THE BIRDS OF ZELLWOOD

FIVE YEARS

August 15th, 1998 to August 14th, 2003

By

HARRY ROBINSON

BIRD MIGRATION – A FLORIDA STUDY

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INTRODUCTION

The St. Johns River Water Management District began purchasing the farms to the north and to the east of Lake Apopka in 1998. They also purchased the Zellwin Sand Farm property. These farms were bought as the nutrient run-off into Lake Apopka was affecting the health of the lake. The District intended to deep flood the fields as a first stage in the restoration of Lake Apopka.

The District was approached by local birdwatchers regarding the possibility of shallow flooding part of the area, this being seen as a major benefit to wildfowl, wading birds and shorebirds. The presence of these birds would draw birdwatchers whose spending, locally, would help the area economy. The fields were shallow flooded by the farmers when they vacated the property. As a result the District in the summer of 1998 became the owner of shallow flooded fields covering some 5351 acres of Unit Two. A lake of some 300 acres also formed at the Sand Farm. As expected the birds found the area immediately and word of the range of species and spectacular numbers quickly spread. Birders from Europe who had planned to fly into Miami changed their plans and based their vacations on Orlando instead.

On August 15th, 1998 there was a meeting between district staff and local birders. One outcome of this meeting was the identified need for detailed information on the numbers and species using the area. Thus the survey was born.

The District had purchased over 14,000 acres an area that could not be covered in one day. The whole complex is known as the Lake Apopka North Shore Restoration Area (LANSRA for short). The survey covers some 10,000 acres of the former Zellwood Drainage and Water Control District's Units One and Two together with the Zellwin Sand Farm Property. Historically this area was known to the bird watchers as Zellwood and this is the name I use to describe the survey area. I do not consider it appropriate to use LANSRA as I am only covering part of that area.

The survey started on August 15th, 1998. Initially I visited the area once a week but after two months I changed this to twice a week. In all 505 surveys were conducted during the five years involving some 6250 hours of field work. The survey is ongoing.

By February 1999 the fields of Unit Two were drained after American White Pelicans and a number of other species had been found dead or dying. This area was not flooded again during the five years being reported on due to concerns about pesticide residue levels. The

Sand Farm remained flooded until November, 2000. Due to concerns about chemicals in the soil the Zellwood area was closed to me after February 17, 1999. During the period of closure until access again granted I was able to look at some of the scrub and woodland borders. I was given permission to re-enter the property on April 20, 1999.

When access again given it became clear that this area was still exceptionally important for birds, just the species had changed.

All the surveys started on the northern border at Canal Road until July 2002. From that month the surveys have started at the Sand Farm Cattail Marsh. At the Canal Road site I used to get there about 0615 hours but at the Sand Farm I have tried to be there at approx. 0525 hours.

Each year I conducted a Breeding Bird Survey in an attempt to evaluate the population of "resident" species. In this report the results of the survey are included in the species accounts and separately in Appendix A.

I have prepared a report for each survey year, five in all. The first two reports were printed by the District but not published by them. I have since rewritten these books and they have all been printed. The District has a copy of the spreadsheet covering all the 505 surveys, I hold the master copy. For further information contact Harry Robinson at 2455 East Lake Drive, Deland, Florida, 32724.

ACKNOWLEDGEMENTS

Firstly I would like to thank Wes Biggs for persuading me to attend the meeting between birders and staff of the St. Johns River Water Management District. If I had not attended that meeting it is very likely that this research project would not have happened.

I would especially like to thank the St. Johns River Water Management District for all their assistance, not least for allowing me access to this area. I would especially like to thank Gian Basili and Jim Peterson for their help and support. Various members of their staff have, as necessary been very helpful.

Pam Bowen prepared a map for me which I have included in this document. Roxanne Conrow and Jim Peterson sent me photographs for possible inclusion. A photograph by Jim Peterson taken in September 1998 showing the flooded fields of Unit Two is now the frontispiece. I really appreciate these individuals taking time out of their busy schedules at St. Johns River Water Management to help me with this project.

Bill Pranty has helped enormously in preparing the spreadsheets for the District. He also made available historical records that he had received from a number of birders. This historical data is now summarized in Appendix D.

Just trying to get this into the computer has been a major undertaking and I would like to thank Julia and Laura Strawn for their efforts. More recently Caroline Nault has come to my rescue at a moment's notice. Your help is especially appreciated.

Finally Karyn Hoffman came to my aid to clear up the remaining problems. Your help is as always much appreciated.

It is now 2016 and I would like to thank Rachel Gerker for preparing this text for placement on Orange Audubon Society's web site.

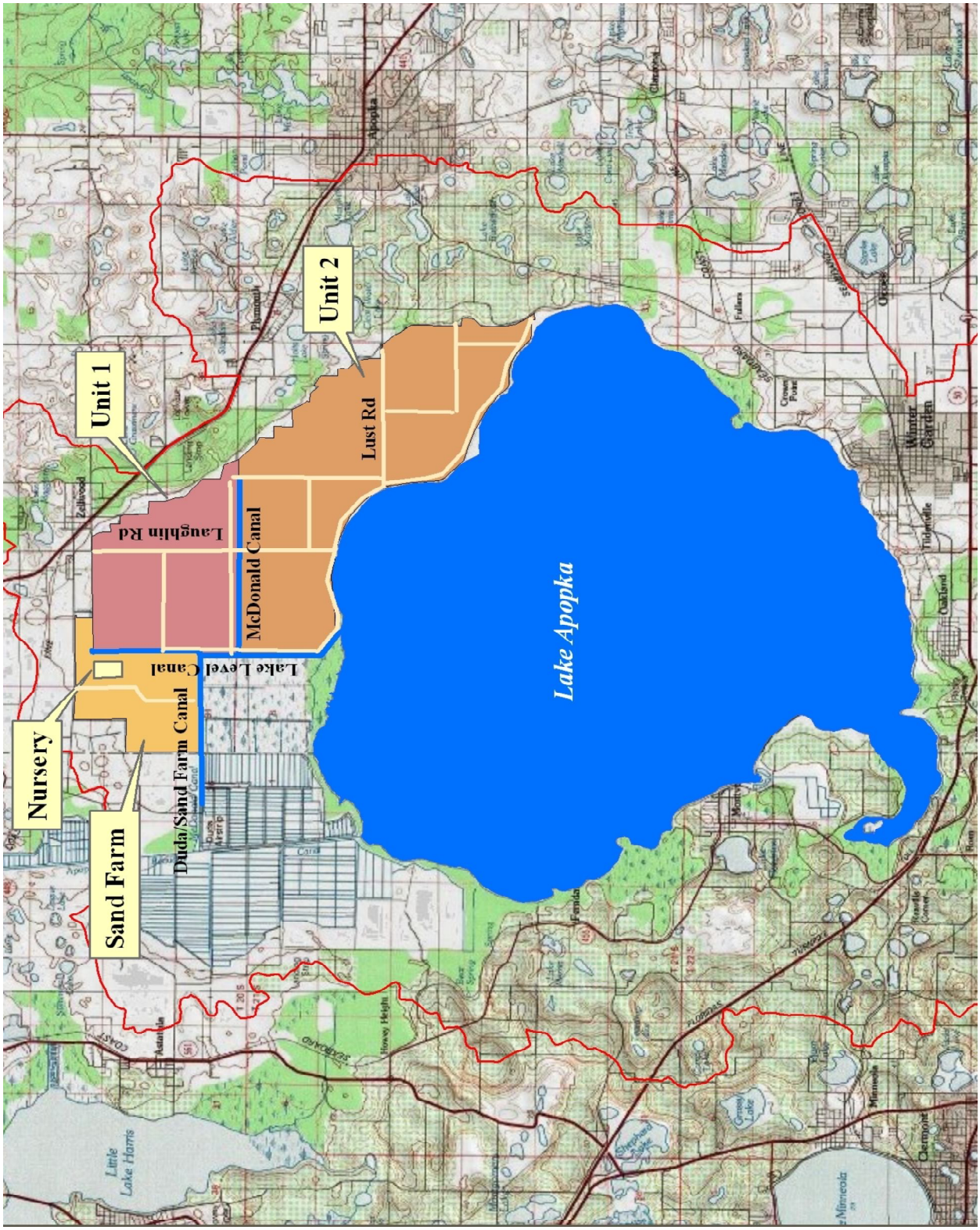
THE SURVEY AREA

The survey covers approximately 1200 acres of the Sand Farm. This farm is on slightly higher ground than the muck farms of Units One and Two with much poorer sandy soils. Vegetation grows slowly here. Growth has been so slow that it has been only mowed twice in five years. The fields are covered in grass and scattered thin shrubs. There are also two small pieces of pine woodland. The southern border is lower and the soil richer. It is also wetter with stands of willows. A wide canal forms the southern border. Until November, 2000 there was a 300 acre lake in the south-eastern corner. After the lake was drained the area was dry for a time. The area was again allowed to retain water and a cattail marsh developed. This marsh covered the full 300 acres and was fully developed by July 2002.

The second area is Unit One. This covers the main property south to the McDonald Canal. None of this area was flooded during the five years. For a time two farms continued to operate. These were Potter's Farm and the Sod Farm. Potter's Farm ceased operations in June, 1999 whilst the Sod Farm continued in use through to the summer of 2002. The vegetation in Unit One gradually evolved from low weeds to fields full of Elderberry, Saltbush and Dog Fennel. The District set up a schedule of mowing and many of the fields were mowed three times a year during the period of this report. The vegetation along the ditches has often been left creating a hedge effect. The north-western portion of Potter's Farm has not been cleared because of drainage problems. Unit One comprises 2800 acres.

The third and largest area is Unit Two. This covers some 6000 acres. Of this 5351 acres were shallow flooded in the summer of 1998. However as mentioned earlier these fields were drained by February, 1999. No intentional flooding took place during the period of this analysis. Fields in both Units One and Two have been flooded after the passage of Tropical Storms but the District has drained these fields as fast as possible. Even so some more isolated areas have taken weeks to drain. As in Unit One thick vegetation developed with the addition of Ludwigia sp. as a major "species" This plant was dominant along the eastern border from Hogshead Road to Lust Road. Much of the northern and western parts of this area have not been cleared. The fields west of Pole Road and south of Lust Road have been cleared a number of times by roller-chopping rather than mowing.

The northern and eastern borders comprise belts of scrub and woodland. The Lake Level Canal forms the main boundary to the west the canal is lined with willows along its western bank. As the canal nears Lake Apopka there is a large area of woodland between the lake and the canal. Further south there are a series of wooded islands just out from the shore of the lake. The lake itself is visible from many points. Normally the water level in the lake is high but on rare occasions there can be extensive areas of mud (summer of 2002).


Unit 1
Unit 2
Nursery
Sand Farm
Duda/Sand Farm Canal
Lake Level Canal
McDonald Canal
Laughlin Rd
Lust Rd
Lake Apopka
Apopka
Zellwood
Plymouth
Winter Garden
Tildenville
Oakland
Ocoee
Clarcona
Fullers
Crown Point
Montverde
Minneola
Clermont
Fenelon
Howey Heights
Adairville
Little Lake Harris

SURVEYING TECHNIQUES

There are many methods used to count birds. The least effective is the person who visits a site, takes no notes, and then at the end of the day "estimates" the numbers seen. Any such estimates are useless.

Numerous bird watchers take some notes during the day but there is nothing systematic about the record keeping. There is also nothing systematic about the areas visited. Counts of this nature are not comparable.

Many surveyors choose to use the system of fixed routes and fixed stops to estimate numbers. They start at a fixed point, at a fixed time and count all they can see or hear for a fixed period of time. They then drive a fixed distance to the next stop and repeat the process. Often there are multiple routes with varying numbers of counters. It sounds terribly scientific but it is not. There are a number of serious problems. It does not work if there is a fixed start time. A 9.00 am start time in December and a 9.00 am start time in June are very different. In December the birds would be very active feeding and calling whilst in June this activity level will have dropped dramatically by that time. As you are not comparing like with like I do not see how the system can work. The only thing it might do is let you compare counts from that date in earlier years. Such a comparison is of no use when studying bird migration. There you are looking at patterns month on month, not year to year. When multiple observers involved the variables increase as these observers will have varying skills in identifying bird calls and/or counting flocks. Skill levels vary so much. My position is that if one individual can cover an area then the rate of error is likely to be constant. For myself I appear too slightly under estimate. When you have a number of teams counting the number of variables increase and the standard of accuracy is likely to decline. I have seen some gross over estimates of the birds using Zellwood.

I do not know of any system that will provide accurate estimates for larger areas. I have found that the best I can do is to have a fixed starting point and to start whilst it is still dark. This removes the static start time problem. I count the birds leaving the various roosts and after sunrise I walk a fixed route, probably some four miles long. I am counting every bird that I can see or hear. The only exception being the species I counted coming out of the roosts. Those species I do not count later in the day to avoid duplication. If there was no roost that day then I would count all seen of that species. The morning walk by itself provides the bulk of the numbers for many species. It also provides a good indication of what is going on i.e. influxes of

Swamp Sparrows or Common Yellowthroats. This may then dictate how I spend the rest of the day. For certain species I have to visit the best habitat at the prime time of day. For Savannah Sparrows that would be early morning whilst they are active. For Swallow-tailed Kites on the other hand I need to visit the eastern fields during the middle of the day in order to calculate their numbers in the early fall. Unless I allow for these "needs" I will grossly under estimate these species. However I always cover certain areas. I always drive the bank of Lake Apopka (five miles). I always check the utility wires and I always check a piece of woodland. Which piece of wood depends on wind direction and strength, there is no point in checking a wood being blasted by a 30 mile per hour wind rather than the sheltered side of a wood. The latter could be very productive. If there has been say a tropical storm then certain fields may be flooded and these will need additional attention. If a gale is blowing then time needs to be spent at the lake checking for any pelagic strays. The purpose of all this is to get the best possible daily count of as many species as possible. The system I use does fail when it comes to resident passerine species. Species such as the Carolina Wren and the Northern Cardinal are grossly under counted each day. Many of the summer visitors suffer likewise. Counts of these resident species can vary according to the level of activity at any one time. Northern Cardinals for example are very active through nest building in the spring and both males and females can be located with ease. When the female gets onto eggs the population appears to be halved. To counter this I conducted a Breeding Bird Survey each year from mid-May to mid-June. In 2004 I walked 74 miles along every road and track. Also all the way down the side of Lake Apopka and along the eastern and northern borders. Whilst I will not have found every pair these counts are quite accurate and comparable.

I hope that the system that I use works. It is not 100% accurate, it could never be that. For a large number of species I aim for a total area wide count i.e. wading birds, wildfowl, shorebirds, gulls, terns, birds of prey, hirundines etc. For the others I try for the fullest count possible i.e. for species such as Eastern Phoebe, Swamp Sparrow etc. As mentioned these are only species that I can aim for comparative counts. Vagrants are always interesting but they are not the focus of this survey. It is the residents and regular visitors that are the "meat" of this project

ANALYSIS OF THE RECORDS AND DEFINITIONS

It is important for you to understand how I came to the conclusions that follow in the systematic list. Firstly at the end of each day I add up the totals for each species and transfer that information to a master, hardback paper record. I am not into computers….I use a separate set of notebooks for each survey year.

The first stage in analyzing the records from August 1998 to August 2003 was to species by species identify and then abstract details of each influx. These influxes took three forms. Frequently numbers built up to a peak and then decline again, this I call a type 1 influx. Often a party arrived and then they gradually drifted away, this I call a type 2 influx. The third type is not very common. This time numbers build up to a peak and then they all or nearly all leave, this I call a type 3 influx. A single influx could cover a short period or occasionally an influx would cover two or more months. So first of all I looked at the rise and fall in numbers. It sometimes happened that an isolated count would be lower and this I ignored. Weather conditions such as wind, rain or cold could all lower a particular count. This means there is an element of assessment not wholly governed by facts. When I had identified what I believed to *be* an influx I listed out the salient counts and dates and then did the same for the following influxes. When I had done this for each of the five years I could then look for patterns.

It is so easy to see whatever one wants to in a set of figures that I looked for a constant that would guide me and make my conclusions as sound as possible, Birds are creatures of habit. They tend to arrive on or near the same date and the peak counts are also on or about the same date. It is the latter fact that my conclusions are based on. I found that the only way I could make sense of the records was to use the individual influxes and their peak counts as a base.

I found that bird migration operated at three levels. The lowest level of influx I call a BASIC INFLUX., this is a short lived event it might just cover a period of ten days. These basic influxes appear to remain hidden unless passage is very light or they can show in the trough between two stronger influxes. These larger influxes I call REGULAR INFLUXES. These occupy the space occupied by 2-4 basic influxes. Very occasionally there is a massive influx that can go on for months, this I call a MEGA INFLUX. There may be four basic influxes to a regular influx but one of the peak counts tends to marry up with the peak count of a regular influx. The same is true of a mega influx. By looking at the influxes it is possible to get an idea as to when a passage begins and ends. Time after time I found influxes that, in different years, started and finished on more or less the same dates. Each passage has its own characteristics and in a surprising number of cases one can clearly see exactly where a passage begins and ends.

Having identified the various passages I tried to identify them from terms in current use. However some of these passages did not fit the standard terminology. I have had to create some of my own descriptions for the passages. Two passages remain the same. Those are the spring and fall passages.

For some time I have felt that there was a passage that started in mid-January and that these birds tended to stay for some time. Species such as the Ash-throated Flycatcher, Western Kingbird and some of the sparrows were prime examples. By mid-January most of the "wintering" birds had left so where did these birds come from? The "wintering" birds probably left to the north so it seems likely that these January visitors came from the south. I cannot totally rule out a western source for these birds. Initially I called this passage the "northward drift" as that appeared to describe it but now I am just calling it the EARLY SPRING PASSAGE. It is clearly an event in its own right. This passage runs from mid-January to late February or the first few days of March.

The spring passage runs from March to April or May depending on the species. I call it the MAIN SPRING PASSAGE but, in truth, the early spring passage can be the stronger event. In the case of the early spring passage being the stronger event I will rename the main spring passage and call it the LATE SPRING PASSAGE.

The summer is a problem. For many species there is a pattern of influxes through the summer, why I do not know. I expect numbers to vary depending on the current activity i.e. courtship, nest building, incubation or feeding the young. But I did not expect there to be a pattern of influxes. The jury is out on this one.

Following the breeding season a number of species gather into large flocks. A well known species is the Purple Martin. There are however, a number of other species, which were not known to gather (at least in Florida) in large flocks as soon as the young fledged. One such species is the Mourning Dove. This is an early nester so the numbers start building up in May and reach a peak in early July, this passage being over by the end of that month. I have no idea as to the size of the catchment area for such numbers but there is some evidence that these birds may have taken off for the north. Two other species in this group are the Red-winged Blackbird and the Boat-tailed Grackle. These two species developed truly massive roosts as soon as the young fledged. Again I cannot conceive the size of the catchment area especially that for the Boat-tailed Grackle. There are some other species that do not gather into such large groups but a number of broods may form loose associations. One such species is the Northern Mockingbird. I call this event a POST-BREEDING GATHERING. It is possible for a species to have more than one consecutive gathering.

For a few species there is a light very early fall passage. It is likely that this passage involves adults only. Two species that come to mind are Blue-winged Teal and Northern Harrier. This is often followed by a regular EARLY FALL PASSAGE which runs from July to the end of September.

The MAIN FALL PASSAGE may follow the summer event, a post-breeding gathering or the early fall passage. This event is normally over at the end of November or during the first week of December. The main passage may cover the whole period or it may end in October with very low numbers thereafter. For the late migrants the first birds may be arriving when the others are finished. With a few exceptions there is normally a clear distinction between the fall and the next event the winter passage.

Like most birders I casually assumed that the winter visitors arrived in the late fall stayed for the winter and then left in the spring. The situation in Central Florida is actually very different. Research is needed to see if this holds true elsewhere. What I found was that the winter occupied a very small space and there were normally two regular influxes or up to four basic influxes. We are not dealing with a static winter population rather for most species there is a dynamic WINTER PASSAGE. Some books talked about local wandering or dispersal, but one would expect some to wander out and others to wander in. In some instances the winter passage is clearly an extension of the fall passage but for the majority of species it is a standalone event.

So the annual cycle could include an early spring passage, the main spring passage, the summer passage (there are all those influxes), the post-breeding gatherings, the early fall passage, the main fall passage and the winter passage. Hopefully the systematic list which follows will clarify the situation.

CHOOSING THE SPECIES ORDER AND WHICH SET OF ENGLISH AND SCIENTIFIC NAMES TO USE

This is a problem that has vexed me as it must do many other people. I want to acknowledge the official species order and the latest scientific names but to do so will create so many serious problems.

All my records are in hard-backed notebooks, a set of notebooks for each survey year. Initially I used the species order and names in use in 1998. After two years I adjusted the species order and the nomenclature to fit in with the latest supplement and that order has been in use ever since.

Now there has been a radical change in the species order affecting a wide range of species. So it is decision time and I have decided on a limited compromise. I am not going to change the species order that I have been using for the last eight years but I will change the nomenclature.

The reason is simple this is an ongoing survey and there will be many annual reports. What I want is someone to be able to open up an annual report and at the same time open up a copy of this analysis and to compare the text. I do not want anyone to have to hunt for the relevant text.

As I state elsewhere Bill Pranty holds the spreadsheet for this ongoing survey. Bill would I know like to change over to the current species order but it will stay as it is. His reasoning is sound as he wants the species order to fit in with the species order used by the Florida Ornithological Society and by American Birds. The spreadsheet is however an integral part of the annual reports and the five year analysis. The species order stays but the nomenclature is now up to date.

AN ANNOTATED CHECKLIST

ZELLWOOD

August 15, 1998 to August 14, 2003

This checklist deals with my survey of the former Zellwood Drainage and Water Management District's Units One and Two together with the Zellwin Sand Farm property. This area comprised approximately 10,000 acres. I conducted 505 surveys during the five years and this involved at least 6250 hours of fieldwork.

I have tried to show the pattern of occurrence for each species together with the numbers present. The text for most species is in two segments. The first is an over view noting the extent of each passage. It also gives examples of the different types of influxes. The second part is more detailed in that it looks at the individual influxes and the patterns that they show.

For those species that prefer shallow water the fall/winter of 1998/1999 is really the only indicator of numbers that I have for this group of species. The pattern of occurrence for them is harder to track with so little information in the later years.

Common Loon (*Gavia immer)*

This is probably an under-recorded species. There were singles at Lake Apopka on November 18, 2001 and November 12, 2003. Fall migration rather than the winter passage.

Pied-billed Grebe (*Podilymbus podiceps*)

Passage migrant and winter visitor, when conditions suitable it was also a summer visitor with a post-breeding gathering. Numbers are comparatively low to mid-October with 91 on September 25, 1999 and 80 on October 6, 1999. Peak passage was from October 21 (1998) to November 30 (1998). The fall passage ran from September 19 (2000) to November 30 (1998) with a high count of 750 on November 18, 1998. To detail the 1998 influxes, there were 170 on October 6 with 219 on October 16 and 620 on October 21, then 610 seen on November 2 with 475 on November 6 and 445 on November 11. There were 540 on November 13 with 750 on November 18, then 585 seen on November 25 with 460 on November 30. Winter passage noted from November 26 (1999) to January 7 (2001) with a high count of 555 on December 3, 1998. In reality this was an extension of the fall passage, as numbers in 1998/1999 indicate. To detail the influxes of 1998/1999, there were 555 on December 3 with 245 on December 8. There were 330 on December 11 with 460 on December 16, then 225 seen on December 18 with 221 on December 20. There were 425 on December 28 with 280 on December 31 and 175 on January 1. The early spring passage ran from January 4 (2000) to March 10 (2000) with a high count of 320 on January 19, 1999. To detail the 1999 influxes, there were 230 on January 7 with 235 on January 8, then 205 seen on January 12 with 195 on January 15. There were 320 on January 19 with 160 on January 29, 145 on February 5, 115 on February 9 and 75 on February 10. The main spring passage only ran, at the most, from February 21 (2001) to April 4 (2001). The high count was that of 15 on March 18, 2000. The summer passage ran from April 11 (2000) to July 12 (2000). No passage during this period. The high count was only that of 11 on June 12, 1999. In 1998 and 1999 there was a significant post-breeding gathering. In the later years with no flooded areas no more than four a day seen at this time. The gathering ran from June 23 (2003) to September 30 (1998) with a high count of 200 on September 17, 1998. This species has a long breeding season. It only bred at the Sand Farm Marsh in 1999 and 2003 with five and one pairs respectively. The only new born young were first noted between June 23 (2003) and July 27 (1999). Perhaps I only noted the second brood or the first nesting attempts failed. The highest count of young was that of seven on July 27, 1999.

The fall passage runs from September 19 (2000) to November 30 (1998) with a total of eight “clustered” influxes. The first peaked from September 24 (2000) to September 26 (2002) with peak counts of 91 on September 25, 1999 and seven on September 24, 2000. The second

peaked from October 6 (1999) to October 7 (2001) with peak counts of 80 on October 6, 1999 and six on October 7, 2001. The third peaked from October 13 (2002) to October 15 (2000) with a peak count of eight on October 15, 2000. The fourth peaked from October 19 (1999) to October 25 (2000) with peak counts of 620 on October 21, 1998 and 59 on October 19, 1999. The fifth is indicated by a peak count of 38 on November 3, 1999. The sixth peaked from November 7 (2001) to November 9 (2002) with a peak count of ten on November 7, 2001. The seventh peaked from November 17 (2002) to November 19 (1999) with peak counts of 750 on November 18, 1998 and 38 on November 19, 1999. The former was the highest count for Zellwood but the high count is now that of 945 on November 26, 2010. Finally the last influx was indicated by an isolated peak count of five on November 26, 2000. The winter passage followed from November 26 (1999) to January 7 (2001), there were three "clustered" influxes. The first peaked from November 29 (2001) to December 3 (1998) with peak counts of 555 on December 3, 1998 and 37 on November 30, 1999. The second peaked from December 11 (1999) to December 16 (1998) with peak counts of 460 on December 16, 1998 and 27 on December 11, 1999. The third peaked from December 27 (1999, 2001) to December 31 (2000) with peak counts of 425 on December 28, 1998 and 27 on December 27, 1999. Next came the early spring passage and this ran from January 4 (2000) to March 10 (2000), there were six "clustered" influxes. The first peaked from January 8 (1999) to January 11 (2000) with peak counts of 235 on January 8, 1999 and 42 on January 11, 2000. The second peaked from January 15 (2003) to January 21 (2000) with peak counts of 320 on January 19, 1999 and 27 on January 21, 2000. For many of the influxes detailed above I have shown two "highest counts". I did this, and will do this, where one count is so much higher than those for the other years. The third peaked from January 27 (2002) to January 30 (2003) with a peak count of six on January 27, 2002. The fourth is indicated by a peak count of ten on February 4, 2001. The fifth peaked from February 9 (2003) to February 11 (2000) with a peak count of 26 on February 11, 2000. The sixth peaked from February 24 (2002) to February 29 (2000) with a peak count of 32 on February 29, 2000. The situation is now a little confused. The late spring passage in this case appears to be a residual event with records from February 21 (2001) to April 4 (2001). However no sightings after March 19 in 2002 and no passage after March 5 in 2003. There are no clear influxes. The highest counts were 15 on March 18, 2000 and 12 on March 25, 2000. The summer appears to run from March 29 (2003) to July 12 (2000). No sightings during this period in 2001 and 2002. There is nothing to suggest passage, the highest count being that of 11 on June 12, 1999. In 1998 with the fields of Unit Two flooded and in 1999 with the lake at the Sand Farm there was clearly a post-breeding gathering. This event ran from June 23 (2003) to September 30 (1998). There were a total of seven "clustered" influxes. The first peaked from June 29 (2003) to July 3 (2002) with a peak count of three on June 29, 2003. The second is indicated by a peak count of four on July 16, 2000. The third peaked from July 27 (2003) to July 31 (2002) with a peak count of three on July 31, 2002. The fourth peaked from August 6 (2000)

to August 11 (2002) with a peak count of four on August 6, 2000. The fifth is indicated by a peak count of four on August 16, 2000. The sixth peaked from September 8 (1999) to September 9 (2001) with a peak count of 95 on September 8, 1999. The seventh is indicated by a peak count of 200 on September 17, 1998. The second to the fifth influxes were basic influxes. In the first two years single, mega influxes occurred. In 1998 the influx ran from August 15 (when the survey started) to September 30. In 1999 the influx ran from July 4 to September 23. Breeding information is contained in part one of this text.

Horned Grebe (*Podiceps auritus)*

They were only recorded from the flooded fields of Unit Two. There was one on November 2, 1998 with three from November 11, 1998 to November 18, 1998; thereafter two seen through to January 27, 1999 with one staying to February 3, 1999. No later records.

Eared Grebe (*Podiceps nigricollis)*

This is potentially a regular winter visitor. When the fields of Unit Two flooded two located on November 11, 1998 with three from November 18, 1998 and four from January 1, 1999. These all stayed to February 5, 1999 with two present to February 10, 1999. I have no idea as to when these two species would have left if the fields had not been drained. Later there was a party of four at the Sand Farm on September 13, 2000 with one staying to September 21, 2000. Singles were also seen on Lake Apopka on October 7, 2001 and November 24, 2002.

American White Pelican (*Pelecanus erythrorhynchos)*

This is an erratic, but sometimes common non-breeding visitor, numbers variable, depending to a large extent on loafing and roosting areas being available at Lake Apopka. It is likely that if this habitat was available year round this would be a winter visitor with a significant non-breeding summer population. Initially, in the fall/winter of 1998/1999, seen in the flooded fields of Unit Two, later all sightings were at Lake Apopka. Fall passage recorded from August 22 (2001) to December 8 (1998). With the exception of the late fall of 1998 numbers low (1-150), when present then in 1998 numbers rose from November 2 to a peak count of 1,350 on November 25, 1998. The winter passage followed from November 25 (2001) to January 16 (2002), counts now generally higher with up to 326 a day, when present, the exception being the winter of 1998/1999. If one looks at the overall trend for that winter,

ignoring the various influxes, the counts show the following pattern. There were 640 on November 13, 1998 with 1,350 on November 25, 1,440 on December 18, 3,550 on December 28 and a very high 4,370 on January 29, 1999. Counts then fell with 2,610 on February 5 and 2,190 on February 17, 1999. The counts only fell because the fields were being drained. In fact the 2,190 were standing on the drying mud after the last field drained. They just did not want to leave the area. The counts detailed above also relate to the early spring passage. This ran from January 9 (2003) to March 6 (2002), numbers again higher with up to 500 a day during the years 2000 to 2003. Next came the main spring passage, this ran from February 12 (2003) to May 13 (2000). With the exception of 2003 this passage started on March 7 (2000). There does appear to be a significant passage but the timing and numbers variable. The highest counts were 379 on March 11, 2001, 1,220 on April 3, 2002 and 740 on March 29, 2003. On March 9, 2003 a total of 85 seen, these were all adults in breeding plumage. The summer event involves a series of influxes but these are non-breeding birds. This event covered an extended period from May 4 (2003) to August 28 (2002). Whilst in 2002 counts reached 770 on June 23 the largest numbers were in 2001. The pattern for 2001 was as follows: only five seen on May 14 with 191 on May 20, 760 on June 3, 890 on June 10, 1430 on June 17, 1710 on June 24 and 2400 on June 27 then 2100 seen on July 1 with 1250 on July 11, 640 on July 25 and 350 on August 14, 2001. Some of these birds had been tagged or banded in either North Dakota or Minnesota. Details are given in Appendix C.

Seen in the fall from August 22 (2001) to December 8 (1998), there were eight "clustered" influxes. The first is indicated by a peak count of 185 on August 26, 2001. The second peaked from September 7 (2000) to September 10 (1999) with a peak count of 15 on September 7, 2000. The third peaked from September 16 (2001) to September 17 (1998) with a peak count of 216 on September 17, 1998. The fourth peaked from October 10 (2001) to October 16 (1998) with a peak count of 140 on October 16, 1998. The fifth peaked from October 21 (2001) to October 26 (1999) with a peak count of 171 on October 21, 2001. The next two influxes were indicated by isolated peak counts of 125 on November 1, 2001 and 420 on November 8, 2000. The last influx peaked from November 21 (2002) to November 26 (1999) with peak counts of 60 on November 21, 2002 and 1,350 on November 25, 1998. The last influx started on November 2, 1998, it is however really part of the winter passage. The winter passage ran from November 25 (2001) to January 16 (2002), there were five "clustered" influxes. The first peaked from November 29 (2001) to December 2 (2002) with a peak count of 245 on November 29, 2001. The second peaked from December 12 (2000) to December 13 (2001) with a peak count of 280 on December 12, 2000. The third peaked from December 19 (2001) to December 21 (2002) with a peak count of 190 on December 19, 2001. The fourth peaked from December 28 (1998) to January 2 (2003) with peak counts of 80 on January I, 2001 and 3,550 on December 28, 1998. The fifth peaked from January 4 (2000) to January 7 (1999) with peak counts of 326 on January 4, 2000 and 2,320 on January 7, 1999. Next came the early

spring passage, it ran from January 9 (2003) to March 6 (2002). There appear to be seven "clustered" influxes. The first peaked from January 11 (2003) to January 12 (1999) with peak counts of 36 on January, 11, 2003 and 3,310 on January 12, 1999. The second is indicated by a peak count of 66 on January 17, 2001. The third peaked from January 24 (2002) to January 25 (2000) with a peak count of 460 on January 24, 2002. The fourth peaked from January 29 (1999) to February 2 (2003) with peak counts of 207 on January 31, 2001 and 4,370 on January 29, 1999. The latter is still (2015) the highest count for Zellwood. The last three influxes are indicated by isolated peak counts of 384 on February 6, 2002, 94 on February 21, 2001 and 500 on February 27, 2002. The main spring passage ran from February 12 (2003) to May 13 (2000). With the exception of 2003 this passage started on March 7 (2000). In 2003 an influx that started on February 12 did not reach its peak until the second influx of this passage, so it is placed here. There were in all six "clustered" influxes. The first peaked from March 10 (2002) to March 11 (1999) with a peak count of 574 on March 10, 2002. The second peaked from March 18 (2000) to March 23 (1999) with a peak count of 246 on March 19, 2003. The third peaked from March 29 (2003) to April 3 (2002) with peak counts of 740 on March 29, 2003 and 1,220 on April 3, 2002. The fourth peaked from April 8 (2001) to April 9 (1999) with a peak count of 290 on April 8, 2001. The fifth is indicated by a peak count of 211 on April 16, 2003. The sixth peaked from April 19 (2001) to April 26 (2000) with a peak count of 850 on April 21, 2002. The summer appears to cover an extended period from May 4 (2003) to August 28 (2002), there were six "clustered" influxes. The first is indicated by a peak count of 56 on May 7, 2003. The second peaked from May 21 (2000) to May 23 (2002) with a peak count of 325 on May 23, 2002. The third peaked from June 23 (2002) to June 28 (2000) with peak counts of 770 on June 23, 2002 and 2400 on June 27, 2001. The fourth peaked from July 10 (2002) to July 11 (2001) with peak counts of 145 on July 10, 2002 and 1,250 on July 11, 2001. The fifth peaked from July 22 (2001) to July 26 (2000) with peak counts of 135 on July 26, 2000 and 1,155 on July 22, 2001. The last influx peaked from August 5 (2001) to August 7 (2002) with a peak count of 460 on August 5, 2001. When you have an extended passage like this it is possible to see clearly how the peak counts are "clustered".

Brown Pelican (*Pelecanus occidentalis)*

An occasional visitor to Lake Apopka during the early spring and especially during the main spring passage there were no summer, fall or winter sightings, perhaps 14 birds in all. The records fall into three periods. Single immatures were seen in January between the 24th (2002) and 31st (2001). There were no further sightings until an immature seen on March 10, 2002. There were two adults and an immature on March 24, 2003 with one adult staying to May 7, 2003. Finally in this group there was an immature on April 4, 2001. May is the month for this

species with records from the 1st (2002) to 15th (2003) – five birds in all. There were also two sub-adults on May 27, 2001. In all three adults, two sub-adults and nine immatures were seen over the five years.

Seen in the early spring from January 24 (2002) to January 31 (2001). The records indicate one influx that peaked from January 24 (2002) to January 28 (2001) with singles on both dates. Seen during the main spring passage from March 10 (2002) to May 15 (2003). There was one on March 10, 2002, later three seen on March 24, 2003 with one staying to May 7, 2003. The count of three was the highest count during the first five years of the survey, then one seen on April 4, 2001. These records may indicate the location of influxes. The records for May do just that, there were two influxes. The first peaked from May 1 (2002) to May 4 (1999) with one on both dates. The second peaked from May 12 (2003) to May 13 (2000) again with one on both dates. Finally there was a late record of two on May 27, 2001.

Double-crested Cormorant (*Phalacrocorax auritus)*

Passage migrant, winter visitor with a few non-breeding birds present during the summer. In the fall/winter of 1998/1999 many were out in the flooded fields of Unit Two. Since then the majority have been at Lake Apopka with a number to be found feeding in the major canals. Seen on passage in the fall from September 22 (2002) to December 8 (1998). The fall of 1998 shows the pattern well. In that year there were just two main influxes. For the first there were 58 on October 16 with 137 on October 21, 322 on October 29 and 442 on November 2, then 280 seen on November 11 with 79 on November 13. The second influx was similar with 115 on November 18, 162 on November 20 and 186 on November 25, then 170 seen on November 30 with 141 on December 3 and 130 on December 8. The winter passage ran from November 21 (2002) to February 3 (2002). That is unusual as this passage is normally over in early January. Most influxes were in the form of pyramids as detailed above. The high count was that of 308 on January 2, 2003. The early spring passage followed from January 27 (1999) to March 7 (2000) but with an extension to March 17 in 2002 and to April 11 in 2003. The high count was that of 515 on February 14, 2001. The main spring passage came next and it ran from February 28 (2001) to June 10 (2001). This was the heaviest passage of the year with peak passage in late March and early April. One influx, in particular, was at the center with peak counts of 321 on March 27, 2000. 531 on March 27, 2002 and 828 on March 25, 2001. During this period flocks could be seen actively fishing all over the lake. The summer is the very opposite with low numbers from May 18 (1999, 2003) to October 8 (1999). No clear passage with a high count of 47 on June 13, 2001. This is perhaps the only species where passage, especially in the spring, can be observed with flocks leaving Lake Apopka for the north in the mornings. Passage noted from March 2 (2003) to May 13 (2000). The peak flights were 144 on

March 27, 2000, 297 on March 25, 2001 and 322 on March 27, 2002. These totals are included in the counts detailed earlier. I only visited the lake later in the day so there was no overlap. Fall passage is far from clear with records from July 4 (2003) to December 15 (2000). Most sightings were late in the day in November. The highest count was that of 71 seen flying to the south on September 26, 2002. Finally on April 10, 2002 I saw an adult with sparse white ear tufts, resembling the California race P.a.*albociliatus*. This bird was also present on April 14, 2002. On April 11, 2003 and April 13, 2003 what was probably the same bird was at Lake Apopka. There is no confirmed record of this race east of the Rockies.

Fall passage noted from September 22 (2002) to December 8 (1998), there were seven "clustered" influxes. The first peaked from September 26 (2002) to September 30 (2001) with a peak count of 78 on September 26, 2002. The second peaked from October 10 (2001) to October 16 (2002) with a peak count of 62 on October 16, 2002. The next two influxes are indicated by isolated peak counts of 53 on October 26, 1999 and 442 on November 2, 1998. The fifth influx peaked from November 8 (2000) to November 9 (1999, 2002) with a peak count of 146 on November 8, 2000. The sixth is indicated by a peak count of 130 on November 15, 2001. The seventh peaked from November 25 (1998) to November 28 (2000) with a peak count of 186 on November 25, 1998. Next was the winter passage. It is not unusual for there to be a link between the fall passage and the winter passage but in this case there is a clear link between the winter passage and the early spring passage. In 2000/2001 an influx ran from December 22, 2000 to January 24, 2001 whilst in 2001/2002 there was an influx from December 30, 2001 to February 3, 2002. The winter passage therefore ran from November 21 (2002) to February 3 (2002), there were six "clustered" influxes. The first is indicated by a peak count of 145 on December 3, 2000. The second peaked from December 8 (2002) to December 11 (1998) with a peak count of 178 on December 8, 2002. The third peaked from December 17 (2000) to December 19 (2001) with a peak count off 180 on December 17, 2000. The fourth peaked from January 2 (2003) to January 4 (2000) with a peak count of 308 on January 2, 2003. The fifth peaked from January 15 (1999) to January 19 (2003) with a peak count of 258 on January 17, 2001. The sixth peaked from January 24 (2002) to January 25 (2000) with a peak count of 217 on January 24, 2002. The early spring passage followed from January 27 (1999) to March 7 (2000). This event also broke the "rules". In 2002 the last influx ran from February 20 to March 17 and in 2003 the last influx ran from February 23 to April 11. In both years the peak counts of these influxes fitted into this passage rather than the main spring passage. There were five "clustered" influxes. The first peaked from January 29 (1999) to January 31 (2001) with a peak count of 286 on January 31, 2001. The second peaked from February 2 (2003) to February 6 (2002) with a peak count of 247 on February 6, 2002. The third peaked from February 14 (2001) to February 17 (1999) with a peak count of 515 on February 14, 2001. The fourth peaked from February 21 (2000) to February 26 (2003) with a peak count of 186 on February 26, 2003. The sixth is indicated by a peak count of 329 on March 4, 2002. The main

spring passage ran from February 28 (2001) to May 23 (2000). In 2001 this passage continued to June 10. This was the heaviest passage of the year, there were six clustered" influxes. The first peaked from March 13 (1999) to March 14 (2000) with a high count of 224 on March 14, 2000. The second peaked from March 25 (2001) to March 27 (2000, 2002) with high counts of 321 on March 27, 2000, 531 on March 27, 2002 and 828 on March 25, 2001. The latter was the highest count during the first five years of the survey. The third peaked on April 6 (1999, 2001) with a high count of 347 on April 6, 2001. The fourth is indicated by a peak count of 165 on April 13, 2003. The fifth peaked from April 20 (1999) to April 26 (2001) with a high count of 157 on April 26, 2001. The sixth peaked from April 30 (2003) to May 6 (2001) with a high count of 87 on May 6, 2001. The "summer:" in this case covers an extended period from May 18 (1999, 2003) to October 8 (1999), there also appear to be 13 "clustered" influxes……However in any one year five to seven influxes recorded. The nine listed below appear to be the most significant. The first peaked from May 22 (1999) to May 27 (2000) with a high count of 26 on May 27, 2000. The second peaked from June 10 (2002) to June 14 (2000) with a high count of 47 on June 13, 2001. The third peaked from June 27 (2001) to June 30 (2000) with a high count of 45 on June 27, 2001. The fourth peaked from July 14 (2000) to July 19 (2003) with a high count of 23 on July 14, 2002. The fifth peaked from July 27 (2003) to July 30 (2000) with a high count of 25 on July 30, 2000. The sixth is indicated by a peak count of 20 on August 11, 2002. The seventh peaked from August 27 (2000) to August 29 (2001) with a high count of 36 on August 27, 2000. The eighth peaked from September 2 (1998) to September 7 (2000) with a high count of 41 on September 7, 2000. The ninth peaked from September 16 (2001) to September 19 (2000) with a high count of 36 on September 19, 2000. The species, such as this, where the pattern of occurrence is a little different makes this analysis all the more interesting.

Anhinga (*Anhinga anhinga*)

This is a resident, passage migrant, winter visitor, with the beginnings of a post-breeding gathering. A total of five pairs located on an island off the end of Lust Road in 2000, of these two pairs were known to have raised two young each. It is very likely that this species bred just outside the survey area each year. The "summer" covers the period May 13 (2000) to August 14 (2001). The summer of 2000 shows the pattern well. There were 16 on May 13 with 24 on May 30, 33 on June 14, 46 on June 30, 51 on July 26 and 57 on July 30, then 50 seen on August 2 with 42 on August 13, 2000. No passage during this time. This was followed by what has to be the beginnings of a post-breeding gathering. This event ran from July 13 (2003) to October 17 (2001) with high counts of 68 on September 3, 2000 and 58 on September 19, 2000. Next came the fall passage, this ran from September 27 (2000) to November 30 (1999) with high counts of 49 on October 22, 2000 and 42 on November 19, 2000. The winter passage ran from November

25 (1998) to January 8 (1999) with high counts of 41 on November 30, 2000 and December 17, 2000. The early spring passage followed from January 4 (2001) to March 18 (2000) with high counts of 43 on January 31, 2001 and February 21, 2001. Finally the main spring passage ran from March 3 (2001) to May 26 (2003) with a high count of 43 on March 3, 2001. It is so noticeable how the pattern does not vary much through the year.

The summer appears to run from May 13 (2000) to August 14 (2001), no indication of passage during this period. The highest count was that of 44 on June 24, 2001. This was followed by emergent post-breeding gathering(s). They ran from July 13 (2003) to October 17 (2001), there were nine "clustered" influxes. The first peaked from July 19 (2003) to July 21 (2002) with a high count of 24 on July 19, 2003. The second peaked from July 27 (2001) to July 30 (2000, 2003) with a high count of 57 on July 30, 2000. The third peaked from August 3 (1999) to August 5 (2001) with a high count of 26 on August 3, 1999. The fourth is indicated by a peak count of 14 on August 7, 2002. The fifth peaked from August 13 (1999) to August 15 (1998) with a high count of 23 on August 13, 1999. The sixth peaked from August 29 (2001) to September 3 (2000) with a high count of 68 on September 3, 2000. This was the highest count during the first five years of the survey. The seventh peaked from September 8 (1999) to September 9 (2001) with a high count of 42 on September 8, 1999. The eighth peaked from September 17 (1998) to September22 (2002) with a high count of 58 on September 19, 2000. The ninth is indicated by a peak count of 24 on September 26, 2001. Next came the fall passage, this ran from September 27 (2000) to November 30 (1999). There were six "clustered" influxes. The first peaked from October 1 (2000) to October 2 (1999, 2002) with a high count of 48 on October 1, 2000. The second is indicated by a peak count of 42 on October 12, 1999. The third peaked from October 20 (2002) to October 26 (1999) with a high count of 49 on October 22, 2000. The fourth is indicated by a peak count of 31 on November 4, 2001. The fifth peaked from November 11 (1998) to November 15 (2001) with a high count of 33 on November 11, 1998. The final influx peaked from November 19 (2000) to November 22 (1999) with a high count off 42 on November 19, 2000. The winter passage ran from November 25 (1998) to January 8 (1999) again there were six "clustered' influxes. The first peaked from November 25 (1998) to November 30 (2000) with a high count of 41 on November 30, 2000. The second peaked from December 2 (2002) to December 5 (2001) with a high count of 25 on December 5, 2001. The third is indicated by a peak count of 17 on December 11, 1999. The fourth peaked from December 17 (2000) to December 18 (1998) with a high count of 41 on December 17, 2000. The fifth is indicated by a peak count of 23 on December 22, 1999. The sixth peaked from December 27 (2001) to December 30 (2002) with a high count of 26 on December 27, 2001. The early spring passage also consisted of six "clustered" influxes, it ran from January 4 (2001) to March 18 (2000). The first peaked from January 7 (2000, 2003) to January 11 (1999) with a high count of 23 on January 7, 2003. The second peaked from January 14 (2001) to January 18 (2000) with a high count of 34 on January 16, 2002. The third peaked from January 27 (2002) to January 31

(2001) with a high count of 43 on January 31, 2001. The fourth is indicated by a peak count of 20 on February 9, 2003. The fifth peaked from February 16 (2000) to February 17 (1999) with a high count of 25 on February 16, 2000. The sixth is indicated by a peak count of 43 on February 21, 2001. The main spring passage ran from March 3 (2001) to May 26 (2003) with five "clustered" influxes. The first peaked from March 3 (2001) to March 9 (2003) with a high count of 43 on March 3, 2001. The second peaked from March 29 (2003) to March 31 (2002) with a high count of 21 on March 30. 1999. The third peaked from April 17 (2002) to April 19 (2000) with a high count of 12 on April 19, 2000. The fourth peaked from April 26 (1999) to May 2 (2000) with a high count of 21 on May 2, 2000. The fifth influx peaked from May 14 (2001) to May 18 (1999, 2003) with a high count of 28 on May 14, 2001. Unlike the last species the Anhinga's various passages occurred when expected with no over-runs. The numbers were consistently low with numerous basic influxes.

American Bittern (*Botaurus lentiginosus*)

This is a passage migrant and winter visitor, occasional in the summer but no evidence of breeding. For the summer singles were seen on June 28, 2000, from June 11, 2003 to June 26, 2003 and on July 13, 2003. In three of the five years there were sightings in the early fall. There were singles on August 22, 2001 and August 31, 1999. In 2002 there was an influx from August 25 to September 11 with a high count of four on September 8, 2002. The main fall passage ran from September 15 (2002) to November 25 (1998). To use 2002 as an example, there was one on August 25 with four on September 8, and ten on September 22, then eight seen on September 26 with six on September 29 and three on October 2. In the other years the peak passage might be in mid-October or mid-November. The winter passage ran from November 26 (1999, 2000) to January 5 (2003) with high counts of seven on November 28, 2000 and five on November 26, 1999. For December the highest count was only that of four on December 14, 2002. Winter counts were normally in the range of one to three. The early spring passage followed from January 7 (2000, 2001, 2003) to February 23, (2003), again one to three seen with a high count of four on January 7, 2003. The late spring passage, which ran from February 26 (2003) to May 2, (2000), was even lighter, normally only singles seen with high counts of three on March 7, 2000 and March 27, 2000. That all changed with 2003 in that year at the Sand Farm Cattail Marsh the picture was very different. There were six on February 26 with 11 on March 3, 16 on March 19 and 17 on March 26, then 15 seen on April 2 with ten on April 6, four on April 13, two on April 21 and one which remained to April 27, 2003. Outside of the spring and summer there are two calls that this species gives. The best known is the alarm croak given when it is disturbed and it takes flight. Before sunrise, when a number present, there is a similar call that they give to mark out their territory. Identifiable individuals have only

been heard to call once. In the spring they can “sing: but this species is said to rarely call in Florida. At the Sand Farm Cattail Marsh in 2003 there were in song four on March 16 with six from March 19 to April 2. There were also four on April 6, 2003.

For the summer singles seen on June 28, 2000, from June 11, 2003 to June 26, 2003 and on July 13, 2003. In three of the five years there were sightings in the early fall. There were singles on August 22, 2001 and August 31, 1999. In 2002 there was an influx from August 25 to September 11 with a peak count of four on September 8, 2002. Fall passage noted from September 15 (2002) to November 25 (1998), there were six “clustered” influxes. The first peaked from September 19 (2001) to September 25 (1999) with high counts of two on September 25, 1999 and ten on September 22, 2002. The second peaked from October 1 (2000) to October 6 (1998) with a high count of three on October 1, 2000. The third peaked from October 12 (1999) to October 16 (2002) with high counts of six on October 12, 1999 and October 15, 2000. The fourth peaked from October 24 (2001) to October 28 (2002) with a high count of five on October 28, 2002. The fifth peaked from November 8 (2000) to November 12 (1999) with a high count of seven on November 12, 1999. The sixth peaked from November 18 (1998, 2001) to November 21, (2002) with a high count of three on November 21, 2002. Over the five years this is probably the strongest event. However the Sand Farm Cattail Marsh may change that situation in future years. Next came the winter passage, it ran from November 26 (1999, 2000) to January 5 (2003), there were five “clustered” influxes. The first peaked from November 26 (1999) to November 28 (2000) with high counts of five on November 26, 1999 and seven on November 28, 2000. The second peaked from December 2 (2001) to December 3 (1998) with a high count of three on December 3, 1998. The third is indicated by a peak count of three on December 7, 1999. The fourth peaked from December 14 (2002) to December 15 (2000) with a high count of four on December 14, 2002. The fifth peaked from December 30 (2002) to January 1 (2001) with a high count of two on December 30, 2002. The early spring passage followed from January 7 (2000, 2001, 2003) to February 23 (2003), there were again five “clustered” influxes. The first peaked from January 7 (2000, 2003) to January 10 (2002) with a high count of four on January 7, 2003. The second peaked from January 15 (1999) to January 17 (2001) with a high count of three on January 17, 2001. The third is indicated by a peak count of three on January 25, 2000. The fourth peaked from February 3 (1999) to February 5 (2003) with high counts of three on February 4, 2001 and February 5, 2003. The fifth peaked from February 11 (2000) to February 15 (2003) with a high count of three on February 11, 2000. The last event was the late spring passage, this ran from February 26 (2003) to May 2 (2000), there were five “clustered” influxes. In every year, bar 2003, this was the weakest event. The first influx peaked from March 3 (2001) to March 7 (2000) with high counts of three on March 7, 2000 and 11 on March 5, 2003. The second is indicated by a peak count of one on March 17, 2002. The third peaked from March 26 (2003) to March 27 (2000, 2002) with high counts of three on March 27, 2000 and 17 on March 26, 2003. The latter was the highest count during the

first five years of the survey. The fourth peaked from April 10 (2002) to April 16 (2001) with one on both dates. The final influx peaked from April 20 (1999) to April 26 (2000) also with one on both dates. With an increasing acreage enveloped in cattails this species should prosper.

Least Bittern *(Ixobrychus exilis*)

This is a summer visitor and passage migrant, occasional in the winter and the early spring. Most sightings are from the Sand Farm Cattail Marsh and the shore of Lake Apopka when the water level is high. Only recorded in one winter, there was an influx from November 21, 2002 to December 21, 2002, singles seen with two on December 8, 2002. The early spring passage was not much better with records from January 7 (2002) to March 14 (2002). There was at least one influx it peaked from January 7, (2002) to January 9, (2003) with one on both dates. Singles were also first seen on January 14, 2001 and February 21, 2001 and these may indicate the location of influxes. The main spring passage ran from March 2 (2003) to May 26 (2003). This passage is normally considered to be over by the end of April but the influx detailed below in 2003 suggests otherwise. There were three on May 4 with eight on May 7 and 17 on May 12, then five seen on May 18 with three on May 21 and two on May 26. The highest count for the other years was that of four on May 9, 2002. The summer followed from May 20 (2001) to September 6 (1999). During the Breeding Bird Survey a total of three pairs located in 1999 with four pairs in 2000, eight pairs in 2001, six pairs in 2002 and 15 pairs in 2003. The counts for this survey take place in late May and early June so the influx detailed earlier was not involved. The only fledged young recorded were seen on July 9 (1999) and July 17 (2002). The highest summer count was that of seven on June 26, 2003. The fall passage followed from September 9 (2001) to November 12 (1999) with a high count of three on October 13, 2002. The fall passage may only have involved 11 birds over the five years.

Only recorded in one winter, there was an influx from November 21, 2002 to December 21, 2002, singles seen with two on December 8, 2002. The early spring passage was not much better. Recorded from January 7 (2002) to March 14 (2002). There was at least one influx and that peaked from January 7 (2002) to January 9 (2003) with one on both dates. Singles were also first seen on January 14, 2001 and February 21, 2001 and these may indicate the location of influxes. The main spring passage appears to run from March 2 (2003) to May 26 (2003) with a total of five “clustered” influxes. The first peaked from March 5 (2003) to March 6 (2002) with three on both dates. The second peaked from March 26 (2003) to March 31 (2002) with a high count of three on March 26, 2003. The third is indicated by a peak count of three on April 24, 2003. The fourth peaked from May 4 (1999, 2000) to May 6 (2001) with a high count of two on May 6, 2001. The fifth peaked from May 9 (2002) to May 12 (2003) with high counts of four on May 9, 2002 and 17 on May 12, 2003. The latter was the highest count during the first five

years of the survey. It is because of that particular influx that I treat the spring as continuing to late May. The summer is always hard to identify but the following is my best estimate. I consider the summer to run from May 20 (2001) to September 6 (1999), the number of "clustered" influxes is uncertain. The first influx peaked from May 20 (2001) to May 22 (1999) with a high count of five on May 20, 2001. The second is indicated by a peak count of two on May 30, 2000. The third peaked from June 8 (2003) to June 10 (2002) with a high count of six on June 8, 2003. The fourth peaked from June 17 (2001) to June 19 (1999, 2000) with a high count of six on June 17, 2001. The fifth peaked from June 26 (2003) to June 30 (2002) with a high count of seven on June 26, 2003. Now it gets complicated as there are a series of isolated peak counts that may indicate the locations of influxes. There were three on July 9, 1999, four on July 26, 2000, four on August 6, 2000, one on August 18, 1999 and two on August 28, 2002. The fall passage followed from September 9 (2001) to November 12 (1999), there were six "clustered" influxes. The first peaked from September 9 (2001) to September 10 (2000) with a high count of two on September 10, 2000. The second is indicated by a peak count of two on September 18, 2002. The third peaked from September 27 (2000) to September 29 (2002) with a high count of two on September 29, 2002. The fourth is indicated by a peak count of three on October 13, 2002. The fifth peaked from October 17 (2001) to October 19 (1999) with one on both dates. The last influx is indicated by a peak count of one on November 12, 1999. This small bittern is often hard to locate so it is almost certainly under-recorded.

Great Blue Heron (*Ardea herodias*)

Non-breeding resident, passage migrant and winter visitor, this species will have nested on the Duda property. Unusually this species nests in the winter with the young fledging in March and April. More northerly birds that wintered in Florida will probably be passing through at that time. This makes for a very confused situation. This species is normally solitary hunting along the canals and the shore of Lake Apopka but on occasions a group will gather in a field, probably to hunt for Hispid Cotton Rats or other rodent species. The winter passage ran from November 18 (1998) to January 14 (2000), an exceptionally long period. The high count was that of 395 on December 3, 1998. The winter of 1998/1999 consisted of two influxes. It is worth showing them in detail. There were 275 on November 18 with 280 on November 25, 295 on November 30 and 395 on December 3, then 310 seen on December 8 with 283 on December 11, 170 on December 16 and 150 on December 18. The second influx had 160 on December 20 with 217 on December 28, 234 on December 31 and 285 on January 1, then 220 seen on January 7. The early spring passage followed from January 7 (2001, 2002) to March 6 (2002) with a high count of 385 on January 15, 1999. Again all these higher counts were whilst the fields of Unit Two were flooded. The main spring passage ran from February 28 (2001) to May

21 (2000) with a high count of 61 on March 11, 2001. The summer, in this case, climatic rather than the breeding season ran from May 2 (2001) to July 28 (2002) with a high count of 58 on June 16, 2002. Now it gets difficult, this is hopefully explained in part two of this text. There appears to be a divided fall event with the first part running from July 30 (2000, 2003) to September 30 (1999) with a high count of 50 on August 27, 2000. I do not know how to describe this event. Then there is a bit of a gap with a high count of 95 on September 22, 2002. This is followed by the fall passage which ran from September 16 (2001) to November 22 (1999) with a high count of 79 on November 5, 2000. This is a confusing species.

To start with the winter passage, this in itself is unusual. The passage ran from November 18 (1998) to January 14 (2000), there were five "clustered" influxes. Whilst January 14 is a late date for this passage to end it is the start date that is exceptionally early. The first influx in 1998 ran from November 18 to December 8. In 2002 this influx ran from November 21 to December 14, Because of these events I placed this influx in the winter passage. The first influx peaked from November 24 (2002) to November 26 (1999) with a high count of 37 on November 26, 1999. The second peaked from December 2 (2001) to December 3 (1998) with high counts of 42 on December 2, 2001 and 395 on December 3, 1998. The latter is still the highest count for Zellwood. The third peaked from December 14 (1999) to December 17 (2000) with a high count of 72 on December 17, 2000. The fourth is indicated by a peak count of 28 on December 21, 2002. The fifth peaked from December 27 (2001) to January 1 (1999, 2000, 2001) with high counts of 57 on January 1, 2001 and 285 on January 1, 1999. The early spring passage followed from January 7 (2001, 2002) to March 6 (2002), again there were five "clustered" influxes. The first peaked from January 13 (2002) to January 15 (1999, 2003) with high counts of 85 on January 14, 2001 and 385 on January 15, 1999. The second peaked from January 26 (2003) to January 28 (2001) with a high count of 72 on January 28, 2001. The third peaked from February 2 (2000) to February 5 (2003) with a high count of 52 on February 2, 2000. The fourth peaked from February 9 (1999) to February 16 (2000) with high counts off 59 on February 11, 2001 and 326 on February 9, 1999. The fifth influx peaked from February 23 (2003) to February 29 (2000) with a high count of 35 on February 29, 2000. The main spring passage appears to run from February 28 (2001) to April 17 (1999), there were three "clustered" influxes. The first peaked from March 10 (2000) to March 11 (1999, 2001) with a high count of 61 on March 11, 2001. The second peaked from March 17 (2002) to March 19 (2003) with a high count of 36 on March 17, 2002. The third peaked from March 25 (2000) to March 31 (2002) with a high count of 51 on March 25, 2000. Now the situation becomes unclear. In April there were three isolated peak counts of 40 on April 8, 2001, 34 on April 14, 2002 and 36 on April 21, 2003. These are the only peak counts for April during the five years. This lack of peak counts suggests to me that there was little or no passage during most of April. Then the main spring passage appears to resume with two influxes from April 19 (2000) to May 21 (2000). The first peaked from April 26 (1999, 2000, 2001) to April 28 (2002) with a high count of 52 on April 26, 2000. The second

peaked from May 7 (2000) to May 10 (1999) with a high count of 42 on May 7, 2000. For this species the summer is more a climatic event seeing as it nests during the winter and early spring. The summer in this case ran from May 2 (2001) to July 28 (2002). Please note the pattern of the highest counts during this event. There were seven “clustered” influxes. The first peaked from May 18 (2003) to May 22 (1999) with a high count of 31 on May 22, 1999. The second peaked from May 30 (2000) to June 2 (2002) with a high count of 46 on June 2, 2002. The third peaked from June 12 (1999) to June 17 (2001) with a high count of 58 on June 16, 2002. The fourth peaked from June 29 (2003) to June 30 (2002) with a high count of 50 on June 30, 2002. The fifth peaked from July 4 (2000) to July 9 (2003) with a high count of 42 on July 6, 1999. The sixth peaked from July 17 (2002) to July 18 (2001) with 39 on both dates. The seventh peaked from July 23 (1999) to July 25 (2003) with a high count of 26 on July 23, 1999. This species continues to surprise, this time with the fall passage. The overall event covered the period July 30 (2000, 2003) to November 22 (1999) but as with the spring there was a period of less activity in the middle. The dates are confusing. There were five “clustered” influxes from July 30 to September 30 (1999). There were also a further five “clustered” influxes from September 16 (2001) to November 22. The problem is that there is an underlying period from September 10 to October 11 during which only three influxes peaked, again three in five years. I do not know how to name the first event but the second is the fall passage with a singular lack of activity between these two events. Now to the first event, the first influx peaked from July 30 (2000) to July 31 (2002) with a high count of 33 on July 30, 2000. The second is indicated by a peak count of 17 on August 5, 2003. The third peaked from August 12 (2001) to August 16 (2000) with a high count of 38 on August 16, 2000. The fourth peaked from August 25 (2002) to August 29 (2001) with a high count of 50 on August 27, 2000. The fifth peaked from September 6 (1999) to September 9 (2001) with a high count of 36 on September 6, 1999. That completes what appears to be a separate event. Then there were the three isolated peak counts. There were 42 on September 13, 2000 with 95 on September 22, 2002 and 29 on October 2, 1999. The fall passage was next. The first influx peaked from October 12 (2000) to October 14 (2001) with a high count of 44 on October 12, 2000. The second is indicated by a peak count of 40 on October 22, 2000. The third peaked from November 5 (2000) to November 6 (1999) with a high count of 79 on November 5, 2000. The fourth peaked from November 9 (2002) to November 11 (2001) with a high count of 34 on November 11, 2001. The last influx is indicated by a peak count of 33 on November 16, 1999. Another interesting species, there are so many unanswered questions.

Great White Heron (*Ardea occidentalis)*

There was an immature on June 1, 2003 standing in the middle of Laughlin Road at its junction with Interceptor Road. It was surrounded by a large flock of diminutive Cattle Egrets. Eventually it flew off to the west.

Great Egret (*Ardea alba)*

Non-breeding resident, passage migrant, winter visitor with what may be post-breeding gatherings. This species hunts in shallower water than the Great Blue Heron but it will often wade out. It frequently gathers in loose flocks out in the fields to hunt for rodents or will join with Snowy Egrets in feeding frenzies in shallow water. Winter passage noted from November 22 (1999) to January 21 (2001) with a high count of 730 on January 7, 1999. The early spring passage ran from January 7 (2002) to February 29 (2000) with a high count of 806 on January 19, 1999. Numbers are much lower during the late spring passage and the summer as the counts do not include any records from when the fields of Unit Two were flooded. The late spring passage ran from February 26 (2003) to May 22 (1999) with a high count of 57 on March 25, 2001. The "summer" ran from May 7 (2003) to July 29 (2001) with a high count of 119 on June 10, 2002. There is an influx in 2002 that is worth recording. There were nine on May 15 with 17 on May 20. 31 on May 30, 63 on June 5 and 119 on June 10, then 91 seen on June 12 with 51 on June 19, 33 on June 30 and 17 on July 3. As this species often has basic influxes that last for seven to ten days, this is significant. The next event is a post-breeding gathering it ran from July 12 (1999) to October 2 (2002) with an extension to October 25 in 2000. The high count was that of 750 on August 15, 1998. The fall passage followed from September 23 (2001) to December 3 (2000) with a major extension to December 31 in 1998. That event, in 1998, was so significant that it is described in detail below. There were 495 on October 6 with 845 on October 16, 975 on October 29, 1,080 on November 2 and 1,950 on November 6, then 1,420 seen on November 13 with 1,335 on November 25 and 660 on November 30. That marks the normal end of the fall passage, but it continues with 540 on December 8, 480 on December 18, 430 on December 28 and 330 on December 31. This was truly a mega influx.

The winter passage was recorded from November 22 (1999) to January 21 (2001), there were five "clustered" influxes. The winter passage of 1998/1999 was all but swamped by the fall passage of 1998 and all that was left was a single, very short, influx from January 1, 1999 to January 8, 1999. The first influx peaked from November 27 (2001) to December 2 (2002) with a high count of 25 on December 2, 2002. The second is indicated by a peak count of 53 on December 4, 1999. The third peaked from December 12 (2000) to December 16 (2002) with a high count of 134 on December 12, 2000. The fourth peaked from December 27 (2001) to

January 2 (2003) with a high count of 15 on January 2, 2003. The fifth peaked from January 7 (1999, 2000, 2001) to January 9 (2003) with high counts of 39 on January 7, 2000 and 730 on January 7, 1999. The early spring passage followed from January 7 (2002) to February 29 (2000), there were six "clustered" influxes. The first is indicated by a peak count of 31 on January 14, 2000. The second peaked from January 19 (1999) to January 20 (2002) with high counts of 21 0n January 20, 2002 and 806 on January 19, 1999. The third peaked from January 30 (2003) to January 31 (2001) with a high count of 19 on January 31, 2001. The fourth is indicated by a peak count of 33 on February 6, 2000. The fifth peaked from February 14 (2001) to February 17 (2002) with a high count of 18 on February 14, 2001. The sixth peaked from February 19 (2003) to February 21 (2000) with a high count of 44 on February 19, 2003. The late spring passage ran from February 26 (2003) to May 22 (1999), note the pattern of the high counts. There were seven "clustered" influxes. The first peaked from March 2 (2003) to March 6 (2002) with a high count of 19 on March 2, 2003. The second peaked on March 11 (1999, 2001) with a high count of 21 on March 11, 2001. The third peaked on March 19 (2002, 2003) with a high count of 40 on March 19, 2003. The fourth peaked from March 25 (2001) to March 29 (2003) with a high count of 57 on March 25, 2001. The fifth peaked from April 4 (2001) to April 7 (2002) with a high count of 38 on April 4, 2001. The sixth peaked from April 21 (2003) to April 26 (2000) with a high count of 39 on April 21, 2003. The seventh peaked from May 7 (1999) to May 9 (2002) with a high count of 18 on May 9, 2002. The summer appears to cover the period May 7 (2003) to July 29 (2001), there were six "clustered" influxes. The first peaked from May 12 (2003) to May 13 (2000) with a high count of 39 on May 12, 2003. The second peaked from May 24 (2001) to May 25 (1999) with a high count of 29 on May 24, 2001. The third peaked from June 7 (2001) to June 10 (2002) with a high count of 119 on June 10, 2002. The fourth is indicated by a peak count of 61 on June 23, 2003. The fifth peaked from June 30 (2000) to July 4 (1999) with a high count of 86 on June 30, 2000. The sixth peaked from July 10 (2002) to July 11 (2001) with a high count of 60 on July 11, 2001. Counts during the summer were significantly higher than those during the spring, either event. Next there was what was probably a post-breeding event, it ran from July 12 (1999) to October 2 (2002) with an extension to October 25 in 2000. There were seven "clustered" influxes. The first peaked from July 19 (2000) to July 23 (1999) with a high count of 47 on July 19, 2000. The second peaked from August 2 (2001) to August 6 (1999, 2000) with a high count of 59 on August 6, 2000. The third peaked from August 10 (2003) to August 16 (2000, 2001) with high counts of 65 on August 16, 2000 and 750 on August 15, 1998. It would have been so interesting and useful to have information from the date the fields first flooded up to August 15, 1998. The fourth is indicated by a peak count of 23 on August 20, 1999. The fifth peaked from August 27 (2000) to August 31 (1999) with a high count of 75 on August 27, 2000. The sixth peaked on September 13 (2000, 2001) with a high count of 75 on September 13, 2000. The seventh peaked on September 17 (1998, 1999) with high counts of 26 on September 17, 1999 and 670 on September 17, 1998. Finally there was the

fall passage, this ran from September 23 (2001) to December 3 (2000), there were six "clustered" influxes. In 1998, with the flooded fields of Unit Two, this passage continued through nearly all of the following winter passage. A single mega influx ran from October 6, 1998 to December 31, 1998. Throughout this analysis where one count is so very high when compared to the others for that influx I am listing the two highest counts. This will show what is normal and also give a better idea of just how unusual the higher count was. The first influx for the fall was indicated by a peak count of 41 on October 6, 1999. The second peaked from October 9 (2002) to October 12 (1999) with a high count of 91 on October 9, 2002. The third peaked from October 24 (2001) to October 29 (2000) with a high count of 183 on October 24, 2001. The fourth peaked from November 5 (2000) to November 7 (2001) with high counts of 111 on November 5, 2000 and 1,950 on November 6, 1998. Surprisingly this was only the highest count for the first five years of the survey (there were 2,390 on December 5, 2004). The fifth is indicated by a peak count of 19 on November 16, 1999. The sixth peaked from November 21 (2002) to November 26 (2000) with a high count of 17 on November 26, 2000. The records for 1998/1999 indicate the kind of numbers that may be seen when the fields are again flooded.

Snowy Egret (*Egretta thula*)

Non-breeding resident, passage migrant and winter visitor, in some years there is a significant summer influx while in others there is a marked post-breeding gathering. This species prefers the edge of Lake Apopka together with the edge of any area of deeper water. This egret, together with the Great Egret and the Great Blue Heron will fly out over Lake Apopka and take fish from near the surface. Egrets noted fishing up to one mile from the shore. Winter passage recorded from November 25 (2001) to January 7 (1999), the highest count was that of 205 on December 2, 2001. The spring passage, as a whole, was the lightest event of the year. The early spring passage ran from January 3 (2002) to March 18 (2001) with a high count of 37 on February 19, 2003. The main spring passage followed from February 24 (2002) to May 4 (2003) with a high count of 77 on March 29, 2003. Next came the summer passage this ran from April 20 (1999) to July 23 (2000) the highest counts were 110 on June 23, 2003 and 322 on June 12, 2002. There was a mega influx in 2002 with 17 on May 6, 32 on May 15, 50 on May 23, 109 on May 27, 148 on June 2 and 322 on June 12, then 174 seen on June 19 with 95 on June 23, 63 on June 26, 51 on June 30 and 45 on July 3. This influx lasted three months. Next came the post-breeding gathering, this ran from July 6 (2003) to August 28 (2002) with high counts of 122 on July 10, 2002, 217 on August 4, 2002 and 300 on August 15, 1998. There appears to be an early fall passage from August 18 (1999) to October 6 (1999, 2002) with a high count of 205 0n September 17, 1998. Excluding that count the highest was that of 42 on September 8, 2002.

Finally there was the main fall passage, this ran from October 1 (2000) to December 3 (1998, 2000) with a high count of 135 on October 6, 1998. Earlier I talked about the three main influx shapes. The one detailed above shows the commonest, the pyramid very well. An influx in the fall of 1998 shows the second commonest form with an arrival followed by declining numbers. There were 135 on October 6 with 110 on October 21, 80 on November 2, 62 on November 11, 26 on November 13 and 21 on November 18.

The winter passage ran from November 25 (2001) to January 7 (1999), there were four "clustered" influxes. The first peaked from December 2 (2001) to December 8 (1998) with a high count of 205 on December 2, 2001. The second peaked from December 13 (2001) to December 14 (1999, 2002) with a high count of 80 on December 14, 2002. The third peaked from December 20 (2000) to December 21 (2001) with a high count of 110 on December 21, 2001. The fourth peaked from December 28 (1998) to January 2 (2003) with a high count of 32 on January 2, 2003. The early spring passage ran from January 3 (2002) to March 3 (2000) with an extension to March 18 in 2001 there were six "clustered" influxes. The first peaked from January 7 (2000) to January 9 (2003) with a high count of 29 on January 9, 2003. The second peaked from January 13 (2002) to January 15 (1999) with a high count of 27 on January 15, 1999. The third peaked from January 20 (2002) to January 26 (2003) with a high count of 16 on January 26, 2003. The fourth peaked from January 29 (1999) to January 31 (2001) with a high count of 24 on January 29, 1999. The fifth peaked from February 16 (2000) to February 19 (2003) with a high count of 37 on February 19, 2003. The sixth is indicated by a peak count of 14 on February 28, 2001. The main spring passage followed from February 24 (2002) to May 4 (2003), again there were six influxes. The first peaked from March 4 (2002) to March 7 (2000) with a high count of seven on March 4, 2002. The second peaked from March 12 (2003) to March 17 (2002) with a high count of 45 on March 12, 2003. The third peaked from March 25 (2001) to March 29 (2003) with a high count of 77 on March 29, 2003. The fourth peaked from April 3 (2002) to April 6 (2001) with a high count of 20 on April 3, 2002. The fifth peaked from April 14 (2002) to April 15 (2000) with a high count of 11 on April 14, 2002. The sixth peaked from April 22 (2001) to April 27 (2003) with a high count of 33 on April 27, 2003. These last two passages were the weakest events of the year. The summer was busier, the passage ran from April 20 (1999) to July 23 (2000), there were six "clustered" influxes. The first is indicated by a peak count of 12 on May 2, 2001. The second peaked from May 10 (1999) to May 12 (2003) with a high count of 32 on May 12, 2003. The third peaked on May 21 (2000, 2003) with a high count of 22 on May 21, 2003. The fourth peaked from June 7 (1999) to June 12 (2002) with high counts of 73 on June 10, 2001 and 322 on June 12, 2002. The latter was the highest count during the first five years of the survey. The fifth peaked from June 23 (2003) to June 29 (1999) with a high count of 110 on June 23, 2003. The sixth is indicated by a peak count of 63 on July 4, 2001. Next came the post-breeding gathering, this event was only significant in 1998 with the flooded fields and in 2002 when Lake Apopka was very low. The gathering ran from July 6

(2003) to August 28 (2002), there were six “clustered” influxes. The first influx is indicated by a peak count of 51 on July 6, 2003. The second peaked from July 10 (2002) to July 15 (2001) with a high count of 122 on July 10, 2002. The next two influxes were indicated by isolated peak counts of 51 on July 21, 2003 and 20 on July 30, 2000. The fifth peaked from August 4 (2002) to August 8 (2003) with a high count of 217 on August 4, 2002. The sixth peaked from August 14 (2002) to August 16 (2000) with a high count of 300 on August 15, 1998. There appears to be an early fall passage from August 18 (1999) to October 6 (1999), with the exception of 1998 this was a minor event there were five “clustered” influxes. The first is indicated by a peak count of 25 on August 20, 1999. The second peaked from August 30 (2000) to September 2 (2001) with a high count of 27 on September 2, 2001. The third peaked from September 6 (1999) to September 8 (2002) with a high count of 42 on September 8, 2002. The fourth peaked from September 13 (2001) to September 17 (1998) with a high count of 205 on September 17, 1998. The fifth peaked from September 26 (2002) to September 30 (1999) with a high count of 26 on September 27, 2000. The main fall passage completes the year, it ran from October 1 (2000) to December 3 (1998, 2000), there were five “clustered” influxes. The first is indicated by a peak count of 135 on October 6, 1998. The second peaked from October 12 (2000) to October 14 (1999, 2001) with a high count of 106 on October 14, 2001. The third peaked from November 4 (2001) to November 6 (1999) with a high count of 69 on November 4, 2001. The fourth peaked from November 12 (1999) to November 15 (2000, 2001) with a high count of 78 on November 15, 2001. The last influx is indicated by a peak count of 30 on November 25, 1998. This species is very dependent on there being suitable habitat.

Little Blue Heron (*Egretta caerulea*)

Passage migrant and winter visitor, there is a post-breeding gathering. Normally a non-breeding resident but bred in 2000. In that year two pairs nested on an island out from the end of Lust Road. The vegetation grew too thick to identify any young in the nests. Fledged young were seen at that location later. This species prefers the well vegetated canals and any wet fields. The summer ran from April 6 (2000) to July 25 (2002) with a high count of 55 on June 29, 2003. This was followed by a noticeable post-breeding gathering from July 11 (2001) to October 6 (1998) with high counts of 79 on July 19, 2003 and 70 on August 15, 1998. The fall passage ran from September 10 (1999) to December 4 (1999) with high counts of 72 on October 7, 2001 and 163 on October 24, 2001. The latter high count related to a type 2 influx with 163 on October 24, 59 on October 28, 35 on November 1 and 22 on November 4. Next came the winter passage which ran from November 26 (2000) to January 14 (2000) with a high count of 51 on December 21, 2001. Again the spring passage, as a whole, had the lowest counts of the year. The early spring passage ran from January 7 (2002) to March 11 (2001) with a high count of 35 on

February 28, 2001. The main spring passage ran from March 2 (2003) to April 26 (1999) with a high count of 29 on March 27, 2001. This species showed a tendency for type 2 influxes (arrival with subsequent declining numbers).

The summer appears to run from April 6 (2000) to July 25 (2002), there were seven "clustered" influxes. The first peaked from April 30 (2000) to May 6 (2001) with a high count of 38 on May 6, 2001. The second peaked from May 10 (1999) to May 13 (2000) with a high count of 29 on May 13, 2000. The third peaked from May 27 (2001) to June 5 (1999) with a high count of 40 on June 3, 2000. The fourth peaked from June 10 (2001, 2002) to June 14 (1999, 2000) with a high count of 43 on June 10, 2002. The fifth is indicated by a peak count of 32 on June 20, 2001. The sixth peaked from June 29 (2003) to July 4 (1999, 2001) with a high count of 55 on June 29, 2003. The seventh is indicated by a peak count of 31 on July 8, 2000. It is often hard to determine exactly which influx belongs to which passage. I believe that the post-breeding gathering ran from July 11 (2001) to October 6 (1998), there were six "clustered" influxes. The first peaked from July 19 (2003) to July 23 (2000) with a high count of 79 on July 19, 2003. The second peaked from July 28 (2002) to July 29 (2001) with 30 on both dates. The third peaked from August 10 (1999) to August 15 (1998) with a high count of 70 on August 15, 1998. The fourth peaked from August 25 (1999) to August 29 (2001) with a high count of 23 on August 29, 2001. The fifth peaked from September 3 (2000) to September 8 (2002) with a high count of 58 on September 8, 2002. The sixth peaked from September 11 (1998) to September 16 (2001) with a high count of 33 on September 16, 2001. The fall passage came next and it ran from September 10 (1999) to December 4 (1999), there were seven "clustered" influxes. The first peaked from September 24 (2000) to September 30 (1999) with a high count of 30 on September 24, 2000. The second peaked from October 7 (2001) to October 10 (2000) with a high count of 72 on October 7, 2001. The third peaked from October 23 (1999) to October 24 (2001) with high counts of 21 on October 23, 1999 and 163 on October 24, 2001. The latter was the highest count during the first five years of the survey. The fourth is indicated by a peak count of 21 on October 29, 2000. The fifth peaked from November 6 (1998, 1999) to November 7 (2001) with a high count of 37 on November 7, 2001. The sixth is indicated by a peak count of 16 on November 12, 2000. The seventh peaked from November 18 (2001) to November 22 (1999) with a high count of 26 on November 22, 1999. The winter passage followed from November 26 (2000) to January 14 (2000), there were five "clustered" influxes. The first peaked from November 26 (2000) to November 29 (2001) with a high count of 31 on November 29, 2001. The second peaked from December 12 (2000) to December 16 (1998) with high counts of 24 on December 14, 1999 and December 14, 2002. The third peaked from December 21 (2001) to December 22 (2000) with a high count of 51 on December 21, 2001. The fourth peaked from December 28 (1998) to January 2 (2003) with a high count of 18 on January 2, 2003. The fifth peaked on January 7 (1999, 2000) with a high count of 26 on January 7, 2000. The spring passage, as a whole, was the lightest event of the year. The early spring passage ran from

January 7 (2002) to March 11 (2001), there were seven "clustered" influxes. The first peaked from January 11 (2003) to January 13 (2002) with a high count of 23 on January 11, 2003. The second peaked from January 18 (2000) to January 24 (2001) with a high count of 28 on January 24, 2001. The third peaked from January 27 (1999) to February 2 (2003) with a high count of 18 on February 2, 2003. The fourth peaked from February 8 (2000) to February 11 (2001) with a high count of 25 on February 11, 2001. The fifth peaked from February 15 (2003) to February 17 (1999) with a high count of 19 on February 15, 2003. The sixth peaked from February 20 (2002) to February 23 (2000) with a high count of 19 on February 23, 2000. The seventh is indicated by a peak count of 35 on February 28, 2001. The main spring passage ran from March 2 (2003) to April 26 (1999), there were five "clustered" influxes. The first peaked from March 9 (2003) to March 14 (2000) with a high count of 16 on March 9, 2003. The second peaked from March 17 (2002) to March 18 (2001) with a high count of 27 on March 18, 2001. The third peaked from March 25 (2000) to March 31 (2002) with a high count of 29 on March 27, 2001. The fourth is indicated by a peak count of 16 on April 11, 2003. The fifth peaked from April 20 (1999) to April 21 (2002) with a high count of 13 on April 21, 2002. On occasions the start date of one event may overlap by a wide margin the last date of the previous event. This is because this analysis uses the peak count dates to identify what influx belongs to which passage. If I had to rely just on the first and last dates (I did try that) I would have ended up with very vague events with dates that actually would be incorrect. By using what appears to be a "constant", or nearly so, I hopefully can give a better picture.

Tricolored Heron (*Egretta tricolor*)

This is a non-breeding resident, a passage migrant and a winter visitor with a noticeable post-breeding gathering. This is the rarest of the common herons and egrets. They prefer areas of open water but are less active than the Snowy Egrets they did not fish out over the lake. The winter passage ran from November 25 (2001) to January 8 (1999) with a high count of 38 on December 21, 2001. On December 16, 2001 only four had been seen with three on December 27, 2001. So a flock of 34 visited for just a day or two. The early spring passage followed from January 7 (2003) to March 11 (2001) with a high count of 30 on February 28, 2001. The other high counts did not exceed 12. The main spring passage ran from February 29 (2000) to May 7 (2000) with a high count of 15 on March 10, 2000. The summer was exceptional in that there was no pattern indicating passage. This event ran from April 16 (2003) to June 29 (1999) with a high count of 17 on May 12, 2003. The post-breeding gathering was the most significant event of the year, it ran from June 1 (2003) to October 6 (1998). The highest counts were 45 on June 16, 2002, 70 on September 2, 1998 and 93 on July 19, 2003. Whilst in 2003 this event started on June 1st the more normal start date would have been at the end of June. To look at 2003 in

more detail, there were 35 on June 29 with 44 on July 4, 64 on July 6 and 93 on July 19, then 83 seen on July 21 with 48 on July 23, 26 on July 30 and 23 on August 5. This was a typical Type 1 influx. In contrast the fall passage was the lightest event of the year. It is these changes in numbers that tend to confirm my decision as to what periods the various passages cover. The fall passage ran from September 26 (2001) to November 30 (1999, 2002) with a high count of 13 on October 5, 2000. Normally the fall passage is far stronger than the spring passage, but not so in this case.

The winter passage ran from November 25 (2001) to January 8 (1999), there were five "clustered" influxes. The first peaked from November 28 (2000) to November 30 (1998) with a high count of 15 on November 30, 1998. The second is indicated by a peak count of nine on December 4, 1999. The third peaked from December 14 (2002) to December 15 (2000) with a high count of ten on December 14, 2002. The fourth peaked from December 18 (1998) to December 21 (2001) with a high count of 38 on December 21, 2001. The fifth peaked from December 30 (1999, 2002) to January 3 (2002) with high counts of eight on December 30, 1999 and December 30, 2002. The early spring passage followed from January 7 (2003) to March 11 (2001), there were six "clustered"influxes. The first peaked from January 9 (2003) to January 11 (1999, 2000) with a high count of 12 on January 9, 2003. The second peaked from January 16 (2002) to January 19 (2003) with a high count of eight on January 16, 2002. The third peaked from January 25 (2000) to January 28 (2001) with a high count of nine on January 28, 2001. The fourth peaked from February 5 (2003) to February 10 (2002) with a high count of ten on February 5, 2003. The fifth peaked from February 14 (2001) to February 19 (2003) with a high count of nine on February 14, 2001. The last influx is indicated by a peak count of 30 on February 28, 2001. Next came the main spring passage, this ran from February 29 (2000) to May 7 (2000), there were seven "clustered" influxes. The first peaked from March 4 (2002) to March 5 (2003) with a high count of six on March 5, 2003. The next two influxes were indicated by isolated peak counts of 15 on March 10, 2000 and six on March 19, 2003. The fourth peaked from March 25 (2001) to March 27 (2002) with a high count of ten on March 25, 2001. The fifth peaked from April 2 (2003) to April 3 (2000) with a high count of eight on April 2, 2003. The sixth peaked from April 14 (2002) to April 19 (2001) with a high count of 11 on April 14, 2002. The seventh peaked from April 26 (2000) to April 29 (2001) also with a high count of 11 on April 29, 2001. The summer event was just that with no suggestion of passage. It ran from April 16 (2003) to June 29 (1999) with a high count of 17 on May 12, 2003. To make up for this the post-breeding gathering was the main event of the year. It ran from June 1 (2003) to October 6 (1998), although a more normal start date would be in late June. There were in all nine "clustered" influxes. The first peaked from June 16 (2002) to June 17 (2001) with a high count of 45 on June 16, 2002. The second peaked on July 4 (2000, 2001) with a high count of 26 on July 4, 2001. The third peaked from July 10 (2002) to July 15 (2001) with a high count of 27 on July 10, 2002. The fourth is indicated by a peak count of 93 on July 19, 2003. This was the

highest count during the first five years of the survey. The fifth peaked from July 25 (2002) to July 30 (2000) with a high count of 29 on July 25, 2002. The sixth peaked from August 5 (2001) to August 8 (2003) with a high count of 33 on August 8, 2003. The seventh peaked from August 14 (2002) to August 20 (1999) with a high count of 28 on August 20, 1999. The eighth peaked from September 2 (1998) to September 8 (2002) with high counts of 18 on September 3, 1999 and 70 on September 2, 1998. The ninth peaked from September 13 (2000) to September 17 (1999) with a high count of 19 on September 17, 1999. Finally there was the fall passage; very unexpectedly this was the lightest event of the year. It ran from September 26 (2001) to November 30 (1999, 2002), there were six "clustered" influxes. The first is indicated by a peak count of eight on September 30, 1999. The second peaked from October 5 (2000) to October 7 (2001) with a high count of 13 on October 5, 2000. The third peaked from October 20 (2002) to October 22 (2000) with nine on both dates. The fourth peaked from October 28 (2001) to November 2 (1998) with a high count of nine on November 2, 1998. The fifth is indicated by a peak count of four on November 12, 2000. The last influx peaked from November 24 (2002) to November 26 (1999) with a high count of ten on November 24, 2002. It is interesting to note how the numbers vary from species to species, each species of heron or egret has its own pattern.

Reddish Egret (*Egretta rufescens)*

This is a vagrant. There was an adult white phase at the Sand Farm on March 21, 2000. An immature blue phase was seen at the end of Lust Road feeding on the muddy edge of Lake Apopka on September 9, 2001. This is a coastal species, most inland sightings relate to immatures of the blue phase.

Cattle Egret (*Bubulcus ibis*)

This is a resident, passage migrant, winter visitor with a significant post-breeding gathering. In 1999 a colony formed on a chain of islands in Lake Apopka near the end of Lust Road. These birds had been flying up from a colony at the southern end of Lake Apopka. These individuals decided it was better to nest near the food source. There were swarms of grasshoppers now that pesticides were no longer being used. In 1999 a total of 413 nests located with 103 nests in 2000. The water level in Lake Apopka then fell and these islands were no longer separated from the shore. This species did not attempt to nest in the other three years. Initially from 1998 to 2000 this was a common species out in the fields but as taller vegetation such as Elderberry and Saltbush took over the population dropped. In 2002 with the mowing and roller-chopping the population grew again. The spring passage, as a whole was the

lightest event of the year. The early spring passage ran from January 4 (2001) to March 7 (2000) with a high count of 970 on January 15, 1999, however most of the high counts were under 300. The main spring passage followed from March 4 (2002) to May 7 (2000, 2003) with high counts of 800 on May 2, 2000 and 930 on May 1, 1999. The summer ran from April 29 (2001) to July 9 (2003) with high counts of 1,345 on June 26, 2003, 1,470 on May 14, 1999 and 2,450 on June 22, 1999. Take the summer of 2003, there was a clear type 1 influx. There were 150 on May 12 with 275 on May 15, 350 on May 29, 630 on June 11, 800 on June 16, 910 on June 23 and 1,345 on June 26, then 1,125 seen on June 29 with 890 on July 4, 750 on July 6 and 605 on July 9. It is possible that there is an element of the post-breeding gathering in this late June influx. The post-breeding gathering ran from June 9 (2000) to September 11 (1998, 2002) with high counts of 3,000 on September 2, 1998 and 3,120 on August 10, 1999. In the later years the highest count was that of 1,700 on July 19, 2003. Next came the fall passage, this ran from September 2 (2001) to November 30 (2002). The highest counts were 2,800 on September 17, 1998 and 5,375 on October 13, 2002. The winter passage completes the year, it ran from November 6 (1998) to January 12 (1999). The November 6 start date is exceptionally early, for the other years this passage started on November 26 (1999). Numbers remained high with high counts of 1,950 on December 8, 1998 and 3,450 on December 14, 2002.

The early spring passage ran from January 4 (2001) to March 7 (2000), there were six “clustered” influxes. The first is indicated by a peak count of 350 on January 7, 2001. The second peaked from January 11 (2000) to January 16 (2002) with a high count of 970 on January 15, 1999. The third peaked from January 28 (2001) to February 2 (2000) with a high count of 215 on January 28, 2001. The fourth is indicated by a peak count of 300 on February 6, 2002. The fifth peaked from February 15 (2003) to February 17 (1999) with a high count of 430 on February 17, 1999. The sixth peaked from February 21 (2001) to February 26 (2003) with a high count of 203 on February 26, 2003. The main spring passage followed from March 4 (2002) to May 7 (2000, 2003), there were five “clustered” influxes. Again these spring passages were the lightest events of the year. The first influx peaked from March 9 (2003) to March 11 (1999, 2001) with a high count of 278 on March 10, 2002. The second is indicated by a peak count of 73 on March 18, 2000. The third peaked from March 24 (2002) to March 30 (1999) with a high count of 445 on March 30, 1999. The fourth peaked from April 2 (2003) to April 6 (2001) with a high count of 512 on April 6, 2001. The fifth peaked from April 28 (2002) to May 2 (2000) with high counts of 800 on May 2, 2000 and 930 on May 1, 1999. Note how the high counts have grown through this passage. The summer appears to run from April 29 (2001) to July 9 (2003). I say appears as it is possible that the last influx has elements of the following post-breeding gathering. Note how after the initial arrival the numbers climb again. There were five “clustered” influxes. The first peaked on May 14 (1999, 2001) with a high count of 1,470 on May 14, 1999. The second is indicated by a peak count of 550 on May 21, 2000. The third peaked from May 27 (2002) to May 30 (2000) with a high count of 650 on May 30, 2000. The

fourth peaked from June 7 (2001) to June 10 (2002) with a high count of 850 on June 10, 2002. The fifth peaked from June 22 (1999) to June 26 (2003) with high counts of 1,345 on June 26, 2003 and 2,450 on June 22, 1999. The post-breeding gathering ran from June 9 (2000) to September 11 (1998), there were eight "clustered" influxes. This is the strongest event of the year. The first influx is indicated by a peak count of 435 on July 1, 2001. The second peaked from July 9 (1999) to July 12 (2000) with high counts of 1,055 on July 12, 2000 and 2,260 on July 9, 1999. The third is indicated by a peak count of 372 on July 22, 2001. These isolated peak counts tend to relate to basic influxes and the numbers are generally much lower than those for regular influxes. The fourth peaked from July 30 (2000) to August 4 (2002) with high counts of 1,210 on July 30, 2000 and 1,570 on August 4, 2002. The fifth peaked from August 8 (2003) to August 10 (1999) with high counts of 1,020 on August 8, 2003 and 3,120 on August 10, 1999. The sixth is indicated by a peak count of 385 on August 14, 2001. The seventh peaked from August 21 (2002) to August 22 (2001) with a high count of 1,550 on August 21, 2002. The eighth peaked from August 31 (1999) to September 4 (2002) with high counts of 1,630 on September 4, 2002 and 3,000 on September 2, 1998. The fall passage followed from September 2 (2001) to November 30 (2002), there were seven "clustered" influxes. The first is indicated by a peak count of 900 on September 10, 1999. The second peaked from September 16 (2001) to September 18 (2002) with high counts of 1,620 on September 16, 2001, 2,120 on September 18, 2002 and 2,800 on September 17, 1998. The third peaked from September 21 (2000) to September 25 (1999) with a high count of 825 on September 25, 1999. The fourth peaked from October 12 (2000) to October 16 (1998) with high counts of 2,050 on October 16, 1998 and 5,375 on October 13, 2002. The latter was the highest count during the first five years of the survey. The fifth is indicated by a peak count of 650 on October 8, 1999. The sixth peaked from October 22 (2000) to October 26 (1999) with a high count of 560 on October 26, 1999. The seventh peaked from November 15 (2001) to November 19 (2000) with a high count of 2,530 on November 17, 2002. Finally there is the winter passage, this ran from November 26 (1999) to January 12 (1999). Exceptionally in 1998 this passage appears to start on November 6. There were four "clustered" influxes. The first peaked from November 26 (1999) to November 30 (1998, 2000) with a high count of 1,540 on November 30, 1998. The second peaked from December 8 (1998) to December 9 (2001) with a high count of 1,950 on December 8, 1998. The third is indicated by a peak count of 3,450 on December 14, 2002. The fourth peaked from December 31 (1998, 2000) to January 5 (2003) with a high count of 2,050 on January 3, 2002. I do not understand why this species only occurs in low numbers during the spring.

Green Heron (*Butorides virescens*)

This is a resident, passage migrant and winter visitor with, in some years, a significant post-breeding gathering. This species nested along the shore of Lake Apopka, the Lake Level Canal and any canal or ditch with thick cover. The vegetation along the canals and ditches gradually grew thicker providing many more nesting sites. Towards the end of the five years the District started cleaning out these canals and ditches with a resultant drop in the number of pairs nesting. There were nine pairs in 1999 with 20 pairs in 2000, 25 pairs in 2001 and 54 pairs in 2002, only 43 pairs located in 2003 with 38 pairs in 2004. The only information on newly fledged young comes from 2002 and 2003. The earliest were one on May 4, 2003 and two on May 23, 2002. The latest was that of three on August 5, 2003. It is hard to identify the summer but it appears to cover the period April 17 (1999) to June 6 (2000), the highest count was that of 52 on June 2, 2002. The post-breeding gathering was the main event of the year, it ran from June 5 (1999) to August 27 (1999), the highest counts were 67 on June 8, 2003, 71 on July 23, 2003 and 109 on June 29, 2003. For the other years the highest count was that of 51 on June 23, 2002. By contrast the fall passage was a minimal event with a host of basic influxes. This passage ran from August 15 (1998) to November 30 (2000). Most of the high counts were of six or less, the highest being that of 15 on August 27, 2000. The winter was no better, that passage ran from November 26 (1999) to January 14 (2000) with a high count of ten on January 2, 2003. The early spring passage followed from January 7 (1999) to March 3 (2001) numbers were a bit higher with most high counts being of eight or less. The highest count was that of 24 on January 15, 1999. Finally there was the main spring passage, this ran from February 23 (2003) to April 19 (2000), Counts again a little higher with high counts of up to ten a day. The highest count was that of 19 on April 13, 2003.

The summer ran from April 17 (1999) to June 6 (2000), there appear to be four ‘clustered” influxes. The first two are indicated by isolated peak counts of 14 on May 2, 2001 and 36 on May 9, 2002. The third peaked from May 21 (2003) to May 27 (2001) with a high count of 41 on May 21, 2003. The fourth peaked from June 2 (2002) to June 3 (2000) with a high count of 52 on June 2, 2002. This was followed by the heaviest passage of the year, the post-breeding gathering. This ran from June 5 (1999) to August 27 (1999), there were seven “clustered” influxes. The first two are indicated by isolated peak counts of 67 on June 8, 2003 and 51 on June 23, 2002. The third peaked from June 26 (2000) to June 29 (2003) with high counts of 24 on June 26, 2000 and 109 on June 29, 2003. The latter was the highest count during the first five years of the survey. The fourth peaked from July 1 (2001) to July 6 (1999) with a high count of 33 on July 1, 2001. The fifth peaked from July 16 (1999) to July 19 (2000) with a high count of 19 on July 16, 1999. The sixth peaked from July 21 (2002) to July 27 (1999) with high counts of 20 on July 21, 2002 and 71 on July 23, 2003. The last influx peaked from August 7 (2002) to August 13 (2000) with a high count of 23 on August 7, 2002. In sharp contrast the fall passage was a minimal event, a host of basic influxes. This passage ran from August 15 (1998) to November 30 (2000), there were 11 “clustered” influxes. The first is

indicated by a peak count of four on April 19, 2000. The second peaked from August 27 (2000) to August 28 (2002) with high counts of 14 on August 28, 2002 and 15 on August 27, 2000. The third peaked from September 2 (1998) to September 6 (1999) with a high count of 13 on September 2, 1998. The fourth is indicated by a peak count of four on September 13, 2001. The fifth peaked from September 19 (2000) to September 22 (2002) with a high count of eight on September 22, 2002. The sixth peaked from September 25 (1999) to September 27 (2000) with five on both dates. The seventh peaked from October 3 (2001) to October 6 (2002) with a high count of five on October 3, 2001. The eighth peaked from October 14 (1999) to October 20 (2002) also with a high count of five on October 14, 1999. The ninth peaked on October 29 (1998, 2000) with a high count of six on October 29, 1998. The tenth peaked from November 11 (1998) to November 16 (1999) with a high count of ten on November 11, 1998. The last influx peaked from November 21 (2002) to November 25 (2001) with five on both dates. When you have a passage with low numbers, when compared to the one before, you are almost guaranteed to find a long series of basic influxes. With the higher numbers some of these basic influxes would have been hidden by the regular influxes. The winter passage followed from November 26 (1999) to January 14 (2000), there were four “clustered” influxes. The first peaked from December 2 (2002) to December 8 (1998) with six on both dates. The second is indicated by a peak count of six on December 15, 2000. The third peaked from December 18 (1998) to December 21 (2001, 2002) with a high count of nine on December 21, 2002. The fourth peaked from December 30 (1999) to January 2 (2003) with a high count of ten on January 2, 2003. Next came the early spring passage, this ran from January 7 (1999) to March 3 (2001), there were six “clustered” influxes. The first peaked from January 9 (2003) to January 10 (2002) with a high count of eight on January 9, 2003. The second peaked from January 14 (2001) to January 18 (2000) with a high count of 24 on January 15, 1999. The third is indicated by a peak count of six on January 24, 2001. The fourth peaked from February 2 (2003) to February 6 (2000) with a high count of 14 on February 3, 1999. The fifth peaked from February 10 (2002) to February 17 (1999) with high counts of eight on February 17, 1999 and February 15, 2003. The sixth influx is indicated by a peak count of four on February 24, 2002. Finally there is the main spring passage, this ran from February 23 (2003) to April 19 (2000), there were five “clustered” influxes. The first is indicated by a peak count of four on March 10, 2000. The second peaked from March 17 (2002) to March 19 (2003) with a high count of 18 on March 19, 2003. The third peaked from March 22 (2001) to March 25 (2000) with a high count of six on March 22, 2001. The fourth peaked from April 3 (2002) to April 6 (2000, 2001) with a high count of ten on April 3, 2002. The last influx is indicated by a peak count of 19 on April 13, 2003. Again the fall passage was lighter than the passage in the spring.

Black-crowned Night-Heron (*Nycticorax nycticorax*)

This is probably a resident, a passage migrant and a winter visitor, little evidence of a post-breeding gathering. No evidence of nesting in the survey area but will have done so to the west. This is a nocturnal species that is hard to locate at any season, it is doubtless under-recorded. At night this species feeds along the major canals and the shore of Lake Apopka. By day it roosts at various locations along the shore of Lake Apopka. The early spring passage ran from January 4 (2001) to March 10 (2000) with high counts of 12 on January 31, 2001 and 89 on January 27, 1999. The main spring passage followed from March 4 (2002) to March 5 (2003), the highest count was only that of nine on March 5, 2003. Numbers were even lower for the summer, this event ran from April 20 (1999) to June 20 (2001). The highest count was that of five on May 27, 2000 and June 3, 2001. What might just be a post-breeding gathering ran from June 12 (2002) to August 16 (2000) the highest count was that of 12 on June 12, 2002. There were no sightings during this period in 1999. The fall passage followed from August 10 (1999) to November 30 (1998) with the exception of 1998 this was a very minor event with a host of basic influxes (again). The highest counts were 37 on October 21, 1998 and excluding 1998 the highest count was only that of eight on October 29, 2000. In 1998 with the fields of Unit Two flooded the situation was different, there were just three influxes. The first ran from September 17 to September 30 with a peak count of 12 on September 17. The second ran from October 21 to November 6 with a peak count of 37 on October 21. The third ran from November 11 to November 30 with a peak count of 26 on November 11. Please note that all three influxes were type 2. Finally there was the winter passage, this ran from November 25 (2001) to January 19 (2003) with a high count of 14 on December 20, 1998.

The early spring passage ran from January 4 (2001) to March 10 (2000), there were five "clustered" influxes. The first is indicated by a peak count of eight on January 4, 2001. This date fits in with a winter passage influx but I believe that this influx belongs here. The second peaked from January 11 (1999) to January 14 (2000) with a high count of three on January 11, 1999. The third peaked from January 27 (1999) to January 31 (2001) with high counts of 12 on January 31, 2001 and 89 on January 27, 1999. The latter was the highest count during the first five years of the survey. The fourth peaked from February 9 (2003) to February 11 (2000) with a high count of six on February 11, 2000. The fifth is indicated by a peak count of eight on February 21, 2001. The main spring passage followed from March 4 (2002) to April 26 (2000), there were five "clustered" influxes. The first peaked from March 4 (2002) to March 5 (2003) with a high count of nine on March 5, 2003. The second is indicated by a peak count of four on March 18, 2001. The third peaked on March 25 (2000, 2001) with a high count of six on March 25, 2000. The fourth is indicated by a peak count of seven on March 31, 2002. The fifth peaked

from April 6 (2003) to April 11 (2001) with a high count of three on April 6, 2003. The summer passage, for this species, was the lightest event of the year, it ran from April 20 (1999) to June 20 (2001) there were four “clustered” influxes. The first peaked from April 20 (1999) to April 21 (2002) with a high count of four on April 21, 2002. The second peaked from April 26 (2001) to April 27 (2003) with a high count of three on April 27, 2003. The third peaked from May 18 (2003) to May 20 (2001) with a high count of four on May 20, 2001. The fourth peaked from May 27 (2000) to June 3 (2001) with five on both dates. The next event was not very strong and it was possibly the post-breeding gathering. It ran from June 12 (2002) to August 16 (2000), there were seven “clustered” influxes. In 1999 there were no records after June 12 or before August 10, so in that year there was no gathering at all. The first influx is indicated by a peak count of 12 on June 12, 2002. The second peaked from June 24 (2001) to June 26 (2003) with a high count of five on June 26, 2003. The next two influxes were indicated by isolated peak counts of four on June 30, 2000 and eight on July 9, 2003. The fifth peaked from July 15 (2001) to July 19 (2000) with a high count of four on July 19, 2000. The sixth peaked from July 21 (2002) to July 23 (2003) with a high count of seven on July 23, 2003. The last influx peaked from August 5 (2001) to August 8 (2003) with a high count of three on August 8, 2003. Next came the fall passage from August 10 (1999) to November 30 (1998), this time there were 12 “clustered” influxes! The first peaked from August 10 (1999) to August 16 (2001) with one on both dates. The second is indicated by a peak count of three on August 20, 2000. The third peaked from August 25 (2002) to August 27 (1999) with high counts of three on August 26, 2001 and August 25, 2002. The fourth is indicated by a peak count of four on September 9, 2001. If one looks at the 1998 records when the fields flooded the fall passage started at this point. The first four influxes would then either be part of the post-breeding gathering or a separate early fall passage. When the fields are flooded again this should become clear. The fifth influx peaked from September 15 (2002) to September 17 (1998) with a high count of 12 on September 17, 1998. The sixth peaked from September 24 (2000) to September 26 (2001) with three on both dates. The seventh peaked from October 6 (1999) to October 9 (2002) with a high count of three on October 6, 1999. The eighth peaked from October 14 (2001) to October 15 (2000) with a high count of four on October 15, 2000. The ninth peaked from October 21 (1998) to October 23 (1999) with high counts of six on October 23, 1999 and 37 on October 21, 1998. The last three influxes were indicated by isolated peak counts of eight on October 29, 2000, 26 on November 11, 1998 and two on November 21, 2002. The winter passage completes the year, it ran from November 25 (2001) to January 19 (2003), there were five “clustered” influxes. The first peaked from November 25 (2001) to November 26 (1999, 2000) with high counts of two on November 25, 2001 and November 26, 2000. The second peaked from November 30 (2002) to December 2 (2001) with a high count of nine on November 30, 2002. The third is indicated by a peak count of two on December 8, 1998. The fourth peaked from December 20 (1998, 2000) to

December 22 (1999) with a high count of 14 on December 20, 1998. The fifth peaked from December 30 (2002) to January 3 (2002) with a high count of three on January 3, 2002.

Yellow-crowned Night-Heron (*Nyctanassa violacea)*

This is a summer visitor and passage migrant. No confirmed breeding during this period but will have bred at Duda if not in the survey area. Most sightings were along the Lake Level Canal and edge of the wood that lay between the canal and Lake Apopka, adults could often be seen during the day along the edge of the canal. There was one winter record, there being one on January 1, 1999. For the early spring there were two on January 27, 1999. The main spring passage was very limited. There was one on March 9, 2003 with a scattering of records from April 3 (2000) to May 12 (2002), the high count was that of six on April 28, 2002. The summer ran from May 13 (2000) to August 13 (2003) with high counts of 11 on June 26, 2000 and 16 on June 12, 2002. To show the main 2002 pattern, there was one on May 27 with seven on May 30, 13 on June 2 and 16 on June 12, then 12 seen on June 16 with nine on June 19, six on June 23, three on June 26 and two on June 30. The fall passage was also very limited with records from August 14 (2001) to October 24 (2001), the highest count was that of four on August 27, 2000.

For the winter there was one on January 1, 1999, then for the early spring passage there were two on January 27, 1999. The main spring passage was a very light affair. There was one on March 9, 2003 with records for three of the five years from April 3 (2000) to May 12 (2002). There appeared to be one influx which peaked from April 3 (2000) to April 7 (2002) with a high count of two on April 7, 2002. Otherwise there were three isolated peak counts. These were: one on April 16, 2003, six on April 28, 2002 and two on May 4, 2003. These may indicate the location of influxes. The summer passage ran from May 13 (2000) to August 13 (2003), there were seven “clustered” influxes. The first peaked from May 29 (2003) to June 5 (1999) with a high count of four on June 5, 1999. The second peaked from June 10 (2001) to June 16 (2003) with high counts of four on June 10, 2001 and 16 on June 12, 2002. The latter was the highest count during the first five years of the survey. The third is indicated by a peak count of 11 on June 26, 2000. The fourth peaked from July 2 (2003) to July 3 (2002) with a high count of five on July 3, 2002. The fifth peaked from July 11 (2001) to July 16 (1999) with a high count of three on July 16, 1999. The last two influxes are indicated by isolated peak counts of seven on July 22, 2001 and two on August 3, 1999. As with the spring the fall passage was minimal. The passage ran from August 14 (2001) to October 24 (2001), there were five “clustered” influxes. The first peaked from August 19 (2001) to August 27 (2000) with a high count of four on August 27, 2000. The next two influxes were indicated by isolated peak counts of one on September 11, 2002 and two on September 19, 2000. The fourth peaked from September 30 (1998) to October

6 (1999) with one on both dates. The last influx peaked from October 23 (1999) to October 24 (2001) again with one on both dates. Another species that was hard to locate, it will have been under-recorded.

White Ibis (*Eudocimus albus*)

This is a non-breeding summer visitor, passage migrant and winter visitor. No evidence of a post-breeding gathering. This species feeds in any wet field with low vegetation, very social, mixes well with other species. Often to be seen flying to and from their roost(s). The winter passage ran from November 27 (2001) to January 15 (2003) with a high count of 670 on December 14, 2002. The early spring passage followed from January 3 (2002) to March 3 (2001) with a high count of 430 on January 29, 1999. In 2002 there was an example of a type 3 influx. There was one on January 3 with 55 on January 7, 84 on January 10, 130 on January 13 and 285 on January 16. No further sightings until one seen on February 3, 2002. With this species, in particular, it is hard to know exactly which influx belongs in which passage. The main spring passage appears to run from March 3 (2000) to May 9 (2002) with a high count of 263 on March 16, 2003. Likewise the summer may run from April 23 (1999) to July 12 (2000) with a high count of 262 on May 4, 1999. The early fall passage follows from June 16 (2003) to August 28 (2002) with high counts of 1,000 on August 15, 1998 and 1,,370 on June 23, 2003. These were isolated higher counts as shown by the 2003 following type 1 influx. There were 56 on June 16, 92 on June 18 and 1,370 on June 23, then 222 seen on June 29 with 180 on July 2, 110 on July 4, 96 on July 6 and 47 on July 9. The late fall passage was again the lightest event of the year, it ran from August 22 (2001) to November 30 (2000) with a high count of 290 on November 15, 2001.

The winter passage ran from November 27 (2001) to January 15 (2003), there were four “clustered” influxes. The first peaked from November 29 (2001) to December 4 (1999) with a high count of 260 on November 29, 2001. The second peaked from December 9 (2001) to December 14 (2002) with a high count of 670 on December 14, 2002. The third peaked from December 18 (1998) to December 20 (2000) with a high count of 365 on December 18, 1998. The fourth peaked from December 30 (1999) to January 5 (2003) with a high count of 400 on January 1, 1999. The early spring passage followed from January 3 (2002) to March 3 (2001), there were five “clustered” influxes. The first peaked from January 10 (2001) to January 12 (1999) with a high count of 390 on January 12, 1999. The second peaked from January 16 (2002) to January 19 (2003) with a high count of 285 on January 16, 2002. The third peaked from January 28 (2001) to February 2 (2003) with a high count of 430 on January 29, 1999. The fourth peaked from February 15 (2003) to February 21 (2000) with a high count of 188 on February 15, 2003. The fifth influx is indicated by a peak count of 51 on February 28, 2001. Peak passage is said to be in February but that is not the case here, the highest numbers were in

January. Now it gets hard to identify what each influx represents, the splits that I have chosen are somewhat arbitrary. So the main spring passage ran from March 3 (2000) to May 9 (2002), there were six “clustered” influxes. The first peaked from March 14 (2000, 2002) to March 16 (2003) with a high count of 263 on March 16, 2003. The second peaked from March 23 (1999) to March 27 (2002) with a high count of 223 on March 25, 2001. The third peaked from March 30 (2000) to April 6 (1999) with a high count of 160 on April 2, 2003. The fourth is indicated by a peak count of 203 on April 13, 2003. The fifth peaked from April 17 (2002) to April 22 (2001) with a high count of 99 on April 22, 2001. The sixth peaked from April 27 (2003) to May 2 (2000) with a high count of 78 on May 2, 2000. The summer passage is taken as running from April 23 (1999) to July 12 (2000), there were six “clustered” influxes. The first peaked from May 4 (1999) to May 8 (2001) with a high count of 262 on May 4, 1999. The second peaked from May 12 (2003) to May 14 (1999) with a high count of 237 on May 14, 1999. The third peaked from May 27 (2002) to May 31 (1999) with a high count of 140 on May 31, 1999. The fourth peaked from June 8 (2003) to June 10 (2002) with a high count of 117 on June 10, 2002. The fifth peaked from June 17 (2001) to June 19 (2002) with a high count of 82 on June 19, 2002. The sixth is indicated by a peak count of 89 on June 28, 2002. Next came the early fall passage. Unlike a post-breeding gathering where birds tend to stop off passage in this case the highest counts were one day events. This passage ran from June 16 (2003) to August 28 (2002), there were five “clustered” influxes. The first peaked from June 23 (2003) to June 25 (1999) with high counts of 165 on June 25, 1999 and 1,370 on June 23, 2003. The latter was the highest count during the first five years of the survey. The second peaked from July 1 (2001) to July 3 (2002) with a high count of 157 on July 3, 2002. The third peaked from July 14 (2002) to July 19 (2003) with a high count of 190 on July 19, 2003. The fourth peaked from July 26 (2000) to July 29 (2001) with a high count of 295 on July 28, 2002. The fifth peaked from August 10 (2003) to August 15 (1998) with high counts of 117 on August 10, 2003 and 1,000 on August 15, 1998. Finally there was the late fall passage in this case it was the lesser event. This passage ran from August 22 (2001) to November 30 (2000), there were six “clustered” influxes. The first peaked from September 9 (2001) to September 11 (1998) with a high count of 260 on September 11, 1998. The second peaked from September 17 (1999) to September 22 (2002) with a high count of 47 on September 22, 2002. The third peaked from September 27 (2000) to October 2 (2002) with a high count of 44 on September 27, 2000. The fourth peaked from October 17 (2001) to October 22 (2000) with a high count of 190 on October 17, 2001. The fifth peaked from October 26 (1999) to November 1 (2000) with a high count of 175 on October 28, 2001. The sixth peaked from November 14 (1999) to November 18 (1998) with a high count of 290 on November 15, 2001. It is always a great sight to see lines of these ibis flying across the fields.

Glossy Ibis (*Plegadis falcinellus*)

This is a non-breeding resident, passage migrant and winter visitor. In three of the five years there was a post-breeding gathering. This ibis also likes the wet fields. It is far more wary than the last species, being quick to take flight. Whilst feeding it has one habit that sets it apart, it tends to take whatever food it has found to water to wash it before eating it. The second and the third years of the survey were very dry with little standing water so the numbers were perhaps unusually low at that time. The winter passage ran from November 30 (1998, 2000, 2002) to January 9 (2003) with a high count of 1,230 on January 2, 2003. In the quiet years the high count was only that of 55 on December 5, 2001. The early spring passage followed from January 1 (1999) to March 10 (2002) with a high count of 560 on February 2, 2003. Again in the quiet years the high count was only that of 48 on January 28, 2001. Next came the late spring passage from March 7 (2000) to April 30 (2003) with a high count of 282 on March 12, 2003. The summer passage appears to run from April 24 (2002) to July 14 (1999) with a high count of 240 on June 23, 2003. There was a post-breeding gathering from July 10 (2002) to September 30 (1998, 2001) with a high count of 1,380 on July 19, 2003. There are two influxes worth showing in detail. The first was from 1999, a type 1 influx. There were 66 on July 16 with 124 on July 20, 171 on July 27, 188 on August 6 and 278 on August 10, then 111 seen on August 18 with 85 on August 20, 50 on August 27, eight on September 6 and six on September 8. The second influx came from 2003, a type 2 influx. There were 41 on July 13, then 1,380 seen on July 19 with 243 on July 21, 109 on July 25, 39 on July 27, 27 on July 30 and seven on August 5. Finally there was the fall passage, this ran from September 21 (2000) to December 4 (1999) with a high count of 550 on October 26, 1999.

The winter passage ran from November 30 (1998, 2000, and 2002) to January 9 (2003), there were four “clustered” influxes. The first peaked from December 3 (1998) to December 7 (1999) with a high count of 505 on December 3, 1998. The second peaked from December 12 (2000) to December 14 (2002) with a high count of 750 on December 14, 2002. The third peaked from December 18 (1998) to December 22 (2000) with a high count of 615 on December 18, 1998. The fourth peaked from January 1 (2000) to January 2 (2003) with a high count of 1,230 on January 2, 2003. These birds were only in the area for one week. The early spring passage followed from January 1 (1999) to March 10 (2002), there were six “clustered” influxes. The first peaked from January 4 (2001) to January 8 (1999) with a high count of 1,010 on January 8, 1999. This influx might just belong to the winter passage in which case that passage would extend to January 27 (1999) whilst the early spring passage would start on January 7 (2002). The second and third influxes were indicated by isolated peak counts of 37 on January 13, 2002 and 430 on January 22, 2003. The fourth peaked from January 28 (2001) to January 29 (1999) with a high count of 390 on January 29, 1999. The fifth peaked from February 2 (2003) to February 6 (2000) with a high count of 560 on February 2, 2003. The sixth peaked from February 14 (2001) to February 17 (2002) with a high count of 370 on February 15, 2003. The late spring passage was the lightest event of the year it ran from March 7, (2000) to April

30 (2003) there were five “clustered” influxes. The first peaked from March 7 (2000) to March 12 (2003) with a high count of 282 on March 12, 2003. The second is indicated by a peak count of 22 on March 19, 2002. The third peaked from March 23 (1999) to March 27 (2000) with a high count of 85 on March 26, 2003. The fourth is indicated by a peak count of five on April 7, 2002. The fifth peaked from April 11 (2001, 2003) to April 15 (2000) with a high count of 76 on April 11, 2003. The summer passage ran from April 24 (2002) to July 14 (1999), there were eight “clustered” influxes. The first peaked from May 4 (2000) to May 9 (2002) with a high count of 170 on May 7, 1999. The second peaked from May 14 (2001) to May 15 (2003) with a high count of 42 on May 15, 2003. The third is indicated by a peak count of 12 on May 21, 2000. The fourth peaked from May 27 (2001) to May 31 (1999) with a high count of 39 on May 31, 1999. The fifth peaked from June 8 (2003) to June 9 (2000) with a high count of 79 on June 8, 2003. The sixth peaked from June 14 (1999) to June 16 (2002) with a high count of 179 on June 14, 1999. The seventh peaked from June 23 (2003) to June 28 (2000) with a high count of 240 on June 23, 2003. The eighth peaked on July 6 (1999, 2003) with a high count of 162 on July 6, 2003. Unlike the White Ibis there were post-breeding gatherings in three of the five years. This passage ran from July 10 (2002) to September 30 (1998, 2001), there were seven “clustered” influxes. The first peaked from July 16 (2000) to July 19 (2003) with high counts of 49 on July 18, 2001 and 1,380 on July 19, 2003. The latter was the highest count during the first five years of the survey. The second peaked from July 30 (2000) to August 4 (2002) with a high count of 215 on August 4, 2002. The third peaked on August 10 (1999, 2003) with a high count of 278 on August 10, 1999. The fourth peaked from August 15 (1998) to August 16 (2000) with a high count of 200 on August 15, 1998. The fifth peaked from August 30 (2000) to September 2 (2001) with a high count of 33 on August 30, 2000. The sixth peaked from September 8 (2002) to September 10 (1999) with a high count of 48 on September 8, 2002. The seventh is indicated by a peak count of 150 on September 17, 1998. Finally there was the fall passage, this ran from September 21 (2000) to December 4 (1999), again there were seven “clustered” influxes. The first peaked from September 29 (2002) to September 30 (1999) with a high count of 41 on September 29, 2002. The second peaked from October 5 (2000) to October 7 (2001) with a high count of 350 on October 7, 2001. The third is indicated by a peak count of 81 on October 13, 2002. The fourth peaked from October 26 (1999) to October 29 (1998) with a high count of 550 on October 26, 1999. The fifth peaked from November 8 (2000) to November 11 (2001) with a high count of 94 on November 11, 2001. The sixth peaked from November 16 (1999) to November 18 (1998) with a high count of 450 on November 18, 1998. The last influx peaked from November 25 (2001) to November 26 (1999) with a high count of 70 on November 25, 2001.

White-faced Ibis (*Plegadis chihi*)

This is a vagrant. There was an adult by Laughlin Road on November 4, 2001 with two adults at the same location on November 11, 2001. A bird in first summer plumage was watched at the Lake Level Canal on June 12, 2002. Finally two adults in breeding plumage were seen at Lake Apopka on June 1, 2003. This species has to be under-recorded as it is so hard to get good views of parties of Glossy Ibis.

Roseate Spoonbill (*Platalea ajaja)*

This is an irregular passage migrant and non-breeding summer visitor. No winter or early spring records and no records for the year 2002/2003. Numbers and presence depends to a large degree on there being areas of shallow water with a mud base. A main spring passage occurred in two years (2001 and 2002) from March 11 (2001) to May 27 (2001), no more than two a day seen. Most sightings however are in the summer from May 31 (2001) to August 12 (2001) with high counts of nine on July 15, 2001 and 30 on June 26, 2002. To highlight the 2002 type 1 influx. There were two on June 2 with three on June 5, four on June 12, six on June 16, nine on June 19, 26 on June 23 and 30 on June 26. The water levels then rose and there were 18 on June 30 with eight on July 8 and two on July 10. There was also an early fall passage from August 14 (2001, 2002) to September 17 (1998) with a high count of five on September 2, 1998. Finally, in 1998, there was a main fall passage from October 21 to November 30 with a high count of six on November 11, 1998.

The main spring passage ran from March 11 (2001) to May 27 (2001) with peak counts of two on March 31, 2002, April 11, 2001 and April 17, 2002. These counts may indicate the location of influxes. The summer passage followed from May 31 (2001) to August 12 (2001), there were three “clustered” influxes. The first is indicated by a peak count of three on May 31, 2001. The second peaked from June 26 (2002) to June 28 (2000) with high counts of one on June 28, 2000 and 30 on June 26, 2002. The latter is still the highest count for Zellwood. The third peaked from July 15 (2001) to July 16 (2000) with a high count of nine on July 15, 2001. There was “clustered” influxes. The first peaked on August 14 (2001, 2002) with a high count of three on August 14, 2001. The second is indicated by a peak count of one on August 20, 1999. The third peaked on September 2 (1998, 2001) with a high count of five on September 2, 1998. In 1998 there was a main fall passage from October 21 to November 30, there were two “clustered” influxes. The first ran from October 21 to November 2 with a peak count of two on October 21. The second ran from November 11 to November 30 with a peak count of six on November 11. Both were type 2 influxes. There were no winter or early spring sightings and no records for the year 2002/2003. It is always a special day when this species is seen.

Wood Stork (*Mycteria americana*)

This is a non-breeding summer visitor, passage migrant and winter visitor. This species prefers situations where the fish are concentrated into the ditches as an area dries out. This does not occur very often so numbers are very variable. The main spring passage ran from March 7 (1999) to May 21 (2000), numbers were very low the highest count was that of 15 on April 30, 2000. The summer passage followed from May 20 (2001) to August 20 (2000) with a high count of 85 on June 19, 2000. There was an early fall passage from August 15 (1998) to October 12 (2000) with a high count of 546 on September 17, 1998. For the other years the highest count was that of 106 on September 6, 1999. The main fall passage was just that in 1998, but it was a minor event in the other years. This passage ran from October 2 (1999) to December 3 (1999) with a high count of 1,130 on November 18, 1998. For the other years the highest count was that of 53 on November 5, 2000. The winter passage followed from November 25 (2001) to January 10 (2001). The highest counts were those of 550 on January 1, 1999 and 154 on December 17, 2000. No more than 11 a day seen for the other years. Finally there is the early spring passage. For all intents and purposes this event only occurred in 1999. It ran from January 12 (1999) to February 17 (1999) with a high count of 815 on January 29, 1999. This passage would almost certainly have gone on longer if the fields had not been drained. If one ignores, both the influxes and the passages, then the overall pattern in 1998/1999 is as follows. There were 30 on August 15 with 265 on September 11, 546 on September 17, 590 on October 16 and 1,130 on November 18, then only 495 noted on November 30 with 105 on December 8. There were 211 on December 31 with 550 on January 1, 627 on January 15 and 815 on January 29, then 730 seen on February 10 with 620 on February 17 when the last field drained. Basically a fall and early spring migrant, with no real separate winter passage.

The main spring passage ran from March 7 (1999) to May 21 (2000), there were four "clustered" influxes. The first is indicated by a peak count of ten on March 7, 1999. The second peaked from March 27 (2001) to March 30 (1999) with a high count of 13 on March 30, 1999. The third peaked from April 27 (2003) to May 1 (1999, 2002) with a high count of 15 on April 30, 2000. The fourth is indicated by a peak count of ten on May 13, 2000. The summer passage followed from May 20 (2001) to August 20 (2000), there were seven "clustered" influxes. The first peaked from May 27 (2002) to May 31 (2001) with ten on both dates. The second is indicated by a peak count of 74 on June 5, 1999. The third peaked from June 12 (2002) to June 14 (1999) with a high count of 33 on June 12, 2002. The fourth peaked from June 19 (2000) to June 24 (2001) with a high count of 85 on June 19, 2000. The fifth peaked from July 8 (2001) to

July 12 (1999) with a high count of 14 on July 12, 1999. The sixth peaked from July 19 (2003) to July 23 (2000) with a high count of 59 on July 23, 2000. The seventh peaked from July 31 (2002) to August 6 (1999) with a high count of 22 on August 6, 1999. There was an early fall passage from August 15 (1998) to October 12 (2000), there were four "clustered" influxes. The first peaked from August 26 (2001) to August 30 (2000) with a high count of 29 on August 30, 2000. The second is indicated by a peak count of 106 on September 6, 1999. The third peaked from September 17 (1998) to September 22 (2002) with a high count of 546 on September 17, 1998. The fourth peaked from September 30 (2001) to October 1 (2000) with a high count of 56 on October 1, 2000. Then came what in 1998 was the main event. The main fall passage ran from October 2 (1999) to December 3 (1999), there were five "clustered" influxes. The first is indicated by a peak count of 29 on October 6, 1999. The second peaked from October 15 (2000) to October 17 (2001) with a high count of 590 on October 16, 1998. The third is indicated by a peak count of 16 on October 25, 2000. The fourth peaked from November 5 (2000) to November 9 (1999) with a high count of 53 on November 5, 2000. The fifth peaked from November 17 (2002) to November 19 (2000) with high counts of 12 on November 17, 2002 and 1,130 on November 18, 1998. The latter is still the highest count for Zellwood. Next came the winter passage, this ran from November 25 (2001) to January 10 (2001). There were three "clustered" influxes. The first peaked from December 8 (1998) to December 11 (2002) with a high count of 105 on December 8, 1998. The second is indicated by a peak count of 154 on December 17, 2000. The third peaked from January 1 (1999, 2001) to January 3 (2002) with a high count of 550 on January 1, 1999. All the other high counts for this passage were exceptionally low; the highest was that of 11 on January 3, 2002. Finally there was the early spring passage, this ran from January 12 (1999) to February 17 (1999) There was no passage in 2000 and 2003 with just three records for the years 2001 and 2002. There were four "clustered" influxes. The first is indicated by a peak count of 627 on January 15, 1999. The second peaked from January 20 (2002) to January 21 (2001) with one on both dates. The third peaked from January 29 (1999) to February 4 (2001) with high counts of one on February 24, 2001 and 815 on January 29, 1999. The fourth is indicated by a peak count of 730 on February 10, 1999. Without the high numbers of 1998/1999 this would be a much less significant species.

Black Vulture (*Coragyps atratus*)

This is a non-breeding resident that often roosts in the wooded borders. It also appears to be a partial migrant and winter visitor. It tends to feed outside the survey area but if there is a major fish kill in Lake Apopka, they then take up residence by the lake for many days. The winter passage ran from December 5 (2001) to January 16 (2002) with a high count of 23 on January 1, 2000. This was followed by the early spring passage, this ran from January 7 (2001)

to March 9 (2003) with high counts of 21 on January 14, 2001 and February 26, 2003. The main spring passage ran from March 6 (2002) to May 14 (1999, 2002) with a high count of 89 on April 2, 2003. The summer passage appeared to run from May 12 (2002) to July 17 (2002) with a high count of 127 on July 10, 2002. To show the main 2002 influxes in more detail, there were two on June 10 with three on June 12, 20 on June 16, 62 on June 19, 74 on June 26 and 86 on June 30, then 22 seen on July 3 with 15 on July 8. There were 127 on July 10 with 65 on July 14 and two on July 17. This shows a common quandary, was the drop in numbers on July 3 and 8 real or did I just miss the major movement on those days? There is an early fall passage from July 4 (2003) to September 23 (1999) with a high count of 48 on August 18, 2002. This event might even be treated as a post-breeding gathering. The main fall passage completes the year, it ran from September 16 (2001) to December 6 (2000) with a high count of 37 on September 19, 2001.

The winter passage ran from December 5 (2001) to January 16 (2002), there were four "clustered" influxes. The first peaked from December 8 (1998) to December 11 (2002) with a high count of four on December 8, 1998. The second peaked from December 17 (2000) to December 21 (2001) with a high count of 17 on December 21, 2001. The third peaked from December 28 (2002) to January 1 (2000, 2001) with a high count of 23 on January 1, 2000. The fourth peaked from January 7 (1999) to January 10 (2002) with 16 on both dates. The early spring passage ran from January 7 (2001) to March 9 (2003), there were five "clustered" influxes. The first peaked from January 14 (2001) to January 19 (2003) with a high count of 21 on January 14, 2001. The second peaked from January 29 (1999) to February 3 (2002) with a high count of 12 on January 29, 1999. The third is indicated by a peak count of 19 on February 8, 2000. The fourth peaked from February 17 (1999) to February 20 (2002) with a high count of 11 on February 17, 1999. The fifth is indicated by a peak count of 21 on February 26, 2003. Next came the main spring passage, this ran from March 6 (2002) to May 14 (1999, 2002), there were six "clustered" influxes. The first peaked from March 12 (2003) to March 16 (1999) with a high count of 21 on March 14, 2002. The second peaked from March 21 (2000) to March 25 (2001) with a high count of 11 on March 24, 2003. The third peaked from April 1 (1999) to April 8 (2001) with a high count of 89 on April 2, 2003. The next two influxes were indicated by isolated peak counts of seven on April 14, 2002 and 13 on April 24, 2003. The sixth influx peaked from May 1 (1999, 2002) to May 6 (2001) with a high count of 11 on May 6, 2001. The summer passage ran from May 12 (2002) to July 17 (2002), there were four "clustered" influxes. The first peaked from May 23 (2000) to June 2 (2002) with a high count of 42 on June 2, 2002. The second peaked from June 6 (2000) to June 7 (2001) with a high count of 19 on June 7, 2001. The third peaked from June 23 (2003) to July 1 (2001) with a high count of 69 on July 1, 2001. The fourth peaked from July 6 (1999) to July 10 (2002) with a high count of 127 on July 10, 2002. This was the highest count for Zellwood during the first five years of the survey. The next event could be described either as a post-breeding gathering or as the early fall passage,

the jury is out. This event ran from July 4 (2003) to September 23 (1999), there were four "clustered" influxes. The first peaked on July 16 (1999, 2000) with a high count of 18 on July 16, 2000. The second peaked from July 25 (2003) to August 3 (1999) with a high count of 43 on July 27, 2001. The third peaked from August 16 (2000) to August 19 (2001) with a high count of 48 on August 18, 2002. The fourth peaked from September 3 (2000) to September 6 (1999) with a high count of 43 on September 3, 2000. The main fall passage ran from September 16 (2001) to December 6 (2000), there were four "clustered" influxes. The first peaked on September 19 (2000, 2001) with a high count of 37 on September 19, 2001. The second peaked from October 9 (2000, 2002) to October 12 (1999) with a high count of 18 on October 9, 2002. The third peaked from October 21 (1998, 2001) to October 22 (2000) with a high count of 25 on October 21, 2001. The fourth peaked from November 11 (1998) to November 17 (2002) with a high count of 12 on November 14, 1999. It is hard to believe but this species was all but unknown at Zellwood prior to the survey.

Turkey Vulture (*Cathartes aura*)

This is a common non-breeding resident, passage migrant and winter visitor. Numbers vary dramatically depending, in part, on the mowing and roller-chopping activities. There are a series of roosts in the wooded borders. The winter passage ran from December 3 (1998, 2000) to January 7 (1999, 2001, 2002, 2003!) with a high count of 336 on December 11, 1999. The early spring passage followed from January 7 (2000) to March 18 (2000) with a high count of 464 on February 6, 2000. This was the stronger of the spring passages. The late spring passage ran from March 5 (2003) to May 29 (1999) with a high count of 63 on May 20, 2002. The summer passage came next from May 26 (2003) to July 23 (1999, 2000). The highest count was that of 172 on July 16, 2000. The early fall passage ran from July 11 (2001) to October 2 (1999) with a high count of 400 on August 13, 2000. To use this 2000 influx as an example of a type 1 influx, there were 81 on July 26 with 97 on July 30, 167 on August 2, 266 on August 9 and 400 on August 13, then 200 seen on August 20 with 152 on August 23. Counts then rose again starting with 225 on August 27. The main fall passage ended the year with passage from September 26 (2002) to December 11 (2002). The highest count was that of 511 on October 29, 1999. In 1999 a single, mega influx, spanned the period October 2 to November 30. There were 89 on October 2 with 170 on October 6, 227 on October 8, 371 on October 14, 387 on October 23 and 511 on October 29, then 353 seen on November 3 with 338 on November 12, 215 on November 19, 174 on November 26 and 106 on November 30, again a typical type 1 influx.

The winter passage ran from December 3 (1998, 2000) to January 7 (1999, 2001, 2002, 2003), there were only two "clustered" influxes. The first peaked from December 11 (1998, 1999) to December 16 (2002) with a high count of 336 on December 11, 1999. The second

peaked from December 30 (1999) to January 5 (2003) with a high count of 152 on December 30, 1999. Next came the early spring passage, again this was the stronger spring passage. It ran from January 7 (2000) to March 18 (2000), there were three “clustered” influxes. The first peaked from January 7 (2000) to January 13 (2002) with a high count of 204 on January 7, 2000. The second peaked from January 21 (2000) to January 28 (2001) with a high count of 420 on January 22, 2003. The third peaked from February 3 (2002) to February 10 (1999) with a high count of 464 on February 6, 2000. The late spring passage followed but it was an unexpectedly minor event. In a species where the influxes (regular) are normally strong when the numbers drop the number of influxes shoots up, in this case from three to six. When the numbers low the basic influxes are visible and again when the numbers high just the regular influxes can be seen. This event ran from March 5 (2003) to May 29 (1999), there were six “clustered” influxes. The first peaked from March 10 (2002) to March 16 (2003) with a high count of 46 on March 16, 2003. The second peaked from March 21 (2000) to March 25 (2001) with a high count of 36 on March 24, 2002. The third peaked from April 1 (1999) to April 2 (2003) with a high count of 19 on April 1, 1999. The fourth peaked from April 14 (2002) to April 20 (1999) with a high count of 30 on April 16, 2001. The fifth peaked from May 1 (2002) to May 4 (1999, 2003) with a high count of 55 on May 1, 2002. The sixth peaked from May 18 (1999, 2003) to May 21 (2000) with a high count of 63 on May 20, 2002. Numbers were a little higher in the summer, this passage ran from May 26 (2003) to July 23 (1999, 2000), there were four “clustered” influxes. The first peaked from May 30 (2002) to June 1 (2003) with a high count of 88 on May 30, 2002. The second peaked from June 12 (1999) to June 19 (2000, 2002) with a high count of 89 on June 17, 2001. The third peaked from June 23 (2003) to June 27 (2001) with a high count of 59 on June 27, 2001. The fourth peaked from July 9 (2003) to July 16 (1999, 2000) with a high count of 172 on July 16, 2000. Next came the early fall passage, this ran from July 11 (2001) to October 2 (1999), there were four “clustered” influxes. The first peaked from July 25 (2002, 2003) to August 2 (2001) with a high count of 105 on August 2, 2001. The second peaked from August 10 (1999) to August 13 (2000, 2003) with a high count of 400 on August 13, 2000. The third peaked from August 30 (2000) to September 9 (2001) with a high count of 262 on August 30, 2000. The fourth peaked from September 19 (2000, 2001) to September 25 (1999) with a high count of 240 on September 19, 2000. The main fall passage ran from September 26 (2002) to December 11 (2002), there were five “clustered” influxes. The first peaked from September 26 (2002) to October 3 (2001) with a high count of 342 on October 1, 2000. The second peaked from October 17 (2001) to October 23 (2002) with a high count of 150 on October 17, 2001. The fourth peaked from November 7 (2001) to November 12 (2000) with a high count of 36 on November 11, 1998. The fifth peaked from November 29 (2001) to December 2 (2002) with a high count of 104 on December 2, 2002. In 1999 just one, mega influx, covered this event from October 6 to November 30 with a high count of 511 on October 29, this is the third influx. The count of 511 was the highest count during the first five years of the survey.

White-faced Whistling-Duck (*Dendrocygna viduata)*

There was an adult at the Sand Farm on May 7, 2000. It was with three Fulvous Whistling-Ducks. This could be a naturally occurring vagrant from South America although the possibility of it being an escapee from a collection cannot be excluded. This species is a resident in South America from Costa Rica southward, including Trinidad. Vagrants have been recorded from several West Indian islands. There are at least three previous Florida records, all I believe in the spring. The Fulvous Whistling-Duck occurs in the same area so they could have traveled together. At the time of this bird's arrival two Fork-tailed Flycatchers *Tyrannus savana* turned up in south Florida. The whistling-duck was not banded so vagrancy is a real possibility. It was not seen again here or elsewhere.

Black-bellied Whistling-Duck (*Dendrocygna autumnalis)*

This is becoming a summer visitor with a post-breeding gathering. This species is gradually spreading north through central Florida. It may have arrived in the Sarasota area in the 1940's. The population has gradually grown but now appears to be in a period of rapid range expansion. It still winters in the Sarasota area but it is now, 2010, wintering in large numbers (high count 1,660 on February 5, 2010) at Zellwood. To take the records chronologically, the first were two on August 15, 1998, then two seen on October 21, 1998 with one on July 12, 1999. There were two on August 25, 1999 with three on August 27, 1999 and August 31, 1999. None seen in 2000 but there were three on October 28, 2001. Again there were no sightings in 2002. Then In 2003 there were a series of five small influxes. The first influx ran from May 29 to June 11 with a peak count of five on June 1. The second ran from June 23 to July 9 with peak counts of three on June 29 and July 4. The third ran from July 19 to July 25 with a peak count of six on July 19. The fourth ran from July 27 to August 8 with a peak count of four on July 27. The fifth influx ran from August 10 to August 13 with a peak count of three on August 10.

During these five years there were no winter or spring records. Seen in the summer from May 29 (2003) to July 9 (2003), there were potentially two "clustered" influxes. The first peaked on June 1, 2003 with a high count of five. The second peaked on June 29 with a high count of three. During this period there were only sightings in 2003. The timing of the breeding season is unclear at this time so to use standard terminology the early fall passage ran from July 12 (1999) to August 31 (1999). I can see no pattern of influxes other than that detailed above

for 2003. The highest count was that of six on July 19, 2003. That was the highest count during the first five years of the survey. There are indications of a fall passage with the counts of two on October 21, 1998 and three on October 28, 2001. This is very much a work in progress.

Fulvous Whistling-Duck (*Dendrocygna bicolor)*

Summer visitor with a post-breeding gathering, in two years there was also a strong fall passage. Normally absent through the winter and the early spring. Numerous pairs bred in the summer of 1998 with 25 pairs in 1999 and one pair in 2000. In 1999 the first young were a family of eight on June 25 and the highest count of young was that of 55 on July 20. The main spring passage ran from March 2 (2003) to June 12 (2002) with a high count of 37 on March 16, 2003. The summer passage followed from June 6 (2000) to July 30 (2003) with a high count of 73 on July 9, 1999. Next came what appears to be a post-breeding gathering, this ran from July 10 (2002) to August 31 (1999). The highest count was that of 366 on August 10, 1999. To detail that 1999 influx, there were 40 on July 23 with 82 on July 27, 119 on August 3, 302 0n August 6 and 366 on August 10, then 294 seen on August 18 with 252 on August 20, 125 on August 25, 89 on August 27 and 26 on August 31. This was followed by the fall passage which ran from September 2 (2002) to December 3 (1998) with a high count of 250 on October 21, 1998. For four of the five years there were no further sightings until March or mid-April. With the flooded fields of 1998/1999 this species stayed through the winter but not the early spring. In that year there was a passage from December 4, 1998 to January 15, 1999 with a high count of 189 on December 8, 1998.

The main spring passage ran from March 2 (2003) to June 12 (2002). That said it was only in 2003 that there was any passage before mid-April. In 2003 the first influx ran from March 2 to March 24 with a peak count of 37 on March 16. The second ran from March 26 to March 29 with a peak count of 29 on March 26. The third ran from April 2 to April 21 with a peak count of 25 on April 6. In 2000 there was one on April 15. The spring passage became a reality for the other years from April 24. From that date to June 12 (2002) there were five “clustered” influxes. The first peaked on April 24 (2002, 2003) with a high count of ten on April 24, 2003. The second peaked from May 7 (2000) to May 9 (2002) with a high count of three on May 7, 2000. The next two influxes were indicated by isolated peak counts of 28 on May 14, 1999 and two on May 24, 2001. The fifth influx peaked from May 29 (2003) to June 2 (2002) with a high count of five on June 2, 2002. The summer passage ran from June 6 (2000) to July 30 (2003), there were four “clustered” influxes. The first peaked on June 19 (1999, 2000) with a high count of 52 on June 19, 1999. The second peaked from June 30 (2000) to July 1 (2001) with a high count of 12 on June 30, 2000. The third peaked from July 6(2003) to July 9 (1999) with high counts of 71 on July 6, 2003 and 73 on July 9, 1999. The fourth peaked from July 16 (2000) to July 18 (2001) with a high count of 33 on July 17, 2002. Next came what appears to be a post-

breeding gathering, this ran from July 10 (2002) to August 31 (1999), there were five“clustered” influxes. The first peaked from July 17 (2002) to July 20 (1999) with a high count of 85 on July 20, 1999. The second is indicated by a peak count of 14 on July 27, 2001. The third peaked from August 4 (2002) to August 5 (2003) with a high count of 110 on August 4, 2002. The fourth peaked from August 10 (1999) to August 15 (1998) with high counts of 50 on August 15, 1998 and 366 on August 10, 1999. The latter was the highest count during the first five years of the survey. The fifth peaked from August 18 (2002) to August 19 (2001) with a high count of 36 on August 18, 2002. The fall passage followed from September 2 (2002) to December 3 (1998), there were seven “clustered” influxes. The first is indicated by a peak count of 36 on September 3, 2000. The second peaked from September 10 (1999) to September 13 (2001) with a high count of 109 on September 10, 1999. The third peaked from September 17 (1998) to September 21 (2000) with a high count of 76 on September 17, 1998. The fourth is indicated by a peak count of 18 on October 12, 1999. If one looks at just the highest counts then this passage gets broken into two with an early fall passage from September 2 (2002) to October 19 (1999) and a main fall passage from October 16 (1998) to December 3 (1998), if that is so the main fall passage has three “clustered” influxes. The first peaked from October 20 (2002) to October 21 (1998) with a high count of 250 on October 21, 1998. The second peaked from October 28 (2001) to October 29 (1999) with a high count of 205 on October 28, 2001. The third peaked from November 14 (1999) to November 15 (2001) with a high count of 180 on November 15, 2001. For four of the five years the year finished with this passage, there being no further sightings until March or mid-April. With the flooded fields of 1998/1999 this species stayed through the winter, but not beyond. The one winter passage ran from December 4, 1998 to January 15, 1999, there were three influxes. The first ran from December 4, 1998 to December 16, 1998 with a peak count of 189 on December 8, 1998. The second ran from December 18, 1998 to January 11, 1999 with a peak count of 82 on December 18, 1998. The third only ran from January 12, 1999 to January 15, 1999 with a peak count of four on January 12, 1999. Why they left then is not known, perhaps it was the rising water levels as the water was pumped to the south before being pumped out into the lake.

Greater White-fronted Goose (*Anser albifrons*)

Vagrant, there are just two records. There was one present from December 4, 1998 to December 11, 1998. There were also two adults and an immature on October 28, 2001.

Snow Goose *(Chen caerulescens*)

Potentially a regular winter visitor but currently best described as an irregular passage migrant and winter visitor, it is a suitable habitat that is missing. For the fall passage there are records for three years with sightings from November 2 (1998) to November 30 (1998, 1999). The counts peaked from November 24 (2002) to November 30 (1998) with high counts of 12 on November 26, 1999 and 33 on November 30, 1998. The winter passage also occurred in three years, from December 2 (2002) to December 28 (1998), there were two "clustered" influxes. The first peaked from December 3 (1998) to December 7 (1999) with high counts of 13 on December 7, 1999 and 89 on December 3, 1998. The second influx only occurred in 1998, it ran from December 18 to December 28. The previous influx had ended with 86 on December 11 and December 16. An additional four birds arrived on December 18 giving a total of 90 from that date to December 28, 1998. This is still the highest count for Zellwood. No later records that winter. There are two spring records. There was one on February 17, 1999 (after which date the area was closed); there were also three on January 21, 2000. Both white and blue morph birds seen but although I did not note the fact the majority were blue morph birds.

Ross's Goose (*Chen rossii)*

This is a vagrant. In 1998, whilst the fields of Unit Two flooded there were two on December 7, 1998 and December 8, 1988 with one staying to December 16, 1998. This species is being recorded more frequently now in Florida so further records could be expected if the habitat was right.

Canada Goose (*Branta canadensis)*

This is a vagrant. This species does not normally travel this far to the south. A party of three arrived on October 29, 1998 and stayed to at least February 17, 1999. The area was closed from that date to mid-April, 1999, so the last date is unknown.

Black Swan (*Cygnus atratus)*

This is an introduced species. There was an adult on Lake Apopka near the end of the Lake Level Canal on June 10, 2002.

Muscovy Duck (*Cairina moschata)*

This is an introduced species, one seen in flight near Canal Road on June 5, 1999 and June 12, 1999.

Wood Duck (*Aix sponsa)*

Resident, passage migrant, winter visitor and if there is a suitable location there may be a post-breeding gathering. There were single pairs in 1999, 2001 and 2003 with two pairs in 2002. In 1999 three young were seen on August 3 with two on August 25. In 2001 a total of three young seen on June 7, with two on June 13 and one from June 20 to at least August 12, then in 2002 three young seen on May 30. This species prefers smaller areas of water, especially those with wooded borders. The winter passage ran from December 4 (1999) to January 13 (2002) with a high count of nine on December 6, 2000. The early spring passage followed from January 15 (2003) to March 9 (2003) with a high count of 24 on February 21, 2001. The main spring passage ran from March 4 (2002) to May 21 (2000) with a high count of ten on May 10, 1999. The summer appears to cover the period May 20 (2002) to August 10 (2003). In four of the five years there was a series of influxes with a high count of 13 on June 3, 2001. In 2000 with the "lake" at the Sand Farm there was a post-breeding gathering, it ran from June 6 to August 9 with a high count of 39 on June 30, 2000. In detail there were two on June 6 with five on June 14, 15 on June 26 and 39 on June 30, then 34 seen on July 8 with 29 on July 16, 16 on July 19, ten on July 23, seven on July 30 and six on August 9, another typical type 1 influx. This was followed by an early fall passage from August 2 (2001) to October 9 (2000) with a high count of 53 on September 10, 1999. The main fall passage completes the year, it ran from October 6 (1999) to December 4 (1999) with a high count of 23 on December 2, 2001.

The winter passage ran from December 4 (1999) to January 13 (2002), there were three "clustered" influxes. The first peaked from December 6 (2000) to December 11 (2002) with a high count of nine on December 6, 2000. The second peaked from December 18 (1998) to December 22 (1999) with a high count of four on December 18, 1998. The third peaked from January 7 (2003) to January 12 (1999) with a high count of seven on January 12, 1999. The early spring passage followed from January 15 (2003) to March 9 (2003). With the exception of 2001 this event hardly existed, but the few records for the other years did help to identify the three "clustered" influxes. The first influx peaked from January 27 (2002) to January 28 (2000) with a high count of four on January 28, 2000. The second peaked from February 5 (2003) to February 11 (2001) with a high count of 21 on February 11, 2001. The third peaked from February 20 (2002) to February 26 (2003) with a high count of 24 on February 21, 2001. The main spring passage came next with passage from March 4 (2002) to May 21 (2000), there were six "clustered" influxes. The first peaked from March 16 (2003) to March 18 (2000, 2001) with a

high count of eight on March 16, 2003. The second peaked from March 29 (2003) to April 6 (2001) with a high count of five on April 6, 2001. The third peaked from April 10 (2002) to April 14 (1999) with high counts of five on April 11, 2003 and April 14, 1999. The fourth is indicated by a peak count of nine on April 22, 2001. The fifth peaked from May 1 (2002) to May 7 (2000, 2003) with a high count of four on May 1, 2002. The sixth is indicated by a peak count of ten on May 10, 1999. The summer passage followed from May 20 (2002) to August 10 (2003), there were five "clustered" influxes. The first peaked from May 29 (2003) to June 3 (2001) with a high count of 13 on June 3, 2001. The second peaked from June 12 (1999, 2002) to June 20 (2001) with a high count of nine on June 12, 1999. The third peaked from June 26 (2002) to June 30 (2000) with a high count of 39 on June 30, 2000. The fourth peaked from July 8 (2001) to July 14 (2002) with a high count of eight on July 8, 2001. The fifth peaked from July 29 (2001) to July 31 (2002) with a high count of four on July 31, 2002. In 2000 a single influx ran from June 6 to August 9 (a mega influx) and was best described as a post-breeding gathering. The peak count of 39 on June 30 fitted into the third influx, as I said these peak counts tend to line up. Next came the early fall passage, this ran from August 2 (2001) to October 9 (2000), there were three "clustered" influxes. The first peaked from August 13 (2000) to August 20 (1999) with a high count of 31 on August 20, 1999. The second peaked from August 27 (2000) to September 5 (2001) with a high count of ten on August 27, 2000. The third peaked from September 10 (1999) to September 13 (2000) with a high count of 53 on September 10, 1999. This was the highest count during the first five years of the survey. The main fall passage ran from October 6 (1999) to December 4 (1999), there were two "clustered" influxes. The low number of influxes indicates that these were regular influxes not basic influxes. The first influx peaked from October 10 (2001) to October 14 (1999) with a high count of 12 on October 12, 2000. The second peaked from November 28 (2000) to December 2 (2001) with a high count of 23 on December 2, 2001.

Gadwall (*Anas strepera*)

This is a passage migrant and winter visitor, the numbers depending on there being suitable habitat i.e. shallow flooded fields. Seen in the fall from October 16 (1998) to December 4 (1999) with a high count of 222 on November 22, 1999. To show the main 1999 influx in more detail, there were 31 on November 9 with 93 on November 12, 104 on November 16, 173 on November 19 and 222 on November 22, then 143 seen on November 26 with 117 on November 30 and 76 on December 4. The winter passage ran from November 26 (2000) to January 1 (2000) with a high count of 92 on December 7, 1999. The early spring passage followed from January 1 (1999) to February 23 (2003) with a high count of 89 on January 12, 1999. The late spring passage was very limited with an influx from March 7, 2000 to March 14, 2000. The high

count was that of 18 on March 7, 2000. The only other spring record relates to one on April 20, 1999. In 1998/1999 there were the flooded fields of Unit Two and in 1999/2000 there was the "lake" at the Sand Farm, very few records for the later years.

There was a fall passage from October 16 (1998) to December 4 (1999), there were five "clustered"influxes. The first is indicated by a peak count of two on October 16, 1998. The second peaked from October 26 (1999) to October 29 (1998) with a high count of 24 on October 26, 1999. The third is indicated by a peak count of 37 on November 5, 1999. The fourth peaked from November 15 (2000) to November 18 (2001) with a high count of nine on November 18, 2001. The fifth peaked from November 22 (1999) to November 25 (1998) with high counts of ten on November 25, 1998 and 222 on November 22, 1999. The latter is still the highest count for Zellwood. The winter passage followed from November 26 (2000) to January 1 (2000), there were three "clustered" influxes. The first peaked from December 3 (1998, 2000) to December 7 (1999) with high counts of 41 on December 3, 1998 and 92 on December 7, 1999. The second is indicated by a peak count of 44 on December 16, 1998. The third peaked from December 28 (1998) to January 4 (2000) with a high count of 52 on December 28, 1998. Next was the early spring passage, there were few records outside of 1999. This passage ran from January 1 (1999) to February 23 (2003), there were three "clustered" influxes. The first is indicated by a peak count of 89 on January 12, 1999. The second peaked from January 24 (2002) to January 25 (2000) with a high count of three on January 25, 2000. The third peaked from February 21 (2000) to February 23 (2003) with a high count of three on February 21, 2000. The 1998/1999 fall to early spring event came to an end on February 3, 1999. Sightings in the later years were very limited. The late spring passage consisted of two items. There was an influx from March 7, 2000 to March 14, 2000 with a peak count of 18 on March 7, 2000. Finally there was one on April 20, 1999. Habitat was as usual critical.

American Wigeon (*Anas americana)*

This is a passage migrant and winter visitor, when suitable habitat available. There was a fall passage from October 18 (2000) to November 30 (1998, 1999) with a high count of 107 on November 25, 1998. The winter passage was a more limited event with records for the first two winters. This passage ran from December 3 (1998) to January 11 (1999) with a high count of 186 on December 18, 1998. To detail the main influx in 1998/1999, there were 63 on December 3 with 116 on December 8, 123 on December 11, 142 on December 16 and 186 on December 18, then 168 seen on December 28 with 154 on January 1, 97 on January 7, 78 on January 8 and 70 on January 11. Again this was a type 1 influx. The early spring passage was also only recorded in 1999 and 2000, this passage ran from January 12 (1999) to February 23 (2000) with a high count of 113 on January 19, 1999. The main spring passage was more extensive but there

were no sightings in 2001. . There was a small passage from March 10 (2000) to March 24 (2002, 2003) with a high count of 16 on March 19, 2002, then singles seen on April 19, 2000, May 1, 2002, May 18, 1999 and May 21, 2003.

Fall passage noted from October 18 (2000) to November 30 (1998, 1999), there were four “clustered” influxes. The first peaked from October 18 (2000) to October 23 (1999) with a high count of nine on October 23, 1999. The second peaked from October 29 (1998) to November 1 (2001) with a high count of seven on October 29, 1998. The third peaked from November 6 (1999) to November 12 (2000) with a high count of 35 on November 6, 1999. The fourth peaked from November 25 (1998) to November 26 (1999, 2000) with a high count of 107 on November 25, 1998. The winter passage followed from December 3 (1998) to January 11 (1999) with single influxes for the first two years. The lack of information for the later years means that it is hard to identify any pattern. The first influx ran from December 3, 1998 to January 11, 1999 with a peak count of 186 on December 18, 1998. This is still the highest count for Zellwood. The second ran from December 4, 1999 to December 19, 1999 with a peak count of six on December 4, 1999. The same situation applies to the early spring passage. The first influx ran from January 12, 1999 to February 10, 1999 with a peak count of 113 on January 19, 1999. The second ran from February 11, 2000 to February 23, 2000 with a peak count of five on February 23, 2000. The main spring passage, by contrast, occurred in four of the five years, no sightings in 2001. The passage ran from March 10 (2000) to May 21 (2003), potentially there were five “clustered”influxes. The first is indicated by a peak count of four on March 10, 2000. The second peaked from March 19 (2002) to March 24 (2003) with a high count of 16 on March 19, 2002. Only singles recorded after March 24, there was one on April 19, 2000, a female on May 1, 2002, a female on May 18, 1999 and a male on May 21, 2003. The last two records form an influx.

American Black Duck (*Anas rubripes*)

This is a rare passage migrant and winter visitor that has summered. Seen in the fall from October 16 (2002) to November 30 (1999) with an extension to December 12 in 2000, the highest counts were of two on October 16, 2002 and November 6, 1999. The winter passage was the heaviest event, it ran from November 25 (1998) to January 8 (1999) with a high count of three on December 7, 1998. This was followed by the early spring passage from January 7 (2002, 2003) to January 20 (2002), the highest count was that of two on January 11, 1999. In the winter of 1999/2000 two were seen on December 27 and January 4, one of these then stayed at the Sand Farm Cattail Marsh and paired with a Mottled Duck. It was last seen on June 19, 2000. This may be the first attempt at nesting by this species in Florida.

Seen in the fall from October 16 (2002) to N “clustered” influxes. The first is indicated by a peak count of two on October 16, 2002. The second peaked from November 1 (2000) to November 6 (1999) with a high count of two on November 6, 1999. The third is indicated by a peak count of one on November 11, 2001. The winter passage followed from November 25 (1998) to January 8 (1999), there were three “clustered” influxes. The first is indicated by a peak count of one on November 29, 2001. The second peaked from December 4 (1999) to December 7 (1998) with a high count of three on December 7, 1998. This is still the highest count for Zellwood. The third peaked from December 27 (1999, 2001) to December 28 (1998) with high counts of two on December 27, 1999 and 2001. There was a short-lived early spring passage from January 7 (2002, 2003) to January 20 (2002), there was one influx which peaked from January 7 (2002, 2003) to January 11 (1999). The highest count was that of two on January 11 (1999). Finally one of two first seen on December 27, 1999 stayed through to June 19, 2000, at that time it was paired with a Mottled Duck.

Mallard (*Anas platyrhynchos*)

This is a feral resident with wild birds present in the late fall and the winter when suitable habitat available. There were three pairs in 1999 with one pair in 2000. New born young were noted as follows, there were two on May 22, 1999 with four on June 14, 1999 and three on May 21, 2000. Hybrids with Mottled Ducks are now more likely to be seen than pure pairs of Mallards. This species nested in the vegetated canals. The summer passage ran from May 2 (2001) to July 23 (1999) with high counts of ten on May 22, 1999 and June 14, 1999. The early fall passage followed from July 16 (2000) to October 29 (2000) with a high count of eight on August 21, 2002. In 1999 there was a post-breeding gathering during this event from July 27 to September 30 with a high count of 17 on August 25 and August 31. The main fall passage came next with records from October 20 (2002) to November 27 (2001) with a high count of 40 on November 19, 1999. For the other years the highest count was that of 12 on November 13, 1998. To look at the 1999 influx in more detail, there was one on October 26 with two on November 3, 11 on November 12, 14 on November 14 and 40 on November 19, only two seen on November 22. This is one of the rare type 3 influxes. The winter passage ran from November 26 (1999, 2000) to January 11 (2000) with a high count of 21 on December 16, 1998. Then the early spring passage ran from January 5 (2003) to February 28 (2001) with a high count of 15 on January 8, 1999. Finally there was the main spring passage, this ran from February 27 (2002) to May 4 (1999) with a high count of four on four dates.

Seen in the summer from May 2 (2001) to July 23 (1999), there may be seven “clustered” influxes. The first two were indicated by isolated peak counts of two on May 2, 2001 and five on May 15, 2002. The third peaked from May 20 (2001) to May 22 (1999) with a

high count of ten on May 22, 1999. The fourth is indicated by a peak count of six on June 6, 2000. The fifth peaked from June 10 (2002) to June 14 (1999) with a high count of ten on June 14, 1999. The sixth peaked from June 23 (2002) to June 26 (2000) with four on both dates. The seventh is indicated by a peak count of five on July 9, 1999. This is another of those species with a host of basic influxes because of the low numbers seen. The early fall passage followed from July 16 (2000) to October 29 (2000), again there were seven "clustered" influxes. The first peaked from July 19 (2000) to July 25 (2002) with a high count of seven on July 19, 2000. The second is indicated by a peak count of three on August 9, 2000. The third peaked from August 21 (2002) to August 27 (2000) with a high count of eight on August 21, 2002. The fourth peaked from September 5 (2001) to September 8 (2002) with a high count of six on September 8, 2002. The fifth peaked from September 19 (2000) to September 22 (2002) with a high count of five on September 22, 2002. The sixth peaked from October 3 (2001) to October 5 (2000) with a high count of five on October 5, 2000. The seventh peaked from October 18 (2000) to October 21 (2001) with a high count of five on October 18, 2000. In 1999 there was a post-breeding gathering during this event from July 27 to September 30 with high counts of 17 on August 25 and August 31. This peak count fits into the third influx. The main fall passage ran from October 20 (2002) to November 27 (2001), there were four "clustered" influxes. The first peaked from October 20 (2002) to October 21 (1998, 2001) with a high count of eight on October 21, 1998. The second is indicated by a peak count of six on October 28, 2001. The third peaked from November 13 (1998) to November 17 (2002) with a high count of 12 on November 13, 1998. The fourth is indicated by a peak count of 40 on November 19, 1999. This was the highest count during the first five years of the survey. The winter passage followed from November 26 (1999, 2000) to January 11 (2000), there were five "clustered" influxes. The first peaked from November 26 (2000) to December 3 (1998) with a high count of 16 on November 30, 1999. The second peaked from December 9 (2001) to December 11 (2002) with a high count of five on December 11, 2002. The third peaked from December 15 (2000) to December 16 (1998) with a high count of 21 on December 16, 1998. The fourth peaked from December 21 (2001) to December 26 (2002) with a high count of six on December 22, 1999. The fifth peaked on January 1 (1999, 2000) with a high count of eight on January 1, 1999. The early spring passage ran from January 5 (2003) to February 28 (2001), there were again five "clustered" influxes. The first peaked from January 7 (2002, 2003) to January 8 (1999) with a high count of 15 on January 8, 1999. The second is indicated by a peak count of four on January 16, 2002. The third peaked from January 26 (2003) to January 28 (2000, 2001) with a high count of four on January 28, 2000. The fourth peaked from February 5 (1999) to February 11 (2001) with a high count of six on February 5, 1999. The fifth peaked from February 19 (2003) to February 25 (2000, 2001) with high counts of three on February 25, 2001 and February 19, 2003. Finally the main spring passage ran from February 27 (2002) to May 4 (1999), there were six "clustered" influxes. The first peaked from March 2 (2003) to March 7 (2000) with high counts of three on March 4, 2002

and March 2, 2003. The second peaked from March 12 (2003) to March 13 (1999) also with a high count of three on March 12, 2003. The third is indicated by a peak count of four on March 24, 2002. The fourth peaked from April 2 (2003) to April 6 (2000) with a high count of four on April 6, 2000. The fifth peaked from April 14 (2002) to April 19 (2001) with two on both dates. The last influx is indicated by a peak count of four on April 26, 1999. When numbers are so low and there is no clear overall pattern it is hard to know exactly which influx belongs to which passage. For example the first winter influx may well belong to the main fall passage. I cannot be certain of its correct placement.

Mottled Duck (*Anas fulvigula)*

This is a resident, passage migrant and if conditions are right there may be a post-breeding gathering. This species tends to nest in the hyacinth filled canals. Up to 13 pairs a year nested from 1999 to 2002 with just four pairs in 2003. The decline is probably caused by the District's program of clearing the vegetation from the canals. Most new born young first noted from May 21 (2000) to July 3 (2002) with high counts of 24 on June 6, 2000 and 30 on June 22, 1999. Outside of this period there were six on April 28, 2002 with five on May 9, 2002 and six on August 16, 2000. The latter may be a second nesting attempt. The summer passage appears to run from April 14 (2002) to August 2 (2001) with a high count of 98 on June 19, 2000. This was followed by a post-breeding gathering from July 21 (2002) to October 25 (2000) with a high count of 197 on August 20, 1999. To look at this influx in more detail, there were nine on July 23 with 24 on July 27, 85 on August 3, 99 on August 6, 151 on August 10, 177 on August 13 and 197 on August 20, then 148 seen on August 25 with 109 on August 27, 69 on August 31 and 61 on September 3. There were 77 on September 6 with 62 on September 8, 51 on September 10, 38 on September 17, 16 on September 25 and four on September 30. This shows two type 1 influxes with the second overlapping the first to a large degree. The main fall passage ran from October 12 (1999) to December 8 (2002) with a high count of 87 on October 28, 2002. Next came the winter passage, this ran from December 5 (2001) to January 15 (2003) with a high count of 82 on December 16, 1998. The early spring passage ran from January 11 (2000) to March 7 (2000) with a high count of 23 on January 12, 1999. Finally there was the main spring passage, this only ran from February 24 (2002) to April 16 (2001, 2003) with a high count of 27 on April 2, 2001. In some winters what appear to be darker individuals have been seen, these may have come from Louisiana or Texas.

Seen in the summer from April 14 (2002) to August 2 (2001), there were six "clustered" influxes. The first peaked from April 26 (2000, 2001) to May 1 (1999) with a high count of 22 on April 28, 2002. The second peaked from May 6 (2001) to May 15 (2003) with a high count of 12 on May 15, 2003. The third peaked from June 8 (2003) to June 13 (2001) with a high count of 44

on June 10, 2002. The fourth peaked from June 18 (2003) to June 19 (1999, 2000) with a high count of 98 on June 19, 2000. The fifth peaked from July 3 (2002) to July 4 (2001, 2003) with a high count of 61 on July 4, 2001. The sixth influx peaked from July 14 (1999, 2002) to July 19 (2003) with a high count of 56 on July 19, 2003. This was followed by a post-breeding gathering, the size depending on there being suitable habitat. This event ran from July 21 (2002) to October 25 (2000), there were seven "clustered" influxes. The first is indicated by a peak count of 37 on July 28, 2002. The second peaked from July 31 (2002) to August 6 (2000) with a high count of 67 on July 31, 2002. The third peaked from August 10 (2003) to August 16 (2000) with a high count of 39 on August 16, 2000. The fourth peaked from August 20 (1999) to August 26 (2001) with a high count of 197 on August 20, 1999. This was the highest count during the first five years of the survey. The fifth peaked from September 2 (2002) to September 6 (1999) with a high count of 77 on September 6, 1999. The sixth peaked from September 19 (2000) to September 26 (2001) with a high count of 84 on September 22, 2002. The seventh peaked from October 7 (2001) to October 15 (2000) with 20 on both dates. The main fall passage ran from October 12 (1999) to December 8 (2002), there were three "clustered" influxes. The first peaked from October 21 (1998, 2001) to October 28 (2002) with a high count of 87 on October 28, 2002. The second peaked from November 13 (1998) to November 19 (2000) with a high count of 75 on November 14, 1999. The third peaked from November 29 (2001) to November 30 (2002) with a high count of 18 on November 29, 2001. The winter passage came next and this ran from December 5 (2001) to January 15 (2003), there were three "clustered" influxes. Please note how the higher numbers ordinarily relate to fewer influxes i.e. regular not basic influxes. The first influx peaked from December 11 (2002) to December 19 (2001) with a high count of 82 on December 16, 1998. The second peaked from December 22 (1999) to December 26 (2002) with a high count of 22 on December 22, 1999. The third peaked from January 1 (1999) to January 9 (2003) with a high count of 30 on January 1, 1999. The early spring passage ran from January 11 (2000) to March 7 (2000), there were five "clustered" influxes. The first peaked from January 11 (2000) to January 12 (1999) with a high count of 23 on January 12, 1999. The second peaked from January 20 (2002) to January 22 (2003) with a high count of 11 on January 22, 2003. The third peaked from January 28 (2000) to February 4 (2001) with four on both dates. The fourth peaked from February 9 (2003) to February 10 (2002) with a high count of 11 on February 9, 2003. The fifth peaked on February 25 (2000, 2001) with a high count of 15 on February 25, 2000. Finally there was the main spring passage, this only ran from February 24 (2002) to April 16 (2001, 2003), there were six "clustered" influxes. The first peaked from March 2 (2003) to March 4 (2002) with a high count of 16 on March 2, 2003. The second peaked from March 10 (2000) to March 11 (2001) with a high count of ten on March 11, 2001. The third peaked on March 16 (1999, 2003) with a high count of 17 on March 16, 2003. The fourth peaked from March 24 (2002) to March 27 (2000) with seven on both dates. The fifth is

indicated by a peak count of 27 on April 2, 2001. The sixth peaked from April 8 (2001) to April 11 (2003) with a high count of ten on April 11, 2003.

Blue-winged Teal (*Anas discors*)

When suitable habitat exists this is a common passage migrant and winter visitor, with records for every month of the year. The spring passage ends on June 12 (1999). The longest day is June 21 and fall passage appears to follow that date. There was one on June 24, 2001 and three on June 25 1999. The initial early fall passage started with these records and again from July 4 (2001, 2003) to August 10 (1999). This event involved adults, especially adult males in full breeding plumage. With the exception of the party of three detailed above and two seen on July 27, 2003 only singles noted. Then the normal early fall passage started, this ran from August 7 (2002) to October 7 (2001) with a high count of 2,220 on September 17, 1999. The main fall passage followed from October 2 (1999) to December 5 (2001) with a high count of 3,500 on October 28, 2001 and 7,300 on November 5, 1999. The winter passage ran from November 30 (1998) to January 7 (1999, 2000) with a high count of 63 on December 19, 1999. The early spring passage followed from January 7 (2001) to February 29 (2000) with a high count of 32 on February 11, 2001. In all the above I left out 1998/1999 when the fields of Unit Two were flooded. In that period there were three mega influxes that I detail below. There were two on August 15, 1998 with 40 on September 2, 135 on September 17, 1,250 on September 30, 5,000 on October 16, 7,500 on October 29 and 10,500 on November 2, then 8,100 seen on November 6 with 4,250 on November 11, 890 on November 18 and 110 on November 25. The one influx covered two complete passages! There were 1,800 on November 30 with 6,500 on December 8 and 6,580 on December 16, then 4,760 seen on December 18 with 1,550 on December 20, 510 on December 28, 335 on December 31 and 205 on January 7, 1999. This mega influx covered the whole winter passage. There were 335 on January 8 with 450 on January 11, 2,490 on January 12, 2,980 on January 15, 3,500 on January 19, 4,190 on January 27 and 4,300 on January 29, then 2,450 seen February 5 with 950 on February 9, 450 on February 10 and 50 on February 17, 1999. It is likely that this influx would have continued to the end of February and the highest count would have been higher and later if the fields had not been drained. Again one mega influx covered the whole passage. It is these mega influxes that give me the clearest picture as to what period each passage covers. This series shows the fall passage ending on November 25, the winter starting on November 30 then ending on January 7 with the early spring passage starting on January 8. These dates are in line with the

data described for the species already dealt with. Now back to the year, the main spring passage ran from March 3 (2000, 2001) to June 12 (1999) with a high count of 213 on March 26, 2003.

Initially seen in the early fall from June 24 (2001) to August 10 (1999), there were three "clustered" influxes. The first peaked from June 24 (2001) to June 25 (1999) with a high count of three on June 25, 1999. The second peaked from July 4 (2001, 2003) to July 8 (2000) with singles on all dates. The third is indicated by a peak count of two on July 27, 2003. This event involved adults, especially adult males in breeding plumage. The regular early fall passage followed from August 7 (2002) to October 7 (2001), there were four "clustered" influxes. The first peaked from August 7 (2002) to August 9 (2000) with a high count of seven on August 9, 2000. The second peaked from August 27 (1999) to September 2 (2001) with a high count of 908 on August 27, 1999. The third peaked from September 13 (2000) to September 17 (1999) with a high count of 2,220 on September 17, 1999. The fourth peaked from September 24 (2000) to October 3 (2001) with a high count of 192 on September 26, 2002. The main fall passage ran from October 2 (1999) to December 5 (2001), again there were four "clustered" influxes. The first peaked from October 2 (1999) October 5 (2000) with a high count of 175 on October 2, 1999. The second peaked from October 15 (2000) to October 21 (2001) with a high count of 160 on October 15, 2000. The third peaked from October 28 (2001) to November 5 (1999, 2002), this is THE INFLUX. The highest counts were 3,500 on October 28, 2001 and 7,300 on November 5, 1999. The fourth influx peaked from November 17 (2002) to November 19 (2000) with a high count of 950 on November 19, 2000. I have left out 1998 from the above data. In 1998 a single mega influx covered the period August 15 to December 3 i.e. it covered both the early fall and the main fall passages. The highest count was that of 10,500 on November 2, 1998. This is still the highest count for Zellwood. This high count fits into the third influx. Next came the winter passage, this ran from November 30 (1998) to January 7 (1999, 2000), there were two "clustered" influxes. The first peaked from December 14 (2002) to December 20 (2000) with a high count of 63 on December 19, 1999. The second peaked from January 1 (2001) to January 4 (2000) with a high count of five on January 4, 2000. Again I have excluded the winter of 1998/1999. The passage that winter ran from November 30 to January 7. A single mega influx took the place of two regular influxes or perhaps four to five basic influxes. The peak count was that of 6,580 on December 16, 1998. The early spring passage ran from January 7 (2001) to February 29 (2000), there were three "clustered" influxes. The first peaked from January 11 (2000) to January 17 (2001) with a high count of 18 on January 17, 2001. The second peaked from February 5 (2003) to February 11 (2001) with a high count of 32 on February 11, 2001. The third peaked from February 24 (2002) to February 25 (2000, 2001) with a high count of 23 on February 25, 2001. Now to 1999, the event in that year ran from January 8 to February 17 with a high count of 4,300 on January 29, 1999. That dates, unlike the other two mega influxes, does not fit into an identified influx. It is likely that if the fields were

not being drained the peak count would have been later and higher and it would have fitted in all probability into the second influx. The main spring passage ran from March 3 (2000, 2001) to June 12 (1999), there were four regular influxes followed by three basic influxes. The first peaked from March 4 (2002) to March 12 (2003) with a high count of 55 on March 12, 2003. The second peaked from March 26 (2003) to March 27 (2002) with high counts of 205 on March 27, 2002 and 213 on March 26, 2003. The third peaked from April 4 (2001) to April 11 (2000) with a high count of 112 on April 6, 2003. The fourth peaked from April 17 (2002) to April 20 (1999) with a high count of 45 on April 20, 1999. The fifth (basic influxes now) peaked from May 4 (1999, 2001) to May 9 (2002) with a high count of three on both dates. The sixth peaked from May 18 (1999) to May 23 (2000) with a high count of three on May 23, 2000. The seventh peaked from June 5 (2002) to June 12 (1999) with two on both dates. In the first segment I took an overview of the seasons but I could not state when an influx started or ended as the following influx starts before the previous one is finished. In this segment I go inside the influxes and concentrate on the patterns shown by the peak counts. Although I still quote first and last dates they are in reality the date(s) on which the numbers stopped falling or started to climb.

Cinnamon Teal (*Anas cyanoptera*)

A vagrant, seen in three out of the five survey years, only males identified. In the fall singles seen on November 30, 1998, from October 29, 1999 to November 12, 1999, on November 1, 2001 and November 11, 2001 with perhaps a separate individual on November 27, 2001. Just one winter record, there was one on December 11, 1998 and December 18, 1998. All the spring sightings came from 1999 whilst Unit Two was flooded. There was one on January 15 with three on January 15, singles then seen to February 3. There were three again on February 5 with two on February 9 and one on February 10. Just to complicate matters there was a hybrid Cinnamon Teal x Blue-winged Teal on February 9, 1999.

Seen in the fall from October 29 (1999) to November 30 (1998), there were two “clustered” influxes. The first peaked from October 29 (1999) to November 1 (2001) with one on both dates. The second is indicated by a peak count of one on November 27, 2001. Just one winter record, there was one on December 11, 1998 and December 18, 1998. The only spring records come from 1999, there appear to be two influxes. The first ran from January 15 to February 3 with a peak count of three on January 19, 1999. There were also three on February 5 with two on February 9 and one on February 10. The counts of three are still the highest counts for Zellwood. There was a hybrid Cinnamon Teal x Blue-winged Teal on February 9, 1999. This will probably always be a rare species.

Northern Shoveler (*Anas clypeata)*

This is a passage migrant and winter visitor when there is suitable habitat. This occurred in 1998/1999 with the flooded fields of Unit Two and in 1999/2000 with the 300 acre lake at the Sand Farm. Unlike the Blue-winged Teal there are very few early fall records. There was one from July 21, 2002 to July 25, 2002. In 2000 there was one on August 16 with three on August 20 and one again on September 3. The main fall passage ran from September 8 (1999) to December 2 (2001) with high counts of 220 on November 19, 1999 and 477 on November 13, 1998. In 2000 there was no following winter passage so the last fall influx continued to December 15, without another influx to cover up the declining numbers. To detail this influx, there were 22 on November 5 with 35 on November 8, 78 on November 12, 122 on November 15, 147 on November 19 and 198 on November 26, then 144 seen on November 28 with 71 on November 30, 59 on December 3, 21 on December 6 and 11 on December 15. Next came the winter passage, this ran from November 30 (1998) to January 11 (1999, 2000) with high counts of 378 on December 22, 1999 and 645 on December 16, 1998. The only record outside of the first two winters was that of one on December 21, 2001. The early spring passage ran from January 12 (1999) to February 29 (2000) with high counts of 112 on January 18, 2000 and 770 on January 27, 1999. For the later years there was one on January 24, 2002 and January 27, 2002 with two on February 23, 2003. In contrast the main spring passage involved every year, the passage ran from March 3 (2000) to May 30 (2000) with a high count of 65 on March 14, 2000. There were two May influxes that I detail below. There were 14 on April 20, 1999 with 18 on April 26, then 14 seen on May 1 with ten on May 7, four on May 10 and one on May 18, 1999. The second influx was in 2000, there were eight on April 30 with six on May 2, three on May 4 and one that stayed through to May 30.

Initially in the fall there was one from July 21, 2002 to July 25, 2002, then in 2000 there was one on August 16 with three on August 20 and one again on September 3. Just one fall passage, this ran from September 8 (1999) to December 2 (2001) with an extension to December 15 in 2000, there were six “clustered” influxes. The first peaked from September 13 (2001) to September 17 (1999) with a high count of ten on September 17, 1999. The second peaked from September 24 (2000) to September 26 (2002) with a high count of six on September 24, 2000. The third is indicated by a peak count of 12 on October 6, 1999. The fourth peaked from October 28 (2001) to October 29 (2000) with a high count of 30 on October 29, 2000. Then the situation changed. The fifth influx peaked from November 6 (1999) to November 13 (1998) with high counts of 134 on November 6, 1999 and 477 on November 13, 1998. The sixth influx peaked from November 19 (1999) to November 26 (2000) with high counts of 198 on November 26, 2000 and 220 on November 19, 1999. Just one mega influx in

1998 from September 11 to November 25. I have looked to see whether the November influxes were a separate event but the start dates indicate that there was just one fall passage. The winter passage followed from November 30 (1998) to January 11 (1999, 2000), there were two "clustered" influxes. The first peaked from December 16 (1998) to December 22 (1999) with high counts of 378 on December 22, 1999 and 645 on December 16, 1998. The second peaked from December 31 (1998) to January 1 (2000) with high counts of 324 on January 1, 2000 and 630 on December 31, 1998. Outside of the first two winters the only sighting was that of one on December 21, 2001, the first influx. The early spring passage ran from January 12 (1999) to February 29 (2000), there were four "clustered" influxes. The first is indicated by a peak count of 112 on January 18, 2000. The second peaked from January 24 (2002) to January 27 (1999) with a high count of 770 on January 27, 1999. This is still the highest count for Zellwood. The third is indicated by a peak count of 30 on February 6, 2000. The fourth peaked from February 21 (2000) to February 23 (2003) with a high count of 30 on February 21, 2000. Finally there was the main spring passage, this ran from March 3 (2000) to May 30 (2000), there were four "clustered" influxes. The first peaked from March 11 (2001) to March 14 (2000) with a high count of 65 on March 14, 2000. The second peaked on March 19 (2002, 2003) with a high count of four on March 19, 2002. The third is indicated by a peak count of 24 on April 10, 2002. The fourth peaked from April 26 (1999) to April 30 (2000) with a high count of 18 on April 26, 1999. There were two influxes that continued into May, these are detailed in segment one.

Northern Pintail (*Anas acuta*)

This is a passage migrant with a significant winter passage if there is suitable habitat. The earliest in the fall were two on September 26, 2002. This was followed by the fall passage from October 9 (2000) to December 7 (1999) with a high count of 108 on November 26, 1999. For this species the fall passage tends to run through the first week of December. The winter passage ran from November 30 (1998) to January 11 (2000) with high counts of 194 on December 19, 1999 and 420 on December 16, 1998. Next came the early spring passage which was in this case the only spring passage. It ran from January 8 (1999) to February 17 (1999) with a high count of 260 on January 12, 1999. Something that does surprise me is the way the numbers dip at the end of each passage. In 1998/1999 there were 16 on November 30 with 180 on December 8, 316 on December 11 and 420 on December 16, then 334 seen on December 18 with 263 on December 28, 170 on December 31, 106 on January 1 and 64 on January 7, 1999. The early spring passage then had 145 on January 8, 1999 with 180 on January 11 and 260 on January 12, then 184 seen on January 15 with 120 on January 19, 60 on January 27, 20 on January 29 and 12 on February 3, 1999. Again two typical type 1 influxes. Finally there was the

late spring passage in this case there were only three records for the five years. There were two on March 5, 2003 and March 26, 2003 with five on April 22, 2001.

In the fall the first were two on September 26, 2002. The fall passage followed from October 9 (2000) to December 7 (1999), there were four "clustered" influxes. The first is indicated by a peak count of 29 on October 29, 1998. The second peaked from November 7 (2001) to November 9 (1999) with a high count of 62 on November 9, 1999. The third is indicated by a peak count of 30 on November 9, 2000. The fourth peaked from November 25 (2001) to November 26 (1999) with a high count of 108 on November 26, 1999. The winter passage ran from November 30 (1998) to January 11 (2000), there were two "clustered" influxes. The first peaked from December 9 (2001) to December 12 (2000) with a high count of 27 on December 12, 2000. The second peaked from December 16 (1998) to December 19 (1999) with high counts of 194 on December 19, 1999 and 420 on December 16, 1998. The latter is still the highest count for Zellwood. In 1998/1999 a single influx covered the whole passage from November 30 to January 7. Next came the early spring passage from January 8 (1999) to February 17 (1999), there were two "clustered" influxes. This in reality was the spring passage. The first peaked from January 10 (2002) to January 12 (1999) with a high count of 260 on January 12, 1999. The second peaked from January 21 (2000) to January 27 (2002) with a high count of 67 on January 21, 2000. There were also three on February 12, 2003. This is one of the earliest species of wildfowl to leave in the spring. The only later records were of two on March 5, 2003 and March 26, 2003 with five on April 22, 2001. I suggest that you check the length of the text of this species against some of the earlier species. Some of them had a host of basic influxes whereas this species has regular or mega influxes.

Green-winged Teal (*Anas crecca*)

This is a passage migrant and winter visitor in good numbers when suitable habitat available. For this species there is a clearly separate early fall passage from August 20 (1999) to November 4 (2001) with a high count of 20 on September 16, 2001. The passage was so minimal that only two influxes could be identified. The main fall passage ran from October 21 (1998) to December 4 (1999) with high counts of 1,300 on November 18, 1998 and 4,500 on November 9, 1999. The winter passage was the main event of the year, it ran from November 30 (1998) to January 11 (1999, 2000) with high counts of 2,870 on December 19, 1999, 7,700 on December 8, 1998 and 12,565 on December 18, 1998. To detail the 1998/1999 records, there were 2,100 on November 30 with 3,050 on December 3 and 7,700 on December 8, then 7,350 seen on December 11 with 2,400 on December 16. Two days later on December 18, 1998 there were 12,565 with 8,550 on December 20, 5,695 on December 28, 4,600 on January 7, 2,950 on January 8 and 2,250 on January 11. In this case there was a type 1 influx followed by a type 2

influx. The early spring passage was also a major event, it ran from January 12 (1999) to February 29 (2000) with high counts of 1,010 on February 2, 2000 and 7,120 on January 27, 1999. The late spring passage, with the exception of 2000, was a very minor event. The passage ran from February 27 (2002) to May 18 (1999) with high counts of 41 on April 20, 1999 and 676 on March 3, 2000. The 2000 influx is worth recording in detail. There were 550 on February 29, 2000. This influx started with 676 on March 3, 480 on March 7, 430 on March 10, 353 on March 14, 196 on March 21, 104 on March 27, 41 on March 30, 18 on April 6, eight on April 15, four on April 26, three on May 2 with one on May 7 and May 13. This was a type 2 influx.

The fall passage was, for this species, two events. The first was the early fall passage and this ran from August 20 (1999) to November 4 (2001), number of influxes uncertain. This was a very light passage that is hard to define. Initially there were four isolated peak counts of one on August 20, 1999, two on August 30, 2000, four on September 8, 2002 and 20 on September 16, 2000. Then an influx peaked from September 23 (1999) to September 26 (2002) with a high count of 11 on September 23, 1999. Next came another isolated peak count of eight on October 5, 2000. Then an influx peaked from October 14 (1999, 2001) to October 20 (2002) with a high count of ten on October 14, 1999. Finally there was another isolated peak count of 12 on November 1, 2001. The main fall passage followed from October 21 (1998) to December 4 (1999), there were three “clustered” influxes. The first is indicated by a peak count of 4,500 on November 9, 1999. The second peaked from November 17 (2002) to November 18 (1998, 2001) with high counts of 380 on November 18, 2001 and 1,300 on November 18, 1998. The third is indicated by a peak count of 350 on November 26, 2000. The winter passage ran from November 30 (1998) to January 11 (1999, 2000), there were four “clustered” influxes. The first peaked from December 3 (2000) to December 8 (1998) with high counts of 403 on December 3, 2000 and 7,700 on December 8, 1998. The second is indicated by a peak count of 12 on December 14, 2002. The third peaked from December 18 (1998) to December 19 (1999) with high counts of 2,870 on December 19, 1999 and 12,565 on December 18, 1998. The latter is still the highest count for Zellwood. Finally the fourth influx peaked from December 30 (2001) to January 1 (2001) with a high count of five on January 1, 2001. The two minor counts relate to basic influxes which were otherwise hidden by the two regular influxes. The early spring passage was next and significant numbers continued to be seen in the first two years. This passage ran from January 12 (1999) to February 29 (2000), again there were four “clustered” influxes. The first is indicated by a peak count of 790 on January 21, 2000. The second peaked from January 27 (1999) to February 2 (2000) with high counts of 1,010 on February 2, 2000 and 7,120 on January 27, 1999. The third peaked from February 6 (2002) to February 9 (2003) with a high count of five on February 9, 2003, another basic influx. The fourth is indicated by a peak count of 730 on February 23, 2000. There was a late spring passage from February 27 (2002) to May 18 (1999) but with the exception of 2000 this was a minor event. The 2000 influx is detailed in segment one. There appear to be five “clustered” influxes. The first peaked from

February 27 (2002) to March 3 (2000) with a high count of 676 on March 3, 2000. The second peaked from March 12 (2003) to March 13 (1999) with a high count of eight on March 13, 1999. Then there were three isolated peak counts that may indicate the location of influxes. There were two on March 25, 2001 with 41 on April 20, 1999 and seven on May 4, 1999. Perhaps the late spring records for 1999 should be detailed. There were 41 on April 20 with five on April 26. There were six on May 1 with seven on May 4, then six seen on May 7 with five on May 10, two on May 14 and one on May 18.

Canvasback (*Aythya valisineria*)

This is potentially a regular migrant and winter visitor. It is possible that this species is present every year out in the middle of Lake Apopka but even this distinctive species would be hard to see at that range. There are no records for the years 2000 to 2003. Nearly all the sightings came from the flooded fields of Unit Two in 1998/1999. Seen in the fall from October 29 (1998) to November 18 (1998), only singles seen in 1998. There were two on Lake Apopka on November 9, 1999. All the following records came from the flooded fields in the winter and spring of 1998/1999. The winter passage followed from November 30 to January 11 with a high count of five on December 7. The early spring passage ran from January 12 to February 10 also with a high count of five on January 29. These high counts of five are still the highest counts for the Zellwood

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Redhead (*Aythya americana)*

This is an irregular passage migrant and winter visitor. The fall passage ran from October 23 (1999) to November 23 (1998) with high counts of two on November 3, 1999 and November 20, 1998. The winter passage ran from November 30 (1998) to January 10 (2002) with a high count of three on January 1, 1999. The early spring passage ran from January 15 (1999) to February 5 (1999) with a high count of eight on January 19, 1999. The late spring passage ran from March 24 (2002) to April 3 (2002) with a high count of two on March 27, 2002.

The number of sightings is so limited that I am just going to list the various influxes. In the fall there were two influxes. The earliest ran from October 23, 1999 to November 22, 1999 with high counts of two on November 3, 1999 and November 6, 1999. The second ran from November 18, 1998 to November 23, 1998 with a high count of two on November 20, 1998. There were four influxes for the winter. The first influx ran from November 30, 1998 to December 18, 1998 with peak counts of two on November 30, 1998 and December 8, 1998. The second is represented by a count of two on December 20, 1998. The third influx ran from

December 30, 2001 to January 10, 2002 also with a peak count of two on January 7, 2002. The final influx ran from December 31, 1998 to January 7, 1999 with a peak count of three on January 1, 1999. The early spring passage comprised two influxes. The first ran from January 15, 1999 to January 22, 1999 with a high count of eight on January 19, 1999. This was the highest count during the first five years of the survey. The second ran from January 29, 1999 to February 5, 1999 with a high count of five on February 5, 1999. For the late spring passage there was one influx. This ran from March 24, 2002 to April 3, 2002 with a high count of two on March 27, 2002.There is too little information to identify recurring influxes.

Ring-necked Duck (*Aythya collaris*)

This is potentially a common late fall and winter passage migrant with a lighter spring passage, it all depends on there being a suitable habitat for a diving duck. For the early fall the only record was that of one on September 24, 2000. The main fall passage ran from October 12 (1999) to November 30 (2000) with a high count of 840 on November 20, 1998. The winter passage followed from November 25 (1998) to January 7 (1999, 2000) with high counts of 380 on December 28, 1998 and 11,900 on December 3, 1998. To look at the major 1998 influx in more detail, the fall finished with 840 on November 20, 1998. There were 4,570 on November 25 with 7,845 on November 30 and 11,900 on December 3, then 6,750 seen on December 8 with 2,250 on December 11, 1,850 on December 16 and just 250 on December 18, 1998, another type 1 influx. This case is interesting in that a small late fall influx was overtaken and swallowed by a major winter influx. The early spring passage ran from January 8 (1999) to February 23 (2003) with an extension to March 14 in 2000. The highest count was that of 103 on January 15, 1999. Exceptionally the main spring passage was nearly as strong as the early spring passage, it ran from March 4 (2002) to April 28 (2002) with a high count of 16 on March 10, 2002.

The only record for the early fall was that of one on September 24, 2000. The main fall passage ran from October 12 (1999) to November 30 (2000), there were six “clustered” influxes. The first is indicated by a peak count of five on October 12, 1999. The second peaked from October 23 (1999) to October 28 (2001) with a high count of 112 on October 23, 1999. The third peaked from November 3 (1999) to November 6 (1998) with a high count of 373 on November 6, 1998. The fourth peaked from November 9 (1999) to November 12 (2000) with a high count of 172 on November 9, 1999. The fifth peaked from November 19 (1999) to November 20 (1998) with a high count of 840 on November 20, 1998. The winter passage followed from November 25 (1998) to January 7 (1999, 2000), there were three “clustered” influxes. The first peaked from December 3 (1998, 2000) to December 5 (2001) with high counts of 169 on December 3, 2000 and 11,900 on December 3, 1998. That is of course still the highest

count for Zellwood. The second peaked from December 14 (2002) to December 19 (1999) with a high count of 171 on December 19, 1999. The third peaked from December 28 (1998) to January 1 (2001) with a high count of 380 on December 28, 1998. The early spring passage ran from January 8 (1999) to February 23 (2003) with an extension to March 14 in 2000, there were three "clustered" influxes. The first peaked from January 14 (2000) to January 16 (2002) with a high count of 103 on January 15, 1999. The second peaked from February 8 (2000) to February 9 (2003) with a high count of 17 on February 8, 2000. The third peaked from February 23 (2003) to February 29 (2000) with a high count of 45 on February 23, 2003. This event normally ends at the end of February so I am detailing that last influx in 2000. There were seven on February 16 with 12 on February 21, then 20 seen on February 23 and February 29 with 11 on March 7, four on March 10 and two on March 14. The main spring passage ended the year, it ran from March 4 (2002) to April 28 (2002), there were two "clustered" influxes. The first peaked from March 10 (2002) to March 12 (2003) with a high count of 16 on March 10, 2002. The second peaked on March 24 (2002, 2003) with a high count of three on March 24, 2003. In April there were three one day events that may indicate the location of influxes. There were five on April 8, 2001 with singles on April 16, 2003 and April 28, 2002.

Greater Scaup (*Aythya marila*)

This is an uncommon passage migrant and winter visitor. Seen in the fall from November 6 (1998) to December 2 (2001) with a high count of three on November 26, 1999. The winter passage followed from December 3 (1998) to January 3 (2002) with a high count of five on December 8, 1998. The early spring passage then ran from January 4 (2000) to February 5 (1999) with high counts of three on January 7, 1999, January 13, 2002 and January 27, 1999. In March there was one on March 3, 2000 with one on March 24, 2002 and two on March 27, 2002. The last was one on April 7, 2002. Unexpectedly there were no May records. The information detailed above probably gives a false impression on how common this species is. This species is in fact not located that often.

There is a light fall passage from November 6 (1998) to December 2 (2001), there were two "clustered" influxes. The first peaked from November 6 (1998) to November 11 (2001) with a high count of two on November 6, 1998. The second peaked from November 18 (1998) to November 26 (1999) with a high count of three on November 26, 1999. There are records for every year. The winter passage was only noted in three years, the passage ran from December 3 (1998) to January 3 (2002). The single "clustered"influx peaked from December 4 (1999) to December 8 (1998) with a high count of five on December 8, 1998. This was the highest count during the first five years of the survey. This species was seen in the spring in four of the five years. The early spring passage ran from January 4 (2000) to February 5 (1999), there were

three “clustered” influxes. The first peaked from January 4 (2000) to January 7 (1999) with a high count of three on January 7, 1999. The second peaked from January 10 (2001) to January 14 (2000) with a high count of three on January 13, 2002. The third influx is indicated by a peak count of three on January 27, 1999. In March there was one on March 3, 2000 with one on March 24, 2002 and two on March 27, 2002. The last was one on April 7, 2002.

Lesser Scaup (*Aythya affinis*)

This is a regular passage migrant and winter visitor, it can be found at Lake Apopka or in a flooded field. Seen in the fall from October 26 (1999) to December 11 (1999) with a high count of 24 on November 15, 2000. The winter passage followed from November 29 (2002) to January 7 (1999, 2001) with an extension to January 20 in 2002. Excluding 2002 the highest count was that of 103 on December 18, 1998. To detail the 2001/2002 influx, there were seven on December 2 with 13 on December 5, 19 on December 9, 28 on December 13, 53 on December 19, 61 on December 21, 101 on December 27, 119 on January 3 and 150 on January 10, then 85 seen on January 13 with 48 on January 20. The highest count date of January 10 fits in with the first influx of the early spring passage but as there is nothing to indicate that passage I treat the whole of this influx as being a winter event. The early spring passage ran from January 4 (2000) to February 27 (2002) with high counts of 133 on January 27, 2002 and 279 on January 12, 1999. Finally the main spring passage ran from March 4 (2002) to May 29 (1999) with a high count of 70 on March 4, 2002. In 2002 an adult male summered from May 15 to July 10 with a subsequent sighting on August 7, 2002. I have already detailed the winter influx that ended with 48 on January 20, 2002 but I now need to detail the next two influxes. There were 88 on January 24 with 133 on January 27, then 94 seen on February 6 with 82 on February 10, 70 on February 24 and 61 on February 27. There were 70 again on March 4 with 69 on March 10, 56 on March 14, 54 on March 17, 37 on March 19, 12 on March 22, nine on March 24 and one on March 31. The early spring passage normally ends in late February or in the first few days of March. In this case there were 70 on February 24 with 61 on February 27 but 70 were seen again on March 4. I have chosen to split the passage by accepting the count of 61 as a real drop in numbers but it is possible that the numbers did not really drop and the early spring passage continued (very exceptionally) to March 31, 2002.

The fall passage ran from October 26 (1999) to December 11 (1999), there were three “clustered” influxes. The first is indicated by a peak count of 17 on November 5, 2002. The second peaked from November 11 (1998) to November 15 (2000, 2001) with a high count of 24

on November 15, 2000. The third peaked from November 25 (1998) to November 26 (1999) with a high count of 11 on November 26, 1999. The winter passage followed from November 29 (2002) to January 7 (1999, 2001) with an extension to January 20 in 2002, this was described in segment one. There were three “clustered” influxes. The first peaked from November 29 (2002) to November 30 (2000) with a high count of 15 on November 30, 2000. The second peaked from December 18 (1998) to December 22 (1999) with a high count of 103 on December 18, 1998. The third peaked from January 4 (2001) to January 10 (2002) with a high count of 150 on January 10, 2002. The early spring passage ran from January 4 (2000) to February 27 (2002), there were four “clustered”influxes. The first peaked from January 10 (2001) to January 14 (2000) with a high count of 279 on January 12, 1999. This was the highest count during the first five years of the survey. The second peaked from January 24 (2001) to January 27 (2002) with a high count of 133 on January 27, 2002. The third peaked from February 8 (2000) to February 14 (2001) with a high count of eight on February 14, 2001. The fourth peaked on February 23 (2000, 2003) with a high count of seven on February 23, 2000. Note how the highest counts form a pattern, this may or may not be significant. Finally there “clustered” influxes. The first peaked from March 4 (2002) to March 7 (2000) with a high count of 70 on March 4, 2002. The second is indicated by a peak count of seven on April 3, 2002. The third peaked from April 26 (1999) to May 1 (2002) with a high count of three on April 26, 1999. The fourth relates to an influx of two on May 25, 1999 and May 29, 1999. In 2002 an adult male summered on Lake Apopka from May 15 to July 10 with a later sighting on August 7, 2002.

Bufflehead (*Bucephala albeola)*

This is an uncommon passage migrant and winter visitor, most sightings have been from the flooded fields. It may be a more frequent visitor than the records suggest as it is hard to identify this very small duck way out on Lake Apopka. Seen in the fall from November 7 (2001) to November 26 (1999) with high counts of three on November 7, 2001 and November 22, 1999. The winter passage was the main event, it ran from November 26 (2000) to January 11 (2000) with a high count of nine on December 30, 1999. The early spring passage followed from January 11 (1999) to March 3 (2000) with a high count of six on January 21, 2000.

Seen in the fall from November 7 (2001) to November 26 (1999), sightings very limited just three influxes over the five years. The first ran from November 9, 1999 to November 26, 1999 with a peak count of three on November 22, 1999. The second ran from November 15, 2000 to November 19, 2000 with a peak count of one on November 15, 2000. The third was a one day event with three on November 7, 2001. These high counts may indicate the location of influxes. The winter passage followed from November 26 (2000) to January 11 (2000), there were four “clustered”influxes. The first peaked from November 26 (2000) to November 30

(1998) with a high count of two on November 26, 2000. The next two influxes are indicated by isolated peak counts of seven on December 7, 1999 and eight on December 19, 1999. The fourth peaked from December 28 (1998) to December 30 (1999) with a high count of nine on December 30, 1999. This was the highest count during the first five years of the survey. The early spring passage ran from January 11 (1999) to March 3 (2000), there were two "clustered" influxes. The first peaked from January 15 (1999) to January 21 (2000) with high counts of five on January 15, 1999 and six on January 21, 2000. The second is indicated by a peak count of four on February 3, 1999.

Common Goldeneye (*Bucephala clangula)*

This is a vagrant, just one record. There was a female/immature on December 30, 2002, a winter record.

Hooded Merganser (*Lophodytes* cucullatus)

This is a regular passage migrant and winter visitor with the greatest numbers in late December and early January. Whist this species preferred the larger areas of shallow flooded water it also frequented the canals and at times the narrowest of ditches. For the late fall passage there was an adult male on October 13, 2002. The main passage ran from October 26 (1999) to November 29 (2002) with a high count of 12 on November 19, 1999. The winter passage followed from November 26 (1999, 2000) to January 17 (2001) with high counts of 70 on January 7, 1999 and 71 on November 30, 2000. The early spring passage ran from January 11 (1999) to March 14 (2000) with high counts of 41 on February 3, 1999 and 100 on January 12, 1999. The main winter and early spring influxes in 1998/1999 are worth detailing. There were 12 on December 11 with 15 on December 16, 18 on December 18, 32 on December 20, 36 on December 28, 40 on December 31 and 70 on January 7, then 57 seen on January 8. For the early spring passage there were 61 on January 11 with 100 on January 12, then 85 seen on January 15 with 33 on January 19, 23 on January 27 and 20 on January 29. In this case the drop in numbers over two counts does suggest that these were two overlapping type 1 influxes. There was no main spring passage for the first two years, in 1999 because the area was closed and in 2000 the early spring passage continued to March 14. For the years 2001 to 2003 there was a minor late spring passage, this ran from March 4, 2002 to March 27 (2001) with a high count of 11 on March 22, 2001.

There was an adult male on October 13, 2002, this was reminiscent of the early fall passage of the Blue-winged Teal. The main fall passage ran from October 26 (1999) to

November 29 (2002), there were three “clustered” influxes. The first peaked from November 5 (2002) to November 6 (1999) with a high count of two on November 6, 1999. The second peaked from November 13 (1998) to November 15 (2000) with a high count of ten on November 15, 2000. The third peaked from November 18 (2001) to November 24 (2002) with a high count of 12 on November 19, 1999. The winter passage followed from November 26 (1999, 2000) to January 17 (2001), there were four “clustered” influxes. The first peaked from November 30 (1998, 2000) to December 4 (1999) with a high count of 71 on November 30, 2000. The second peaked from December 16 (2002) to December 22 (1999) with a high count of 40 on December 22, 1999. The third peaked from December 27 (2001) to December 31 (2000) with a high count of 33 on December 31, 2000. So far in this passage the highest counts have been declining. The fourth peaked from January 4 (2000) to January 7 (1999, 2001, 2003) with a high count of 70 on January 7, 1999. The early spring passage ran from January 11 (1999) to March 14 (2000), there were four “clustered” influxes. The first is indicated by a peak count of 100 on January 12, 1999, this is still the highest count for Zellwood. The second peaked from January 21 (2000) to January 24 (2001, 2002) with a high count of 25 on January 24, 2001. The third peaked from February 2 (2003) to February 8 (2000) with a high count of 41 on February 3, 1999. The fourth peaked from February 15 (2003) to February 18 (2001) with a high count of 12 on February 18, 2003. There were no late spring passage records for the first two years. For the later years this passage ran from March 4 (2002) to March 27 (2001), there were two “clustered” influxes. The first peaked from March 5 (2003) to March 6 (2002) with a high count of six on March 6, 2002. The second peaked from March 19 (2002) to March 22 (2001) with a high count of 11 on March 22, 2001

Red-breasted Merganser (*Mergus serrator*)

This is a very rare passage migrant and winter visitor, to the lake and to any flooded fields. Seen in the fall from November 1 (2001) to November 20 (1998), just three records with a high count of four on November 1, 2001. Most sightings were in the winter from November 30 (1998) to January 7 (2001) with a high count of five on December 18, 1998, seen in three of the five winters. For the early spring there was a single influx in 1999, there being six present from January 7 to January 11 in that year. Late spring and summer records are a regular feature on the coasts so one on May 6, 2002 with two from May 31, 1999 to June 12, 1999 are not that unusual.

Seen in the fall from November 1 (2001) to November 20 (1998). Despite there being only three records there are indications of two “clustered” influxes. The first is indicated by a peak count of four on November 1, 2001. The second peaked from November 16 (1999) to November 20 (1998) with one on both dates. The winter passage ran from November 30 (1998)

to January 7 (2001), the records suggest three “clustered” influxes. The first two are indicated by isolated peak counts of one on November 30, 1998 and five on December 18, 1998. The third peaked from December 27 (2001) to December 31 (2000) with a high count of two on December 31, 2000. For the early spring passage there was a single influx in 1999, there being six present from January 7 to January 11 in that year. This was the highest count during the first five years of the survey. There are no records from February to April. In May there was a female on May 6, 2002 with a party of two from May 31, 1999 to June 12, 1999.

Ruddy Duck (*Oxyura jamaicensis)*

This is a passage migrant and winter visitor. There have been stragglers in every month. For the first three years I only counted this species in the flooded fields or when they were close to the shore of Lake Apopka. In 2002 and 2003 I started counting birds well out onto the lake. It transpires that Lake Apopka has probably the largest population of this species for the State of Florida. There are four early fall records. There were two from August 6, 1999 to August 13, 1999 with one on August 18, 2002, one from August 20, 1999 to August 31, 1999 and one from September 30, 1999 to October 14, 1999. The main fall passage ran from October 16 (1998) to December 3 (2000) with an extension to December 18 in 1998. The highest count was that of 240 on November 11, 1998. The winter passage followed from December 4 (1999) to January 11 (2003) with a high count of 1,450 on December 8, 2002. The highest count of that over-running fall influx was also on that date. To detail the 1998/1999 influxes, there were 114 on November 13, 1998 with 164 on November 18, 203 on November 20, 278 on November 25, 357 on November 30, 430 on December 3 and 517 on December 8, then 385 seen on December 11 with 315 on December 16 and 95 on December 18. There were 515 on December 20 with 347 on December 28, 150 on January 1 and 132 on January 7, 1999. Thus there was a type 1 influx followed by a type 2 influx, the winter passage still ended at an expected time. The early spring passage ran from January 7 (2000) to March 4 (2002) with a high count of 830 on January 30 (2003). Prior to 2002 there were only three March and April records, there being singles on March 21, 2000, April 6, 2000 and April 8, 2001. With more attention to the lake the situation changed, I do not know whether or not there were similar events in the earlier years. In 2002 and 2003 there was a main spring passage from March 5 (2003) to April 27 (2003) with a high count of 3,650 on March 12, 2003. There were later records. One summered from May 1, 1999 to August 3, 1999. An adult male was present from May 23, 2002 to May 30, 2002 and finally there was one on June 14, 2000.

There are four early fall records, There was two from August 6, 1999 to August 13, 1999, one on August 18, 2002, one from August 20, 1999 to August 31, 1999 and one from September 30, 1999 to October 14, 1999. These suggest at the very least an influx that peaked from August 18 (2002) to August 20 (1999) with one on both dates. The main fall passage ran from October 16 (1998) to December 3 (2000) with an extension to December 18 in 1998. In 1998 and 1999 with the flooded fields on Unit Two many species had influxes that over ran or even passages that merged because of the large numbers involved. There were four "clustered" influxes. The first peaked from October 29 (1999) to November 1 (2000) with a high count of 62 on October 29, 1999. The second peaked from November 7 (2001) to November 11 (1998) with a high count of 240 on November 11, 1998. The third peaked from November 19 (1999) to November 26 (2000) with high counts of 60 on November 19, 1999 and November 24, 2002. The fourth is indicated by a peak count of 106 on November 29, 2001. The winter passage ran from December 4 (1999) to January 11 (2003), there were three "clustered" influxes. The first peaked from December 4 (1999) to December 9 (2001) with a high count of 1,450 on December 8, 2002. The highest count of that over-running fall influx in 1998 was also on December 8, there were 517 on that date. Perhaps the incoming winter influx merged seamlessly with the outgoing fall influx to create the one event. The second influx is indicated by a peak count of 515 on December 20, 1998. The third peaked from December 30 (1999, 2002) to January 1 (2001) with a high count of 2,600 on December 30, 2002. The early spring passage ran from January 7 (2000) to March 4 (2002), there were four "clustered" influxes. The first peaked from January 7 (2000) to January 8 (1999) with a high count of 322 on January 8, 1999. The second peaked from January 14 (2001) to January 21 (2000) with a high count of 377 on January 15, 1999. The third peaked from January 30 (2003) to February 4 (2001) with a high count of 830 on January 30, 2003. The fourth peaked from February 11 (2000) to February 14 (2001) with a high count of 22 on February 11, 2000. With the exception of the three highest counts detailed here all the other high counts were in the range of three – 28. Prior to 2002 there were only three March and April records. There were singles on March 21, 2000, April 6, 2000 and April 8, 2001. Even these limited records suggest that an influx peaked from April 6 (2000) to April 8 (2001). With more attention being paid to Lake Apopka the situation changed. I do not know whether or not the following type of events occurred in the earlier years. In 2002 and 2003 there was a main spring passage from March 5 (2003) to April 27 (2003), there were two "clustered" influxes. The first peaked from March 12 (2003) to March 17 (2002) with a high count of 3,650 on March 12, 2003. This was the highest count during the first five years of the survey. The second influx peaked from April 2 (2003) to April 10 (2002) with a high count of 1,295 on April 2, 2003. Note how the earlier identified influx from April 6 (2000) to April 8 (2001) fits inside the latter influx. There were later records. One summered from May 1, 1999 to August 3, 1999. An adult male was present from May 23, 2002 to May 30, 2002 and finally there was one on June 14, 2000.

Osprey (*Pandion haliaetus*)

This is a resident, a passage migrant and a winter visitor. It did not nest in the survey area but did so close by. This species could also often be seen atop the utility poles feeding on their catch, if all the poles were occupied an incoming bird would fly at a perched bird forcing it to vacate its perch. Snags along the shore of the lake were also used. Bald Eagles were a constant threat with the exception of the summers when the eagles were for the most part absent. Passage consisted of a host of basic influxes. The winter passage ran from December 7 (1999) to January 14 (2000) with a high count of 23 on December 27, 2001. This was followed by the early spring passage, this ran from January 10 (2002) to March 7 (2000) with a high count of 25 on February 4, 2001. The main spring passage ran from February 26 (2003) to June 2 (2002) with a high count of 57 on April 24, 2003. The summer passage followed from May 21 (2003) to July 21 (2002, 2003) with a high count of 34 on July 15, 2001 and July 14, 2002. The early fall passage is the lightest event of the year, it ran from July 22 (2001) to September 23 (2001) with a high count of 33 on July 27, 2001. The main fall passage then ran from September 22 (2002) to December 9 (2001) with high counts of 21 on October 16, 1998 and December 5, 2001. As these were all basic influxes there were none worth detailing. In the following years the numbers rose significantly, hopefully switching from basic to regular influxes.

Seen in the winter from December 7 (1999) to January 14 (2000), there were four "clustered" influxes. The first peaked from December 11 (1998, 2002) to December 14 (1999) with a high count of 22 on December 11, 2002. The second peaked from December 18 (1998) to December 21 (2002) with a high count of 19 on December 21, 2002. The third peaked from December 27 (2001) to January 1 (2000) with a high count of 23 on December 27 2001. The fourth influx peaked from January 4 (2001) to January 7 (2000, 2003) with a high count of 14 on January 7, 2003. The early spring passage followed from January 10 (2002) to March 7 (2000), there were four "clustered" influxes. The first peaked from January 11 (1999) to January 19 (2003) with a high count of 19 on January 16, 2002 and January 19, 2003. The second peaked from January 27 (2002) to January 28 (2000) with a high count of 19 on January 28, 2000. The third peaked from February 4 (2001) to February 12 (2003) with a high count of 25 on February 4, 2001. The fourth peaked from February 23 (2000) to February 25 (2001) with a high count of 23 on February 25, 2001. Now we come to the main spring passage, this ran from February 26 (2003) to June 2 (2002), there appear to be eight "clustered" influxes. The first is indicated by a peak count of 17 on March 2, 2003. The second peaked from March 10 (2002) to March 18 (2000) with a high count of 29 on March 11, 2001. The third is indicated by a peak count of 13 on March 24, 2003. The fourth peaked from April 7 (2002) to April 9 (1999) with a high count of 23 on April 7, 2002. The fifth peaked from April 24 (2003) to April 26 (2000) with a high count of

57 on April 24, 2003. This was the highest count during the first five years of the survey. The sixth peaked from May 1 (1999) to May 4 (2000) with a high count of 44 on May 2, 2001. The last two influxes were indicated by isolated peak counts of 15 on May 14, 1999 and 33 on May 23, 2002. The summer passage ran from May 21 (2003) to July 21 (2002, 2003) with extensions in 1999 to August 3 and to August 6 in 2000. There were four "clustered" influxes. The first peaked from May 29 (2003) to June 5 (2002) with a high count of 24 on May 29, 2003. The second peaked from June 24 (2001) to June 29 (2003) with a high count of 31 on June 26, 2002. The third peaked from July 4 (2000) to July 9 (1999) with a high count of 20 on July 6, 2003. The fourth peaked from July 14 (2002) to July 16 (2000) with a high count of 34 on July 15, 2001 and July 14, 2002. The early fall passage is the lightest event of the year, it ran from July 22 (2001) to September 23 (2001), there were five "clustered" influxes. The first peaked from July 25 (2002, 2003) to July 27 (2001) with a high count of 33 on July 27, 2001. The second peaked from August 5 (2001) to August 11 (2002) with a high count of 30 on August 11, 2002. The third peaked from August 15 (1998) to August 16 (2000) with a high count of 12 on August 16, 2000. The fourth peaked from August 28 (2002) to August 31 (1999) with a high count of 16 on August 28, 2002. The fifth influx peaked from September 13 (2001) to September 17 (1998) with a high count of 18 on September 17, 1998. The main fall passage followed from September 22 (2002) to December 9 (2001), there were six "clustered" influxes. The first peaked from September 27 (2000) to September 30 (2001) with a high count of 13 on September 30, 2001. The second peaked from October 6 (2002) to October 10 (2001) with a high count of 16 on October 10, 2001. The third peaked from October 16 (1998) to October 23 (1999) with a high count of 21 on October 16, 1998. The fourth peaked from October 28 (2001) to November 5 (2002) with a high count of 15 on October 28, 2001. The fifth peaked from November 15, (2000, 2001) to November 21 (2002) with a high count of 15 on November 15, 2001. The last influx peaked from November 25 (1998) to December 5 (2001) with a high count of 21 on December 5, 2001.

Swallow-tailed Kite (*Elanoides forficatus)*

This is a passage migrant, a non-breeding summer visitor with a growing population that is stopping off passage to feed in the fall. This fall post-breeding gathering is becoming one of Zellwood's special events. Most of the flocks were to be found over the eastern fields, especially from the McDonald Canal to Lust Road. It is a special day when one is surrounded by kites swooping, gliding and chasing prey, their calls filling the air. Spring passage noted from March 29 (2003) to May 21 (2000) with a high count of 25 on April 14, 2002. This species migrates along the ridge to the east of the fields. This is perhaps the least visited of the Zellwood areas so it is likely that it was under-recorded. Excepting the count of 25 the highest

spring count was that of seven on May 12, 2002. The summer passage ran from May 23 (2002) to June 19 (1999, 2002) with a high count of 27 on June 16, 2003. All this is as nothing when compared to the growing post-breeding gathering, this ran from June 14 (2000) to September 7 (2003), however with the exception of 2003 this event ended on August 25 (1999). There is a very clear change in the pattern during the five years. From 1999 to 2002 there were seven basic influxes with a high count of 102 on July 20, 1999. In 2003 one influx occupied the space held by five basic influxes in the earlier years. To detail this 2003 influx, there were 18 on June 23 with 21 on June 26, 106 on July 2, 148 on July 6, 211 on July 9, 303 on July 19, 413 on July 21 and 556 on July 25, then 415 seen on July 27 with 243 on July 30, 202 on August 5, 41 on August 8 and 36 on August 10. The next influx started with 90 on August 13. Because this is such an important species I am listing some of the later high counts. There were 856 on July 17, 2005 and 1,560 on July 26, 2006.

Spring passage noted from March 29 (2003) to May 21 (2000), it is hard to be certain as to when this passage ended but the counts appear to coalesce around that date. It is likely that the later birds were non-breeders, perhaps they were the helpers at the nest. There were four "clustered" influxes. The first peaked from March 29 (2003) to April 6 (2000, 2001) with a high count of four on April 6, 2001. The second is indicated by a peak count of 25 on April 14, 2002. The third peaked from April 19 (2000) to April 26(2001) with a high count of three on April 23, 1999. The fourth peaked from May 10 (1999) to May 15 (2003) with a high count of seven on May 12, 2002. The summer passage spans the period May 23 (2002) to June 19 (1999, 2002), there were two "clustered" influxes. The first peaked from May 31 (1999) to June 3 (2000) with high counts of 22 on June 2, 2002 and 24 on June 1, 2003. The second is indicated by a peak count of 27 on June 16, 2003. Now to the main event of the year the post-breeding gathering, this ran from June 14 (2000) to September 7 (2003). With the exception of 2003 this event ended on August 25 (1999). There is a very clear change in the pattern during the five years. From 1999 to 2002 there were seven basic influxes whilst in 2003 a single mega influx covered the space held by five basic influxes in the earlier years. The basic influxes were as follows. The first peaked from June 24 (2001) to June 26 (2002) with a high count of 41 on June 26, 2002. The second peaked from July 4 (2000, 2001) to July 9 (1999) with a high count of 44 on July 9, 1999. The third peaked from July 14 (2002) to July 18 (2001) with a high count of 81 on July 14, 2002. The fourth peaked from July 20 (1999) to July 25 (2001) with a high count of 102 on July 20, 1999. The fifth influx peaked from August 4 (2002) to August 6 (2000) with a high count of 43 on August 4, 2002. The sixth peaked from August 13 (2003) to August 16 (2000) with a high count of 90 on August 13, 2003. The last influx peaked from August 25 (1999) to September 1 (2003) with a high count of four on September 1, 2003. The mega influx of 2003, as detailed in segment one ran from June 23 to August 10 with a high count of 556 on July 25. This high count fits perfectly into the fourth basic influx. The count of 556 was the highest count during the first five years of the survey.

White-tailed Kite (*Elanus leucurus*)

This is a vagrant. There was a juvenile at the eastern end of the McDonald Canal on June 30, 2000, an early fall record.

Snail Kite (*Rostrhamus sociabilis)*

This is another vagrant. A juvenile flew to the west along the northern border of Lake Apopka on August 20, 2000 with on August 14, 2002 a female or immature that flew to the north over the eastern border near the Lust Road gate. Note the closeness of the dates.

Bald Eagle (*Haliaeetus leucocephalus)*

This is a passage migrant, a winter visitor with very low numbers through the summer and the early fall. One pair nested at the Sand Farm raising one young each year with another pair just to the south of the southern border. This species breeds in the winter with the young fledging in April or early May. They often chase Ospreys and force them to give up their catch but they are equally capable of catching their own food. They will join Turkey Vultures in soaring over the fields and will feed on any carrion that is located. Seen in the fall from September 16 (2001) to December 2 (2002) with a high count of ten on November 21, 2002. The winter passage followed from November 25 (1998, 2001) to January 10 (2002) with a high count of 19 on December 16, 1998. The early spring passage is probably the strongest event, it ran from January 7 (1999, 2000, 2003) to March 11 (2001) with a high count of 18 on January 7, 1999. The main spring passage ran from March 10 (2000) to May 13 (2000) for the first three years with high counts of six on March 25, 2000 and April 29, 2001. In the last two years this passage ran from March 14 (2002) to June 23 (2002) with a high count of 20 on April 3, 2002. There were also high counts of ten on April 17, 2002 and March 16, 2003. The reason for the higher numbers and the extended passage appears to be that the District was mowing and roller-chopping through the summer in these later years. The summer is normally the time for low numbers as most migrate to the north, the ones staying behind are normally adults. In the first three years there were one to three from May 8 (2001) to October 5 (2000). In the last two years there were one to four from June 18 (2003) to November 9 (2002).

Seen in the fall from September 16 (2001) to December 2 (2002), there were six “clustered” influxes. The first peaked from September 16 (2001) to September 17 (1998) with a high count of eight on September 16, 2001. The second is indicated by a peak count of four on September 25, 1999. The third peaked from October 9 (2000) to October 14 (2001) with a high

count of eight on October 9, 2000. The fourth peaked from October 22 (2000) to October 23 (1999) with a high count of four on October 23, 1999. The fifth peaked from November 11 (2001) to November 13 (1998) with a high count of seven on November 13, 1998. The sixth is indicated by a peak count of ten on November 21, 2002. The winter passage followed from November 25 (1998, 2001) to January 10 (2002), there were five "clustered" influxes. The first peaked from November 25 (1998) to November 28 (2000) with a high count of 12 on November 25, 1998. The second peaked from December 7 (1999) to December 12 (2000) with five on both dates. The third peaked on December 16 (1998, 2001) with a high count of 19 on December 16, 1998. The fourth is indicated by a peak count of five on December 22, 1999. The fifth peaked from December 28 (1998) to January 3 (2002) with a high count of eight on December 28, 1998. The early spring passage was the strongest event of the year, the passage ran from January 7 (1999, 2000, 2003) to March 11 (2001), there were six "clustered" influxes. The first peaked from January 7 (1999, 2000) to January 13 (2002) with a high count of 18 on January 7, 1999. The second peaked from January 21 (2001) to January 26 (2003) with a high count of eight on January 26, 2003. The third is indicated by a peak count of nine on February 3, 1999. The fourth peaked from February 8 (2000) to February 12 (2003) with a high count of 11 on February 10, 2002. The fifth is indicated by a peak count of seven on February 18, 2001. The sixth peaked from February 29 (2000) to March 3 (2001) with a high count of eight on March 2, 2003. The main spring passage is an interesting event. In the first three years this passage ran from March 10 (2000) to May 13 (2000). In the last two years this changed and the passage ran from March 14 (2002) to June 23 (2002) i.e. a month longer. The reason for this appears to be that the District had entered into a regime of mowing and roller-chopping through the summer. There were five "clustered" influxes up to May 13. The first peaked from March 11 (1999) to March 16 (2003) with a high count of ten on March 16, 2003. The second peaked from March 22 (2001) to March 25 (2000) with a high count of six on March 25, 2000. The third peaked from March 30 (1999) to April 3 (2002) with a high count of 20 on April 3, 2002. This was the highest count during the first five years of the survey. I take it that a number of eagles that were migrating north stopped off to feed, especially in the fields that had just been roller-chopped. The fourth peaked from April 16 (2001) to April 21 (2003) with a high count of ten on April 17, 2002. The fifth peaked from April 29 (2001) to April 30 (2000) with a high count of six on April 29, 2001. In the last two years there were indications of an additional three "clustered" influxes. The first peaked from May 20 (2002) to May 21 (2003) with a high count of five on May 20, 2002. The other two influxes were indicated by isolated peak counts of five on June 4, 2003 and seven on June 19, 2002. There was no passage during the summer or the early fall but one to three adults remained. In 2002 the numbers were a little higher from September 4 to November 9 with one to four being seen. For the years 1999 to 2001 this "event" ran from May 8 (2001) to October 5 (2000). For 2002 it ran from June 23 to November 9 and for 2003 it ran from June 18 to October 2.

Northern Harrier (*Circus cyaneus)*

This is a common passage migrant and winter visitor. The numbers roosting in the survey area makes this one of the most important sites in the U.S.A. for this species. In 1999/2000 the numbers were possibly the highest ever recorded for one site in the U.S.A. at that time! This species roosts communally often in Unit One with a secondary roost south of Lust Road. At first light they leave the roost with the majority heading west over Duda, all have left the roost by sunrise. With so many around they are often heard calling. Adult males are very much a minority. In the very early fall there is a minor passage of adults (males more than females), this event ran from August 4 (2002) to August 20 (2000) with a high count of three on August 9, 2000. The more normal early fall passage ran from August 23 (2000) to October 7 (2001) with a high count of 29 on September 30, 1999. The main fall passage ran from September 30 (1998) to December 3 (1998), this passage was a mixture of regular and basic influxes. The majority of the influxes were type 2. The highest count was that of 173 on October 26, 1999. The winter passage followed from November 25 (2001) to January 8 (1999) with an extension to January 17 in 2001. The highest count was that of 181 on December 27, 1999. To detail some type 2 influxes. There were 123 on November 22, 1999 with 168 on November 26, then 129 seen on November 30 with 116 on December 4 and 89 on December 7. There were 121 on December 11 with 107 on December 14, 75 on December 19 and 74 on December 22. There were 181 on December 27 with 142 on December 30. The above details three type 2 influxes but the following is a type 1 influx. There were 166 on January 1, 2000 with 171 on January 4, 174 on January 7 and 223 on January 14, then 181 seen on January 18 with 84 on January 21. This last influx was in fact the first influx of the early spring passage. This event ran from January 1 (2000) to March 9 (2003) with a high count of 223 on January 14, 2000. The main spring passage ran from February 29 (2000) to May 18 (1999) with the exception of 2000 which will be dealt with separately. The highest count was that of 124 on March 30, 2000. In 2000 after such high numbers in the fall, winter and spring it is not surprising that some stayed late. There were still ten on May 4, 2000 with six to May 16, four to June 3, three on June 6 and two to June 19, then one was seen from June 26 to June 30 with two on July 4. There was one from July 8 to July 16. Finally there were two on July 19 with singles to August 2, 2000. Through the summer from May to August only females noted.

Seen in the very early fall from August 4 (2002) to August 20 (2000), there may be two “clustered” influxes. The first is indicated by a peak count of one on August 4, 2002. The second peaked from August 9 (2000) to August 14 (2001) with a high count of three on August 9, 2000. Only adults involves in the above. This was followed by the regular early fall passage, this ran from August 23 (2000) to October 7 (2001), there were two “clustered” influxes. The first

peaked from September 7 (2000) to September 13 (2001) with a high count of seven on September 7, 2000. The second peaked from September 26 (2002) to October 1 (2000) with a high count of 29 on September 30, 1999. The pattern now changed to a number of regular influxes surrounded by the more numerous basic influxes. The main fall passage ran from September 30 (1998) to December 3 (1998), there were six “clustered” influxes. The first is indicated by a peak count of nine on October 10, 2001. The second peaked from October 21 (1998) to October 26 (1999) with a high count of 173 on October 26, 1999. The third is indicated by a peak count of 45 on October 29, 2000. The fourth peaked from November 4 (2001) to November 6 (1998) with a high count of 24 on November 6, 1998. The fifth peaked from November 12 (2000) to November 14 (1999) with a high count of 157 on November 14, 1999. The sixth peaked from November 17 (2002) to November 20 (1998) with a high count of 26 on November 20, 1998. The winter passage ran from November 25 (2001) to January 8 (1999) with an extension to January 17 in 2001. Normally this passage would involve two to four influxes but in this case there were seven “clustered” influxes, it appears that type 2 influxes take up half the space. The first peaked from November 25 (2001) to November 29 (2002) with a high count of 168 on November 26, 1999. The second peaked from December 3 (2000) to December 5 (2001) with a high count of 43 on December 3, 2000. The third peaked from December 8 (1998) to December 11 (1999, 2002) with a high count of 121 on December 11, 1999. The fourth peaked from December 17 (2000) to December 21 (2002) with a high count of 40 on December 17, 2000. The fifth peaked on December 27 (1999, 2001) with a high count of 181 on December 27, 1999. The sixth peaked from January 2 (2003) to January 3 (2002) with a high count of 13 on January 3, 2002. The seventh is indicated by a peak count of ten on January 8, 1999. The early spring passage followed from January 1 (2000) to March 9 (2003), there were five “clustered” influxes. The first peaked from January 11 (1999) to January 14 (2000) with a high count of 223 on January 14, 2000. This was the highest count during the first five years of the survey. The second peaked from January 19 (2003) to January 20 (2002) with a high count of 21 on January 19, 2003. The third peaked from January 24 (2001) to January 28 (2000) with a high count of 162 on January 28, 2000. The fourth peaked from February 17 (1999, 2002) to February 18 (2001) with a high count of 15 on February 18, 2001. The fifth peaked on February 23 (2000, 2003) with a high count of 103 on February 23, 2000. The main spring passage ran from February 29 (2000) to May 18 (1999), again there were seven “clustered” influxes. The first two influxes are indicated by isolated peak counts of 118 on March 3, 2000 and seven on March 10, 2002. The third peaked from March 16 (1999) to March 19 (2003) with a high count of 121 on March 18, 2000. The fourth peaked from March 24 (2002) to March 30 (2000) with a high count of 124 on March 30, 2000. The fifth peaked from April 3 (2002) to April 6 (1999) with a high count of 14 on April 6, 1999. The last two influxes were indicated by isolated peak counts of five on April 26, 1999 and three on May 10, 1999. In 2000 this species continued to be seen through the summer. There were four from May 21 to June 3

with three on June 6, then one to two seen through to August 2, full details are in segment one. This is one of the most important Zellwood species.

Sharp-shinned Hawk (*Accipiter striatus)*

This is a passage migrant and winter visitor in small numbers, it has summered. All the accipiters are considered to be woodland species but that is not true for this species as it is not true for the Cooper's Hawk. Both of these species hunt over the open fields of Zellwood, often using the utility poles for perches. As with the Blue-winged Teal and the Northern Harrier there are a few very early fall records, they probably involve adults. There was one from July 12, 2000 to at least August 13, 2000, one from July 22, 2001 to July 29, 2001 and one on July 27, 2003. The regular early fall passage follows from August 5 (2003) to October 12 (2000) with the exception of 2002 when none seen until September 28. The highest count was that of six on August 6, 1999. The main fall passage ran from September 28 (2002) to November 30 (1999) with a high count of six on October 29, 1999. The winter passage followed from November 29 (2001, 2002) to January 11 (1999, 2000, 2003) with high counts of five on December 4, 1999 and January 1, 2000. The early spring passage ran from January 7 (2002) to March 14 (2000) with high counts of six on January 14, 2000 and January 25, 2000. The late spring passage came next and it ran from March 6 (1999) to May 15 (2002) with a high count of four on March 25, 1999. All of that is straight forward, just a long series of basic influxes caused by the low numbers. This species is thought to be an irregular summer visitor to Florida with no evidence of breeding. In 1999 after the fields drained in February there was a massive growth of tall vegetation which led to a very large population of Red-winged Blackbirds. Very exceptionally these hawks (one to two) stayed through the summer of 1999 and apparently bred leading to that count of six on August 6, 1999. In 2000 there was also one from May 27 to June 19.

In the very early fall there appears to be a minor passage that probably involves adults not juveniles. There was one from July 12, 2000 to at least August 13, 2000, one from July 22, 2001 to July 29, 2001 and one on July 27, 2003. There is a regular early fall passage from August 5 (2003) to October 12 (2000), there were four "clustered" influxes. The first peaked from August 5 (2003) to August 6 (1999) with a high count of six on August 6, 1999. The second peaked from August 15 (1998) to August 16 (2000) with a high count of two on August 16, 2000. The third peaked from August 29 (2001) to September 3 (1999) with a high count of three on September 3, 1999. The fourth peaked from September 10 (1999) to September 13 (2000, 2001) with high counts of two on September 10, 1999 and September 13, 2000. The main fall passage ran from September 28 (2002) to November 30 (1999), there were six "clustered" influxes. The first peaked from September 28 (2002) to September 30 (2001) with a high count of two on September 30, 2001. The second is indicated by a peak count of five on October 14,

1999. The third peaked from October 20 (2002) to October 22 (2000) with a high count of three on October 22, 2000. The fourth peaked from October 28 (2001) to October 29 (1999) with a high count of six on October 29, 1999. The fifth peaked from November 5 (2000) to November 9 (2002) with a high count of five on November 5, 2000. The sixth peaked from November 16 (1999) to November 18 (1998) with a high count of five on November 16, 1999. These were basic influxes. The winter passage followed from November 29 (2001, 2002) to January 11 (1999, 2000, 2003), there were four "clustered" influxes. The first peaked from November 28 (2000) to December 4 (1999) with a high count of five on December 4, 1999. The second is indicated by a peak count of four on December 12, 2000. The third peaked from December 20 (1998, 2000) to December 21 (2001, 2002) with high counts of four on December 20, 1998 and December 20, 2000. The fourth is indicated by a peak count of five on January 1, 2000. The early spring passage ran from January 7 (2002) to March 14 (2000), there were five "clustered" influxes. The early spring passage and the main fall passage were the strongest events of the year. The first influx peaked from January 12 (1999) to January 15 (2003) with a high count of six on January 14, 2000. The second peaked from January 21 (2001) to January 26 (2003) also with a high count of six on January 25, 2000. The counts of six (four in all) were the highest counts during the first five years of the survey. The third peaked from February 3 (2002) to February 7 (2001) with three on both dates. The fourth peaked from February 10 (1999) to February 16 (2000) with four on both dates. The fifth peaked from February 21 (2001) to February 26 (2003) with a high count of four on February 25, 2000. The late spring passage ran from March 6 (1999) to May 15 (2002), again there were five "clustered" influxes. The first peaked from March 6 (1999) to March 9 (2003) with two on both dates. The second peaked on March 18 (2000, 2001) with a high count of three on March 18, 2000. The third peaked from March 22 (2002) to March 25 (1999) with a high count of four on March 25, 1999. The fourth peaked from April 2 (2003) to April 6 (2001) with three on both dates. The fifth peaked from May 6 (2002) to May 10 (1999) with a high count of two on May 10, 1999. In 1999 two stayed through the summer and it is likely that they bred contributing to the high count of six on August 6, 1999. In 2000 there was one from May 27 to June 19. Just a host of basic influxes, it would be so nice to come to a species with regular influxes.

Cooper's Hawk (*Accipiter cooperii)*

This is a resident of the wooded borders, no pairs located in 1999 but there were four pairs in 2000 with one pair in 2001, three pairs in 2002 and two pairs in 2003. During the breeding season they keep very much to the woodland and are hard to locate unless a display flight is noted. It is likely that there were other pairs that I did not find. For the rest of the year the behavior changes and they can be seen hunting out over the fields especially at dawn and

dusk. On cloudy days and days with a light rainfall they can often be found out hunting through the day. There is a significant post-breeding gathering from June 27 (2001) to September 17 (1999), during this time family parties can be seen inter-acting with one another as they work a field. The highest counts were 12 on August 10, 2003, 12 on September 2, 2001 and 21 on August 7, 2002. To detail the main 2001 and 2002 influxes, in 2001 there were three on June 27 and July 4 with four on July 15, five on July 22, six on July 29, seven on August 5, eight on August 16, nine on August 22 and 12 on September 2, only three seen on September 5. This appears to be a type 3 influx. In 2002 the influx started a month later, there were four on July 25 with 14 on July 31 and 21 on August 7, then eight seen on August 11 with seven on August 14, six on August 21 and two on August 25, a typical type 1 influx. It is possible that there is a minor fall passage from September 3 (2000) to October 19 (1999) with a high count of eight on September 7, 2000. After the post-breeding gathering and the fall passage numbers gradually fell, in 1999 a total of one to two seen from October 19 to June 26, 2000. In 2000 a total of five to six seen from October 22 to January 24, 2001 with seven on December 20. Two to four were seen from January 28 to February 18 with one to two from February 21 to June 24 (there were four on March 27, 2001). In 2001 a total of five to six seen from September 9 to November 27 with two to four from November 29 to December 9 and one to three from December 13 to July 21, 2002. Then in 2002 there were one to three from September 11 to July 21, 2003 with four from January 30 to February 12 and again on March 16, 2003. It is unusual for there to be so much variation in the pattern.

There is a post-breeding gathering from June 27 (2001) to September 17 (1999), there were four “clustered” influxes. The first peaked from July 26 (2000) to July 30 (2003) with a high count of eight on July 30, 2003. The second is indicated by a peak count of 21 on August 7, 2002. This was the highest count during the first five years of the survey. The third peaked from August 10 (2003) to August 16 (2000) with high counts of ten on August 16, 2000 and 12 on August 10, 2003. The fourth peaked from August 31 (1999) to September 2 (2001, 2002) with a high count of 12 on September 2, 2001. In 1999 and 2000 there was a fall passage, this ran from September 3 (2000) to October 19 (1999), there were indications of three “clustered” influxes. The first two were indicated by isolated peak counts of eight on September 7, 2000 and three on September 23, 1999. The third peaked from October 6 (1999) to October 12 (2000) with a high count of six on October 12, 2000. There were no other signs of passage during the rest of the year. After these events in the fall numbers gradually fell. I do not understand it but in the two years with a fall passage the counts were lower from October 19 (1999) to June 26 (2000) whilst in the years with no fall passage the counts were lower from September 9 (2001) to July 21 (2002, 2003). The first month I understand but for numbers to stay low for an extra month from late June to late July? This is an unusual species.

Red-shouldered Hawk (*Buteo lineatus*)

This is a resident, a passage migrant and a winter visitor. It is a woodland species that is at home out in the fields, on many days the majority are to be found sitting atop the utility poles that run through the field system often a mile or more from the nearest piece of woodland. This species nests in the larger pieces of woodland, there were four pairs in 1999, six pairs in 2000 and nine pairs in 2001. Numbers then lower with six pairs in 2002 and four pairs in 2003, reason for this decline is not known. Fledged young have been seen from May 27 (2000). This led to the post-breeding gathering that ran from June 5 (2002) to September 11 (1998, 2002), there were two influxes. The second influx may have involved birds from further north. The highest count was that of 18 on August 10, 2003. The fall passage followed from August 31 (1999) to December 11 (1999, 2002) with high counts of 26 on September 30, 1999 and October 15, 2000. In 2007 although way outside the period covered by this analysis I found juveniles dominated from August to October with adults doing so in November and December. I do not have such observations for the other seasons. The winter passage ran from December 8 (1998) to January 16 (2002) with a high count of 28 on January 7, 2000. For many species I have a problem in deciding where to place the influx that tends to peak on November 25/26, it is not always clear as to whether this is a fall or winter influx. In this instance I have placed it in the fall passage. The early spring passage ran from January 9 (2003) to March 2 (2003) with an extension to March 18 in 2000. The high count was that of 24 on February 16, 2000. There was a minor late spring passage from February 29 (2000) to April 8 (2001) with a high count of ten on March 11, 2001, up to five a day then seen through to the post-breeding gathering.

There is a post-breeding gathering from June 5 (2002) to September 11 (1998, 2002), there are two “clustered” influxes. The first influx probably involves the locally raised young, it peaked from July 4 (2003) to July 9 (1999) with a high count of eight on both dates. The second peaked from August 10 (2003) to August 19(2001) with a high count of 18 on August 10, 2003. It is likely that this second influx involved individuals from further north. The fall passage followed and this ran from August 31 (1999) to December 11 (1999, 2002), there were four “clustered” basic influxes followed by two “clustered” regular influxes. The first peaked from September 16 (2001) to September 22 (2002) with a high count of 13 on September 22, 2002. The second peaked from September 30 (1999) to October 6 (2002) with a high count of 26 on September 30, 1999. The third peaked from October 15 (2000) to October 16 (2002) also with a high count of 26 on October 15, 2000. The fourth peaked from October 29 (1999) to November 5 (2002) with a high count of 23 on October 29, 1999. The first regular influx peaked from November 12 (2000) to November 21 (2002) with a high count of 23 on November 16, 1999. The second peaked from November 26 (1999) to December 2 (2002) with a high count of 22 on November 26, 1999. As stated earlier juvenile dominated from August to October and adults likewise from November to December in 2007, if that holds true then the basic influxes involved

juveniles whilst the regular influxes involved adults. I do not have such observations for the other seasons. The winter passage followed, it ran from December 8 (1998) to January 16 (2002), there were just two “clustered” influxes. The first peaked from December 8 (1998) to December 14 (1999) with a high count of 19 on December 14, 1999. The second peaked from December 30 (2002) to January 7 (2000) with a high count of 28 on January 7, 2000. This was the highest count during the first five years of the survey. The early spring passage was next, this ran from January 9 (2003) to March 2 (2003) with an extension to March 18 in 2000, there were five “clustered” influxes. The first peaked from January 11 (2003) to January 15 (1999) with a high count of 18 on January 14, 2001. The second peaked from January 20 (2002) to January 21 (2000) with a high count of 22 on January 21, 2000. The third peaked from February 6 (2000) to February 11 (2001) with high counts of 23 on February 6, 2000 and 22 on February 11, 2001. The fourth peaked from February 16 (2000) to February 17 (2002) with a high count of 24 on February 16, 2000. The fifth peaked from February 23 (2003) to February 25 (2001) with a high count of seven on February 23, 2003. There is a minor late spring passage from February 26 (2003) to April 8 (2001), there were two “clustered” influxes. The first is indicated by a peak count of ten on March 11, 201. The second peaked from March 19 (2002) to March 25 (2000, 2001) with a high count of eight on March 25, 2001, numbers then gradually declined through the summer.

Broad-winged Hawk (*Buteo platypterus*)

This is a rare migrant, no winter records, initially only juveniles recorded. It would seem that some wander south from north Florida or Georgia after fledging. Singles seen on August 5, 2003, August 18, 2002, September 9, 2001 and September 10, 2000, the last two records may indicate the location of an influx. There was an adult on September 27, 2000 denoting the start of the fall passage. There was a final juvenile on October 2, 2002. Later sightings were not aged but there were singles on October 6, 1998 and October 14, 1999. There were no winter records. Exceptionally there was an early spring record of one on January 8, 2000. Finally there was a late spring passage record of one on March 16, 1999. This will always be a real rarity with so little woodland.

Short-tailed Hawk (*Buteo brachyurus*)

This is a very rare migrant, just three records. For the early fall passage there was a dark morph adult on July 30, 2003, with one on September 30, 1999. For the late fall passage there was a light morph adult on October 9, 2000. All the above were along the wooded eastern border.

Swainson's Hawk (*Buteo swainsoni*)

This is a rare passage migrant and winter visitor, only singles noted. There were immature pale morphs on November 17, 2002 and November 25, 2001 with very exceptionally an adult dark morph on November 28, 2000. For the winter there an immature light morph on December 20, 2000 with un-aged birds on December 27, 1999 and January 4, 2000. For the early spring there was one on January 21, 2000. Most sightings were in the Lust to Hooper Farms Roads area.

Red-tailed Hawk (*Buteo jamaicensis)*

This is a resident, a passage migrant and a winter visitor. There were six pairs in 1999 with 11 pairs in 2000, six pairs in 2001 and 2002 and eight pairs in 2003. This species bred in the more isolated pieces of woodland. They could frequently be seen perching atop the utility poles or hovering out over the fields, at times they even hunted from the ground. In strong westerly winds a line of the birds could be seen hanging in the sky over the higher ground, the wooded eastern border. The main fall passage ran from October 2 (1999) to December 7 (1999) with a high count of 43 on October 26, 1999. The winter passage followed from November 25 (2001) to January 15 (1999) with a high count of 53 on January 1, 2000. The early spring passage ran from January 7 (2000) to March 6 (2002) with the exception of 2000 when this passage ended on February 16. The highest count was that of 55 on February 11, 2000. Now to the main spring passage, there was a mega influx in 2000 so that year will be dealt with separately. For the other years the passage ran from March 2 (2003) to May 18 (1999) with a high count of 35 on March 11, 2001. So to the mega influx of 2000, it started on February 21 but I will detail the counts from January 25 when 22 seen. There were 28 on January 28 with 51 on February 6 and 55 on February 11, then 29 seen on February 16. There were 51 on February 21 with 53 on February 23, 61 on February 25, 71 on March 3 and 94 on March 14, then 73 seen on March 18 with 67 on March 27, 49 on April 3, 34 on April 6, 31 on April 19, 24 on April 30, 18 on May 2, 14 on May 4 and nine on May 7. These records cover a three month period. By February 11 the counts had reached 55, the count of 29 can be ignored but the counts of 51 and 53 both being lower than the 55 cannot. This means that there were in reality two overlapping type 1 influxes. The situation now gets very complicated. In two of the five years passage continued whilst in the other three numbers gradually fell away. In 2000 there was an influx from May 13 to June 3 with a peak count of 19 on May 21. In 2002 there were two influxes. The first ran from May 12 to May 20 with a peak count of ten on May 12. The second ran from May 27 to June 19 with a peak count of 12 on June 2. In all the years other than 2000 numbers fell gradually after the spring passage ended. In 1999 up to six a day seen from May 22 to June 14, then in 2001 up to eight a day seen from April 22 to May 27 with up to five a day to July 22. In 2002 up to eight a day seen from June 23 to July 28 with in 2003, up to eight a day from May 4 to May 18 with up to seven to May 21 and up to six to June 26, These periods of declining numbers ended with the fledged young joining the population. This led to the post-breeding gathering which ran from June 6 (2000) to September 8 (2002) with a high count of 24 on August 10, 1999. Again 2000 did not behave as the population grew gradually that year from June 6 to a peak of 36 on September 21, 2000. This influx ended on October 9, a period of four months! To put it another way this one mega influx covered both the post-breeding gathering and the early fall passage. To detail the 2000 influx, there were 16 on June 6 with 17 on June 14, 20 on June 30, 25 on July 30, 31 on August 13, 32 on August 27, 33 on September 10 and 36 on September 21, then 32 seen on September 24 with 28 on October 1, 22 on October 5 and 15 on October 9. For the

other years this early fall passage ran from August 31 (1999) to October 13 (2002) with a high count of 36 on September 21, 2000. The year 2000 was an exceptional year for this species. During the five years I saw a number of "Krider's" Red-tailed Hawks but I did not keep details, identification was too subjective. However on February 21, 2000 a dark morph of one of the western forms was seen with the Rough-legged Hawks so perhaps the mega spring passage had a western element. On December 27, 2001 and December 30, 2001 an adult of the eastern Canadian form was seen at the Sand Farm Cattail Marsh.

The main fall passage ran from October 2 (1999) to December 7 (1999), there were four "clustered" influxes. The first peaked from October 12 (1999) to October 15 (2000) with a high count of 28 on October 15, 2000. The second peaked from October 24 (2001) to October 26 (1999) with a high count of 43 on October 26, 1999. The third peaked from November 5 (2000) to November 6 (1999) with a high count of 34 on November 6, 1999. The fourth peaked from November 19 (1999, 2000) to November 25 (2001) with a high count of 39 on November 19, 1999. The winter passage followed from November 25 (2001) to January 15 (1999), there were three "clustered" influxes. The first peaked from December 3 (2000) to December 8 (1998) with a high count of 31 on December 3, 2000. The second peaked from December 16 (2002) to December 21 (2001) with a high count of 41 on December 19, 1999. The third peaked from January 1 (2000) to January 8 (1999) with a high count of 53 on January 1, 2000. The early spring passage consisted of four "clustered" influxes, it ran from January 7 (2000) to March 6 (2002) with the exception of 2000 when this passage ended on February 16 at the end of the third influx. The first influx peaked from January 14 (2000) to January 16 (2002) with a high count of 48 on January 14, 2000. The second peaked from January 26 (2003) to January 28 (2001) with a high count of 40 on January 28, 2001. The third is indicated by a peak count of 55 on February 11, 2000. The fourth peaked from February 15 (2003) to February 21 (2001) with a high count of 32 on February 21, 2001. Now to the main spring passage, as there was a mega influx in 2000 I will deal with that year separately. The following is based solely on the records from the other years. This passage ran from March 2 (2003) to May 18 (1999), there were six "clustered" influxes. The first is indicated by a peak count of 14 on March 5, 2003. The second peaked from March 10 (2002) to March 13 (1999) with a high count of 35 on March 11, 2001. The third peaked from March 24 (2002) to March 30 (1999) with a high count of 12 on March 24, 2002. The next two influxes are indicated by isolated peak counts of 18 on April 4, 2001 and 15 on April 14, 2002. The sixth peaked from April 24 (2003) to April 26 (1999) with a high count of 11 on April 24, 2003. So to the mega influx of 2000, this in reality was two very overlapping influxes that covered the period January 28 to May 7, a total period of three months! The high count was that of 94 on March 14, 2000. This was the highest count during the first five years of the survey. Full details are in segment one of this very unusual event. Surprisingly there was further passage in two of the five years. In 2000 an influx ran from May 13 to June 3 with a peak count of 19 on May 21, In 2002 there were two influxes, the first ran from May 12 to May 20

with a peak count of ten on May 12. The second ran from May 27 to June 19 with a peak count of 12 on June 2. In all years, bar 2000, numbers gradually fell after all passage ended in the spring, full details are included in segment one. These declining numbers came to an end when the fledged young joined the population. This led to the post-breeding gathering that ran from June 6 (2000) to September 8 (2002), there were two "clustered" influxes. The first peaked from August 7 (2002) to August 10 (1999) with a high count of 24 on August 10, 1999. The second peaked from August 16 (2001) to August 18 (2002) with a high count of 15 on August 18, 2002. Again 2000 did not behave as the population gradually grew that year from June 6 to a peak of 36 on September 21, 2000. That date is in fact in the second influx of the early fall passage. This early fall passage ran from August 31 (1999) to October 13 (2002), there were two "clustered" influxes. The first peaked from September 2 (2001) to September 6 (1999) with a high count of 23 on September 6, 1999. The second peaked from September 19 (2001) to September 21 (2000) with the high count of 36 on September 21 (2000) as mentioned earlier. That 2000 influx actually ended on October 9, having lasted for just over four months. This means that two influxes lasted some six months…..

Rough-legged Hawk (*Buteo lagopus*)

This is a vagrant. The following constitute the first verified records for Florida. A juvenile dark morph was first seen near Hooper Farms Road on February 16, 2000. On February 21 a juvenile pale morph was seen with a juvenile dark morph at the same location. On February 23 the juvenile pale morph was seen with two juvenile dark morph. All three continued to be seen and photographed by many through to April 11, 2000. On April 15 just the two dark morph birds located whilst on April 19, 2000 the juvenile pale morph was seen with one of the dark morph juveniles. In all probability all three stayed to at least that date.

Golden Eagle (*Aquila chrysaetos)*

This is a very rare winter visitor. There was an adult on January 8, 1999 and January 12, 1999. This individual was near the McDonald Canal at a field that had just been drained. There was another adult on December 12, 2000. The January sightings might perhaps be treated as early spring records but here I treat them as winter records.

Crested Caracara (*Caracara cheriway*)

There is just one record, there being an adult at the Sod Farm on July 27, 1999. This species rarely wanders north from its range to the south of Kissimmee.

Eurasian Kestrel (*Falco tinnunculus)*

This is perhaps the most unexpected find. There was a female on the utility wires by Lust Road on February 26, 2003. It later moved out into the fields to the west of Airport Road where it stayed to March 23, 2003. These fields had been roller-chopped and there were many snags for the kestrel to use as perches. Its main if not sole prey appeared to be Grasshoppers. This constitutes the first record for the south-eastern United States.

American Kestrel (*Falco sparverius*)

This is a passage migrant and a winter visitor, there are no summer records. They can often be seen on the utility wires or poles searching for prey. It is likely that grasshoppers form a large part of their diet, these creatures are now so exceedingly numerous as pesticides are no longer applied to the fields. There are a number of very early fall records with singles on July 10, 2002, July 15, 2001, August 13, 2003 and from August 26, 2001 to September 9, 2001. The main fall passage ran from August 31 (1999) to December 2 (2002) with a high count of 28 on October 26, 1999. To detail this 1999 influx, there were 16 on October 2 with 23 on October 8, 25 on October 19 and 28 on October 26, then 23 seen on October 29 with 21 on November 6 and 16 on November 9, a typical type 1 influx. The winter passage followed from November 25 (1998) to January 24 (2001) with a high count of 24 on December 11, 1999. The early spring passage ran from January 4 (2001) to March 5 (2003) with a high count of 21 on January 26, 2003. Finally there was the main spring passage, this ran from February 25 (2001) to April 26 (2000, 2001) with a high count of 18 on March 10, 2000.

As with the Northern Harrier there are some very early fall sightings, there were singles on July 10, 2002, July 15, 2001, and August 13, 2003 and from August 26, 2001 to September 9, 2001. The main fall passage ran from August 31 (1999) to December 2 (2002) although passage was light through September, there were four “clustered” influxes. The first peaked from September 6 (1999) to September 13 (2000) with a high count of three on September 6, 1999. The second is indicated by a peak count of 20 on October 10, 2001. The third peaked from October 21 (1998) to October 29 (2000) with a high count of 28 on October 26, 1999. This was the highest count during the first five years of the survey. The fourth peaked from November 24

(2002) to November 30 (2000) with a high count of 27 on November 24, 2002. The winter passage followed from November 25 (1998) to January 16 (2002), there were five "clustered" influxes. The first peaked from November 30 (2000) to December 2 (2001) with a high count of 18 on December 2, 2001. The second peaked from December 8 (1998, 2002) to December 11 (1999) with a high count of 24 on December 11, 1999. The third peaked from December 20 (1998, 2000) to December 22 (1999) with a high count of 20 on December 22, 1999. The fourth peaked from December 28 (2002) to January 1 (2001) with a high count of 18 on December 28, 2002. The fifth is indicated by a peak count of eight on January 7, 1999. I believe that these isolated peak counts represent the tip of basic influxes that in other years were hidden by regular influxes. In deciding which influx belongs to which passage I sometimes find situations that makes it all a little clearer. The timing of the start of the winter passage is one such issue. This species has an influx that runs from approximately November 25 to December 19 (December 26 in 2002). As I consider mid-December too late a start time I am, and have treated the winter passage as starting in late November or during the first few days of December. The early spring passage ran from January 4 (2001) to March 5 (2003), there were four "clustered" influxes. The first peaked from January 11 (2000) to January 19 (2003) with 17 on both dates. The second peaked from January 20 (2002) to January 28 (2001) with a high count of 21 on January 26, 2003. The third peaked from February 5 (1999) to February 6 (2000) with a high count of 20 on February 6, 2000. The fourth peaked from February 14 (2001) to February 17 (2002) with a high count of 19 on February 16, 2000. Finally there was the main spring passage, this ran from February 25 (2001) to April 26 (2000, 2001), there were five "clustered" influxes. The first is indicated by a peak count of 12 on February 25, 2001. As that influx ran to March 18 it is treated as part of this passage. The second peaked from March 6 (2002) to March 10 (2000) with a high count of 18 on March 10, 2000. The third is indicated by a peak count of ten on March 19, 2002. The fourth peaked from March 24 (2003) to March 30 (1999) with a high count of 15 on March 27, 2002. The last influx peaked from April 11 (2001) to April 17 (1999) with high counts of four on April 15, 2000 and April 17, 1999, A number of species share what appears to be an influx that gathers up the stragglers, the Palm Warbler is the best example.

Merlin (*Falco columbarius*)

This is a passage migrant and winter visitor, but in very low numbers. Whilst it does perch on utility poles it is more likely to be seen on a snag or dashing across a field. There is a fall passage from September 10 (2000) to December 2 (2001, 2002) with a high count of three on October 8, 1999 and October 10, 2001. The winter passage followed from December 11 (1998, 1999) to January 14 (2001) with a high count of two on December 16, 2002. The early spring passage ran from January 14 (2000) to February 26 (2003) with a high count of two on

January 18, 2000. Finally there was the main spring passage, this ran from March 2 (2003) to May 23 (2000) with high counts of three on March 27, 2000 and April 11, 2003.

Fall passage noted from September 10 (2000) to December 2 (2001, 2002), there were three "clustered" influxes. The first peaked from September 18 (2002) to September 25 (1999) with a high count of two on September 18, 2002. The second peaked from October 8 (1999) to October 12 (2000) with high counts of three on October 8, 1999 and October 10, 2001. The third peaked from October 26 (1999) to October 28 (2001, 2002) with a high count of two on all three dates. There was a distinctly separate winter passage that ran from December 11 (1998, 1999) to January 14 (2001), there were two "clustered" influxes. The first peaked from December 11 (1998, 1999) to December 16 (2001, 2002) with a high count of two on December 16, 2002. The second peaked from December 27 (1999) to January 1 (2001) with one on both dates. The spring passage as a whole was the most active time of the year. The early spring passage ran from January 14 (2000) to February 26 (2003), there were three "clustered" influxes. The first peaked from January 18 (2000) to January 20 (2002) with a high count of two on January 18, 2000. The second peaked from February 3 (1999) to February 4 (2001) with one on both dates. The third peaked from February 21 (2001) to February 23 (2003) with one on both dates. The main spring passage ran from March 2 (2003) to May 23 (2000), there were four "clustered" influxes. The first peaked from March 24 (2003) to March 27 (2000, 2001) with a high count of three on March 27, 2000. The second peaked from April 11 (2003) to April 19 (2000, 2001) with a high count of three on April 11, 2003. The third peaked from April 26 (1999) to May 2 (2001) with one on both dates. The fourth peaked from May 18 (1999) to May 23 (2000) also with one on both dates. The counts of three constitute the highest counts for Zellwood during the first five years of the survey.

Peregrine Falcon (*Falco peregrinus)*

This is an uncommon fall migrant and an irregular winter visitor and spring passage migrant. The lack of suitable habitat is the constraining factor here, only 1998/1999 with the large populations of duck created the right environment. Seen in the fall from September 11 (1998) to December 3 (2000) with a high count of four on October 12, 1999. There were only two winter records, there being singles on December 15, 2000 and December 16, 1998. In the early spring there was a minor passage from January 12 (1999) to February 5 (1999), only singles seen. Later there were singles on March 27, 2002 and April 26, 2001.

Seen in the fall from September 11 (1998) to December 3 (2000), most sightings were of birds flying to the south in October. The largest such movement involved four on October 12, 1999. This fall passage consisted of five "clustered" influxes. The first peaked from September

26 (2002) to September 30 (1998) with a high count of two on September 26, 2002. The second peaked from October 9 (2000) to October 16 (1998, 2002) with a high count of four on October 12, 1999. This is still the highest count for Zellwood. The third peaked from October 22 (2000) to October 28 (2002) with a high count of two on October 24, 2001. The fourth peaked on November 6 (1998, 1999) with one on both dates. The fifth peaked from November 25 (1998) to November 30 (1999) again with one on both dates. There are only two winter records, there being singles on December 15, 2000 and December 16, 1998. There does appear to be a minor early spring passage from January 12 (1999) to February 5 (1999), whilst only singles seen there was an influx that peaked from February 2 (2000) to February 3 (1999). Later there were singles on March 27, 2002 and April 26, 2001.

Ring-necked Pheasant (*Phasianus colchicus)*

This was a truly beautiful bird, I do not know from which collection it escaped. It had apparently been seen to the west of the survey area for some time prior to its appearance at Zellwood. This was an adult male of the race *P*.c.*torquatus*. It took up and defended a territory along Laughlin Road from May 6, 2002 to April 30, 2003.

Wild Turkey (*Meleagris gallopavo)*

This is an occasional spring visitor. There were two by the Hooper Farms Road gate from March 7, 2000 to April 15, 2000. One of them was of the gray form. The same or another gray form was by Lake Apopka at the end of Lust Road from March 17, 2002 to March 27, 2002. Whilst there is some doubt as to the provenance of these birds there was a normal plumaged bird by the Lake Level Canal on June 6, 2000, it later flew across the canal into the wood.

Northern Bobwhite (*Colinus virginianus)*

This is a quite common resident with most pairs either scattered through the Sand Farm or along the wooded borders. The breeding population consisted of 40 pairs in 1999 with 38 pairs in 2000, 65 pairs in 2001, 89 pairs in 2002 and 125 pairs in 2003. In 2003 over half of the located pairs were at the Sand Farm. Birds were located by different means through the year, from early April to mid-July mostly calling males counted. Then from mid-July to October contact calls were made at first light. From October to March an occasional bird calls but one has to hope to locate a covey in the wooded borders. Only low numbers seen during the

summer of 2000 but the pattern of the higher counts for the other years is interesting as two patterns emerge.

Higher Count Periods	Higher Count
05.31.99 – 07.06.99	19 on 07.06.99
05.27.01 – 07.08.01	30 on 06.07.01
05.27.02 – 07.08.02	48 on 06.05.02
05.21.03 – 07.13.03	69 on 07.04.03

These figures lead to questions about why there are two totally separate highest count periods. It is as if there were two influxes but that is not the case here. There has to be a reason for this situation, I just do not know what it is. The closeness of the dates is a perfect example of the timing of bird behavior. The gradual, perhaps not so gradual earlier start of the peak activity may be a real change not a temporary fluctuation. Finally the count of 69 on July 4, 2003 is the highest count during the first five years of the survey.

Yellow Rail *(Coturnicops noveboracensis)*

There is only one record. One flushed from the bank of the Lake Level Canal on March 9, 2003. This is still (2010) the only Zellwood record. It is likely that others have passed through the area unnoticed.

Black Rail (*Laterallus jamaicensis*)

This was an unexpected find in an unexpected area. There was one in a marshy area by Pole Road extension on June 4, 2003. Again there are no later records.

King Rail (*Rallus elegans*)

This is a resident, a passage migrant and a winter visitor. It is a difficult species in that for the first four years the only habitat that it used was along the canals and the shore of Lake Apopka. In 2002 a cattail marsh formed at the Sand Farm and the situation started to change. I switched my starting point from Canal Road to the Sand Farm Bridge as that was at the apex of that marsh. The real ability to describe this species occurs from 2003 to 2008 i.e. in the second set of five years. The following is an attempt to describe the pattern of movement with a very limited amount of information for the first five years. There was a winter passage but it was

only noted in two winters 1998 and 2002/2003. This passage ran from December 11 (2002) to January 7 (2003) with a high count of eight on December 30, 2002. The early spring passage ran from January 9 (2003) to March 2 (2003) with a high count of 14 on January 9, 2003. With such limited information it is hard to say whether or not there was a main spring passage, if so it could have run from March 5 (2003) to May 4 (2000) with a high count of six on March 5, 2003. The summer probably relates to the period from mid-May to August 14 (2002), there were no influxes. Only singles seen/heard to 2000 with high counts of five on July 8, 2002 and eight on ;August 8, 2003. Breeding only noted in 2002 and 2003. In 2002 there were two pairs, one chick seen on July 8. In 2003 there were 14 pairs with young noted from June 23 to July 23. The highest daily count of young was of three on July 23, 2003. Up to and including 2001 there were no early fall records, there being a gap until the main fall passage started in mid-October. In 2002 there was a minor early fall passage from August 25 to October 6 with a peak count of two on September 15, 2002. The main fall passage ran from October 7 (2001) to December 8 (2002) with a high count of seven on November 21, 2002. I do not normally go into events outside of the five year period but the changes are so extreme. As I stated earlier the highest count for the first five years was that of 14 on January 9, 2003. Later higher counts include the following, 69 on November 28, 2003, 107 on August 11, 2004, 236 on August 10, 2005, 436 on August 11, 2006 and 523 on August 23, 2006. Then the drought took over and the rails left. After Tropical Storm Fay in August 2008 the water came back and the rails began to return, there were 41 on October 5, 2008.

The cautions detailed in segment one are still there but are omitted here for the sake of brevity. The winter passage ran from December 11 (2002) to January 7 (2003) with a high count of eight on December 30, 2002. The early spring passage followed from January 9 (2003) to March 2 (2003), there were two “clustered” influxes. The first peaked from January 9 (2003) to January 11 (1999) with a high count of 14 on January 9, 2003. That was the highest count during the first five years of the survey. The second peaked from February 10 (1999, 2002) to February 15 (2003) with a high count of eight on February 15, 2003. The main spring passage ran from March 5 (2003) to May 4 (2000), there were three “clustered” influxes. Two of these influxes only occurred in 2003. The first ran from March 5 to March 16 with a peak count of six on March 5. The second ran from March 19 to March 26 with a peak count of three on March 19. The third, which had a little more substance, peaked from April 24 (2003) to April 30 (2000) with a high count of two on April 24, 2003. The summer passage ran from mid-May to August 14 (2002), there were no influxes. Only singles seen/heard to 2000 with high counts of five on July 8, 2002 and eight on August 8, 2003. Up to and including 2001 there were no early fall records there being a gap until the fall passage started in mid-October. In 2002 there was a minor early fall passage from August 25 to October 6, initially singles seen on August 25 and September 4 with two present from September 15 to October 6. The main fall passage ran from October 7, (2001) to December 8 (2002), there were two “clustered” influxes. The first peaked

from October 19 (1999) to October 23 (2002) with a high count of six on October 23, 2002. The second peaked from November 21 (2002) to November 28 (2000) with a high count of seven on November 21, 2002. I await the analysis of the next five years with interest.

Virginia Rail *(Rallus limicola)*

This is an uncommon passage migrant and winter visitor. It prefers the canals and the shore of Lake Apopka to the cattail marsh. At the marsh a stray individual would be at the edge, not out in the middle with the King Rails. It also calls less so will be under-recorded. The first in the fall was one on September 22, 2002. The main fall passage followed from October 6 (2002) to November 26 (1999) with high counts of two on November 24, 2002 and November 26, 1999. The winter passage ran from November 28 (2000) to January 7 (2003) with high counts of two on December 16, 2002 and three on January 5, 2003. The early spring passage then ran from January 7 (1999) to February 15 (2003), only singles noted. There was the trace of a late spring passage from March 5 (2003) to March 26 (2003), again only singles recorded.

In the fall there was an early individual on September 22, 2002. The main fall passage ran from October 6 (2002) to November 26 (1999), there may be six “clustered” influxes. The first two were indicated by isolated peak counts of one on October 6, 2002 and October 14, 2001. The third peaked from October 23 (1999) to October 28 (2001) with one on both dates. The fourth is indicated by a peak count of one on November 3, 1999. The fifth peaked from November 15 (2000) to November 19 (1999) also with one on both dates. The sixth peaked from November 24 (2002) to November 26 (1999) with two on both dates. Again this influx might just belong to the winter passage in which case the fall passage would end on November 19 (1999) and the winter passage would start on November 24 (2002). As it is the winter passage ran from November 28 (2000) to January 7 (2003), there were four “clustered” influxes. This was clearly the strongest event. The first influx peaked from November 28 (2000) to December 3 (1998) with one on both dates. The second peaked from December 16 (2002) to December 17 (2000) with two on both dates. The third peaked from December 21 (2001) to December 22 (1999) with one on both dates. The fourth is indicated by a peak count of three on January 5, 2003. This was the highest count during the first five years of the survey. The early spring passage followed from January 7 (1999) to February 15 (2003), there were four “clustered” influxes. The first peaked from January 7 (1999) to January 13 (2002) with one on both dates. The second is indicated by a peak count of one on January 31, 2001. The third peaked from February 8 (2000) to February 9 (1999) with one on both dates. The fourth is indicated by a peak count of one on February 15, 2003. There is the trace of a late spring “clustered” influxes. The first peaked from March 5 (2003) to March 7 (2000) with one on both dates. The other two influxes are indicated by isolated peak counts of one on March 14, 2002

and March 26, 2003. For a species with such low numbers it is surprising just how much information could be obtained.

Sora (*Porzana carolina*)

This is a passage migrant and winter visitor, numbers were very low before the cattail marsh developed at the Sand Farm. Most were located along the canals and the shore of Lake Apopka. Three species really prospered with the advent of the cattail marsh, they were the American Bittern, the King Rail and the Sora. There were some very early fall records with singles on August 28, 2002, September 2, 1998 and from September 15, 2002 to September 18, 2002. The actual early fall passage ran from September 22 (2002) to October 21 (2001) with a high count of 39 on October 14, 2001. The main fall passage followed from October 15 (2000) to December 6 (2000) with an extension to December 14 in 2002. Excluding the influx that started on November 17, 2002 the highest count was that of 28 on November 5, 2002. The winter passage followed from November 25 (1998) to January 14 (2000) with high counts of 102 on December 2, 2002 and 109 on December 30, 2002. To detail the period from November 17, 2002 to January 7, 2003, there were 16 on November 17 with 22 on November 21, 42 on November 24, 53 on November 29, 66 on November 30 and 102 on December 2, then 58 seen on December 8 with 51 on December 11 and 42 on December 14. I have treated this as a fall influx but I have put the peak count into the winter passage! That is a first. It appears to me that although this looks like one influx it is really two with the first winter influx merging seamlessly with the fall influx. To continue there were 55 on December 16 and 48 on December 21. This is probably the tip of a basic influx. There were 50 on December 26 with 57 on December 28 and 109 on December 30, then 98 seen on January 2 with 77 on January 5 and 71 on January 7. I may not have mentioned it but the word “seen” covers for both seen and heard. The early spring passage ran from January 7 (1999, 2001, 2002) to March 10 (2002) with a high count of 90 on January 9, 2003. Finally there was the main spring passage, up to and including 2002 this was the lesser event in the spring but with the cattail marsh the situation changed. This passage ran from March 3 (2001) to May 7 (2003) with an extension to May 31 in 1999, the highest count was that of 32 on March 16, 2003. Now back to 1999, there was one on May 10 and May 14 with two on May 18. Finally there was one on May 31, an exceptionally late date. As with the King Rail the numbers of this species grew significantly in later years. The highest counts were 156 on December 9, 2003, 186 on November 21, 2004, 260 on December 4, 2005 and 394 on November 22, 2006. As with the King Rail numbers dried up with the drought. After Tropical Storm Fay numbers did reach 58 on October 5, 2008.

There were very early fall records with singles on August 28, 2002, September 2, 1998 and from September 15, 2002 to September 18, 2002. The actual early fall passage ran from

September 22 (2002) to October 21 (2001), there were two “clustered” influxes. The first peaked from September 24 (2000) to September 30 (2001) with a high count of 22 on September 30, 2001. The second peaked from October 9 (2002) to October 14 (2001) with a high count of 39 on October 14, 2001. The main fall passage ran from October 15 (2000) to December 6 (2000) with an extension to December 14 in 2002, there were three “clustered” influxes. The first peaked from October 20 (2002) to October 29 (2000) with a high count of 22 on October 20, 2002. The second peaked from November 5 (2002) to November 11 (2001) with a high count of 28 on November 5, 2002. The third peaked on November 26 (1999, 2000) with a high count of 13 on November 26, 2000. The winter passage followed from November 25 (1998) to January 14 (2000), there were four “clustered” influxes. The first is indicated by a peak count of 102 on December 2, 2002. See segment one for details of this fall influx with a winter peak count. The second peaked from December 11 (1999) to December 16 (2002) with a high count of 55 on December 16, 2002. The third peaked from December 20 (1998) to December 21 (2001) with a high count of 26 on December 21, 2001. The fourth peaked from December 30 (1999, 2002) to January 1 (2001) with a high count of 109 on December 30, 2002. This was the highest count during the first five years of the survey. The early spring passage ran from January 7 (1999, 2001 and 2002) to March 10 (2002), there were six “clustered”influxes. The first peaked from January 7 (2002) to January 15 (1999) with a high count of 90 on January 9, 2003. The second peaked from January 20 (2002) to January 21 (2000) with a high count of 22 on January 20, 2002. The third peaked from February 2 (2003) to February 6 (2000) with a high count of 65 on February 2, 2003. The fourth peaked from February 14 (2000) to February 17 (1999, 2002) with a high count of 14 on February 17, 2002. The fifth peaked from February 21 (2001) to February 25 (2000) with a high count of five on February 25, 2000. The sixth is indicated by a peak count of 43 on March 5, 2003. The main spring passage followed and up to and including 2002 this was the lesser spring passage but with the cattail marsh this all changed. This passage ran from March 3 (2001) to May 7 (2003) with an extension to May 31 in 1999, there were four “clustered” influxes. The first peaked from March 11 (2001) to March 19 (1999) with a high count of 32 on March 16, 2003. The second peaked from March 30 (1999) to April 6 (2000) with a high count of 20 on April 2, 2003. The third peaked from April 10 (2002) to April 20 (1999) with a high count of 21 on April 13, 2003. The fourth peaked from April 27 (2003) to May 2 (2001) with a high count of two on April 27, 2003. Now back to May 1999, there was one on May 10 and May 14 with two on May 18. There was an exceptionally late record of one on May 31, 1999.

Purple Gallinule (*Porphyrio martinica*)

This is a passage migrant and summer visitor with one to two wintering in some years. This species prefers the hyacinth filled canals, the Lake Level Canal and since its inception the Sand Farm Cattail Marsh. The main spring passage ran from March 11 (2001) to May 29 (2003) with a high count of 58 on April 21, 2003, to detail that influx. There were eight on April 2 with ten on April 6, 13 on April 11, 18 on April 13 and 58 on April 21, then 45 seen on April 27 with 39 on April 30, another typical type 1 influx. The breeding population was as follows, there were 21 pairs in 1999 with 23 pairs in 2000, 17 pairs in 2001, 40 pairs in 2002 and 51 pairs in 2003. The increase in the number of pairs may be tied to the water levels in the canals and to the formation of the Sand Farm cattail marsh. Small chicks noted from May 9 (2002) to September 9 (2001), with such a long nesting season it is likely that some of the "spring migrants" were actually on territory. The summer is therefore somewhat difficult to define but it may cover the period May 8 (2001) to August 8 (2000) with a high count of 47 on June 2, 2002. No post-breeding gatherings identified. The fall appears to be a time of gradual departure with some birds from elsewhere moving through. The fall passage ran from July 13 (2003) to November 9 (2002) with a high count of 20 on July 19, 2003. Passage basically came to an end on November 9 (2002), there were later records but no passage. There was one from November 2, 1998 to February 17, 1999. There was one from November 15, 2001 to January 10, 2002. There were one to two from November 21, 2002 to January 11, 2003 with three on December 8, 2002. All these counts covered the late fall, the winter and part of the early spring passages. The winter is treated as covering the period December 6 (2000) to January 11 (2003). In addition for the winter there was one from December 6, 2000 to December 22, 2000. There were no winter sightings for the winter of 1999/2000. There does appear to be an early spring passage from January 10 (2001) to March 9 (2003) with a high count of ten on March 2, 2003. To detail these 2003 influxes, there were two on January 15 with three on January 26 and four on February 2, then two seen on February 12. There were six on February 15 with seven on February 23, eight on February 26 and ten on March 2, then five seen on March 5 with four on March 9.

The main spring passage ran from March 11 (2001) to May 29 (2003), there were five "clustered" influxes. The first two were indicated by isolated peak counts of ten on March 12, 2003 and two on March 22, 2001. The third peaked from March 27 (2002) to March 29 (2003) with a high count of ten on March 29, 2003. The fourth peaked from April 21 (2003) to April 26 (2000) with a high count of 58 on April 21, 2003. This was the highest count during the first five years of the survey. The fifth peaked from May 7 (1999) to May 15 (2003) with a high count of 57 on May 15, 2003. The summer passage appears to cover the period May 8 (2001) to August 8 (2000). Yet again the records for the summer fall into a pattern of influxes, why I do not know. There were four "clustered" influxes. The first peaked from May 29 (1999) to June 2 (2002) with

a high count of 47 on June 2, 2002. The second peaked from June 12 (2002) to June 14 (1999) with a high count of 38 on June 12, 2002. The third peaked from June 28 (2000) to July 1 (2001) with a high count of 19 on June 28, 2000. The fourth peaked from July 6 (2003) to July 12 (1999) with a high count of 28 on July 6, 2003. The fall appears to be a time of gradual departure, this passage ran from July 13 (2003) to November 9 (2002), there were seven "clustered" influxes. The first peaked from July 19 (2003) to July 22 (2001) with a high count of 20 on July 19, 2003. The second peaked from July 26 (2000) to July 28 (2002) with a high count of 12 on July 26, 2000. The third peaked from August 3 (1999) to August 6 (2000) with a high count of 15 on August 3, 1999. The fourth peaked from August 16 (2001) to August 18 (2002) with a high count of eight on August 16, 2001. The fifth peaked from September 2 (1998) to September 5 (2001) with a high count of five on September 5, 2001. The sixth peaked from October 2 (2002) to October 6 (1998) with a high count of three on October 2, 2002. The seventh peaked from October 17 (2001) to October 21 (1998) with a high count of four on October 21, 1998. Passage basically came to an end on November 9, (2002), there were later records but no actual passage. There was one from November 2, 1998 to February 17, 1999. There was one from November 15, 2001 to January 10, 2002. There were one to two from November 21, 2002 to January 11, 2003 with three on December 8, 2002. All these counts covered the late fall, the winter and part of the early spring passage. The winter is treated as covering the period December 6 (2000) to January 11 (2003). In addition for the winter there was one from December 6, 2000 to December 22, 2000. The winter records do suggest the possibility of an influx that peaked from December 6 (2000) to December 8 (2002) with a high count of three on December 8, 2002. There were no winter sightings for the winter 1999/2000. There does appear to be an early spring passage from January 10 (2001) to March 9 (2003) but it is not possible to identify a series of influxes. There was one from January 10, 2001 to February 11, 2001 with another at a different location on February 14, 2001 and February 18, 2001. In 2002 there was one from February 24 to March 6. In 2003 there was a second bird from January 15 to January 22 with a total of three on January 26 and four on February 2, only two seen on February 12. There was a second influx in 2003 with six on February 15, seven on February 23, eight on February 26 and ten on March 2, then five seen on March 5 with four on March 9. It looks as if it will take another set of five years records to identify any pattern at this season.

Common Gallinule (*Gallinula galeata)*

This is a resident, a passage migrant and a winter visitor. Numbers vary dependent on the availability of shallow flooded areas. Otherwise they are confined to the canals and the cattail marsh. Numbers along the shore of Lake Apopka are very limited. This can be an exceptionally noisy species when large numbers get together. The winter passage ran from

December 3 (2001) to January 11 (1999) with a high count of 200 on December 8, 2002. There was no winter passage in 1999/2000 and in 2000/2001 there was only passage from January 1, 2001. The early spring passage followed with passage in all years bar 2000. This passage ran from January 9 (2003) to February 28 (2001) with a high count of 225 on January 13, 2002. As with all resident species it is hard to identify any spring passage, in this case the main spring passage, if that is what it was can be broken down into two parts. The first part only occurred in three years and this passage ran from February 23 (2003) to April 21 (2002) with a high count of 190 on March 2, 2003. Surprisingly the second part was stronger, it ran from April 13 (2003) to June 4 (2003), however in 2001 under 50 a day seen to May 14 with passage thereafter. The high count was that of 150 on May 25, 1999. The breeding population was as follows, there were 104 pairs in 1999 with 129 pairs in 2000, 126 pairs in 2001, 146 pairs in 2002 and 214 pairs in 2003. Young chicks noted from April 11 (2003) to August 13 (2003) with most sightings for the period late May to early July. With this information in mind the summer season appears to run from May 27 (2002) to August 10 (2003) even though some pairs will have been nesting in March. The problem appears to be that some birds are still moving north while others are already nesting locally. The highest count was that of 260 on June 5, 1999. There appears to be a post-breeding gathering from July 20 (1999) to September 30 (1998) with an extension to October 23 in 1999, the highest count was that of 1,310 on September 17, 1999. To detail the two 1999 influxes, there were 190 on August 6 with 645 on August 10, 787 on August 13, 925 on August 20 and 1,003 on August 25, then 816 seen on August 27 with 758 on August 31. There were 943 on September 3 with 1,102 on September 6, 1,245 on September 10 and 1,310 on September 17, then 686 seen on September 25 with 515 on September 30, 435 on October 6, 300 on October 8, 260 on October 12, 223 on October 14, 210 on October 19 and 115 on October 23. This last type 1 influx could well be called a mega influx. The main fall passage ran from September 23 (2001) to December 9 (2001) with the exception of 1999 when this passage did not start until October 26. The highest count was that of 1,890 on October 21, 1998. I have not detailed that influx as the figures do not show a true picture. On October 21 I located a very large number to the south of Hooper Farms Road near Lake Apopka in an area that I had not been visiting (previously that area was too wet to get to).

For the sake of space I will omit the cautions I expressed in segment one regarding the timing of the various passages. The winter passage ran from December 3 (2001) to January 11 (1999), there were two “clustered” influxes. The first peaked from December 8 (2002) to December 13 (2001) with a high count of 200 on December 8, 2002. The second peaked from December 31 (1998) to January 3 (2002) with a high count of 182 on January 3, 2002. There was no winter passage in 1999/2000 and in 2000/2001 (up to 32 a day seen) there was only passage from January 1, 2001 (up to 48 a day seen prior to that date). The early spring passage ran from January 9 (2003) to February 28 (2001), there were three “clustered” influxes. The first peaked from January 11 (2003) to January 13 (2002) with a high count of 225 on January 13, 2002. The

second peaked from January 24 (2001) to January 27 (1999) with a high count of 137 on January 27, 1999. The third peaked from February 5 (2003) to February 10 (2002) with a high count of 185 on February 5, 2003. The main spring passage is divided into two parts. The first part occurred in three years and it ran from February 23 (2003) to April 21 (2002), there were two “clustered” influxes. The first peaked from March 2 (2003) to March 4 (2002) with a high count of 190 on March 2, 2003. The second peaked from March 22 (2002) to March 25 (2001) with a high count of 106 on March 22, 2002. Surprisingly the second part of this passage was stronger, it ran from April 13 (2003) to June 4 (2003). In 2001 under 50 a day noted to May 14 with passage thereafter. There were three “clustered” influxes. The first peaked from April 20 (1999) to April 24 (2002) with a high count of 105 on April 20, 1999. The second peaked from May 12 (2002) to May 14 (1999) with a high count of 130 on May 14, 1999. The third peaked from May 20 (2001) to May 25 (1999) with a high count of 150 on May 25, 1999. The summer passage ran from May 27 (2002) to August 10 (2003), there were six “clustered” influxes. The first peaked on June 5 (1999, 2002) with a high count of 260 on June 5, 1999. The second peaked from June 14 (1999) to June 16 (2003) with a high count of 138 on June 14, 1999. The third peaked from June 23 (2002) to June 24 (2001) with a high count of 125 on June 23, 2002. The fourth peaked from June 29 (2003) to July 4 (2000) with a high count of 163 on July 4, 2000. The fifth peaked from July 9 (1999) to July 15 (2001) with a high count of 166 on July 15, 2001. The sixth is indicated by a peak count of 185 on July 23, 2003. The post-breeding gathering ran from July 20 (1999) to September 30 (1998) with an extension to October 23 in 1999. There were five “clustered” influxes. The first peaked from August 6 (2000) to August 7 (2002) with a high count of 119 on August 6, 2000. The second peaked from August 13 (2003) to August 16 (2000) with a high count of 140 on August 13, 2003. The third peaked from August 25 (1999) to August 28 (2002) with a high count of 1,003 on August 25, 1999. The fourth is indicated by a peak count of 146 on September 5, 2001. The fifth peaked from September 11 (1998, 2002) to September 17 (1999) with high counts of 1,100 on September 11, 1998 and 1,310 on September 17, 1999. The main fall passage ran from September 23 (2001) to December 9 (2001) with the exception of 1999 when this event did not start until October 26. There were four “clustered” influxes. The first is indicated by a peak count of 114 on October 6, 2002. The second peaked from October 14 (2001) to October 21 (1998) with a high count of 1,890 on October 21, 1998. This was the highest count during the first five years of the survey. The third peaked from October 29 (1999) to November 4 (2001) with a high count of 203 on November 4, 2001. The last influx peaked from November 29 (2001) to December 2 (2002) with a high count of 206 on November 29, 2001.

American Coot (*Fulica americana*)

This is a passage migrant and winter visitor, when there are areas of open water this may also be a summer visitor. This species prefers the flooded fields. It is unusual to see one on Lake Apopka. There was an early fall passage and this ran from July 19 (2000) to October 6 (1998) with a peak count of 143 on August 6, 1999. The main fall passage followed from September 25 (1999) to December 16 (2001) with a high count of 16,720 on November 18, 1998. To detail that influx, there were 90 on October 6 (the end of the last influx) with 1,130 on October 16, 3,620 on October 21, 4,250 on October 29, 7,450 on November 2, 12,750 on November 11 and 16,720 on November 18, then 6,630 seen on November 25 with 5,700 on November 30, 5,050 on December 8 and 3,800 on December 11, a type 1 influx. Excluding 1998 the highest count was that of 960 on December 4, 1999. This species is unusual in that there are totally separate fall and winter passages. The winter passage ran from December 11 (2002) to January 16 (2002) with an extension to January 29 in 1999. There was a high count of 6,050 on December 16, 1998. To detail the 1998 influxes, there were 6,050 on December 16 with 3,750 on December 18, 2,400 on December 28 and 2,210 on December 31, a type 2 influx. There were 3,050 on January 1 with 3,055 on January 8, 3,000 on January 11, 2,960 on January 15, 2,665 on January 19, 1,785 on January 27 and 1,700 on January 29. I stated earlier that the winter passage ended for the other years on January 16 (2002). What that really means is that from that date the early spring passage became visible in all years (bar 1999). In 1999 the declining winter passage continued to exceed the early spring passage through its first influx. It was only with the second influx that the early spring passage became visible. The second winter influx and the first early spring influx were possibly type 2 influxes. The early spring passage ran from January 14 (2000) to March 10 (2002) with a high count of 2,365 on February 3, 1999. To detail this 1999 influx, there were 2,365 on February 3 with 1,950 on February 5, 1,810 on February 10 and 470 on February 17 when the area closed after the last field drained. It is likely that this influx would have continued for some time. For the other years the highest count was that of 692 on January 25, 2000. In 1998/1999 there were only four influxes from October 16 to February 17! There will have been underlying basic and regular influxes but they were buried under these mega influxes. There was a minor late spring passage from March 10 (2000) to May 25 (1999) with a high count of 260 on April 20, 1999. The summer passage appears to run from May 12 (2002) to July 16 (1999, 2000) with a high count of 133 on June 5, 1999. In 1999 there were five pairs at the Sand Farm Cattail Marsh with one pair there in 2000. This marsh was drained in November 2000 and it did not reform until the summer of 2002.

There was an early fall passage from July 19 (2000) to October 6 (1998), there were two "clustered" influxes. The first peaked on August 6 (1999, 2000) with a high count of 143 on August 6, 1999. The second peaked from September 17 (1999) to September 21 (2000) with a high count of 134 on September 17, 1999. The main fall passage followed from September 25

(1999) to December 16 (2001), there were six “clustered” influxes. The first peaked from October 9 (2000) to October 10 (2001) with a high count of 56 on October 10, 2001. The second peaked from October 16 (2002) to October 18 (2000) with a high count of 11 on October 18, 2000. The third is indicated by a peak count of 555 on October 24, 2001. The fourth peaked from November 3 (1999) to November 9 (2002) with a high count of 2,830 on November 3, 1999. In 1998 with the flooded fields there was a single mega influx from October 16 to December 11 with a high count of 16,720 on November 18, 1998. Very exceptionally this peak count did not fall within the boundaries of any of the other influxes. The count of 16,720 was the highest count during the first five years of the survey, in fact this record was not broken until January 8, 2010 when a total of 17,200 seen. The sixth influx peaked from November 28 (2000) to December 4 (1999) with a high count of 960 on December 4, 1999. This species is unusual in that there are totally separate fall and winter passages. The winter passage ran from December 11 (2002) to January 16 (2002) with an extension to January 29 in 1999, there were three “clustered” influxes. The first peaked from December 11 (2002) to December 16 (1998) with a high count of 6,050 on December 16, 1998. The second peaked from December 22 (2000) to December 30 (1999) with a high count of 515 on December 30, 1999. The third peaked from January 3 (2002) to January 8 (1999) with a high count of 3,055 on January 8, 1999. The early spring passage followed from January 14 (2000) to March 10 (2002), was nearly a non-event from 2001 to 2003. There were four “clustered” influxes. The first peaked from January 20 (2002) to January 28 (2001) with a high count of 692 on January 25, 2000. In 1999 with the extended winter passage this event did not start until February 3. The second influx peaked from February 3 (1999) to February 10 (2002) with a high count of 2,365 on February 3, 1999. The third influx peaked from February 23 (2003) to February 25 (2001) with a high count of three on February 23, 2002. The fourth is indicated by a peak count of 29 on March 4, 2002. There was a late spring passage from March 10 (2000) to May 25 (1999), but the numbers were low. There were five “clustered” influxes. The first peaked from March 11 (2001) to March 14 (2000) with a high count of 237 on March 14, 2000. The second peaked from March 22 (2001) to March 24 (2003) with a high count of five on March 24, 2003. The third peaked from April 3 (2002) to April 4 (2001) with a high count of 32 on April 3, 2002. The fourth peaked from April 11 (2001) to April 15 (2000) with a high count of 102 on April 15, 2000. The fifth peaked from April 20 (1999) to April 24 (2002) with a high count of 260 on April 20, 1999. Whilst there were peak counts of 260, 237 and 102 in 1999 and 2000 the highest counts for 2001, 2002 and 2003 were only those of 32, 20 and 15. The summer ran from May 12 (2002) to July 16 (1999, 2000), there were three influxes. The first peaked from May 12 (2002) to May 16 (2000) with a high count of 59 on May 16, 2000. The second peaked from June 5 (1999) to June 10 (2001) with a high count of 133 on June 5, 1999. The third peaked from July 9 (1999) to July 12 (2000) with a high count of 26 on July 12, 2000. To revert to 1998/1999 whilst the fields of Unit Two flooded, there were as I previously stated just four influxes for the period October 16, 1998 to February

17, 1999, a period of four months. For the other years in the same time frame there were nine influxes, a mixture of basic and regular influxes. If it had been just basic influxes the number could have been significantly higher.

Limpkin (*Aramus guarauna*)

This is a sometimes noisy but very elusive resident and visitor, the majority of sightings were along the canals and the shore of Lake Apopka. With the exception of the summer there is the usual pattern of influxes. The summer passage covers the period May 14 (2001) to July 17 (2002) with no sightings in 1999, 2000 and 2003. In this instance the lack of sightings does not mean that they were absent. There was a pair with three young at the entrance to the Lake Level Canal from May 14, 2001 to May 27, 2001. In 2002 there was one from June 23 to July 17 with two on July 14. In the early fall there appeared to be a degree of movement from July 18 (2001) to August 30 (2000) with a high count of three on August 13, 2000. The main fall passage followed from August 28 (2002) to December 2 (2001, 2002), however most of the passage was from mid-October. The highest counts were of three on six dates. There were winter records for three of the five years but numbers very low. This passage ran from December 6 (2000) to January 11 (2003) with a high count of two on December 26, 2002. There was a light early spring passage and this ran from January 8 (1999) to March 3 (2001) with a high count of three on January 19, 1999. The main spring passage was also a very weak event with records from March 5 (2003) to May 9 (2002) with a high count of three on March 12, 2003.

The summer passage ran from May 14 (2001) to July 17 (2002) with no sightings in 1999, 2000 and 2003. There was a pair with three young at the entrance to the Lake Level Canal from May 14, 2001 to May 27, 2001. This count of five was the highest count during the first five years of the survey. In 2002 there was one from June 23 to July 17 with two on July 14. There was an early fall passage from July 18 (2001) to August 30 (2000), there were two “clustered” influxes. The first peaked from July 18 (2001) to July 23 (1999) with one on both dates. The second peaked from August 13 (2000) to August 18 (2002) with a high count of three on August 13, 2000. The main fall passage followed from August 28 (2002) to December 2 (2001, 2002), however most of the passage was from mid-October, there were five “clustered” influxes. The first influx is indicated by a peak count of three on September 3, 2000. The second peaked from September 22 (2002) to September 24 (2000) with a high count of three on September 22, 2002. The third peaked October 12 (2000) to October 17 (2001) with two on both dates. The fourth peaked from October 28 (2002) to November 1 (2001) with three on both dates. The fifth peaked from November 21 (2002) to November 26 (2000) with high counts of three on November 21, 2002 and November 25, 2001. There were winter records for three of the five years but the numbers were low. The passage ran from December 6 (2000) to January 11

(2003), there were two "clustered" influxes. The first is indicated by a peak count of one on December 6, 2000. The second peaked from December 26 (2002) to December 30 (2001) with a high count of two on December 26, 2002. As an aside, where an influx consists of a series of sightings of the same number of birds (normally one) then I always treat the first date as the peak count. For example the December 6, 2000 peak count relates to a single individual that was present from December 6 to December 20. There was a very light early spring passage from January 8 (1999) to March 3 (2001), there were two "clustered" influxes. The first peaked from January 19 (1999) to January 27 (2002) with a high count of three on January 19, 1999. The second peaked from February 21 (2001) to February 23 (2003) with a high count of two on February 21, 2001. With the exception of these two peak counts only singles seen. The main spring passage was also a very weak event, it ran from March 5 (2003) to May 9 (2002), there were two "clustered" influxes. The first peaked from March 12 (2003) to March 18 (2001) with a high count of three on March 12, 2003. The second peaked from May 2 (2000) to May 9 (2002) with one on both dates. This species is clearly a late fall visitor to the area, above all else.

Sandhill Crane (*Grus canadensis*)

This is a passage migrant and winter visitor. There are no records for the summer from May 22 to July 3. The records for this species fall into two distinct groups i.e. those flying over and those off passage in the fields. I had expected to write up these groups separately but the pattern is identical. With the exception of 2001 when there were no records in the fall before November. In 2001 there were four on July 4 and July 11 with one staying to July 22. Later there was an influx from September 5 to September 19 with a peak count of five on September 16. The late fall passage ran from November 5 (1999) to December 14 (1999) with a high count of 104 flying to the south on November 25, 2001. The winter passage was possibly an extension of the fall passage, it ran from December 11 (1998) to January 12 (1999) with a high count of 55 flying to the south on January 7, 2002. There was no winter passage in 1999/2000 and in 2000/2001 this passage ended on December 20 i.e. there was no second influx. The early spring passage ran from January 13 (2002) to February 26 (2003) with a high count of 38 flying to the north on February 11, 2000. The late spring passage was a minor event, it ran from March 5 (2003) to May 21 (2003) with a high count of five on April 2, 2001.

With the exception of 2001 there were no sightings in the fall before November. In 2001 there were four on July 4 and July 11 with one staying to July 22. Later there was an influx from September 5 to September 19 with a peak count of five on September 16. The late fall passage was by far the most significant event of the year. This passage ran from November 5 (1999) to December 14 (1999), there were three "clustered" influxes. The first peaked from November 12 (2000) to November 15 (2001) with high counts of 97 flying south on November 13, 1998 and

29 in the area on November 15, 2001. The second peaked from November 24 (2002) to November 30 (1998) with high counts of 82 flying to the south on November 24, 2002 and 104 flying to the south on November 25, 2001. The latter was the highest count during the first five years of the survey. The highest count for the area during this influx was that of 33 on November 30, 1998. The third peaked from December 2 (2002) to December 7 (1999) with high counts of 69 flying to the south on December 2, 2002 with 15 in the area on December 7, 1999. The winter passage was perhaps an extension of the fall passage, it ran from December 11 (1998) to January 12 (1999), there were two "clustered" influxes. The first peaked from December 15 (2000) to December 21 (2001) with a high count of 37 in the area on December 15, 2000. None noted as flying to the south during this influx. The second peaked from December 31 (1998) to January 7 (2002) with a high count of 55 flying to the south on January 7, 2002. Six also flew to the south on January 5, 2003. In the area the high count was that of 20 on December 31, 1998. There was no winter passage in 1999/2000 and in 2000/2001 this passage ended early on December 20 i.e. there was no second influx. There was an early spring passage from January 13 (2002) to February 26 (2003), there were four "clustered" influxes. The first peaked from January 13 (2002) to January 18 (2000) with a high count of four in the area on January 18, 2000. The second peaked from January 29 (1999) to February 6 (2000) with a high count of eight in the area on January 29, 1999. The third peaked from February 11 (2000) to February 19 (1999) with one in the area on February 19, 1999. During this influx birds also noted flying to the north. There were 38 on February 11, 2000 and 33 on February 15, 2003. The fourth peaked from February 24 (2002) to February 26 (2003) with one in the area on February 25, 2000 and two in the area on February 24, 2002. On February 26, 2003 a total of 12 flew to the north. The late spring passage which ran from March 5 (2003) to May 21 (2003) was a very minor event, there were four "clustered" influxes. The first peaked from March 11 (2001) to March 14 (2002) with one on both dates. The second peaked from March 30 (2000) to April 2 (2001) with a high count of five on April 2, 2001. The third peaked from April 29 (2001) to May 7 (1999) with a high count of three on April 29, 2001. The fourth peaked from May 20 (2001) to May 21 (2003) with a high count of two on May 21, 2003. Most sightings were along the eastern border, no flocks were ever seen flying to the north or the south over Lake Apopka.

Whooping Crane (*Grus americana)*

There are a few sightings of birds from the project to create a resident population of this species in Florida. There were three on July 6, 1999. Later a party of eight flew to the east on March 21, 2000. Finally there was one on March 25, 2001. The count of eight is still the highest count for Zellwood.

Black-bellied Plover (*Pluvialis squatarola)*

This is a passage migrant and winter visitor when suitable habitat available. In 1999 a number stayed through the summer. This species prefers the short grass fields but they can be found on ploughed land and the drier areas of expanses of mud. There is an early fall passage from July 25 (2001) to September 17 (1998) with a high count of 55 on September 2, 1998. Normally each passage overlaps to a degree with its neighbor but there was a two week gap until the main fall passage started. This event ran from September 30 (1998) to November 30 (1999) with a high count of 183 on November 6, 1998. To detail the last two 1998 influxes, there were 14 on October 16 with 24 on October 21, 97 on October 29, 155 on November 2 and 183 on November 6, then 175 seen on November 11 with 63 on November 13. There were also 218 on November 18 and 213 on November 20. The winter passage followed from November 25 (1998, 2001) to January 7 (2000) with a high count of 346 on December 3, 1998. The highest counts for the other years are given in segment two. To detail the 1998 influxes, there were 315 on November 25 with 346 on December 3, then 186 seen on December 8 with 145 on December 11. There were 295 on December 16 with 129 on December 28 and 75 on December 31, 1998. The early spring passage ran from January 1 (1999) to March 10 (2000) with a high count of 262 on January 27, 1999. To detail the 1999 influxes, there were 82 on January 1 with 84 on January 7, 100 on January 8 and 236 on January 12, then 221 seen on January 15 with 109 on January 19. There were 262 on January 27 with 122 on January 29 and 45 on February 3. There were 54 on February 5 with 175 on February 9, then 172 seen on February 10 with 31 on February 17. With all these species I wonder what the counts would have done that spring if the fields had not been drained. The main spring passage ran from March 11 (1999, 2001) to May 18 (1999), the first three high counts were all of 25. The fourth influx had high counts of 65 on May 1, 1999 and 75 on April 30, 2000. The last two influxes only had high counts of eight. This late surge was unexpected. In 2002 there were later records of birds in non-breeding plumage. There was one n May 30 with three on June 10 and two on June 16. The situation in the summer of 1999 was exceptional with birds staying at the Sod Farm through to July. There were 20 on May 22 with 14 on May 25, then eight stayed to June 12, there were six on June 14, three then stayed to June 25 and two continued to be seen to July 9. The fall passage did not start until July 27 in that year.

There is an early fall passage from July 25 (2001) to September 17 (1998), there were two “clustered” influxes. The first peaked from August 11 (2002) to August 14 (2001) with a high count of 14 on August 13, 1999. The second peaked from September 2 (1998) to September 10 (2000) with a high count of 55 on September 2, 1998. Normally each passage overlaps to a degree with those on either side but there was a two week gap until the main fall passage started. The main fall passage ran from September 30 (1998) to November 30 (1999), there were four “clustered” influxes. The first peaked from October 15 (2000) to October 19

(1999) with a high count of 116 on October 19, 1999. The second peaked from October 28 (2001) to November 6 (1998) with high counts of 135 on November 3, 1999 and 183 on November 6, 1998. The third peaked from November 9 (1999) to November 12 (2000) with a high count of 115 on November 9, 1999. The fourth peaked from November 18 (1998) to November 26 (1999) with high counts of 55 on November 26, 1999 and 218 on November 18, 1998. The winter passage followed from November 25 (1998, 2001) to January 7 (2000), there were three "clustered" influxes. The first peaked on December 3 (1998, 2000) with high counts of 52 on December 3, 2000 and 346 on December 3, 1998. The latter is still the highest count for Zellwood. The second peaked from December 16 (1998) to December 22 (1999) with high counts of 31 on December 22, 1999 and 295 on December 16, 1998. The third peaked from December 31 (2000) to January 4 (2000) with a high count of 17 on December 31, 2000, this was clearly a basic influx. The early spring passage ran from January 1 (1999) to March 10 (2000), there were five "clustered" influxes. The start date is early but if that first influx was placed in the winter passage then that event would have continued to January 28 (2000). This first influx peaked from January 7 (2001) to January 12 (1999) with high counts of 15 on January 11, 2000 and 236 on January 12, 1999. The second peaked from January 27 (1999) to January 31 (2001) with high counts of three on January 31, 2001 and 262 on January 27, 1999. The third peaked from February 2 (2000) to February 5 (2003) with five on both dates. The fourth peaked from February 9 (1999) to February 16 (2000) with high counts of four on February 16, 2000 and 175 on February 9, 1999. I have given two high counts for the winter and the early spring whilst Unit Two flooded just to show how few seen when there was little suitable habitat. The fifth influx peaked from March 3 (2000) to March 4 (2002) with a high count of 23 on March 3, 2000. The main spring passage followed from March 11 (1999, 2001) to May 18 (1999), there were six "clustered" influxes. In both 1999 and 2002 birds continued to be seen after May 18, these will be dealt with separately. The first influx peaked from March 18 (1999) to March 21 (2000) with a high count of 25 on March 21, 2000. The second is indicated by a peak count of 25 on March 30, 1999. The third peaked from April 6 (2000) to April 9 (1999) also with a high count of 25 on April 9, 1999. The fourth peaked from April 30 (2000) to May 1 (1999) with high counts of 65 on May 1, 1999 and 75 on April 30, 2000. There was clearly a significant event at this time. The fifth peaked from May 4 (2001) to May 6 (2002) with a high count of eight on May 4, 2001. The last influx is indicated by a peak count of eight on May 13, 2000. Note how low these counts were, this was all because the fields of Unit Two had been drained. In 2002 there were late records of birds in non-breeding plumage. There was one on May 30 with three on June 10 and two on June 16. The situation in the summer of 1999 was exceptional with birds staying at the Sod Farm through to July. There were 20 on May 22 with 14 on May 25, eight then stayed to June 12 with six on June 14. Three then stayed to June 25 and finally two remained to July 9. Fall passage then noted from July 27 in that year.

American Golden-Plover (*Pluvialis dominica)*

This is an uncommon fall passage migrant with isolated records in the winter and the spring. This species occurs in the same habitat as the Black-bellied Plover. The main fall passage ran from September 2 (1998) to November 26 (1999), there were four "clustered" influxes. The first peaked from September 8 (1999) to September 16 (2001) with a high count of four on September 11, 1998. The second peaked on October 14 (1999, 2001) also with a high count of four on October 14, 2001. The third peaked from October 26 (1999) to October 29 (1998, 2000) with a high count of six on October 26, 1999. This is still the highest count for the survey. There were five earlier higher counts the highest being that of 24 on November 6, 1991. This has all to do with habitat availability. The fourth influx peaked from November 16 (1999) to November 18 (1998) with singles on both dates. There were no sightings in the fall of 2002 i.e. there was no suitable habitat. There is only one winter record, there being one on December 16, 1998. Again in the early spring there was only one record, there being one on January 19, 2003. The main spring passage was a little better with the following records. There was one on March 25, 2001 with two on March 27, 2001. There was also one on April 23, 1999. Finally there was one from May 1, 1999 to May 7, 1999. Habitat is critical. With the ploughed fields prior to 1998 the two highest counts were of 17 on September 20, 1990 and 24 on November 6, 1991. Neither count fits into the peak count periods detailed above.

Semipalmated Plover (*Charadrius semipalmatus)*

This is a passage migrant. Unlike the last two species the Semipalmated Plover only uses areas of drying mud. This is an early fall migrant so the early fall passage is the main event. This passage ran from July 23 (1999, 2000) to September 19 (2000) with a high count of 70 on September 2, 1998. As with the Black-bellied Plover there is a gap between the early fall and the main fall passages. This is unusual normally these events overlap to an extent. The late fall passage ran from October 6 (2002) to November 20 (1998) with a high count of eight on November 2, 1998. There were no winter records, only the main spring passage occurred in the spring. This passage ran from March 30 (1999) to June 10 (2002) with a high count of 134 on May 15, 2002. This is still the highest count for the survey. Individuals thought to be in first-summer plumage were seen on May 23, 2002 and June 10, 2002, just one per day. In the spring of 2002 the water level in Lake Apopka was way below normal with extensive mud flats providing the one and only time that a spring shorebird passage could be followed. This event was cut short by the heavy rains in late May causing the water levels to rise foreshortening the season. What for this species was a mega influx started with five on April 17, then nine seen on April 24 with 35 on April 28, 44 on May 6, 102 on May 12 and 134 on May 15, then 63 seen on May 23 with one on May 30. There were no further sightings until a party of four seen on June

10, 2002. As always the lack of suitable habitat means that information on this species is very incomplete.

This is an early fall migrant so the early fall passage is the main event. This passage ran from July 23 (1999, 2000) to September 19 (2000), there were five “clustered” influxes. The first peaked on July 23 (1999, 2000) with a high count of three on July 23, 2000. The second peaked from August 5 (2001) to August 11 (2002) with a high count of ten on August 11, 2002. The third peaked from August 22 (2001) to August 25 (1999, 2002) with high counts of 14 on August 22, 2001 and August 25, 2002. The fourth peaked from September 2 (1998) to September 3 (2000) with a high count of 70 on September 2, 1998. The fifth peaked from September 11 (2002) to September 19 (2000) with a high count of five on September 16, 2001. The late fall passage ran from October 6 (2002) to November 20 (1998), there was one “clustered” influx. The gap between this and the previous passage is unusual as normally these events overlap to an extent. The influx peaked from October 29 (2000) to November 2 (1998) with a high count of eight on November 2, 1998. There were other records that may indicate the location of basic influxes. There was one from October 6, 2002 to October 9, 2002 with singles on October 21, 1998 and November 12, 1999. None seen during the winter or the early spring however there was a main spring passage from March 30 (1999) to June 10 (2002), there were three “clustered” influxes. The first is indicated by a peak count of 21 on April 26, 2000. The second peaked from May 2 (2001) to May 4 (1999, 2003) with a high count of 22 on May 4, 1999. The third peaked from May 13 (2000) to May 15 (2002) with a high count of 134 on May 15, 2002. This is still the highest count for the survey. The highest count for Zellwood is that of 175 on August 13, 1995. The fourth is indicated by a peak count of four on June 10, 2002, a very late date. Singles were also seen on March 30, 1999 and May 25, 1999, these may indicate the location of a further two influxes. No summer records.

Piping Plover (*Charadrius melodus*)

This species is a major rarity inland in Florida. There was one in first summer plumage on the shore of Lake Apopka on May 20, 2002. This was during the major influx of Semipalmated Plovers. There is an earlier record there was one on August 18, 1974. This was the first inland record for Florida.

Killdeer (*Charadrius vociferus)*

This is a resident, a passage migrant, a winter visitor and there was a post-breeding gathering. They preferred the bare earth habitats and the short grass fields but not areas of wet

mud. There was a light early fall passage from July 23 (1999) to October 2 (2002) with a high count of 90 on August 15, 1998. The main fall passage followed from September 23 (2001) to December 11 (1998) with a high count of 311 on November 30, 1998. The winter passage ran from December 6 (2000) to January 19 (1999) with a high count of 756 on January 1, 1999. To detail the 2002 influxes, there were 123 on December 11 with 575 on December 14 and 710 on December 16, then 176 seen on December 21 with 84 on December 26. There were 266 on December 28 with 82 on December 30, 20 on January 2 and nine on January 5, 2003. The early spring passage was at a slightly lower level than the winter passage with the noticeable exception of 2003. This passage ran from January 7 (2003) to February 29 (2000) with a high count of 1,935 on February 9, 2003. To detail the 2003 influxes, there were 61 on January 7 with 174 on January 9, 383 on January 11 and 1,760 on January 19, then 1,205 seen on January 22 with 1,000 on January 26. There were 1,025 on January 30 with 1,085 on February 2 and 1,935 on February 9, then 950 seen on February 12 with 550 on February 15, 480 on February 19, 65 on February 23 and 25 on February 26. In contrast the late spring passage was a minor event, it ran from March 2 (2003) to April 3 (2002) with a high count of 155 on March 5, 2003. The summer passage ran from April 2 (2003) to June 23 (2002), there were six influxes. As usual that surprises me as there was a small breeding population. There were six pairs in 1999 with one pair in 2000, six pairs in 2001 and 11 pairs in 2002. None located in 2003. The only information that I recorded on new born young was as follows. There were three on May 1, 2002, three again on May 23, 2002 and one on July 1, 2001. The highest count during the summer was that of 20 on May 30, 2002. There is a post-breeding gathering from June 3 (2000) to July 31 (2002) with a high count of 264 on July 19, 2000.

The early fall passage ran from July 23 (1999) to October 2 (2002), there were six “clustered” influxes. The first is indicated by a peak count of 57 on July 23, 1999. The second peaked from August 2 (2001) to August 9 (2000) with a high count of 59 on August 7, 2002. The third peaked from August 15 (1998) to August 23 (2000) with a high count of 90 on August 15, 1998. The fourth is indicated by a peak count of 17 on August 29, 2001. The fifth peaked from September 6 (1999) to September 10 (2000) with a high count of 18 on September 10, 2000. The sixth peaked from September 16 (2001) to September 22 (2002) with a high count of 33 on September 22, 2002. The main fall passage followed from September 23 (2001) to December 11 (1998), there were four “clustered” influxes. The first peaked from September 26 (2001) to October 1 (2000) with a high count of 18 on October 1, 2000. The second peaked from October 19 (1999) to October 29 (2000) with a high count of 56 on October 29, 2000. The third peaked from November 6 (1999) to November 9 (2002) with a high count of 238 on November 6, 1999. The fourth peaked from November 24 (2002) to December 2 (2001) with a high count of 311 on November 30, 1998. There were two other peak counts on November 30, in 1999 and 2000. During this fall passage the numbers got higher as the passage progressed, the same pattern happens with the winter passage. The winter passage ran from December 6 (2000) to January

19 (1999), there were three “clustered” influxes. The first is indicated by a peak count of 413 on December 6, 2000. The second peaked from December 11 (1999) to December 17 (2000) with a high count of 710 on December 16, 2002. The third peaked from December 28 (2002) to January 3 (2002) with a high count of 756 on January 1, 1999. Again there were also peak counts on January 1 in 2000 and 2001. Whilst the early spring passage was a major event it was at a slightly lower level than the winter passage, 2003 was a significant exception. This passage ran from January 7 (2003) to February 29 (2000), there were three “clustered” influxes. The first peaked from January 16 (2002) to January 19 (2003) with a high count of 1,760 on January 19, 2003. The second peaked from February 3 (1999) to February 9 (2003) with a high count of 1,935 on February 9, 2003. This was the highest count during the first five years of the survey. The third peaked from February 21 (2000) to February 24 (2002) with a high count of 416 on February 24, 2002. If one excluded the very high 2003 counts the peak counts would be those of 401 on January 17, 2001 and 615 on February 3, 1999. The late spring passage was a weak, short lived event running from March 2 (2003) to April 3 (2002), there were four ”clustered” influxes. The first peaked from March 5 (2003) to March 7 (2000) with a high count of 155 on March 5, 2003. The second peaked from March 11 (2001) to March 13 (1999) with a high count of 47 on March 13, 1999. The third peaked from March 16 (2003) to March 19 (1999) with a high count of 37 on March 19, 1999. The fourth is indicated by a peak count of 12 on March 25, 2000. The summer passage ran from April 2 (2003) to June 23 (2002), even though the numbers were low there did appear to be a series of six “clustered” basic influxes. The first peaked from April 7 (2002) to April 11 (2000, 2003) with a high count of nine on April 11, 2000. The second peaked from April 21 (2002) to April 29 (2001) with a high count of 11 on April 26, 1999. The third peaked from May 8 (2001) to May 12 (2003) with a high count of nine on May 12, 2003. The fourth peaked from May 16 (2000) to May 18 (1999) with a high count of six on May 16, 2000. The fifth is indicated by a peak count of 20 on May 30, 2002. The sixth peaked from June 7 (1999, 2001) to June 10 (2002) with a high count of 16 on June 10, 2002. There was a post-breeding gathering and this ran from June 3 (2000) to July 31 (2002), there were four “clustered” influxes. The first two influxes were indicated by isolated peak counts of nine on June 17, 2001 and 142 on June 25, 1999. The third peaked from July 3 (2002) to July 9 (1999) with a high count of 215 on July 9, 1999. The fourth peaked from July 15 (2001() to July 19 (2000) with a peak count of 264 on July 19, 2000.

Black-necked Stilt (*Himantopus mexicanus*)

This is a passage migrant, a summer visitor and an occasional winter visitor. This species needs shallow water and areas of wet mud for feeding and dried mud for nesting, if the nest is lost due to rising water levels this species will often try again at a new location. There was a

marked main spring passage from March 17 (2002) to May 29 (1999) with a high count of 70 on May 4, 1999. The summer passage ran from May 23 (2002) to July 30 (2003) with a high count of 195 on June 10, 2002. The summer of 2002 was very exceptional and one influx covered the whole period, it is worth detailing. There were 40 on May 23 with 68 on May 30, 86 on June 5 and 195 on June 10, then 130 seen on June 12 with 43 on June 16, 40 on June 23, 32 on July 3, 28 on July 21 and 22 on July 25. This really looks like a genuine passage. As with all summer visitors the breeding population was very variable, there were six pairs in 1999 with seven pairs in 2000, 18 pairs in 2001, 30 pairs in 2002 and just one pair in 2003. Water levels are critical. Recently hatched young noted from June 3 (2000) to July 23 (1999) with most sightings in the second half of June. It is not possible to separate out any post-breeding gathering from the main fall passage. This passage ran from July 15 (2001) to October 29 (2000) with a high count of 368 on September 17, 1998. To detail that influx, there were 70 on September 2 with 150 on September 11 and 368 on September 17, then 220 seen on September 30 with 55 on October 6 and 21 on October 16. Both of the influxes detailed above were type 1 influxes. After this passage ended on October 29 (2000) there were no further records until mid-November. There was in fact a late fall passage in two years running from November 13 (1998) to December 3 (1998), there was one influx. This peaked from November 20 (1998) to November 26 (2000) with a high count of eight on November 20, 1998. There was a small winter passage in the same two years, a single influx in each year. The first ran from December 3, 1998 to January 19, 1999 with ten present throughout. The second ran from December 12, 2000 to December 15, 2000 with a peak count of four on December 15, 2000. The early spring passage was also only noted in two years. In 1999 there were five on January 27 with ten on January 29 and February 3, up to eight then seen to February 10 with four on February 17 when the fields drained. In 2003 there was one present from February 26 to March 9. There are indications that if the habitat i.e. water levels were acceptable then this species would become a year round resident.

There was a marked spring passage from March 17 (2002) to May 29 (1999), there were six “clustered” influxes. The first peaked from March 18 (2001) to March 22 (2002) with a high count of 24 on March 22, 2002. The second peaked from March 29 (2003) to April 2 (2001) with a high count of 23 on March 29, 2003. The third peaked from April 7 (2002) to April 11 (2000) with a high count of 49 on April 11, 2000. The fourth is indicated by a peak count of 53 on April 26, 2000. The fifth peaked on May 4 (1999, 2000) with a high count of 70 on May 4, 1999. The sixth peaked from May 14 (2001) to May 15 (2002) with a high count of 53 on May 15, 2002. The summer passage ran from May 23 (2002) to July 30 (2003) and as is often the case there were four “clustered” influxes. The first is indicated by a peak count of 18 on May 27, 2001. The second peaked from June 7 (1999, 2001) to June 10 (2002) with a high count of 195 on June 10, 2002. This influx is detailed in segment one. The third peaked from June 20 (2001) to June 22 (1999) with a high count of 29 on June 20, 2001. The fourth peaked from July 4 (2003) to July 12 (2000) with a high count of 65 on June 12, 2000. The summer of 2002 was very exceptional in

that one influx ran from May 23 to July 25 with the high count of 195 on June 10. It is not possible to separate any post-breeding gathering from the main fall passage. This event ran from July 15 (2001) to October 29 (2000), there were six “clustered” influxes. The first peaked from July 15 (2001) to July 23 (2000) with a high count of 94 on July 23, 2000. The second is indicated by a peak count of 53 on August 4, 2002. The third peaked from August 25 (1999) to August 27 (2000) with a high count of 65 on August 25, 1999. The fourth is indicated by a peak count of 16 on September 2, 2001. The fifth peaked from September 10 (1999) to September 17 (1998) with a high count of 368 on September 17, 1998. This is still the highest count for Zellwood. The sixth is indicated by a peak count of two on September 22, 2002. This fall passage ended on October 29 (2000) and there were no further records until mid-November. There was a late fall passage in two years, it ran from November 13 (1998) to December 3 (1998), there was one “clustered” influx. This influx peaked from November 20 (1998) to November 26 (2000) with a high count of eight on November 20, 1998. There was a small winter passage in the same two years with a single influx in each year. The first ran from December 3, 1998 to January 19, 1999 with a party of ten present throughout. The second was from December 12, 2000 to December 15, 2000 with a peak count of four on December 15, 2000. The early spring passage was also only noted in two years. In 1999 there were five on January 27 with ten on January 29 and February 3. Up to eight then seen to February 10 with four on February 17. In 2003 there was one present from February 26 to March 9.

American Avocet (*Recurvirostra americana*)

This is a unique species in many ways. Its habitat needs are simple i.e. shallow water with extensive area of wet mud. It has been seen in every month of the year but two events stand out above all others. There was a single influx from September 17, 1998 to January 27, 1999 with high counts of 75 on January 11, 1999 and January 12, 1999. To detail that four month long influx, there were three on September 17 with 17 on September 30, 23 on October 16, 24 on October 21, 25 on October 29, 33 on November 2, 34 on November 11, 37 on November 18, 63 on November 25, 66 on December 28, 66 again on January 8 with 75 on January 11 and January 12, then 53 seen on January 19 and 11 on January 27. There was also a three month long influx from November 3, 1999 to February 25, 2000 with a high count of eight on January 14, 2000. This is the first species that I have come across as I work my way down through the species that is a real winter visitor, all the other species are winter passage migrants. Excluding the two mega influxes described above the first in the fall was an influx from June 26, 2000 to July 23, 2000 with a peak count of two on July 4, 2000. There was also one on July 21, 2002. There was a fall passage from August 27 (1999) to December 3 (2000) with a high count of 26 on October 29, 2000. The only winter records relate to ten on

December 12, 2000 with two on December 15, 2000. The early spring passage ran from January 11 (1999) to February 25 (2000) with high counts of 33 on February 5, 1999 and 75 on January 11, 1999. The main spring passage was a little stronger but exceptionally there were two very separate events. Initially there was a passage from March 14 (2000, 2002) to April 15 (2000) with a high count of two on April 11, 2000. The second event ran from May 23 (2002) to June 23 (2002), because this is so unexpected the individual records are described. There was one from May 23, 2002 to June 23, 2002, then one seen on May 29, 1999. Finally there were two on June 9, 2000. This species is different.

This is the first true winter visitor that I have come across as I work my way through the species. There was a single mega influx from September 17, 1998 to January 27, 1999 with a peak count of 75 on January 11, 1999 and January 12, 1999. This influx continued for a total of four months. There was also a three month long mega influx from November 3, 1999 to February 25, 2000 with a peak count of eight on January 14, 2000. To continue with the rest of the records, the first in the fall was an influx from June 26, 2000 to July 23, 2000 with a peak count of two on July 4, 2000. There was also one on July 21, 2002. The main fall passage ran from August 27 (1999) to December 3 (2000), there were three “clustered” influxes. The first peaked from August 27 (1999) to September 2 (1998) with a high count of three on September 2, 1998. The second peaked from September 8 (2002) to September 9 (2001) with a high count of two on September 9, 2001. The third peaked from October 21 (2001) to October 29 (2000) with high counts of one on October 21, 2001 and 26 on October 29, 2000. The only winter records relate to ten on December 12, 2000 and to two on December 15, 2000. For the early spring passage there were two influxes. The first peaked from January 11 (1999) to January 14 (2000) with a high count of 75 on January 11, 1999 and January 12, 1999. These are still the highest counts for Zellwood. This influx relates to the two mega influxes that both peaked at this time. The second relates to a single influx that ran from January 29, 1999 to February 17, 1999 with a peak count of 33 on February 5, 1999. The main spring passage was a little stronger but most unexpectedly there were two separate events! Initially there was passage from March 14 (2000, 2002) to April 15 (2000), there were two “clustered” influxes. The first peaked on March 14 (2000, 2002) with one on both dates. The second is indicated by a peak count of two on April 11, 2000. The second event ran from May 23 (2002) to June 23 (2002), because this is so unexpected the individual records are given. There was one from May 23, 2002 to June 23, 2002, then one seen on May 29, 1999. Finally there were two on June 9, 2000. This species is so very different.

Greater Yellowlegs (*Tringa melanoleuca*)

This is a passage migrant and winter visitor, when conditions were good non-breeding birds have summered. They prefer the shallow flooded fields to the shore of Lake Apopka. The early fall passage ran from June 29 (1999) to September 30 (1998, 2001) with an extension to October 16 in 2002. The highest count was that of 80 on September 11, 1998. The main fall passage followed and it ran from October 6 (1998) to December 6 (2000) with a high count of 400 on November 2, 1998. To detail that influx, there were 82 on October 6 with 160 on October 16, 305 on October 21, 380 on October 29 and 400 on November 2, then 210 seen on November 11 with 190 on November 18 and 85 on November 25. The winter passage ran from December 7 (1999) to January 14 (2000) with a high count of 415 on December 16, 1998. To detail the 1998 influxes, there were 125 on November 30 with 55 on December 3. There were 105 on December 8 with 115 on December 11 and 415 on December 16, then 370 seen on December 28 with 340 on December 31, 150 on January 1, 115 on January 7 and 80 on January 8. The early spring passage ran from January 12 (1999) to February 29 (2000) with an extension to March 16 in 2003. The high count was that of 295 0n February 5, 1999. To detail the 1999 influxes, there were 130 on January 12 with 125 on January 15 and 100 on January 19. There were 160 on January 27 with 240 on January 29 and 295 on February 5, then 290 seen on February 9 with 230 on February 10 and 40 on February 17. The major influxes detailed above were type 1 with the two minor ones showing as type 2. The late spring passage followed from March 3 (2000) to June 5 (1999) with a high count of 23 on April 20, 1999. It would appear that this species could become a regular non-breeding summer visitor if the habitat was there. There were three on June 7, 1999 with two on June 12, 1999. Then in 2000 there were two on May 30, three on June 6, six on June 9, eight on June 19 and 13 on June 26, then 12 seen on June 30 with 11 on July 4.

The early fall passage ran from June 29 (1999) to September 30 (1998, 2001) with an extension to October 16 in 2002, there were seven “clustered” basic influxes. If the passage had been heavier we might have had just three regular influxes…… The first peaked from July 14 (1999, 2002) to July 18 (2001) with a high count of eight on July 18, 2001. The second peaked from July 23 (2000) to July 28 (2002) with a high count of 24 on July 23, 2000. The third peaked from August 13 (2000) to August 19 (2001) with a high count of five on August 18, 2002. The fourth peaked from August 25 (1999) to August 28 (2002) with nine on both dates. The fifth peaked from September 8 (2002) to September 11 (1998) with a high count of 80 on September 11, 1998. The sixth peaked from September 16 (2001) to September 22 (2002) with a high count of 12 on September 16, 2001. The seventh is indicated by a peak count of 24 on September 30, 2001. The main fall passage followed and it ran from October 6 (1998) to December 6 (2000). Just one influx covered this event in 1998, in the other years there were four “clustered” influxes. The first peaked from October 17 (2001) to October 23 (2002) with a

high count of 19 on October 23, 2002. The second peaked from October 29 (1999, 2000) to November 2 (1998) with a high count of 400 on November 2, 1998. The third peaked from November 11 (2001) to November 12 (1999, 2000) with a high count of 25 on November 12, 1999. The fourth peaked from November 28 (2000) to November 30 (1999) with a high count of 16 on November 30, 1999. The winter passage ran from December 7 (1999) to January 14 (2000) and again with the exception of 1998/1999 only small numbers seen. There were three "clustered" influxes. The first peaked from December 12 (2000) to December 19 (2001) with a high count of 415 on December 16, 1998. This is still the highest count for the survey. There were two higher counts in earlier years the highest being that of 800 on August 5, 1995. The second peaked from December 22 (1999) to December 30 (2001) with a high count of nine on December 22, 1999. The third peaked from January 4 (2001) to January 11 (2000) with a high count of 11 on January 11, 2000. The early spring passage came next and it ran from January 12 (1999) to February 29 (2000) with an extension to March 16 in 2003, there were three "clustered" influxes. The first peaked from January 12 (1999) to January 18 (2000) with a high count of 130 on January 12, 1999. The second peaked from January 27 (2002) to February 5 (1999) with a high count of 295 on February 5, 1999. The third peaked from February 21 (2000) to February 26 (2003) with a high count of 21 on February 26, 2003. The late spring passage ran from March 3 (2000) to June 5 (1999), there were six "clustered" influxes. The first peaked from March 21 (2000) to March 27 (2002) with a high count of 21 on March 21, 2000. The second peaked from April 2 (2001) to April 3 (2000) with a high count of 19 on April 3, 2000. The third peaked from April 13 (2003) to April 20 (1999) with a high count of 23 on April 20, 1999. The fourth peaked from April 30 (2003) to May 4 (2000) with a high count of 11 on May 1, 1999. The fifth peaked from May 15 (2002) to May 16 (2000) with a high count of ten on May 16, 2000. The sixth peaked from May 20 (2001) to May 25 (1999) with a high count of five on May 25, 1999. It would appear that this species could become a regular non-breeding summer visitor if the habitat was there. There were three on June 7, 1999 with two on June 12, 1999. Then in 2000 there were two on May 30 with three on June 6, six on June 9, eight on June 19 and 13 on June 26, then 12 seen on June 30 with 11 on July 4. The peak counts for the summer do not indicate any particular pattern.

Lesser Yellowlegs (*Tringa flavipes*)

This is a passage migrant and winter visitor, no indication that it would ever summer. Habitat needs much as for the last species. The early fall passage ran from June 25 (1999) to September 30 (1998, 2001) with a high count of 570 on September 11, 1998. For the record where a migrant is seen after June 21 (the longest day) I treat it as a fall record. To detail the 1998 influx, there were 140 on August 15 with 290 on September 2 and 570 on September 11,

then 370 seen on September 17 with 212 on September 30. The Greater Yellowlegs had minimal passage during this period. The main fall passage followed from September 25 (1999) to December 3 (1998) with a high count of 995 on November 2, 1998. This was also a peak count date for the Greater Yellowlegs. To detail the 1998 influxes, there were 370 on October 6 with 945 on October 16, then 815 seen on October 21 with 700 on October 29. There were 995 on November 2 with 680 on November 6 and 520 on November 11. There were 755 on November 13 and 830 on November 25, then 755 seen on November 30 with 415 on December 3. To have these comparatively short-lived influxes when numbers are high suggest to me that the passage was moving quickly i.e. birds were staying for shorter periods than normal. The winter passage ran from November 26 (1999) to January 8 (1999) with a high count of 1,195 on December 16, 1998. Dare I say that the highest count for the Greater Yellowlegs was also on this date. To detail the 1998 influxes, there were 540 on December 8 with 625 on December 11 and 1,195 on December 16, then 620 seen on December 20 with 490 on December 28. There were 910 on December 31 with 450 on January 1, 215 on January 7 and 185 on January 8. The early spring passage followed from January 4 (2000) to March 2 (2003) with a high count of 720 on February 5, 1999. To detail the 1999 influxes, there were 510 on January 12 with 270 on January 15. There were 415 on January 19 with 550 on January 27, then 430 seen on January 29 with 235 on February 3. There were 720 on February 5 with 680 on February 10 and 70 on February 17 after the fields had been drained. You now have the whole of the 1998/1999 passage from August 15 to February 17, it was a mixture of type 1 and type 2 influxes. The late spring passage ran from March 3 (2000) to June 12 (1999) with a high count of 129 on April 26, 2000. There were no records from June 13 to June 24.

The early fall passage ran from June 25 (1999) to September 30 (1998, 2001), there were eight “clustered” basic influxes. The first peaked from June 25 (1999) to June 30 (2000) with a high count of 11 on June 30, 2000. The second peaked from July 4 (2001) to July 9 (2003) with a high count of 25 on July 4, 2001. The third peaked from July 14 (1999) to July 19 (2000, 2003) with a high count of 61 on July 14, 1999. The fourth peaked on July 25 (2001, 2002) with a high count of 23 on July 25, 2002. The fifth is indicated by a peak count of 53 on August 4, 2002. The sixth peaked from August 16 (2000) to August 20 (1999) with a high count of 35 on August 18, 2002. The seventh peaked from September 8 (2002) to September 11 (1998) with a high count of 570 on September 11, 1998. The eighth peaked from September 16 (2001) to September 22 (2002) with a high count of 94 on September 16, 2001. If the passage had been stronger in all the years there might have just been three regular influxes. The main fall passage was better as there were four ”clustered” influxes, this passage ran from September 25 (1999) to December 3 (1998). The first peaked from October 2 (2002) to October 8 (1999) with a high count of 32 on October 2, 2002. The second peaked from October 14 (2001) to October 22 (2000) with a high count of 945 on October 16, 1998. The third peaked from October 28 (2002) to November 2 (1998) with a high count of 995 on November 2, 1998. The fourth peaked from

November 21 (2002) to November 25 (1998) with a high count of 830 on November 25, 1998.The winter passage followed from November 26 (1999) to January 8 (1999), there were three “clustered” influxes. The first peaked from December 4 (1999) to December 6 (2000) with a high count of 37 on December 4, 1999. The second peaked from December 11 (1999) to December 16 (1998) with a high count of 1,195 on December 16, 1998. This is still the highest count for Zellwood. The third peaked from December 30 (2002) to December 31 (1998) with a high count of 910 on December 31, 1998. Next came the early spring passage, this ran from January 4 (2000) to March 2 (2003), there were four “clustered” influxes. The first peaked from January 11 (2000, 2003) to January 13 (2002) with a high count of 510 on January 12, 1999. The second is indicated by a peak count of 550 on January 27, 1999. The third peaked from February 5 (1999) to February 12 (2003) with a high count of 720 on February 5, 1999. The fourth peaked from February 21 (2000) to February 24 (2002) with a high count of 49 on February 21, 2000. The late spring passage was perhaps the weakest event of the year, it ran from March 3 (2000) to June 12 (1999), there were seven “clustered” influxes. The first peaked from March 7 (2000) to March 13 (1999) with a high count of 94 on March 12, 2003. The second peaked from March 19 (2003) to March 22 (2001) with a high count of 16 on March 22, 2001. The third peaked from March 27 (2002) to April 4 (2001) with a high count of 14 on March 27, 2002. The fourth peaked from April 10 (2002) to April 13 (2003) with a high count of 24 on April 10, 2002. The fifth peaked from April 24 (2003) to April 26 (2000, 2001) with a high count of 129 on April 26, 2000. The sixth peaked on May 1 (1999, 2002) with a high count of 100 on May I, 1999. The seventh is indicated by a peak count of three on June 5, 1999. Whilst this passage was weaker there was a noticeable late passage in 1999 from April 20 to May 14 with a high count of 100 on May 1. In this case unlike the last species there was a summer break from June 13 to June 24.

Solitary Sandpiper (*Tringa solitaria*)

This is a passage migrant, most often seen along any muddy canal banks and the shore of Lake Apopka when there is exposed mud. The spring passage ran from March 18 (2001) to May 16 (2000), there were four “clustered” influxes. The first peaked from March 18 (2001) to March 19 (2002) with one on both dates. The second peaked from April 24 (2002, 2003) to April 26 (2000, 2001) with a high count of eight on April 26, 2001. This was the highest count for Zellwood during the first five years of the survey. The third peaked on May 4 (1999, 2001) with a high count of five on May 4, 2001. The fourth is indicated by a peak count of one on May 16, 2000. There were no further sightings until the fall passage started on July 12 (2000), this passage continued to September 28 (2002), there were five “clustered” influxes. The first peaked from July 18 (2001) to July 25 (2002) with a high count of four on July 25, 2002. The

second peaked from August 2 (2001) to August 4 (2002) with a high count of two on August 4, 2002. The third is indicated by singles on August 12 and August 16, 2001. The fourth peaked from August 26 (2001) to August 31 (1999) with one on both dates. The fifth peaked from September 11 (2002) to September 17 (1998) with a high count of five on September 11, 2002. There were some late records. There were two from September 29, 2002 to October 9, 2002. There were also singles on October 15, 2000 and November 19, 1999. In later years this species has proved to be a commoner migrant. There was insufficient information to create a segment one.

Willet (*Tringa semipalmata*)

This is an irregular passage migrant, with no records for 2002/2003. Most sightings were along the shore of Lake Apopka. The only spring records relate to four on April 24, 2002 and one on May 24, 2001. Seen in the fall from July 4 (2001) to September 11 (1998), there were indications of four "clustered" influxes. The first two influxes are indicated by isolated peak counts of four on July 4, 2001 and eight on July 27, 1999. The latter is still the highest count for the survey. There were four higher counts for the earlier years. The highest was that of 40 on August 16, 1978. The third peaked from August 15 (1998) to August 20 (1999) with a high count of two on August 15, 1998. The fourth peaked from September 2 (1998) to September 7 (2000) with a high count of three on September 2, 1998. This species remains a very irregular migrant.

Spotted Sandpiper (*Actitis macularius*)

This is an uncommon passage migrant, most sightings were along the shore of Lake Apopka. There was a light spring passage from April 4 (2001) to June 2 (2002), there were five "clustered" influxes. The first peaked from April 4 (2001) to April 6 (1999) with one on both dates. The second is indicated by a peak count of four on April 26, 2000. The third peaked from on May 4 (1999, 2001, 2003) with a high count of nine on May 4, 1999. The fourth peaked from May 13 (2000) to May 15 (2002) with a high count of 13 on May 15, 2002. This is still the highest count for the survey. There were two higher counts for the earlier years, the highest being that of 19 on July 29, 1972. To detail the 2002 influx there was one on April 17 with two on April 24, six on May 1, seven on May 9 and 13 on May 15, then 12 seen on May 23 with three to May 30 and two on June 2. The fifth is indicated by a peak count of one on May 20, 2001. No summer records, Seen in the fall from July 11 (2001) to September 22 (2002), there were six "clustered" influxes. There were more sightings than in the spring but there were much lower numbers, often only singles seen. The first peaked from July 11 (2001) to July 16

(1999, 2000) with a high count of three on July 16, 2000. The second peaked from August 4 (2002) to August 10 (1999) with two on both dates. The third peaked from August 15 (1998) to August 16 (2000, 2001) with a high count of two on August 15, 1998. The fourth peaked from August 28 (2002) to September 2 (1998) with a high count of five on August 28, 2002. The fifth peaked from September 5 (2001) to September 8 (1999) with a high count of two on September 5, 2001. The sixth peaked from September 19 (2000, 2001) to September 22 (2002) with one on both dates. Finally there was a late record of one on October 10, 2001.

Upland Sandpiper (*Bartramia longicauda*)

This was an uncommon but regular passage migrant whilst the Sod Farm existed, since its demise this has become a rarity. There was a light spring passage from March 21 (2000) to May 18 (1999) whilst the Sod Farm operated, it ceased operation in the summer of 2002. There were no spring records in 2003. There is no pattern to the spring records so they are all detailed below. There was one from March 21, 2000 to March 30, 2000. There was one on March 27, 2001 and April 2, 2001 with three on April 4, 2001 and two on April 8, 2001. There were six seen on April 20, 1999 and April 23, 1999. There was one on April 26, 2000 with three on April 30, 2000 and one on May 4, 2000. Finally there was one from May 10, 1999 to May 18, 1999. For the fall there were potentially six “clustered” influxes. The passage ran from July 9 (1999) to September 5 (2001) with an extension to September 22 in 2002. The first two influxes were indicated by isolated peak counts of one on July 9, 1999 and July 27, 2001. The third peaked from August 3 (1999) to August 8 (2003) with a high count of six on August 3, 1999. The counts of six in the spring and fall of 1999 are still the highest counts for the survey. There were many higher counts for the earlier years, the highest being that of 40 on August 21, 1993. The fourth peaked from August 13 (2000) to August 14 (2001) with two on both dates. The fifth peaked from September 2 (1998) to September 5 (2001) with a high count of two on September 2, 1998. The last is indicated by a peak count of one on September 22, 2002. This species is sorely missed.

Whimbrel (*Numenius phaeopus*)

This is a real vagrant, there being just two spring records. There were singles on May 1, 1999 and May 13, 2000. Most migration is along the coasts.

Long-billed Curlew (*Numenius americanus)*

This is a totally unexpected find. There was one at the Sod Farm on June 25, 1999. The date makes it an early fall record.

Marbled Godwit (*Limosa fedoa)*

This is a very rare migrant. The only records for the five years came from 1998/1999 whilst the fields of Unit Two flooded. This species would appear to need large areas of shallow flooded land. There was one from November 2, 1998 to November 20, 1998 with two on November 25, 1998. The count of two is still the highest for Zellwood. For the winter there was one on December 28, 1998. In the early spring there was one from January 27, 1999 to February 10, 1999. These separate events suggest that this species could be a more regular visitor when large areas flooded again.

Ruddy Turnstone (*Arenaria interpres*)

This is potentially a regular spring migrant with fewer fall records, as always it depends on there being suitable habitat i.e. muddy area in shallow flooded fields. Seen in the spring from April 24 (2002) to May 23 (2002) with a high count of eight on May 6, 2002. To detail the 2002 influxes, there was one on April 24 and April 28 with eight on May 6, then two seen on May 12. There were six on May 15 with five on May 20 and one on May 23. The singles in April, 2002 and the one on May 23, 2002 were adults in breeding plumage. Unfortunately I did not record plumage for the other dates. The water level in Lake Apopka was exceptionally low in the spring of 2002 creating extensive areas of mud. There was a more limited fall passage from August 15 (1998) to September 20 (2001) with high counts of two on August 15, 1998 and September 16, 2001.

Seen in the spring from April 24 (2002) to May 23 (2002), there were two “clustered” influxes. The first peaked from May 4 (1999) to May 6 (2002) with a high count of eight on May 6, 2002. This is still the highest count for the survey. The count of eight is equaled by another count of eight on September 20, 1990. The second peaked from May 15 (2002) to May 16 (2000) with a high count of six on May 15, 2002. Passage in the fall was lighter with records from August 15 (1998) to September 19 (2001), there may be three “clustered” influxes. The first two are indicated by isolated peak counts of two on August 15, 1998 and one on September 2, 1998. The third peaked from September 11 (1998) to September 16 (2001) with a high count of two on September 16, 2001. This is really a coastal species.

Red Knot (*Calidris canutus*)

This is an irregular passage migrant. Seen in the spring from April 3 (2000) to May 25 (1999), there was one "clustered" influx. This influx peaked from May 14 (2001) to May 15 (2002) with a high count of 12 on May 14, 2001. This is still the highest count for Zellwood. Singles were also seen on April 3, 2000 and May 25, 1999. These may indicate the location of other influxes. Fall passage noted from July 23 (2000) to November 30 (1999). The very limited records suggest two "clustered" influxes. The first peaked from September 16 (2001) to September 17 (1998) with one on both dates. The second peaked from October 16 (1998) to October 22 (2000) with one on both dates. There were also singles on July 23, 2000 and November 30, 1999. These may indicate the location of other influxes.

Sanderling *(Calidris alba)*

This is a rare passage migrant with most sighting in the spring. There was one on May 1, 1999. There was a small passage in the spring of 2002 whilst the water level in Lake Apopka was so low. There were four in winter plumage on May 6 with one in partial summer plumage on May 12. There was a party of five on May 20 with three in breeding plumage and two in winter plumage. Fall passage was very limited with one on August 29, 2001. There was also one on September 11, 1998 with three on September 17, 1998. With suitable habitat this would be a commoner migrant.

Noted in the spring from May 1 (1999) to May 20 (2002), there was one "clustered" influx. This peaked from May 1 (1999) to May 6 (2002) with a high count of four on May 6. Outside of these peak counts the 2002 influx continued with one on May 12 and five on May 20. The latter was the highest count for Zellwood. The fall is poorly represented with singles on August 29, 2001 and September 11, 1998 with three on September 17, 1998. The counts on August 29 and September 11 may represent the location of influxes.

Semipalmated Sandpiper (*Calidris pusilla)*

This is potentially a very common spring migrant with lesser numbers in the fall. Spring passage recorded from March 22 (2001) to June 19 (2000). In 2002 just one mega influx covered the period April 17 to June 5, in that year the highest count was that of 1,540 on May 23, 2002. The highest count for the other years was only that of 185 on May 13, 2000. To detail the spring of 2002, there was one on April 17 with two on April 24, 23 on April 28, 80 on May 1, 90 on May 6, 595 on May 12, 1,150 on May 15 and 1,540 on May 23, then 20 seen on May 27

with 19 on May 30 and 12 on June 5. The rising lake level caused these birds to leave so abruptly, then 22 seen on June 10 with six on June 12. The last 12 seen on June 5 were adults in breeding plumage. Those seen on June 10 and June 12 were not in breeding plumage so would best be described as being in first-summer plumage. This would also explain why they were in Florida so late in the season. The early fall passage ran from July 4 (2000, 2001) to September 3 (1999) with a high count of 200 on August 15, 1998. The main fall passage followed from August 22 (2001) to November 6 (1998) with a high count of 240 on September 5, 2001. There were no winter records.

The spring passage ran from March 22 (2001) to June 19 (2000), there may have been seven "clustered" influxes. The first three are indicated by isolated peak counts of two on March 25, 2001, six on April 11, 2000 and 126 on April 26, 2000. The fourth peaked from May 4 (1999) to May 6 (2001) with a high count of 130 on May 4, 1999. The fifth peaked from May 13 (2000) to May 15 (2003) with a high count of 185 on May 13, 2000. The sixth peaked from May 20 (2001) to May 25 (1999) with a high count of 1,540 on May 23, 2002. This is still the highest count for Zellwood. The sixth peaked from May 31 (2001) to June 10 (2002) with a high count of 22 on June 10, 2002. In 2002 just one mega influx covered the period April 17 to June 5. The early fall passage ran from July 4 (2000, 2001) to September 3 (1999), there were five "clustered" influxes. The first peaked from July 12 (2000) to July 14 (1999) with a high count of 50 on July 12, 2000. The second peaked from July 21 (2002) to July 25 (2003) with a high count of 132 on July 23, 2000. The third peaked from August 2 (2000, 2001) to August 6 (1999) with a high count of 130 on August 2, 2001. The fourth peaked from August 11 (2002) to August 16 (2001) with a high count of 200 on August 15, 1998. The fifth peaked on August 25 (1999, 2002) with a high count of 41 on August 25, 2002. The main fall passage followed and it ran from August 22 (2001) to November 6 (1998), there were four "clustered" influxes. The first peaked from September 4 (2002) to September 5 (2001) with a high count of 240 on September 5, 2001. The second peaked from September 10 (2000) to September 16 (2001) with a high count of 150 on September 16, 2001. The highest count for the other years for these first two influxes was that of 95 on September 4, 2002. The third is indicated by a peak count of four on September 22, 2002. Passage then stopped after September 30 (2001). Unexpectedly passage restarts on October 16 (1998) and continues to November 6 (1998), this is where the fourth influx resides, it peaked from October 16 (1998) to October 22 (2000) with a high count of 20 on October 16, 1998. Perhaps this is the fall equivalent of the round up influx that some species have at the end of the spring passage that appears to gather up all the strays.

Western Sandpiper (*Calidris mauri)*

This is a passage migrant and winter visitor when conditions suitable. There was an early fall passage from July 8 (2000, 2001) to October 2 (2002) with a high count of 965 on September 11, 1998. For the other years with little suitable habitat the highest count was that of 21 on August 18, 2002. To detail the 1998 influx, there were already 400 on August 15 when this survey started, then 480 seen on September 2 with 965 on September 11, then 420 seen on September 17 with one on September 30. This was another type 1 influx. The late fall passage followed but it was a minor event, it ran from October 9 (2000) to December 8 (1998) with a high count of 113 on November 6, 1999, even fewer seen through the winter and the early spring. The winter passage ran from December 4 (1999) to January 7 (1999, 2000) with a high count of 50 on December 31, 1998. The early spring passage followed from January 8 (1999) to March 3 (2000) with a high count of 95 on January 19, 1999. The main spring passage was more noticeable and it ran from March 7 (2000) to May 23 (2002) with a high count of 63 on April 26, 2000. This species has a strong fall passage with a minor spring passage whereas the Semipalmated Sandpiper has an exceptionally strong spring passage with a minor fall passage.

There was an early fall passage from July 8 (2000, 2001) to October 2 (2002), there were eight "clustered" influxes. The first peaked from July 8 (2001) to July 9 (2003) with a high count of three on July 8, 2001. The second peaked from July 14 (1999) to July 19 (2000) with a high count of 16 on July 19, 2000. The third peaked from July 23 (2003) to July 25 (2002) with a high count of three on July 23, 2003. The fourth is indicated by a peak count of 12 on August 2, 2001. The fifth peaked from August 16 (2001) to August 18 (2002) with a high count of 21 on August 18, 2002. The sixth peaked from September 2 (2001) to September 8 (2002) with high counts of 19 on both dates. The seventh peaked from September 11 (1998) to September 16 (2001) with high counts of 40 on September 16, 2001 and 965 on September 11, 1998. The latter is still the highest count for the survey. Earlier there was a higher count of 2,100 on August 5, 1995. The eighth peaked from September 23 (1999) to September 30 (1998) with a high count of ten on September 23, 1999. The late fall passage ran from October 9 (2000) to December 8 (1998), there were three "clustered" influxes. The first peaked from October 12 (1999, 2000) to October 17 (2001) with a high count of 50 on October 16, 1998. The second peaked from October 28 (2001) to November 6 (1999) with a high count of 113 on November 6, 1999. The third peaked from November 13 (1998) to November 19 (1999, 2000) with a high count of 32 on November 13, 1998. The winter passage ran from December 4 (1999) to January 7 (1999, 2000), there were three "clustered" influxes. The first peaked from December 4 (1999) to December 6 (2000) with a high count of 13 on December 4, 1999. The second is indicated by a peak count of nine on December 15, 2000. The third peaked from December 31 (1998) to January 4 (2000) with a high count of 50 on December 31, 1998. The early spring passage

followed from January 8 (1999) to March 3 (2000), there were three “clustered” influxes. The first peaked from January 18 (2000) to January 21 (2001) with a high count of 95 on January 19, 1999. The other two were indicated by isolated peak counts of seven on February 16, 2000 and four on February 25, 2000. The main spring passage was stronger, it ran from March 7 (2000) to May 23 (2002), there were four “clustered” influxes. The first peaked from March 14 (2000) to March 22 (2002) with a high count of 13 on March 14, 2000. The second peaked from April 20 (1999) to April 26 (2000) with a high count of 63 on April 26, 2000. The third peaked from May 1 (2002) to May 7 (2003) with two on both dates and May 2, 2001. The fourth is indicated by a peak count of 14 on May 20, 2002.

Least Sandpiper (*Calidris minutilla*)

This is a common passage migrant and winter visitor, especially when there are extensive areas of wet mud. Of all the shorebirds this species will use the greatest range of habitats. Whilst they much prefer the wet mud they will feed on dried mud, short grass fields and short grassed areas that are covered in very shallow water. There was an early fall passage from July 4 (1999, 2001) to August 31 (1999) with a high count of 108 on July 23, 2000. The main fall passage followed from August 15 (1998) to November 30 (1998, 1999, 2000) with a high count of 2,400 on November 13, 1998. To detail the 1998 influxes, there were already 800 on August 15 when the survey started, then 1,290 seen on September 11 with 350 on September 17 and three on September 30. There were 1,340 on October 16 with 1,530 on October 29, 1,850 on November 2 and 2,400 on November 13, then 1,400 seen on November 18 with 1,150 on November 25 and 550 on November 30. The winter passage ran from December 3 (1998, 2000) to January 8 (1999) with high counts of 2,400 on December 8, 1998 and 2,450 on December 13, 1998. To detail the 1998/1999 influxes, there were 1,150 on December 3 with 2,400 on December 8 and 1,100 on December 11. There were 2,050 on December 16 with 1,800 on December 20 and 1,285 on December 28. There were 2,450 on December 31 with 1,850 on January 1, 1,200 on January 7 and 800 on January 8. This pattern of very short-lived influxes with high numbers also occurred with the Lesser Yellowlegs. I am used to short-lived (basic) influxes with very low numbers but this situation is new, as I said I feel that this can only be because the birds are moving through very fast. The early spring passage ran from January 7 (2000, 2003) to February 29 (2000), however no such passage noted in 2002. The highest count was that of 1,500 on January 19, 1999. To detail the 1999 influxes, there were 1,150 on January 12 with 1,500 on January 19, then 1,250 seen on January 29 with 1,150 to February 9. There were 1,210 on February 10 which may have been the beginning of another influx, however only 90 seen on February 17 when the last of the fields drained. The main spring passage ran from February 19 (2003) to June 14 (2000) with high counts of 450 on March

7, 2000 and May 1, 1999. I have treated the spring passage as ending on June 14 (2000) but there were later June records in that year. There were three on June 19 with singles on June 26 and June 28. In July the first were on July 8. I just do not know how to treat these records. The first as it is before the June 21 will be a spring record but what of the others? All were in breeding plumage. The decision is yours.

This is a common passage migrant and winter visitor. The early fall passage ran from July 4 (1999, 2001) to August 31 (1999), there were five "clustered" influxes. The first is indicated by a peak count of four on July 8, 2001. The second peaked from July 14 (1999, 2002) to July 19 (2003) with a high count of 31 on July 14, 1999. The third peaked from July 23 (2000) to July 25 (2002) with a high count of 108 on July 23, 2000. The fourth peaked from August 2 (2001) to August 6 (1999, 2000) with a high count of 90 on August 2, 2001. The fifth is indicated by a peak count of 96 on August 11, 2002. The main fall passage ran from August 15 (1998) to November 30 (1998, 1999, 2000), there were eight "clustered" influxes. The first two influxes are indicated by isolated peak counts of 320 on August 25, 2002 and 480 on September 2, 2001. The third peaked from September 10 (1999, 2000) to September 11 (1998) with a high count of 1,290 on September 11, 1998. The fourth is indicated by a peak count of 270 on September 16, 2001. The fifth peaked from September 30 (1999) to October 6 (2002) with a high count of 350 on October 6, 2002. The sixth peaked from October 14 (1999) to October 15 (2000) with a high count of 156 on October 15, 2000. The seventh peaked from October 28 (2001, 2002) to October 29 (2000) with a high count of 251 on October 28, 2002. The eighth peaked from November 13 (1998) to November 19 (1999) with a high count of 2,400 on November 13, 1998. The winter passage comprised three "clustered" influxes, it ran from December 3 (1998, 2000) to January 8 (1999). The first peaked from December 5 (2001) to December 8 (1998) also with a high count of 2,400 on December 8, 1998. The second peaked from December 14 (1999) to December 21 (2001) with a high count of 780 on December 15, 2000. The third peaked from December 31 (1998) to January 3 (2002) with a high count of 2,450 on December 31, 1998. This is still the highest count for the survey. The high count for Zellwood is a little higher as 2,500 seen on September 4, 1971. It is interesting to note how differently these three peeps are in their occurrence at Zellwood. The Semipalmated is a spring migrant, the Western is a fall migrant and the Least is a winter migrant. The early spring passage followed from January 7 (2000, 2003) to February 29 (2000), there was no passage in 2002. For the four years there were four "clustered" influxes. The first peaked from January 15 (2003) to January 21 (2000, 2001) with a high count of 1,500 on January 19, 1999. The second is indicated by a peak count of 39 on January 26, 2003. The third peaked from February 10 (1999) to February 14 (2001) with a high count of 1,210 on February 10, 1999. The fourth is indicated by a peak count of 429 on February 21, 2000. The main spring passage ran from February 19 (2003) to June 14 (2000), there were a plethora of "clustered" influxes, nine in all. The first peaked from March 3 (2001) to March 7 (2000) with a high count of 450 on March 7, 2000. The second peaked from March

12 (2003) to March 16 (1999) with a high count of 265 on March 12, 2003. The third is indicated by a peak count of 43 on March 22, 2002. The fourth peaked from April 2 (2003) to April 7 (2002) with a high count of 62 on April 7, 2002. The fifth peaked from April 9 (1999) to April 14 (2002) with a high count of 384 on April 11, 2000. The sixth was indicated by a peak count of 138 on April 24, 2002. The seventh peaked from May 1 (1999) to May 7 (2003) with a high count of 450 on May 1, 1999. The eighth is indicated by a peak count of 43 on May 20, 2001. The ninth peaked from May 31 (1999) to June 6 (2000) with a high count of eight on May 31, 1999. I have treated the spring passage as ending on June 14 (2000) but there are later June (2000) records. There were three on June 19 with singles on June 26 and June 28 in that year. The June 19 count will be a spring record but what of the others? The choice is yours. The first in the fall was on July 8. All those June birds were in breeding plumage.

White-rumped Sandpiper (*Calidris fuscicollis*)

This is a regular spring migrant in small numbers and a casual migrant in the fall. Spring passage noted from May 4 (1999) to June 12 (1999, 2002) with a high count of 37 on May 23, 2002, to detail the 2002 influxes. There were two on May 6 with seven on May 9, then three seen on May 12 with two on May 15. There were three on May 20 with 37 on May 23, then four seen on May 27. There were five on May 30 with eight on June 10, then two seen on June 12. The June birds were all in breeding plumage. There was a minor fall passage from September 4 (2002) to October 3 (2001) with a high count of eight on September 16, 2001.

There was a spring passage from May 4 (1999) to June 12 (1999, 2002), there were three “clustered” influxes. The first peaked from May 4 (1999) to May 12 (2003) with a high count of seven on May 9, 2002. The second peaked from May 23 (2002) to May 25 (1999) with high counts of four on May 25, 1999 and 37 on May 23, 2002. The latter was the highest count during the first five years of the survey. The third peaked from June 10 (2001, 2002) to June 12 (1999) with a high count of eight on June 10, 2002. There was a minor fall passage from September 4 (2002) to October 3 (2001), there were two “clustered” influxes. This passage only noted in three out of the five years. The first influx peaked from September 10 (2000) to September 16 (2001) with a high count of eight on September 16, 2001. The second is indicated by a peak count of one on October 3, 2001.

Baird's Sandpiper (*Calidris bairdii*)

This is a vagrant with just three records. Unexpectedly there was a spring record, there being one on May 7, 1999. For the fall there were singles on August 6, 2000 and September 13, 2001. Only the latter's age was noted, a juvenile.

Pectoral Sandpiper (*Calidris melanotos*)

This is a passage migrant, especially so in the fall with the passing of tropical weather systems. This species is similar to the Least Sandpiper in its choice of habitats. There was the trace of an early spring passage from February 9 (1999) to February 26 (2003), only singles recorded. The main spring passage ran from March 22 (2001) to May 10 (1999) with a high count of 45 on March 22, 2001. There was an early fall passage from July 12 (1999, 2000) to August 28 (2002) with a high count of 35 on August 15, 1998. The main fall passage followed from September 2 (1998, 2001, 2002) to November 25 (1998) with a high count of 690 on September 16, 2001. To detail the main 1998 influx, there were 450 on September 2 with 350 on September 11 and 130 on September 17. Next to detail the main 2001 influxes, there 690 on September 16 with 90 on September 19 and 73 on September 26. There were 126 on September 30 with 24 on October 3 and one on October 7. These type 2 influxes are typical for this species, a few may pass through anyway but the large numbers only come with weather systems and they do not stay for long.

There was the trace of an early spring passage from February 9 (1999) to February 26 (2003). All this came to were singles on February 9, 1999, February 10, 1999 and February 26, 2003. There was a minor main spring passage from March 22 (2001) to May 10 (1999), there were two "clustered" influxes. The first peaked from March 22 (2001) to March 27 (2000) with a high count of 45 on March 22, 2001. The second peaked from April 26 (2000) to May 1 (1999) with a high count of six on April 26, 2000. There was an early fall passage from July 12 (1999, 2000) to August 28 (2002), there were three "clustered" influxes. The first peaked from July 14 (2002) to July 19 (2003) with a high count of three on July 19, 2003. The second peaked from July 27 (1999) to August 2 (2001) with a high count of 32 on July 30, 2000. The third peaked from August 14 (2001) to August 20 (1999) with a high count of 35 on August 15, 1998. The main fall passage was by far the strongest event of the year, it ran from September 2 (1998, 2001, and 2002) to November 25 (1998), there were six "clustered" influxes. The first peaked from September 2 (1998, 2002) to September 7 (2000) with a high count of 450 on September 2, 1998. The second peaked from September 16 (2001) to September 21 (2000) with a high count of 690 on September 16, 2001. This was the highest count during the first five years of the survey. The third peaked from September 28 (2002) to October 6 (1998) with a high count

of 126 on September 30, 2001. The fourth peaked from October 14 (2001) to October 19 (1999) with a high count of 82 on October 16, 1998. The fifth peaked from November 2 (1998) to November 5 (1999) with 12 on both dates. The sixth peaked from November 16 (1999) to November 18 (2001) with a peak count of five on November 16, 1999.

Sharp-tailed Sandpiper (*Calidris acuminata)*

This is a vagrant nationally. There was a juvenile at the Sod Farm near Interceptor Road on September 26, 2002. Nearly all sightings are of juveniles. Surprisingly there is another Zellwood record. There was another juvenile on August 12, 1973 and August 13, 1973.

Dunlin (*Calidris alpina*)

This is a passage migrant and winter visitor when conditions are right. It is most likely to be found when there are extensive areas of very shallow water together with areas of wet mud. This is a late fall migrant but as with the Long-billed Dowitcher there are individuals that travel early. There were singles on August 15, 1998 and August 20, 1999. The main fall passage ran from October 2 (2002) to December 4 (1999) but a more normal start date would be October 12 (2000). The highest count was that of 210 on November 13, 1998. To detail the 1998 influx, there were 80 on October 29 with 155 on November 2 and 210 on November 13, then 70 seen on November 20 with 50 on November 25, 36 on November 30 and 21 on December 3, a type 1 influx. The winter passage ran from December 6 (2000) to January 14 (2000) with a high count of 145 on December 31, 1998. To detail the 1998 influx, there were 75 on December 8 with 90 on December 16, 125 on December 20 and 145 on December 31, then 54 seen on January 1, 1999. The early spring passage followed from January 7 (1999, 2003) to March 3 (2000) with a high count of 175 on January 19, 1999. To detail the 1999 influxes, there were 60 on January 7 with 130 on January 8, then 27 seen on January 12 with 25 on January 15. There were 175 on January 19 with 118 on January 27, 40 on February 3, 28 on February 9 and 21 on February 10. There were 64 on February 17 but as the area was closed after that date I do not know whether this was a type 1 or type 2 influx. For the main spring passage there was a single influx in 2000, as this is rather unusual I detail it below. There were ten on March 7 with 13 on March 10, 16 on March 21, counts then lower with six on March 25 with four on March 27, two on April 11 and one on April 15.

In the early fall there were singles on August 15, 1998 and August 20, 1999. The main fall passage ran from October 2 (2002) to December 4 (1999), however a more usual start date was October 12 (2000). There were four “clustered” influxes. The first peaked from October 12

(2000) to October 21 (2001) with a high count of six on October 16, 1998. The second peaked from November 5 (2002) to November 6 (1999) with a high count of 21 on November 6, 1999. The third peaked from November 13 (1998) to November 19 (2000) with a high count of 210 on November 13, 1998. This is still the highest count for Zellwood. The fourth peaked on November 30 (1999, 2000) with a high count of 23 on November 30, 1999. The winter passage followed from December 6 (2000) to January 14 (2000), there were three "clustered" influxes. The first peaked from December 6 (2000) to December 7 (1999) with a high count of 23 on December 7, 1999. The second is indicated by a peak count of eight on December 14, 2002. The third peaked from December 30 (2002) to January 4 (2000) with a high count of 145 on December 31, 1998. The early spring passage ran from January 7 (1999, 2003) to March 3 (2000), there were four "clustered" influxes. The first peaked from January 8 (1999) to January 9 (2003) with a high count of 130 on January 8, 1999. The second peaked from January 19 (1999) to January 21 (2001) with a high count of 175 on January 19, 1999. The third is indicated by a peak count of 19 on February 2, 2000. The fourth peaked from February 17 (1999) to February 23 (2000) with a high count of 64 on February 17, 1999. The only influx for the late spring passage was in 2000, it ran from March 7 to April 15 with a peak count of 16 on March 21. That is an exceptional event.

Curlew Sandpiper (*Calidris ferruginea)*

Another vagrant, there were just three records. There was an adult in breeding plumage on May 6, 2002. This was on the muddy shore of Lake Apopka near the end of Lust Road. In the fall there were singles on September 2, 1998 and November 11, 1998. I did not note the locations or their age.

Stilt Sandpiper (*Calidris himantopus)*

This is a passage migrant and it is an irregular winter visitor. Being longer legged this species was often to be found with Lesser Yellowlegs. The yellowlegs would be scattered along the water's edge whilst the Stilt Sandpipers would form a tight single species flock. There was an early fall passage from July 8 (2001) to August 28 (2002) with a high count of 18 on August 2, 2001. The main fall passage followed from August 15 (1998) to December 4 (1999) with a high count of 490 on October 21, 1998. To detail the 1998 influxes, there were 150 on August 15, 1998 with 340 on September 2, then 150 seen on September 11 with 84 on September 17, 48 on September 30 and 45 on October 6. There were 320 on October 16 with 490 on October 21, then 195 seen on October 29 with 31 on November 2 and one on November 6. There were 28 on November 11 with 108 on November 13, then 57 seen on November 18 with 24 on

November 20. There were 60 on November 25 with 88 on November 30. then 32 seen on December 3. Some species have just one influx to cover a passage whilst this species has a series of four short-lived influxes. The winter passage was only noted in the first three winters, it ran from December 4 (1998) to January 7 (1999, 2000) with a high count of 138 on January 1, 1999. To detail the 1998/1999 influxes, there were 53 on December 4 with 83 on December 8 and 103 on December 16, then 54 seen on December 20 with 42 on December 28. There were 80 on December 31 with 138 on January 1, then 85 seen on January 7. I have stopped identifying the influx type in every case as types I and 2 should be understood, any type 3 influxes I will mention. The early spring passage ran from January 7 (2003) to February 25 (2000) with a high count of 156 on January 19, 1999. This passage also occurred in three of the five years but the years with no passage were 2001 and 2002. To detail the main 1999 influx, there were 95 on January 8 with 123 on January 12 and 156 on January 19, then 101 seen on January 27 with 43 on February 3 and 14 on February 5. The main spring passage came next from February 29 (2000 to May 31 (1999) with a high count of 111 on May 9, 2002. This passage occurred in all five years. To detail the main 2002 influx, there were three on May 1 with 15 on May 6 and 111 on May 9, then 65 seen on May 12 with 54 on May 15, 13 on May 20 and three on May 23.

There was an early fall passage from July 8 (2001) to August 28 (2002), there were five “clustered” influxes. The first peaked from July 8 (2001) to July 14 (1999) with a high count of ten on July 8, 2001. The second peaked from July 23 (2000, 2003) to July 25 (2002) with a high count of 14 on July 25, 2002. The third peaked from August 2 (2001) to August 4 (2002) with a high count of 18 on August 2, 2001. The fourth is indicated by a peak count of six on August 16, 2001. The fifth peaked from August 20 (1999) to August 21 (2002) with a high count of 14 on August 21, 2002. The main fall passage ran from August 15 (1998) to December 4 (1999), there were seven “clustered” influxes. The first is indicated by a peak count of 340 on September 2, 1998. The second peaked from September 11 (2002) to September 16 (2001) with eight on both dates. The third peaked from September 30 (1999) to October 6 (2002) with a high count of 22 on October 6, 2002. The fourth peaked from October 16 (2002) to October 21 (1998) with a high count of 490 on October 21, 1998. This is still the highest count for Zellwood. The fifth is indicated by a peak count of three on October 28, 2001. The sixth peaked from November 13 (1998) to November 19 (2000) with a high count of 108 on November 13, 1998. The seventh peaked on November 30 (1998, 1999) with a high count of 88 on November 30, 1998. The winter passage ran from December 4 (1998) to January 7 (1999, 2000), there were two “clustered” influxes. The first peaked from December 7 (1999) to December 16 (1998) with a high count of 103 on December 16, 1998. The second peaked from January 1 (1999) to January 4 (2000) with a high count of 138 on January 1, 1999. The early spring passage followed from January 7 (2003) to February 25 (2000), there were four “clustered” influxes. The first is indicated by a peak count of 38 on January 11, 2000. The second peaked from January 19

(1999) to January 22 (2003) with a high count of 156 on January 19, 1999. The third peaked from February 8 (2000) to February 9 (1999) with a high count of 78 on February 9, 1999. The fourth is indicated by a peak count of one on February 23, 2003. Finally the main spring passage ran from February 29 (2000) to May 31 (1999), there were six "clustered" influxes. The first peaked from February 29 (2000) to March 2 (2003) with a high count of 19 on February 29, 2000. The second peaked from March 21 (2000) to March 31 (2002) with a high count of 13 on March 21, 2000. The third peaked from April 4 (2001) to April 11 (2000) with a high count of 37 on April 11, 2000. The fourth peaked from April 20 (1999) to April 26 (2000) with a high count of 36 on April 26, 2000. The fifth peaked from May 4 (1999) to May 9 (2002) with a high count of 111 on May 9, 2002. The sixth is indicated by a peak count of nine on May 13, 2000. In 2002 the latest date in the spring was May 23, that is one of the latest dates for Florida. In 1999 there was one on May 25, May 29 and May 31. The latter may be the latest spring date for Florida.

Buff-breasted Sandpiper (*Tryngites subruficollis*)

This is an uncommon to rare passage migrant. It all depends on the availability of suitable habitat, in this case very short grass fields or the areas of dried mud. There was one spring record, there being one on May 7, 1999. Seen in the fall from July 29 (2001) to October 3 (2001), there were five "clustered" influxes. The first peaked from July 29 (2001) to August 4 (2002) with one on both dates. The next two influxes were indicated by isolated peak counts of 12 on August 13, 1999 and one on August 30, 2000. The fourth peaked from September 10 (1999) to September 15 (2002) with a high count of 23 on September 11, 1998. This is still the highest count for the survey. There were two earlier higher counts. The highest being that of 45 on September 1, 1975. The last influx peaked from September 24 (2000) to September 26 (2001) with a high count of three on September 26, 2001. To detail the 1998 influx, there were 15 on September 2 with 23 on September 11, then eight seen on September 17.

Ruff (*Philomachus pugnax*)

This species is considered a vagrant anywhere in Florida. In the fall there was a female from October 29 (1998) to January 19 (1999) with two on November 25, 1998. The count of two represents the highest count for Zellwood. These were in flooded fields by Pole Road extension. Finally there was a female on September 16, 2001. I cannot remember the location of this individual. Even more exceptionally there was a female from May 25 (1999) to June 5 (1999, this was at the Sand Farm. It is likely that this is the latest spring record for Florida.

Short-billed Dowitcher (*Limnodromus griseus)*

This is a passage migrant with the greatest numbers in the fall. As with the Stilt Sandpiper this species forms single species flocks feeding out in the water with the yellowlegs and the Stilt Sandpipers. There was an early fall passage from July 8 (2000) to September 30 (1998) with a high count of 450 on September 2, 1998. In 1998 a single mega influx covered the period August 15 to September 30, there were already 350 on August 15 when the survey started. To detail the 1998 influx, there were 350 on August 15 with 450 on September 2, then 320 seen on September 11 with 315 on September 17 and 72 on September 30. This was followed by the main fall passage, this ran from October 6 (1998) to November 26 (1999), again a mega influx covered this event in 1998 from October 6 to November 25. Outside of 1998 passage was minimal but this was probably due to the lack of habitat. The highest count for this passage was that of 670 on October 29, 1998. To detail the 1998 influx, there were 95 on October 6 with 350 on October 16 and 670 on October 29, then 615 seen on November 6 with 270 on November 11, 210 on November 13, 120 on November 18 and 30 on November 25. There were no winter or early spring records. The main spring passage ran from March 7 (2000) to May 29 (1999) although this passage normally ended in mid- May. The highest count was that of 80 on April 26, 1999. Finally there were nine on June 10, 2002 and three on June 12, 2002. These were in winter plumage so were presumably first-summer non-breeding birds that were wandering north but not so far as the breeding grounds.

There was an early fall passage from July 8 (2000) to September 30 (1998), there were four “clustered” influxes. The first peaked from July 14 (1999) to July 20 (2002) with a high count of 34 on July 19, 2000. The second peaked from August 19 (2001) to August 21 (2002) with a high count of 19 on August 21, 2002. The third peaked from September 2 (1998) to September 4 (2002) with a high count of 450 on September 2, 1998. The fourth is indicated by a peak count of three on September 28, 2002. In 1998 a mega influx covered the period August 15 to September 30, there were already 350 on August 15 when the survey started so it is likely that this particular influx went back to July. The main fall passage followed from October 6 (1998) to November 26 (1999), there were three “clustered” influxes. The first peaked from October 21 ((2001) to October 22 (2000) with a high count of three on October 21, 2001. The second peaked from October 28 (2002) to November 1 (2000) with a high count of 670 on October 29, 1998. This is still the highest count for Zellwood. The third is indicated by a peak count of two on November 26, 1999. Again there was a mega influx in 1998 from October 6 to November 25. Passage was minimal in the other years. There were no winter or early spring records. The main spring passage ran from March 7 (2000) to May 29 (1999) although passage normally over in mid-May. There were six “clustered” influxes. The first is indicated by a peak count of 16 on March 14, 2000. The second peaked from March 27 (2002) to April 2 (2001) with a high count of seven on April 2, 2001. The third peaked from April 11 (2000) to April 17 (2002)

with a high count of 48 on April 11, 2000. The fourth is indicated by a peak count of 80 on April 26, 1999. The fifth peaked from May 6 (2002) to May 15 (2003) with a high count of 21 on May 6, 2002. The sixth is indicated by a peak count of two on May 25, 1999. Finally there were nine on June 10, 2002 with three on June 12, 2002. These individuals were in winter or first-summer plumage.

Long-billed Dowitcher (*Limnodromus scolopaceus*)

This is a passage migrant and winter visitor. For some unknown reason this species does not follow the "rules" that the other species follow. This species goes through a molt before migrating south in the fall but a number of adults in breeding plumage pass through early. There were single adults in breeding plumage on July 20, 1999, July 28, 2002 and August 25, 2002, the latter is the exceptional record. The fall passage ran from September 22 (2002) to December 3 (1998, 2000) with a high count of 1,275 0n November 25, 1998. To detail the 1998 influx, there were five on October 16 with 31 on October 21, 65 on October 29, 400 on November 2, 640 on November 11 and 1,275 on November 25, then 750 seen on November 30 with 485 on December 3. The winter passage followed from December 6 (2000) to January 7 (1999) with a high count of 1,855 on January 1, 1999. There was no winter passage in 2001/2002. To detail the 1998/1999 influxes, there were 1,160 on December 8 with 1,230 on December 11, then 1,070 seen on December 16 with 920 on December 20. There were 1,485 on December 28 with 1,545 on December 31 and 1,855 on January 1, then 835 seen on January 7. Normally we have an early spring passage from January to the end of February and a main spring passage from March to May. This species has a single spring passage from January 8 (1999) to April 26 (2000) with an extension to May 14 in 1999. My reason for concluding that there was a single spring passage is based in part on an extended influx that ran from February 2, 2000 to April 3, 2000 with its peak count on March 14. In 1999 there was an influx that started on February 9, numbers rose to 1,610 on February 10, it is possible that this influx would also have gone into April if the fields had not been drained. The highest count was that of 1,890 on January 12, 1999. To detail the 1999 influxes, there were 1,595 on January 8 with 1,890 on January 12, then 1,760 seen on January 15 with 1,725 on January 19, 1,270 on January 27 and 105 on January 29. There were 1,450 on February 3 with 1,610 on February 10, then 184 seen after the fields finally drained on February 17. Later there were four on May 4 with one on May 14, the latest record. Everything that I have detailed above is normal, with the exception the single spring passage, but in the above I excluded the data from the fall of 1999 and the winter of 1999/2000. To detail the records, there were 32 on October 29 with 52 on November 5, 141 on November 9, 267 on November 14, 316 on November 22, 474 on November 30 and 493 on December 7 (a date when the winter passage should have started). Counts then lower

with 468 on December 11, 305 on December 14, 91 on December 19 and 33 on December 27. This fall influx over-ran by three to four weeks the start of the winter passage. The winter passage then followed with 42 on December 30, 85 on January 1, 92 on January 7 (this should have been the end of the winter passage), 116 on January 14 and 157 on January 18, then 82 seen on January 21 with 43 on January 25 and 28 on January 28. A number of things surprise me about these events. Firstly the numbers were not that great when compared to the previous year which behaved normally so why did the fall passage overrun to such an extent? It is also surprising that not only did the fall passage overrun by three to four weeks but that the winter passage did likewise. So far this is the only instance where the second passage did not end up a much shorter event.

Single adults in breeding plumage were seen on July 20, 1999, July 28. 2002 and August 25, 2002. The fall passage ran from September 22 (2002) to December 3 (1998, 2000), the fall/winter of 1999/2000 broke all the rules. It will be dealt with separately. There were four "clustered" influxes. The first peaked from October 6 (1998) to October 13 (2002) with a high count of 35 on October 6, 1998. The second peaked from October 19 (1999) to October 28 (2002) with a high count of 465 on October 22, 2000. The third peaked from November 4 (2001) to November 12 (2000) with a high count of 348 on November 12, 2000. The fourth peaked from November 18 (2001) to November 25 (1998) with a high count of 1,275 on November 25, 1998. The winter passage followed from December 6 (2000) to January 7 (1999), there were two "clustered" influxes. There was no passage in the winter of 2001/2002. The first influx peaked from December 11 (1998) to December 16 (2002) with a high count of 1,230 on December 11, 1998. The second is indicated by a peak count of 1,855 on January 1, 1999. The spring passage ran from January 8 (1999) to April 26 (2000) with an extension to May 14 in 1999, there were seven "clustered" influxes. The first peaked from January 12 (1999) to January 18 (2000) with a high count of 1,890 on January 12, 1999. This is still the highest count for Zellwood. The second is indicated by a peak count of 1, 610 on February 10, 1999. The third peaked from March 12 (2003) to March 14 (2000) with a high count of 200 on March 14, 2000. The fourth peaked from March 22 (2001) to March 24 (2002) with a high count of 28 on March 22, 2001. The fifth peaked from April 2 (2001) to April 6 (2003) with a high count of 23 on April 2, 2001. The sixth is indicated by a peak count of 14 on April 11, 2000. The seventh peaked from April 24 (2002) to April 26 (2000) with a high count of 32 on April 26, 2000. The eighth is indicated by a peak count of four on May 4, 1999. Now to the data for 1999/2000, the first fall influx ran from October 2 to October 26 with a peak count of 19 on October 19. The second ran from October 29 to December 27 with a peak count of 493 on December 7. The winter passage ran from December 30 to January 28, 2000 with a peak count of 157 on January 18, there was just the one influx. The spring passage followed, there were three influxes. The first ran from February 2 to April 3 with a peak count of 200 on March 14. The second ran from April 6 to April 19 with a peak count of 14 on April 11. Finally there were 32 on April 26. The fall passage

reached its peak on December 7 with a peak count of 493. This would be the fifth fall influx. It is perhaps necessary to describe the various passages taking this year into account. The fall passage ran from September 22 (2002) to December 3 (1998, 2000) with an extension to December 27 in 1999. The winter passage ran from December 6 (2000) to January 7 (1999) with an extension to January 28 in 2000. The spring passage ran from January 8 (1999) to April 26 (2000) with an extension to May 14 in 1999. I was not expecting this species to be so complicated.

Wilson's Snipe (*Gallinago delicata*)

This is a common passage migrant and winter visitor. They feed out in the fields at night with the great majority moving out at first light to more secure daytime roost sites. Many of those that stay leave as soon as the Northern Harriers start quartering the fields. Seen in the fall from September 4 (2002) to December 7 (1998) with the exception of 2000 when the fall passage continued through the whole of the winter passage to January 4, 2001. The highest count was that of 402 on November 18, 1998. To detail the 1998 influx, there five on November 6 with 58 on November 11, 150 on November 13 and 402 on November 18, then 280 seen on November 30 with two on December 3. Now to detail the long running fall influx of 2000, there were two on October 15 with eight on October 29, 11 on November 8, 19 on November 26, 38 on December 12 (the winter passage should have started by now) and 121 on December 17, then 84 seen on December 20 with 18 on December 22, 12 on December 31, six on January 1 and three on January 4, 2001. As with the Long-billed Dowitcher the numbers were not very high for this mega influx. Unlike that species the winter passage was somewhere under the fall passage and not a separate event that followed afterwards. The winter passage for the other years ran from December 8 (1998, 2002) to January 12 (1999) with an extension to January 25 in 2000, the high count was that of 898 on December 28, 1998. To detail the 1998 influxes, there were 82 on December 8 with seven on December 11. There were 37 on December 16 with 115 on December 20 and 898 on December 28, then 72 seen on January 1 with 40 on January 8 and 11 on January 12. This species is unusual in just how short a time it stays in the area. I detailed earlier the 2000 fall influx that swallowed the whole of the winter passage. Its high count was that of 121 on December 17. This does not fit in with the other winter peak counts so it means that there were four not three winter influxes. The early spring passage ran from January 7 (2001) to February 24 (2002) with a high count of 126 on February 19, 2003. The main spring passage followed from February 25 (2000) to May 1 (1999, 2002) with a high count of 123 on March 12, 2003.

Seen in the fall from September 4 (2002) to December 7 (1998) with the exception of 2000 when the fall passage continued through the winter passage to January 4, 2001, there

were seven “clustered” influxes. The first peaked from September 8 (1999) to September 13 (2000) with a high count of nine on September 11, 2002. The second peaked from September 17 (1998) to September 26 (2001, 2002) with a high count of 32 on September 26, 2001. The third peaked from October 6 (2002) to October 9 (2000) with a high count of 33 on October 6, 2002. The fourth peaked from October 14 (1999) to October 21 (1998) with a high count of 42 on October 16, 2002. The fifth is indicated by a peak count of 67 on October 28, 2001. The sixth peaked from November 9 (2002) to November 12 (1999) with a high count of 44 on November 9, 2002. The seventh peaked on November 18 (1998, 2001) with a high count of 402 on November 18, 1998. The winter passage followed from December 8 (1998, 2002) to January 12 (1999) with an extension to January 25 in 2000, there were four “clustered” influxes. The first peaked from December 8 (1998, 2002) to December 13 (2001) with a high count of 82 on December 8, 1998. The second is indicated by a peak count of 121 on December 17, 2000. This peak count relates to the long running fall influx of 2000. The third peaked from December 22 (1999) to December 28 (1998, 2002) with a high count of 898 on December 28, 1998. This was the highest count during the first five years of the survey. The fourth peaked from January 3 (2002) to January 5 (2003) with a high count of 93 on January 5, 2003. Next came the early spring passage, this ran from January 7 (2001) to February 24 (2002), there were four “clustered” influxes. The first peaked from January 17 (2001) to January 19 (1999, 2003) with a high count of 88 on January 19, 2003. The second peaked from January 27 (2002) to February 2 (2003) with a high count of 116 on February 2, 2003. The third peaked from February 4 (2001) to February 11 (2000) with a high count of 74 on February 11, 2000. The fourth peaked from February 18 (2001) to February 19 (2003) with a high count of 126 on February 19, 2003. The main spring passage was somewhat lighter, it ran from February 25 (2000) to May 1 (1999, 2002), there were five “clustered” influxes. The first peaked from February 27 (2002) to March 3 (2000) with a high count of 115 on March 3, 2000. The second peaked from March 11 (1999, 2001) to March 17 (2002) with a high count of 123 on March 12, 2003. The third peaked from March 25 (2001) to March 31 (2002) with a high count of 25 on March 26, 2003. The fourth peaked from April 6 (1999) to April 11 (2003) with a high count of six on April 11, 2003. The fifth peaked from April 30 (2003) to May 1 (1999) with a high count of two on April 30, 2003.

American Woodcock (*Scolopax minor*)

This is an uncommon passage migrant and winter visitor, status uncertain due to its crepuscular nature and the very short time period (perhaps 20 minutes) when they can be seen flying to and from the fields at dawn and dusk. At dawn they tend to leave the fields a little after the Wilson’s Snipe. Fall passage noted from September 24 (2000) to November 27 (2001), only singles recorded. The winter passage ran from December 2 (2002) to January 9 (2003) with

a high counts of three on December 5, 2001 and on December 27, 2001. The spring passage surprisingly is the strongest event, it ran from January 10 (2002) to February 17 (2002) with a high count of seven on January 13, 2002. To detail the 2002 influxes, there were two on January 10 with seven on January 13 then three seen on January 16 with two on January 20 and one on January 24. There were also four on February 6 with one later on February 17.

Fall passage noted from September 24 (2000) to November 27 (2001), there were indications of five "clustered" influxes. The first peaked from September 24 (2000) to September 26 (2001) with one on both dates. The second peaked from October 2 (1999) to October 5 (2000) with one on both dates. The next three influxes are indicated by isolated peak counts of one on October 29, 1999, November 15, 2001 and November 24, 2002. The winter passage followed from December 2 (2002) to January 9 (2003), there were four "clustered" influxes. The first peaked from December 2 (2002) to December 5 (2001) with a high count of three on December 5, 2001. The second is indicated by a peak count of one on December 14, 2002. The third peaked from December 19 (1999) to December 22 (2000) with singles on four dates. The fourth peaked from December 27 (2000) to January 4 (2000) with a high count of three on December 27, 2001. Surprisingly the spring passage was the strongest event, it ran from January 10 (2002) to February 17 (2002), there were three "clustered" influxes. The first peaked from January 13 (2002) to January 14 (2001) with a high count of seven on January 13, 2002. This was the highest count during the first five years of the survey. The second peaked from February 6 (2002) to February 11 (2001) with a high count of four on February 6, 2002. The third is indicated by a peak count of one on February 17, 2002. This is an under-recorded species.

Wilson's Phalarope (*Phalaropus tricolor)*

This is an irregular passage migrant. There was a single very early fall record, there being one on July 23, 2000. The early fall passage ran from August 15 (1998) to September 16 (2001) with a high count of 21 on September 2, 1998. To detail the 1998 influx, there were 17 on August 15 with 21 on September 2, then six seen on September 11. The "main" fall passage only occurred in 1998 whilst the fields of Unit Two flooded. The passage ran from October 16 to December 3 with a high count of four on October 16. There were no winter records. The only record for the spring relates to one on May 27, 2000.

There was a very early fall record with one on July 23, 2000. Otherwise the early fall passage ran from August 15 (1998) to September 16 (2001), there were three "clustered" influxes. The first peaked from August 20 (1999) to August 25 (2002) with a high count of two on August 25, 2002. The second peaked on September 2 (1998, 2001) with a high count of 21

on September 2, 1998. This is still the highest count for the survey. There were many higher counts in the earlier years. The highest was that of 93 on August 17, 1975. The third is indicated by a peak count of one on September 16, 2001. The "main" fall passage only occurred in 1998 with the flooded fields of Unit Two. The passage ran from October 16 to December 3, there were two influxes. They were both indicated by isolated peak counts of four on October 16, 1998 and two on November 25, 1998. There were no winter records. There was a single spring record, there being one on May 27, 2000.

Red-necked Phalarope (*Phalaropus lobatus*)

This is a coastal and pelagic species. Its status at Zellwood is that of a vagrant. There was an immature on September 23, 1999 with an adult on May 16, 2000.

Red Phalarope (*Phalaropus fulicarius*)

This is for the most part a pelagic species. Its status at Zellwood is that of a vagrant. There was an adult in winter plumage in a flooded field near the Lake Level Canal on September 16, 2001 after the passage of a tropical weather system. This is probably the first inland record for Florida.

Pomarine Jaeger (S*tercorarius pomarinus*)

This is a coastal species. Its status at Zellwood is that of a vagrant. There were two adults pale morphs with full twisted tail feathers circling over Lake Apopka for some time on May 6, 2001. This is a truly outstanding record.

Laughing Gull (*Larus atricilla*)

This is a passage migrant, a non-breeding summer visitor to Lake Apopka and an irregular early winter visitor. Most sightings are at Lake Apopka. I have noted the age of some or all of the birds during the spring and the summer, these details are included in this segment. There is a significant spring passage from March 24 (2002) to May 18 (2003) which involved adults in breeding plumage flying from the west to the north-east/east. The highest count was that of 114 on April 1, 2001. These adults were gradually replaced by birds in first-summer plumage, for instance on May 12 (2003) 14 out of 18 were in first-summer plumage. Individuals

in first-summer plumage tended to stay at the lake rather than migrate through. There is overlap but I treat the summer as running from May 12 (2003) to July 11 (2001), the highest count was that of 70 on May 24, 2001. Only two of these were adults the rest were birds in first-summer plumage. Juveniles started to join the population in July, the earliest being that of one on July 10, 2002. The population now became very mixed with birds in juvenile plumage, others in first-summer plumage, adults in breeding plumage and probably adults in winter plumage. I therefore stopped trying to age the birds. There was in fact a very light early fall passage, this ran from July 8 (2000) to October 6 (1998) with a high count of 17 on September 17, 1998. The main fall passage was not much better, it ran from October 16 (1998) to December 11 (1998) with a high count of 57 on November 7, 2001. The winter passage only occurred in three of the five years and very exceptionally it only ran from December 11 (2002) to December 30 (2001) with a high counts of two on December 18, 1998 and on December 28, 2002. There was a minimal early spring passage from January 7 (2000) to February 28 (2001) with a high count of five on January 28, 2001.

The main spring passage ran from March 24 (2002) to May 18 (2003), there were four "clustered" influxes. This passage involved adults in breeding plumage flying to the east/north-east across Lake Apopka. The first peaked from March 29 (2003) to April 1 (1999) with a high count of 65 on April 1, 1999. The second peaked from April 11 (2000, 2001) to April 16 (2003) with a high count of 114 on April 1, 2001. That was the highest count during the first five years of the survey. The third peaked from April 30 (2000) to May 4 (1999, 2001) with a high count of 17 on May 4, 2001. The fourth peaked from May 12 (2003) to May 14 (1999) with a high count of 18 on May 12, 2003. These adults were gradually replaced by birds in first summer plumage, for instance on May 12 (2003) a total, of 14 out of 18 were in first-summer plumage. There is overlap but I treat the summer as running from May 12 (2003) to July 11 (2001), there were four "clustered" influxes. The first peaked from May 24 (2001) to May 29 (2003) with a high count of 70 (two adults) on May 24, 2001. The second peaked on June 3 (2000, 2001) with a high count of 16 on June 3, 2001. The third peaked from June 10 (2002) to June 12 (1999) with a high count of 21 (one adult) on June 10, 2002. The fourth peaked from June 18 (2003) to June 20 (2001) with a high count of 15 (two adults) on June 20, 2001. The first juvenile (one) was seen on July 10, 2002. The early fall passage ran from July 8 (2000) to October 6 (1998), there were five "clustered"influxes. The first peaked from July 8 (2000) to July 10 (2002) with one on both dates. The second peaked from July 27 (2001) to July 31 (2002) with a high count of three on July 27, 2001. The third peaked from August 12 (2001) to August 15 (1998) with a high count of seven on August 12, 2001. The fourth peaked from September 5 (2001) to September 8 (1999) with one on both dates. The fifth peaked from September 17 (1998) to September 24 (2000) with a high count of 17 on September 17, 1998. The main fall passage ran from October 16 (1998) to December 11 (1998), there were four "clustered" influxes. The first is indicated by a peak count of five on October 16, 1998. The second peaked from October 29 (1998) to

November 7 (2001) with a high count of 57 on November 7, 2001. The third peaked from November 21 (2002) to November 26 (1999, 2000) with a high count of five on November 25, 1998. The fourth peaked from December 2 (2001) to December 4 (1998) with a high count of five on December 4, 1998. The winter passage only occurred in three of the five years, the passage ran from December 11 (2002) to December 30 (2001), there were two "clustered"influxes. The first is indicated by a peak count of two on December 18, 1998. The second peaked from December 28 (2002) to December 30 (2001) with a high count of two on December 28, 2002. The early spring passage ran from January 7 (2000) to February 28 (2001), there were four "clustered" influxes. Note the gap between this passage and the winter passage, normally these events overlap to a degree. The first peaked from January 7 (2000) to January 14 (2001) with a high count of four on January 7, 2000. The second peaked from January 28 (2001) to January 29 (1999) with a high count of five on January 28, 2001. The third peaked from February 10 (2002) to February 11 (2001) with a high count of two on February 11, 2001. The fourth peaked from February 26 (2003) to February 28 (2001) with one on both dates. It is interesting that Lake Apopka is an acceptable location for non-breeders to summer.

Franklin's Gull (*Larus pipixcan*)

This is an irregular late fall migrant and winter visitor, it is a rarity anywhere in Florida. There was one on October 22, 2000. In 1998 there was one on November 20 with six on November 25, 14 on December 3 and 21 on December 4. This is still the highest count for Zellwood, then 19 seen on December 8 with three on December 11. These birds were coming in late in the day to settle on a mud ridge out in the middle of a flooded field, presumably to roost. This appears to be a late fall influx which over- There were no other records for the first five years of the survey.

Little Gull (*Larus minutus)*

This is a vagrant anywhere in Florida. There was one in first-winter plumage on Lake Apopka on January 7, 2001. I treat that as an early spring record.

Bonaparte's Gull (*Larus philadelphia)*

This is a winter visitor and a spring passage migrant. It arrives too late for there to be a fall passage. Most are seen close to the shore of Lake Apopka, the location depending on wind direction. Occasionally they would swarm up over the fields, presumably after flying ants. The

winter passage ran from November 20 (1998) to January 1 (2000) with a high count of 22 on November 30, 2002. The early spring passage followed from December 27 (2001) to March 6 (2002) with a high count of 404 on January 10, 2002. To detail the 1998/1999 influxes, there were eight on December 28 with 58 on December 31, 63 on January 1, 111 on January 7 and 157 on January 8, then 93 seen on January 12 with 29 on January 15, 20 on January 19, 15 on January 27 and six on January 29. There were 27 on February 3 with 148 on February 5, then 97 seen on February 9 with 35 on February 17. To detail the 2001/2002 influxes, there were five on December 27, 2001 with 32 on January 3, 209 on January 7 and 404 on January 10, then 53 seen on January 13 with 43 on January 16, 19 on January 24, five on January 27 and two on February 3. There were five on February 6 with ten on February 10. There were four on February 20 with 67 on February 24 and 124 on February 27, then 31 seen on March 4 with 18 on March 6. I have shown the records for these two years in detail in part because I wanted to show why I treated the winter passage as ending so early. In both years the first influx extends to late January or early February, this means that they have to be early spring influxes. Perhaps I am also trying to show you why I make the decisions that I do. The late spring passage ran from March 10 (2000) to April 26 (1999) with a high count of 43 on April 2, 2003.

There was a winter passage from November 20 (1998) to January 1 (2000), there were three “clustered” influxes. The first peaked from November 25 (1998) to November 30 (2002) with a high count of 22 on November 30, 2002. The second peaked from December 4 (1998) to December 6 (2000) with a high count of three on December 4, 1998. The third peaked from December 14 (2002) to December 16 (1998) with six on both date “clustered” influxes. The first peaked from December 27 (2001) to December 31 (2000) with a high count of five on December 27, 2001. The second peaked from January 5 (2003) to January 10 (2002) with high counts of 126 on January 7, 2001, 157 on January 8, 1999, 185 on January 5, 2003 and 404 on January 10, 2002. The latter was the highest count during the first five years of the survey. The third peaked from January 24 (2001) to January 25 (2000) with a high count of 214 on January 24, 2001. The fourth peaked from February 5 (1999, 2003) to February 10 (2002) with a high count of 148 on February 5, 1999. The fifth is indicated by a peak count of 124 on February 27, 2002. The late spring passage ran from March 10 (2000) to April 26 (1999), there were three “clustered” influxes. The first peaked from March 19 (2003) to March 27 (2002) with a high count of 29 on March 22, 2001. The second peaked from April 1 (1999) to April 6 (2001) with a high count of 43 on April 2, 2003. The third is indicated by a peak count of four on April 16, 2003. This species has always puzzled me, is it possible that the first passage is the fall passage even if it occurs in the winter. Is it then possible that what appears to be the early spring passage is in fact the winter passage. It makes sense in that one has to ask the question, from which direction exactly did these birds come? I have the same questions with the Cedar Waxwing.

Ring-billed Gull (*Larus delawarensis*)

This is a passage migrant and winter visitor, some individuals in first-summer plumage have summered. Whilst a number are at Lake Apopka all the time during the winter the majority fly in late in the day firstly to bathe near the shore and then to move out to the middle of the lake to roost. There is a minimal early fall passage from July 13 (2003) to September 10 (2000) with a high count of three on July 25, 2001. The main fall passage ran from September 30 (1998) to December 5 (2001) with the exception of 1998 this passage started on October 14 (1999). The highest count was that of 471 on November 20, 1998. To detail the main 1998 influx, there were 193 on November 11 with 196 on November 13, 346 on November 18 and 471 on November 20, then 250 seen on November 30. The winter passage ran from December 2 (2002) to January 11 (1999) with a high count of 4,600 on December 21, 2002. To detail the 2002/2003 influx, there were 27 on December 2 with 165 on December 8, 460 on December 11, 1,250 on December 14 and 4,600 on December 21, then 1,245 seen on December 28 with 1,210 on December 30 and 660 on January 2. The early spring passage ran from January 1 (2001) to March 19 (2002) with a high count of 3,650 on January 5, 2003. To detail the main 2003 influx, there were 3,650 on January 5 with 1,200 on January 7, 510 on January 11, 270 on January 15 and 170 on January 19, a type 2 influx. In 2002 I started to record a visible spring passage to the west or north-west, there were 280 on January 20 with 509 on February 6, 62 on February 10 and 41 on February 17. All of these will have been adults in breeding plumage. When these birds left the lake to feed they were normally quiet but when they left the lake at the start of their spring migration they always called. The main spring passage ran from February 23 (2003) to June 6 (2000) with a high count of 510 on March 11, 2001. By early April the adults had gone and birds in first-summer plumage took their place. On April 7, 2002 a total of 122 first-summers flew to the east. In 1999 a total of four stayed on from June 7 to June 25 with two staying to August 3 and one to August 6. In 2000 there was one present from June 26 to July 8. The latter could be a summer or early fall record.

There were a few early fall records from July 13 (2003) to September 10 (2000). There was an adult on July 13, 2003. Later there appeared to be a “clustered” influx which peaked from July 23 (2000) to July 25 (2001) with a high count of three on July 25, 2001, this influx ended on August 6 (2000). Finally there was one on September 10, 2000. The main fall passage ran from September 30 (1998) to December 5 (2001), however with the exception of 1998 this passage did not start until October 14 (1999), there were six “clustered” influxes. The first two influxes were indicated by isolated peak counts of five on September 30, 1998 and October 14, 1999. The third peaked from October 29 (1998) to November 5 (2002) with a high count of 52 on October 29, 1998. The fourth peaked on November 12 (1999, 2000) with a high count of 195 on November 12, 2000. The fifth peaked from November 18 (2001) to November 26 (2000) with a high count of 471 on November 20, 1998. The sixth is indicated by a peak count of 56 on

November 30, 1999. The winter passage followed from December 2 (2002) to January 11 (1999), there were two "clustered" influxes. The first is indicated by a peak count of 450 on December 4, 1998. The second peaked from December 16 (1998, 2001) to December 21 (2002) with a high count of 4,600 on December 21, 2002. This was the highest count during the first five years of the survey. The early spring passage ran from January 1 (2000, 2001) to March 19 (2002), there were six "clustered" influxes. The first peaked from January 1 (2000, 2001) to January 7 (1999, 2002) with a high count of 3,650 on January 5, 2003. The second is indicated by a peak count of 73 on January 14, 2000. The third peaked from January 26 (2003) to February 2 (2000) with a high count of 1,603 on January 29, 1999. The fourth is indicated by a peak count of 360 on February 7, 2001. The fifth peaked from February 12 (2003) to February 17 (1999, 2002) with a high count of 891 on February 17, 2002. The sixth peaked from February 21 (2000) to February 25 (2001) with a high count of 610 on February 25, 2001. The main spring passage ran from February 23 (2003) to June 6 (2000), there were seven "clustered" influxes. The first peaked from March 3 (2000) to March 11 (2001) with a high count of 510 on March 11, 2001. The second is indicated by a peak count of 68 on March 24, 2002. The third peaked from April 1 (1999) to April 6 (2000) with a high count of 327 on April 1, 1999. The fourth peaked from April 16 (2003) to April 22 (2001) with a high count of 122 on April 19, 2000. The fifth is indicated by a peak count of 133 on April 26, 1999. The sixth peaked from May 4 (2001) to May 7 (2003) with a high count of 12 on May 7, 2003. The seventh is indicated by a peak count of three on May 20, 2001. In 1999 a total of four stayed on from June 7 to June 25 with two staying to August 3 and one to August 6. In 2000 there was one present from June 26 to July 8. This could be as summer or early fall record, unfortunately I did not note its age.

Herring Gull (*Larus argentatus*)

This is a passage migrant and winter visitor. Whilst some chased the smaller gulls the main target appears to be the Double-crested Cormorants especially when they gather into groups for some intense fishing. The fall passage ran from October 29 (1998) to November 20 (1998) with high counts of two on October 29, 1998 and November 15, 2001. The winter passage followed from November 27 (2001) to January 11 (2000) with a high count of 80 on December 4, 1998. To detail the 1998 influxes, there were two on November 30 with 14 on December 3 and 80 on December 4, then 65 seen on December 11 with 49 on December 16, seven on December 18 and five on December 20. There were 27 on December 28 with 21 on December 31. There were 23 on January 12 with 33 on January 7, then ten seen on January 8. The early spring passage was the strongest event of the year, it ran from January 5 (2003) to February 28 (2001) with a high count of 88 on February 3, 1999. To detail the 1999 influxes, there were 12 on January 11 with 22 on January 12, then 16 seen on January 15 with 11 on

January 19. There were 76 on January 27 with 88 on February 3, then 69 seen on February 5 with 21 on February 9. There were 44 on February 10 with 54 on February 17 when the fields drained and the area closed. The late spring passage by contrast was a minor event, it ran from February 29 (2000) to May 14 (1999) with a high count of 37 on March 6, 1999, only small numbers seen in the years other than 1998/1999 due to the lack of loafing areas. Singles in first-summer plumage were seen on May 27, 2002 and June 23, 2002.

The fall passage ran from October 29 (1998) to November 20 (1998), there were two "clustered" influxes. The first is indicated by a peak count of two on October 29, 1998. The second peaked from November 12 (2000) to November 15 (2001) with a high count of two on November 15, 2001. The winter passage followed from November 27 (2001) to January 11 (2000), there were four "clustered" influxes. The first peaked from November 29 (2002) to December 4 (1998, 1999) with a high count of 80 on December 4, 1998. The second peaked from December 11 (1998, 2002) to December 16 (2001) with a high count of 65 on December 11, 1998. The third peaked from December 28 (1998) to January 1 (2001) with a high count of 27 on December 28, 1998. The fourth peaked on January 7 (1999, 2002) with a high count of 33 on January 7, 1999. The early spring passage ran from January 5 (2003) to February 28 (2001), there were four "clustered" influxes. The first peaked from January 11 (2003) to January 17 (2001) with a high count of 22 on January 12, 1999. The second peaked from February 3 (1999) to February 6 (2002) with a high count of 88 on February 3, 1999. This is still the highest count for Zellwood. The third peaked from February 11 (2000) to February 17 (1999) with a high count of 54 on February 17, 1999, that is the date when the fields finally drained. With the exception of 1999 the highest counts were in the range one to seven. The fourth is indicated by a peak count of one on February 20, 2002. The late spring passage was a very minor event, it ran from February 29 (2000) to May 14 (1999). An influx did peak from February 29 (2000) to March 6 (1999) with a high count of 37 on March 6, 1999. Apart from that there were four isolated peak counts that might indicate the location of influxes. These were three on March 30, 1999, one on April 11, 2003, five on April 20, 1999 and one on May 8, 2001. Finally there were sightings of singles in first-summer plumage on May 27, 2002 and June 23, 2002.

Lesser Black-backed Gull (*Larus fuscus*)

This is an irregular winter visitor and spring passage migrant. All adults seen were of the British race L.f.*graellsii*. Seen in the winter from December 3 (1998) to January 15 (1999), there were two "clustered" influxes. The first peaked from December 11 (1998) to December 16 (2001) with a high count of two on December 11, 1998. The second is indicated by a peak count of one on December 30, 2002. The early spring passage followed from January 24 (2001) to February 17 (1999), again there were two "clustered" influxes. The first peaked from January 24

(2001) to January 27 (1999) with a high count of two on January 27, 1999. The second is indicated by a peak count of one on February 17, 1999. Finally there was a late record of one on April 20, 1000. The counts of two (six in all) were and still are the highest counts for Zellwood.

Gull-billed Tern (*Geochelidon nilotica*)

This is an irregular spring migrant with an occasional sighting in the summer. There was a small spring passage from April 6 (2001) to May 15 (2002), there appear to be three "clustered" influxes. The first is indicated by a peak count of two on April 8, 2001. The second peaked from April 20 (1999) to April 21 (2002, 2003) with a high count of four on April 20, 1999. This is still the highest count for the survey. There is an earlier higher count there being five on August 19, 1972. The third peaked from May 1 (2002) to May 2 (2000) with a high count of two on May 2, 2000. In 2002 there were later records, there were three on May 30 with one on June 2. Later there was one on June 23, 2002. There were no fall or winter records.

Caspian Tern (*Hydroprogne caspia*)

This species is present all year in varying numbers, the numbers depending on there being suitable loafing and roosting areas. Generally only birds in first-summer plumage seen during the summer, no known attempt made to nest locally. Numbers are lowest during the summer and the early fall. The summer passage ran from May 20 (2001) to July 16 (2000) with a high count of 49 on May 23, 2002. The early fall passage followed from July 18 (2001) to September 17 (1998) with a high count of 45 on September 2, 1998. The main fall passage ran from September 25 (1999) to December 6 (2000) with a high count of 111 on November 18, 1998. To detail the main 1998 influx, there were 42 on November 6 with 74 on November 11 and 111 on November 18, then 92 seen on December 3 with 75 on December 4. I do not know whether it is noteworthy but there was a juvenile on September 2, 2001. The winter passage ran from December 8 (1998) to January 14 (2000) with a high count of 189 on December 22, 1999. To detail the 1998/1999 influxes, there were 106 on December 8 with 135 on December 16, then 94 seen on December 18 with 89 on December 20 and 77 on December 28. There were 93 on December 31 with 92 on January 1 and January 8, then 45 seen on January 11. It is not that unusual for the counts to hold on a plateau as shown above. Next came the early spring passage, this ran from January 12 (1999) to March 7 (2000) with a high count of 208 on February 10, 1999. To detail the two 1999 influxes, there were 100 on January 12 with 180 on January 19, then 160 seen on January 29 with 89 on February 3. There were 168 on February 5 with 208 on February 10, then 69 seen on February 17 when the last field drained. I wonder what would have been the highest count of this influx if it been allowed to follow its own path.

It is no coincidence that I have been detailing the counts from 1998/1999 because numbers were so low in the other years as there was no suitable habitat. There is another reason because by concentrating on the best counts I am showing what this area could support if the habitat was available. Finally there was the main spring passage, this ran from February 26 (2003) to May 22 (1999) with a high count of 154 on April 20, 1999. I recorded very little information on the ages of these birds. In 2002 I did separate out some adults in breeding plumage. There were five out of 23 on May 27 with three out of 19 on May 30, one out of seven on June 10, one out of four on June 16 and two out of 12 on June 23. Conversely there were three adults still in breeding plumage on July 25, 2001.

The summer passage ran from May 20 (2001) to July 16 (2000), there were four "clustered" influxes. The first peaked from May 21 (2000) to May 25 (1999) with a high count of 49 on May 23, 2002. The second peaked from June 6 (2000) to June 10 (2002) with a high count of 11 on June 7, 1999. The third peaked from June 20 (2001) to June 23 (2002, 2003) with a high count of 30 on June 20, 2001. The fourth peaked from July 8 (2000) to July 14 (2002) with a high count of 24 on July 11, 2001. The early fall passage ran from July 18 (2001) to September 17 (1998), again there were four "clustered" influxes. The first peaked from July 23 (2000) to July 27 (2001) with a high count of 36 on July 27, 2001. The second is indicated by a peak count of 15 on August 12, 2001. The third peaked from August 28 (2002) to September 3 (1999) with a high count of 45 on September 2, 1998. The fourth peaked from September 10 (2000) to September 13 (2001) with a high count of 34 on September 13, 2001. The main fall passage followed from September 25 (1999) to December 6 (2000), there were five "clustered" influxes. The first peaked from September 25 (1999) to September 30 (1998, 2001) with a high count of 47 on September 30, 1998. The second peaked from October 22 (2000) to October 23 (1999) with a high count of 26 on October 22, 2000. The third peaked from November 1 (2001) to November 8 (2000) with a high count of 109 on November 8, 2000. The fourth is indicated by a peak count of 111 on November 18, 1998. The fifth peaked from November 26 (1999) to November 29 (2002) with a high count of 101 on November 26, 1999. Next came the winter passage, it ran from December 8 (1998) to January 14 (2000), there were three "clustered" influxes. The first peaked from December 12 (2000) to December 16 (1998, 2001) with a high count of 135 on December 16, 1998. The second is indicated by a peak count of 189 on December 22, 1999. The third peaked from December 31 (1998) to January 7 (2000) with a high count of 94 on January 7, 2000. The early spring passage ran from January 12 (1999) to March 7 (2000), there were five "clustered" influxes. The first influx peaked from January 15 (2003) to January 19 (1999) with a high count of 180 on January 19, 1999. The second peaked from January 31 (2001) to February 2 (2000, 2003) with a high count of 51 on February 2, 2000. The third is indicated by a peak count of 208 on February 10, 1999. This is still the highest count for Zellwood. The fourth peaked from February 16 (2000) to February 21 (2001) with a high count of 33 on February 16, 2000. The fifth is indicated by a peak count of 32 on February 25, 2000.

Finally there was the main spring passage, it ran from February 26 (2003) to May 22 (1999), there were six "clustered" influxes. The first peaked from March 2 (2003) to March 3 (2001) with a high count of ten on March 2, 2003. The second peaked from March 10 (2000, 2002) to March 16 (1999) with a high count of 22 on March 10, 2000. The third peaked from March 24 (2002) to March 30 (1999) with a high count of 66 on March 27, 2000. The fourth peaked from April 2 (2003) to April 9 (1999) with a high count of 14 on April 6, 2001. The fifth peaked from April 16 (2003) to April 20 (1999) with a high count of 154 on April 20, 1999. The sixth influx peaked from May 6 (2001) to May 12 (2003) with a high count of 86 on May 9, 2002. All the tern species would benefit from a shallow flooded area with non-vegetated islands.

Royal Tern (*Thalasseus maxima*)

This is an irregular visitor. It is a coastal species that is rare inland. For the late spring passage there were singles on March 29, 2003 and May 4, 2001, later one seen on May 9, 2002 and May 12, 2002. For the early fall passage there was one on July 10, 2002 with one on September 8, 1999. There was one winter record, there being one on December 16, 1998. The May records may indicate an influx from May 4 (2001) to May 9 (2002). Whilst only singles seen during this five year period the high count is now that of eight on August 22, 2008.

Sandwich Tern (*Thalasseus sandvicensis)*

This is another vagrant. It is a coastal species that is rare inland. Singles in first-summer plumage noted in two years. In 2002 for the summer passage there was one on June 12 and June 23. In 2001 for the early fall passage there was one on July 1, July 4 and July 15.

Common Tern (*Sterna hirundo*)

This is an irregular passage migrant and potentially a regular non-breeding summer visitor. Again it all depends on the availability of loafing and roosting areas. Exceptionally for the late spring passage there was an adult in winter plumage on March 2, 2003 and March 9, 2003. Still early was a party of five (three adults) on April 7, 2002. This was the highest count during the first five years of the survey. More proper to a spring passage are a group of records from April 28 (2002) to May 20 (2002). Only singles noted on four dates with three on May 12, 2002, the latter were adults in breeding plumage. In 2001 a total of two adults and two in first summer plumage seen regularly from May 31 to June 24. There were also three adults in breeding plumage on June 10, 2002 with another on June 28, 2000. It does not surprise me to

find individuals in first-summer plumage during the summer at Lake Apopka but adults in breeding plumage were not expected. For the early fall passage there was an adult in breeding plumage July 11, 2001 and July 15, 2001. Singles in first-summer plumage were then seen on July 23, 2001 and August 14, 2001. After this date I did not note the age of individuals. There were four on September 16, 2001 with two on September 19, 2001 and September 30, 2001. For the late fall passage there were singles on October 10, 2001 and November 15, 2001. No winter records. There is insufficient information to identify any influxes.

Arctic Tern (*Sterna paradisaea)*

This species should not occur at Lake Apopka as it is truly a pelagic species, however it does and it is a quite regular summer visitor if there are loafing and roosting areas. Seen in three of the five years! There were two adults in breeding plumage on May 23, 2002. This was the highest count during the first five years of the survey. They were on the mud at the end of Lust Road. The ground must have been too hot for them as they were continually raising their feet alternately off the mud to cool them. There was another in breeding plumage on June 8, 2003. Finally there was one in first-summer plumage on June 17, 2001.

Forster's Tern (*Sterna forsteri)*

This is a passage migrant and winter visitor, as with the other tern species if there is suitable habitat there is likely to be a non-breeding summer population. Present during the summer in varying numbers from May 14 (2001) to July 18 (2001), the great majority were in first-summer plumage. The highest count was that of 56 on May 20, 2001. To detail the 2001 influxes, there were three on May 1 and 56 on May 20 (all were in first-summer plumage), then 53 seen on May 24 with 40 to June 3 and 34 on June 7. There were 35 on June 10 with 40 on June 13, 37 on June 20, 34 to June 27, eight on July 4, seven on July 11, four on July 15 and two on July 18. All of the above were in first-summer plumage with the following exceptions. There were three adults in breeding plumage on June 17 with singles on July 4 and July 11. The early fall passage ran from July 14 (1999) to October 16 (1998) with a high count of 500 on September 2, 1998. To detail the 1998 influx, there were 90 on August 15 with 500 on September 2, then 145 seen on September 11 with 47 on September 17, 20 to October 6 and two on October 16. Back to 2001 there were adults on July 15 and July 23 with a juvenile from July 22 to July 29. In 2002 there was an adult in breeding plumage on July 17. The main fall passage followed from October 10 (2001) to December 8 (2002) with a high count of 342 on November 18, 1998. To detail the 1998 influx, there were five on October 21 with 33 on October 29, 39 on November 2, 125 on November 6, 132 on November 11, 255 on November

13 and 342 on November 18, then 240 seen on November 30 with 220 on December 3. The winter passage ran from December 2 (2001) to January 19 (2003) with a high count of 280 on December 18, 1998. To detail the 1998/1999 influxes, there were 260 on December 8 with 120 on December 11. There were 235 on December 16 with 280 on December 18, then 125 seen on December 20 with 90 on December 28, 62 on December 31, 60 on January 1 and 45 to January 11. Next came the early spring passage and this ran from January 4 (2000, 2001) to February 26 (2003). This species is unusual in that for the years 2000 to 2002 this particular passage continued well into March (March 10 (2000) to March 22 (2001)). The highest count was that of 90 on January 12, 1999. To detail the 1999 influxes, there were 90 on January 12 with 36 on January 15. There were 60 on January 19 with 80 on January 27, then 31 seen on January 29 with 21 on February 3. There were 50 on February 5 with 85 on February 10, then 11 seen on February 17. The main spring passage ran from March 2 (2003) to May 12 (2002, 2003) with a high count of 64 on April 26, 2001. Individuals in first-summer plumage dominated from at least April 21 (2002), also in 2002 two adults in breeding plumage seen from April 28 to May 9 with one on May 15.

Seen in the summer from May 14 (2001) to July 18 (2001), there were four “clustered” influxes. The first peaked from May 20 (2001) to May 23 (2002) with a high count of 56 on May 20, 2001. The other three are indicated by isolated peak counts of one on June 5, 1999, 16 on June 16, 2002 and five on July 8, 2000. The early fall passage ran from July 14 (1999) to October 16 (1998), there were six “clustered” influxes. The first peaked from July 14 (1999) to July 23 (2000, 2001) with a high count of 20 on July 23, 2001. The second peaked from July 31 (2002) to August 3 (1999) with one on both dates. The third is indicated by a peak count of two on August 11, 2002. The fourth peaked from August 31 (1999) to September 2 (1998, 2001) with a high count of 500 on September 2, 1998. This was the highest count during the first five years of the survey. The last two influxes were indicated by isolated peak counts of three on September 13, 2001 and September 22, 2002. The main fall passage followed from October 10 (2001) to December 8 (2002), there were four “clustered” influxes. The first two were indicated by isolated peak counts of 26 on October 10, 2001 and eight on October 29, 2000. The third peaked from November 15 (2001) to November 22 (1999) with a high count of 342 on November 18, 1998. The fourth peaked from November 26 (2000) to November 30 (1999) with a high count of 141 on November 29, 2002. The winter passage ran from December 2 (2001) to January 19 (2003), there were four “clustered” influxes. The first is indicated by a peak count of 108 on December 5, 2001. The second peaked from December 8 (1998) to December 11 (1999) with a high count of 260 on December 8, 1998. The third peaked from December 16 (2001) to December 20 (2000) with a high count of 280 on December 18, 1998. The fourth is indicated by a peak count of five on December 27, 1999. Next came the early spring passage, this ran from January 4 (2000, 2001) to February 26, 2003 with extensions to March 10 in 2000, to March 17 in 2002 and to March 22 in 2001. There were six “clustered” influxes. The first peaked on

January 4 (2000, 2001) with a high count of 56 on January 4, 2001. The second is indicated by a peak count of 90 on January 12, 1999. The third peaked from January 22 (2003) to January 28 (2000) with a high count of 80 on January 27, 1999. The fourth peaked from February 4 (2001) to February 5 (2003) with a high count of ten on February 4, 2001. The fifth peaked from February 10 (1999, 2002) to February 14 (2001) with a high count of 85 on February 10, 1999. The sixth peaked from February 23 (2003) to February 29 (2000) with a high count of 194 on February 25, 2001. The main spring passage ran from March 2 (2003) or from as late as March 25 in 2001 to May 12 (2002, 2003), there were six "clustered" influxes. The first is indicated by a peak count of 17 on March 5, 2003. The second peaked from March 19 (1999) to March 27 (2000) with a high count of 12 on March 27, 2000. The third peaked from April 6 (1999, 2003) to April 10 (2002) with a high count of 63 on April 6, 2003. The fourth peaked from April 19 (2000) to April 26 (2001) with a high count of 64 on April 26, 2001. The fifth peaked from April 30 (2000) to May 4 (1999) with a high count of two on May 4, 1999. The sixth peaked from May 9 (2002) to May 12 (2003) with a high count of 13 on May 9, 2002.

Least Tern (*Sternula antillarum*)

This is a non-breeding summer visitor with what appears to be a post-breeding gathering, there is little to indicate spring or fall passage. The only record that relates to spring passage was that of two on March 24, 2003, this is one of the earliest records for Florida. Otherwise the summer passage ran from April 24 (2002) to June 10 (2002) with a high counts of 17 on May 9, 2002 and June 6, 2000. To detail the 2002 influx, there were two on April 24 with nine on May 6 and 17 on May 9, then 12 seen on May 12 with seven on May 15, five on May 20, two on May 23 and one from May 27 to June 10. Very unexpectedly there were individuals in first-summer plumage. Normally non-breeding birds remain well south of the breeding range during their first-summer. There were singles on May 9, 2002 and May 15, 2002 with two on May 12, 2002. The post-breeding gathering ran from June 3 (2001) to July 31 (2002), with the exception of 2001 this passage normally started later i.e. June 12 (2002). The highest count was that of 54 on July 19, 2000. To detail the 2000 influx, there were two on June 19 with five on June 28, ten on July 4, 18 on July 8, 20 on July 12, 38 on July 16 and 54 on July 19, then 28 seen on July 23 with three on July 26. Juveniles were seen on June 20, 2001 and June 26, 2002. Bearing this in mind this has the character of a post-breeding gathering. I say that because when I started to write up this species I just assumed that I was dealing with the usual spring and summer passages but because of those juveniles I have had to rethink this species, no bad thing. Finally there was a single fall record, there being one on August 15, 1998.

There was a single spring record of two on March 24, 2003, an exceptionally early record for Florida. The summer passage appears to run from April 24 (2002) to June 10 (2002).

The start date for this passage was very tight, three other years (1999, 2000, 2001) all started this passage on April 26. There were four "clustered" influxes. The first peaked from April 24 (2002) to May 1 (1999) with a high count of three on May 1, 1999. The second peaked from May 4 (2000, 2001) to May 9 (2002) with a high count of 17 on May 9, 2002. The third peaked from May 16 (2000) to May 20 (2001) with a high count of nine on May 16, 2000. The fourth peaked from May 31 (1999) to June 6 (2000) with a high count of 17 on June 6, 2000. The post-breeding gathering ran from June 3 (2001) to July 31 (2002), with the exception of 2001 this passage normally started later i.e. June 12 (2002). There were three "clustered" influxes. The first peaked from June 16 (2003) to June 22 (1999) with a high count of 32 on June 17, 2001. The second peaked from July 10 (2002) to July 15 (2001) with a high count of 16 on July 10, 2002. The third peaked from July 19 (2000) to July 23 (2001) with a high count of 54 on July 19, 2000. This was the highest count during the first five years of the survey. Finally there was a single fall record there was one on August 15, 1998.

Black Tern (*Chlidonias niger)*

This is a passage migrant and non-breeding summer visitor when there are suitable loafing and roosting sites. Seen in the spring from April 16 (2003) to May 23 (2002) with a high count of 14 on May 6, 2001, these flew to the east. From 2001 I noted the age and with three exceptions all those seen from May 27, 2001 were in first-summer plumage. I therefore treat the summer as running from May 27 (2001) to July 30 (2000) with a high count of 16 on July 19, 2000. The three exceptions were as follows. There were four adults in breeding plumage on June 10, 2001 these were considered to be spring migrants. There were two adults in breeding plumage on July 4, 2001 these were considered to be fall migrants. Finally there was a juvenile on July 15, 2001 this was obviously a fall migrant. Individuals in first-summer plumage noted from May 15 (2002) to August 7 (2002). The fall passage followed from July 31 (2002) to September 19 (2000, 2001) with a high count of 500 on September 2, 1998, they were scattered in swarms through the flooded fields of Unit Two. To detail that 1998 influx, there were 240 on August 15 with 500 on September 2, then 305 seen on September 11 with 78 on September 17 and one on October 6. In the fall there were seven adults in breeding plumage on August 7, 2002.

Seen in the spring from April 16 (2003) to May 23 (2002), there were four "clustered" influxes. The first is indicated by a peak count of one on April 16, 2003. This record is very isolated as the next sighting was not until April 30 (2000). The second peaked from April 30 (2000) to May 6 (2001) with a high count of 14 on May 6, 2001. The third peaked from May 10 (1999) to May 15 (2002) with a high count of five on May 15, 2002. The fourth is indicated by a peak count of one on May 21, 2000. The summer passage followed from May 27 (2001) to July

30 (2000), there were four “clustered” influxes. The first peaked from June 10 (2001, 2002) to June 14 (1999) with a high count of eight on June 10, 2001. The second peaked from June 22 (1999) to June 27 (2001) with a high count of seven on June 27, 2001. The third is indicated by a peak count of seven on July 4, 2001. The fourth peaked from July 12 (1999) to July 19 (2000) with a high count of 16 on July 19, 2000. The fall passage ran from July 31 (2002) to September 19 (2000, 2001), there were three “clustered” influxes. The first peaked from August 7 (2002) to August 10 (1999) with a high count of nine on August 7, 2002. The second peaked from August 27 (2000) to September 2 (1998) with a high count of 500 on September 2, 1998. This was the highest count during the first five years of the survey. The third peaked from September 15 (2002) to September 19 (2000) with a high count of 26 on September 16, 2001. Finally for the late fall passage there was a very late individual on October 6, 1998.

Black Skimmer (*Rynchops niger)*

This is potentially a regular spring and non-breeding summer visitor, rare at other times of the year. There are only two fall records, there being singles on September 11, 1998 and November 6, 1998. This was whilst the fields of Unit Two shallow flooded, no records for the other years. This all shows just how unusual fall records are. The same goes for the winter, in 1998 there was one on December 20 with three on December 28, four on January 7 and two on January 11. None reported for the other years. Now the pattern changes as there was a very significant early spring passage from January 7 (2003) to February 17 (1999) with a high count of 120 on February 3, 1999. To detail the 1999 influxes, there were four on January 12 with 14 on January 15, 48 on January 27, 60 on January 29 and 120 on February 3, then 80 seen on February 5 with 14 on February 9. There were 17 on February 10 with 52 on February 17. I always wonder what would have happened to these counts if the fields had not been drained. The main spring passage followed from March 21 (2000) to May 20 (2001) with a high counts of 28 on April 26, 2000 and May 4, 1999. Finally there is the summer passage. This can be divided into two parts, the first part running from May 23 (2002) to June 17 (2001) with a high counts of 16 on June 12, 2002 and 17 on June 13, 2001. The second part ran from June 20 (2001) to August 5 (2001) with a high count of 16 on July 4, 2001. On the face of it these look the same but they are not. In the first part the passage was normal with two influxes. In the second there were two consecutive influxes in 2001 with other isolated records in 1999 and 2000. To detail the 2001 influxes, there were 11 on June 20 with 14 on June 24 and 16 on July 4, then five seen on July 8 with three on July 15 and two on July 22. There were three on July 23 with ten on July 25 and July 29, then eight seen on August 5. To summarize this passage, the first half showed a strong passage with very limited activity in the second half.

For the fall there were just two records, there were singles on September 11, 1998 and November 6, 1998. For the winter there was a single influx, again in 1998/1999. This influx ran from December 20 to January 11 with a peak count of four on January 7. There was however a strong early spring passage, this ran from January 7 (2003) to February 17 (1999), there were three "clustered" influxes. The first is indicated by a peak count of one on January 7, 2003. The second is indicated by a peak count of 120 on February 3, 1999. This is still the highest count for Zellwood. The third peaked from February 16 (2000) to February 17 (1999) with a high count of 52 on February 17, 1999. The first of these peak counts (January 7) could have been placed with the winter passage which also had an influx peak on that date but as the 2003 individual stayed to January 15 I have left this as a spring influx. The main spring passage followed from March 21 (2000) to May 20 (2001). The gap in records from February 17 to March 21 is best explained by the draining of the fields in 1999 and the paucity of records for the later years. This event is the only passage to be recorded in each of the five years, there were three "clustered" influxes. The first peaked from April 26 (2000) to April 27 (2003) with a high count of 28 on April 26, 2000. The second peaked from May 1 (2002) to May 4 (1999) also with a high count of 28 on May 4, 1999. The third peaked from May 18 (1999) to May 20 (2001) with a high count of three on May 20, 2001. The summer ran from May 23 (2002) to August 5 (2001) but this passage was very limited from June 20 (2001). For the first part there were two "clustered" influxes. The first is indicated by a peak count of nine on May 27, 2002. The second peaked from June 12 (2002) to June 13 (2001) with a high count of 17 on June 13, 2001. For the second part there were two consecutive influxes in 2001 with two isolated records. The first influx ran from June 20 to July 22 with a peak count of 16 on July 4. The second ran from July 23 to August 5 with a peak count of ten on July 25. The other records are of two on June 22, 1999 and one on July 12, 2000. This very limited information has to suggest the possibility of four "clustered" influxes.

Rock Pigeon (*Columba livia*)

This is a non-breeding visitor. Many of the so called resident species surprise me in that their pattern of occurrence fits that of a migrant. I have checked the figures carefully and the highest counts are clustered with a greater gap between the clusters than the gap inside the clusters. It surely cannot be a coincidence, something has to be happening. Most sightings were in the first three years whilst there were still weedy fields. There appears to be a winter passage from December 4 (1999) to January 11 (2000) with a high count of 42 on December 18, 1998. The early spring passage followed from January 7 (2001) to March 7 (2000) with a high count of 42 on January 29, 1999. Next came the main spring passage, this ran from March 6 (1999) to May 30 (2002) with a high count of 105 on April 6, 1999. To detail the 1999 influxes, there were 36 on March 6 with 45 on March 13 and 95 on March 16, then 30 seen on March 18.

There were 35 on March 19 with 40 on March 23, 41 on March 25, 55 on March 30 and 105 on April 6, then 27 seen on April 9 with ten on April 14. Whilst there were counts of 30 on April 17 and April 30 the movement was over. With the exception of 1999 the summer is the quietest season, the passage ran from May 20 (2001) to August 13 (1999) with a high count of 106 on June 25, 1999. In 1999 the period of greatest activity was from June 7 to August 13 and this is detailed below. There were nine on June 7 with 25 on June 12, 47 on June 14, 96 on June 22 and 106 on June 25, then 58 seen to July 14 with 54 on July 16, 53 on July 20, 26 on July 27, 13 on August 3 and one on August 13. Now this event might be called a post-breeding gathering, the same cannot be said for the influxes in March and April. Finally there was a single fall passage and it ran from August 9 (2000) to December 6 (2000) with a high count of 41 on September 7, 2000. Throughout this analysis I have included details of many influxes just so that you can see their form, their strength and their length, a secondary purpose was to get you used to the patterns so that when I came to the resident species you would see what bewilders me, the exact same pattern of influxes.

The winter passage ran from December 4 (1999) to January 11 (2000), there were two "clustered" influxes. The first peaked from December 18 (1998) to December 22 (2000) with a high count of 42 on December 18, 1998. The second peaked from December 28 (1998) to January 1 (2000) with a high count of ten on January 1, 2000. The early spring passage followed from January 7 (2001) to March 7 (2000), there were four "clustered" influxes. The first peaked from January 11 (1999) to January 16 (2002) with a high count of 20 on January 11, 1999. The second peaked from January 24 (2001) to January 29 (1999) with a high count of 42 on January 29, 1999. The third peaked from February 10 (1999) to February 16 (2000) with a high count of 31 on February 10, 1999. The fourth peaked from February 27 (2002) to March 2 (2003) with a high count of four on February 27, 2002. The main spring passage came next and it ran from March 6 (1999) to May 30 (2002), there were six "clustered" influxes. The first peaked from March 16 (1999) to March 18 (2000) with a high count of 95 on March 16, 1999. The second peaked from March 26 (2003) to March 27 (2001) with a high count of four on March 27, 2001. The third peaked from April 6 (1999) to April 11 (2000) with a high count of 105 on April 6, 1999. The fourth peaked from April 16 (2003) to April 17 (2002) with a high count of 16 on April 17, 2002. The fifth peaked from April 29 (2001) to April 30 (2003) with a high count of seven on April 29, 2001. The sixth peaked from May 22 (1999) to May 26 (2003) with a high count of 28 on May 22, 1999. With the exception of 1999 the summer was the quietest season. The summer passage ran from May 20 (2001) to August 13 (1999), there were five "clustered" influxes. The first is indicated by a peak count of 15 on May 30, 2000. The second peaked from June 12 (2002) to June 17 (2001) with a high count of ten on June 17, 2001. The third is indicated by a peak count of 106 on June 25, 1999. This is still the highest count for Zellwood. The fourth peaked from July 4 (2001) to July 12 (2000) with a high count of 12 on July 12, 2000. The fifth peaked from July 30 (2003) to August 4 (2002) with a high count of two on July 30,

2003. There was a single fall passage, this ran from August 9 (2000) to December 6 (2000), there were eight “clustered” influxes. The first is indicated by a peak count of 35 on August 15, 1998. The second peaked from September 3 (1999) to September 7 (2000) with a high count of 41 on September 7, 2000. The third peaked from September 17 (1999) to September 19 (2001) with a high count of four on September 17, 1999. The fourth peaked from October 5 (2000) to October 8 (1999) with a high count of two on October 5, 2000. The fifth peaked from November 1 (2000) to November 3 (1999) also with a high count of two on November 1, 2000. The sixth peaked from November 11 (2001) to November 15 (2000) with a high count of 13 on November 15, 2000, The last two influxes were indicated by isolated peak counts of 20 on November 26, 1999 and nine on December 6. 2000. Earlier I raised the possibility that what would by the calendar be the summer passage might in fact be a post-breeding gathering. If that is so the seasons would be as follows. The spring passage would run from January 7(2001) to March 7 (2000), the summer passage would run from March 6 (1999) to May 30 (2002) and the post-breeding gathering from May 20 (2001) to August 13 (1999). None of this explains the pattern of influxes.

Eurasian Collared-Dove (*Streptopelia decaocto*)

This species is resident but it is also probably a passage migrant in some years. This species bred at the workshops and at other sites just over the northern and eastern borders. There was a single pair in 2001, 2002 and 2003. There appears to be a minor winter passage in four out of the five years, no passage noted in 2000/2001. This passage ran from December 5 (2001) to January 7 (1999, 2002), there were three “clustered” influxes. The first peaked from December 7 (1999) to December 9 (2001) with a high count of 11 on December 7, 1999. The second peaked from December 16 (1998) to December 21 (2002) with a high count of seven on December 16, 1998. The third is indicated by a peak count of 12 on January 1, 2000. The early spring passage followed from January 7 (2001) to February 17 (1999), there were three “clustered” influxes. No passage noted in 2003. The first influx peaked from January 8 (1999) to January 13 (2002 with five on both dates. The second peaked from January 27 (2002) to February 4 (2001) with a high count of 17 on February 4, 2001. The third peaked on February 10 (1999, 2002) with a high count of seven on February 10, 2002. No passage recorded in the years 2001, 2002 and 2003 from March to late May. The activity in the other years could be attributed to increased activity by the resident birds. The high counts range from four to six with ten on May 9, 2002. Somewhat surprisingly there appears to be a movement through the summer. Passage noted from June 5 (1999) to August 23 (2000), there appear to be six “clustered” influxes. The first peaked from June 7 (1999) to June 11 (2003) with a high count of 36 on June 7, 1999. This is still the highest count for Zellwood. The second peaked from June 19

(1999) to June 20 (2001) with a high count of four on June 20, 2001. The third is indicated by a peak count of 12 on June 30, 2000. The fourth peaked from July 6 (1999) to July 10 (2002) with a high count of 31 on July 6, 1999. The fifth peaked from July 21 (2002) to July 25 (2001) with a high count of 12 on July 25, 2001. The sixth is indicated by a peak count of seven on August 2, 2000. I have not prepared a segment one for this species as there are no significant influxes. The high counts of 31 and 36 were both one day events, just one to three seen on either side. The fall passage ran from August 26 (2001) to December 3 (2000), there were six "clustered" influxes. The first peaked from August 27 (2000) to September 5 (2001) with a high count of 18 on September 5, 2001. The second is indicated by a peak count of nine on September 23, 2001. The third peaked from October 7 (2001) to October 12 (2000) with a high count of 30 on October 12, 2000. The fourth peaked from November 5 (2002) to November 8 (2000) with a high count of six on November 8, 2000. The fifth peaked from November 13 (1998) to November 15 (2001) with a high count of nine on November 15, 2001. The sixth peaked from November 29 (2001) to December 3 (2000) with a high count of 12 on December 3, 2000. In 1999 there was no passage from September 3 to December 4, just one to two a day in the area. There was no passage from July 21, 2002 to August 13, 2003. The highest counts were of five on December 21, 2002 and June 11, 2003. Unlike the last species I believe that there is an element of passage in the above. Any passage however is limited and erratic in nature.

White-winged Dove (*Zenaida asiatica*)

This is an early fall passage migrant with occasional sightings at other times of the year but there are no records from October 15 to December 17. Most sightings were along the northern border. There are indications that three pairs bred in a line of willow out in the fields south of Hogshead Road in 2003, individuals had been seen in the same area in 2002. There was a minimal winter passage from December 18 (1998) to January 8 (1999) with a high count of six on December 28, 2002. The early spring passage was even lighter with records for the first three years only. This passage ran from January 21 (2000) to February 25 (2000) with a high count of two on January 21, 2000 and January 24, 2001. The main spring passage was heavier but still a marginal event, it ran from March 18 (2000) to May 18 (2003) with a high count of six on April 30, 2003. With the summer passage started to pick up, this passage ran from May 23 (2002) to July 21 (2002) with a high count of eight on June 16, 2003 and July 14, 2002. The fall passage followed and this is the main event of the year with small flocks occasionally noted flying to the east or south-east. The passage ran from July 19 (2003) to October 14 (2001) with a high count of 24 on September 19, 2001. To detail the parties seen flying to the east or south-east, there were seven on July 8, 2002, four on July 10, 2002, eight on July 22, 2001, one on July 27, 2001, one on July 29, 2001, two on August 11,2002, 15 on August 25, 2002 and three

on August 26 2001. On September 19, 2000 18 flew to the east whilst on September 19, 2001 a total of 24 flew to the south-east. That is the day, no later records. Flying to the west were eight on July 14, 2002, two on July 17, 2002 and four on August 5, 2001. To complete the picture one flew to the north on April 11, 2003.

There was a minimal winter passage from December 18 (1998) to January 8 (1999), there were two "clustered" influxes. The first peaked from December 18 (1998) to December 20 (2000) with one on both dates. The second peaked from December 28 (2002) to January 1 (2001) with a high count of six on December 28, 2002. The early spring passage was even lighter with records for the first three years only. This passage ran from January 21 (2000) to February 25 (2000), there were three "clustered" influxes. The first peaked from January 21 (2000) to January 24 (2001) with two on both dates. The second peaked from February 2 (2000) to February 5 (1999) with one on both dates. The third is indicated by a peak count of one on February 25, 2000. There were no sightings from February 26 to March 17. The main spring passage was heavier but still a marginal event, the passage ran from March 18 (2000) to May 18 (2003), there were four "clustered" influxes. The first peaked from March 26 (2003) to March 27 (2002) with a high count of two on March 26, 2003. The second peaked from April 11 (2003) to April 14 (2002) with one on both dates. The third peaked from April 26 (2001) to May 2 (2000) with a high count of six on April 30, 2003. The fourth is indicated by a peak count of two on May 12, 2003. With the summer the passage started to pick up, this passage ran from May 23 (2002) to July 21 (2002), there were five "clustered" influxes. The first peaked from May 27 (2002) to May 29 (2003) with a high count of four on May 27, 2002. The second peaked on June 7 (1999, 2001) with two on both dates. The third peaked from June 12 (2002) to June 16 (2003) with a high count of eight on June 16, 2003. The fourth peaked from July 4 (2003) to July 8 (2001, 2002) with a high count of seven on July 8, 2002. The fifth is indicated by a peak count of eight on July 14, 2002. The fall passage ran from July 19 (2003) to October 14 (2001), there were seven "clustered" influxes. This passage included flocks flying to the east or to the south-east, this is detailed in segment one. The first influx peaked from July 19 (2003) to July 26 (2000) with a high count of eight on July 22, 2001. The second peaked from July 31 (2002) to August 5 (2001) with a high count of four on August 5, 2001. The third peaked from August 11 (2002) to August 13 (1999, 2000) with a high count of six on August 13, 2000. The fourth peaked from August 23 (2000) to August 26 (2001) with a high count of 15 on August 25, 2002. The fifth peaked from August 31 (1999) to September 3 (2000) with high counts of two on September 2, 2002 and September 3, 2000. The sixth peaked from September 19 (2000, 2001) to September 25 (1999) with high counts of 18 on September 19, 2000 and 24 on September 19, 2001. The latter is the highest count for Zellwood. The seventh peaked from October 12 (2000) to October 14 (2001) with a high count of two on October 14, 2001. There were no records from October 15 to December 17. Passage to the east or south-east noted from July 8 (2002) to September 19 (2000, 2001).

Mourning Dove (*Zenaida macroura*)

This is a resident, a passage migrant with, in two years (1999, 2001) a massive post-breeding gathering without precedent in Florida. These doves nest in the wooded borders. There were 32 pairs in 1999 with 14 pairs in 2000, 29 pairs in 2001, 23 pairs in 2002 and 22 pairs in 2003. Throughout the year numbers gather to feed out in the fields, to gather grit from the roads and to loaf on the utility wires, where there are no utility wires they settle on the roads. The early fall passage ran from August 15 (1998) to October 14 (2001) although this passage is normally over in late September or the first week of October. The highest count was that of 506 on September 2, 2001. To detail the 2001 influxes, there were 179 on August 26 with 506 on September 2, then 370 seen on September 5 with 64 on September 9 and 59 on September 13. There were 191 on September 16 with 339 on September 19, then 153 seen on September 26 with 25 on September 30. There were 309 on October 3 with 200 on October 7 and 32 to October 14. The main fall passage followed from September 21 (2000) to December 7 (1999) with a high count of 240 on November 25, 1998. The winter passage came next and it ran from December 2 (2001) to January 9 (2003) with a high count of 260 on January 7, 2003. The early spring passage ran from January 7 (2001) to March 5 (2003) with a high count of 157 on January 15, 2003. The summer passage was next as this species breeds so early this passage ran from February 29 (2000) to May 12 (2002) with the exception of 1999 and 2001 when this passage ended in late April. The highest count was that of 228 on April 3, 2002. Now we come to the post-breeding gatherings this overall event ran from April 26 (1999) to August 25 (1999), a period of four months! Now to look at the major events in 1999 and 2001, in 1999 there were 82 on April 26 with 125 on May 1, 145 on May 4, 267 on May 10, 555 on May 18, 1,035 on May 22, 1,405 on May 29 and 1,760 on June 5, then 1,145 seen on June 12 with 965 on June 14, 875 on June 22, 805 on June 25, 730 on July 4 and 445 on July 6. That is a mega type 1 influx. There were 960 on July 9 with 1,340 on July 12, then 1,025 seen on July 16 with 605 on July 20, 510 on July 23, 430 on July 27, 165 on August 3 and 61 on August 6. There were 62 on August 10 with 100 on August 13, then 97 on August 20 and 56 on August 25. In 2001 there were 45 on April 29 with 62 on May 2, 93 on May 4, 132 on May 6, 142 on May 8, 329 on May 14, 542 on May 20, 640 on May 24, 770 on May 31, 900 on June 7 and 1,180 on June 10, then 605 seen on June 17 with 405 on June 20. There were 1,245 on June 24 with 1,815 on June 27, then 1,082 seen on July 1. There were 1,510 on July 4 with 2,120 on July 8, then 1,905 seen on July 11 with 1,685 on July 15 and 122 on July 18. There were 159 on July 22 with 870 on July 25 and 1,390 on July 27, then 1,155 seen on July 29 with 615 on August 2, 480 on August 5, 465 on August 14, 280 on August 16, 117 on August 19 and 85 on August 22. The highest counts for the non-invasion years were 595 on June 30, 2000, 824 on June 23, 2002 and 725 on July 19, 2003. There has been only one major invasion since 2001 and that was in 2008, the highest count was that of 2,370 on July 30, 2008. This high count fits into the seventh influx for the earlier years. As only some 21 pairs nest in the area just where did all these birds come from? Numbers tended to

build up during the day along the roads, in the fields and in streams along the utility wires. This is a nocturnal migrant and there are indications of a northward movement in the early fall to or towards Canada. Perhaps in these three years Zellwood was a major staging post. These post-breeding gatherings are not detailed in the literature for other sites in Florida.

The early fall passage ran from August 15 (1998) to October 14 (2001) although this passage is normally over in late September or the first week of October, there were three "clustered" influxes. The first peaked from August 15 (1998) to August 21 (2002) with a high count of 125 on August 21, 2002. The second peaked from August 27 (1999, 2000) to September 2 (2001) with a high count of 506 on September 2, 2001. The third peaked from September 17 (1998) to September 19 (2001) with a high count of 339 on September 19, 2001. The main fall passage followed from September 21 (2000) to December 7 (1999), there were four "clustered" influxes. The first peaked from October 1 (2000) to October 8 (1999) with a high count of 85 on October 8, 1999. The second peaked from October 21 (1998) to October 26 (1999) with a high count of 175 on October 25, 2000. The third peaked from November 4 (2001) to November 9 (2002) with a high count of 227 on November 4, 2001. The fourth peaked from November 22 (1999) to November 30 (2002) with a high count of 240 on November 25, 1998. Whilst it may not be significant but each high count for this passage was higher than the one before. The same applies to the winter passage but the start count was lower. The winter passage ran from December 2 (2001) to January 9 (2003), there were four "clustered" influxes. The first peaked from December 5 (2001) to December 6 (2000) with a high count of 58 on December 6, 2000. The second peaked from December 16 (2002) to December 18 (1998) with a high count of 145 on December 18, 1998. The third peaked on December 22 (1999, 2000) with a high count of 168 on December 22, 1999. The fourth peaked from January 3 (2002) to January 7 (2003) with a high count of 260 on January 7, 2003. The early spring passage ran from January 7 (2001) to March 5 (2003), there were four "clustered" influxes. The first peaked from January 12 (1999) to January 15 (2003) with a high count of 157 on January 15, 2003. The second peaked from January 24 (2001) to January 29 (1999) with a high count of 106 on January 24, 2001. The third peaked from February 8 (2002) to February 9 (2003) with a high count of 130 on February 9, 2003. The fourth peaked from February 17 (1999) to February 23 (2003) with a high count of 111 on February 17, 1999. The summer passage was no heavier and it was somewhat shortened by following event. This passage ran from February 29 (2000) to May 12 (2002), with the exception of 1999 and 2001 when this passage ended in late April, there were five "clustered" influxes. The first peaked from March 3 (2000) to March 6 (2002) with a high count of 81 on March 3, 2000. The second peaked from March 18 (2001) to March 19 (2002, 2003) with a high count of 132 on March 19, 2003. The third peaked from April 3 (2002) to April 6 (1999, 2001) with a high count of 228 on April 3, 2002. The fourth peaked from April 16 (2001) to April 20 (1999) with a high count of 134 on April 20, 1999. The fifth peaked from April 30 (2000) to May 1 (2002) with a high count of 122 on May 1, 2002. Now we come to the event of

the year, the post-breeding gatherings, these ran from April 26 (1999) to August 25 (1999), a period of four months! There were eight "clustered" influxes. The first is indicated by a peak count of 114 on May 21, 2003. The second peaked from June 2 (2002) to June 5 (1999) with a high count of 1,760 on June 5, 1999. The third peaked from June 10 (2001) to June 12 (1999) with high counts of 1,180 on June 10, 2001 and 1,340 on June 12, 1999. The fourth peaked from June 23 (2002) to June 30 (2000) with a high count of 1,815 on June 27, 2001. The fifth peaked from July 8 (2001) to July 12 (1999) with a high count of 2,120 on July 8, 2001. This was the highest count during the first five years of the survey. Counts then fell. The sixth peaked on July 19 (2000, 2003) with coincidentally 725 on both dates. The seventh peaked on July 27 (2001, 2003) with a high count of 1,390 on July 27, 2001. Finally the eighth influx peaked from August 7 (2002) to August 13 (1999, 2003) with a high count of 440 on August 7, 2002. For the non-invasion years the highest counts were 595 on June 30, 2000, 824 on June 23, 2002 and 725 on July 19, 2003. This is one of the most interesting Zellwood species.

Common Ground-Dove (*Columbina passerina*)

This is a resident and a passage migrant with what may be a post-breeding gathering. As with many other species that are "considered" to be resident, the records suggest otherwise. The pattern for this species is no different than that for the majority of the migratory species. This is a secretive species for much of the year being heard more than it is seen. They prefer areas of thick scrub with areas of grass for feeding. In the fall they can often be found on the utility wires. This is one of the species that has really prospered with the cessation of farming. There were 40 pairs in 1999 with 59 pairs in 2000, 116 pairs in 2001, 98 pairs in 2002 and 236 pairs in 2003. The majority of the pairs are at the Sand Farm. There appears to be an early fall passage from July 10 (2002) to October 3 (2001) with a high count of 51 on July 25, 2003 and July 28, 2002. To detail the 2002 influxes, there were 25 on July 10 with 29 on July 14, 32 on July 17, 34 on July 21 and 51 on July 28, then 17 seen on July 31 with 15 on August 4. There were 16 on August 7 with 20 on August 11, 29 on August 14, 37 on August 18 and 42 on August 25, then 12 seen on September 2 with ten to September 8 and seven on September 11. There were 13 on September 15 and September 22 with seven on September 26. The late fall passage followed from September 15 (2002) to December 4 (1999) with a high count of 24 on September 25, 1999. The lowest numbers for the year occurred in the winter, this passage ran from December 6 (2000) to January 11 (2000) with a high count of 15 on December 8, 1998. Counts now gradually climbed again. The early spring passage ran from January 1 (1999) to March 2 (2003) with a high count of 21 on February 2, 2003 and February 10, 1999. Next came the main spring passage, this ran from February 21 (2001) to May 9 (2002) with a high count of 35 on April 28, 2002. Now we come to the main event, there being a large summer population

possibly leading into a post-breeding gathering. The records suggest passage rather than a stable population. This event ran from April 30 (2000) to August 8 (2003) with a high count of 111 on May 21, 2003. To detail the 2003 influxes, there were 47 on May 4 with 34 on May 7. There were 37 on May 12 with 38 on May 15, 49 on May 18 and 111 on May 21, then 69 seen on May 26 with 40 on May 29 and 39 on June 1. There were 51 on June 4 with 53 on June 8 and 69 on June 11, then 60 seen on June 16 with 42 on June 18. There were 49 on June 23 with 54 on June 26, then 53 on July 2 with 41 on July 4. There were 55 on July 6 with 54 on July 9, 48 on July 13, 36 on July 19, 32 on July 21 and 26 on July 23, a type 2 influx. There were 51 on July 25 with 44 on July 27, 36 on July 30, 30 on August 5 and 16 on August 8, another type 2 influx. This is said to be a declining species but not so at Zellwood.

The early fall passage ran from July 10 (2002) to October 3 (2001), there were six "clustered" influxes. It is possible that the first two influxes relate to all or part of a post-breeding gathering. The first influx peaked from July 22 (2001) to July 25 (2003) with a high count of 51 on July 25, 2003. The second peaked from July 28 (2002) to July 29 (2001) also with a high count of 51 on July 28, 2002. The third peaked from August 6 (2000) to August 10 (1999) with a high count of 20 on August 10, 1999. The fourth is indicated by a peak count of 37 on August 14, 2001. The fifth peaked from August 25 (2002) to August 27 (2000) with a high count of 42 on August 25, 2002. The sixth peaked from September 2 (1998, 2001) to September 6 (1999) with a high count of 28 on September 2, 2001. Numbers now lower. The late fall passage ran from September 15 (2002) to December 4 (1999), there were five "clustered" influxes. The first peaked from September 24 (2000) to September 25 (1999) with a high count of 24 on September 25, 1999. The second is indicated by a peak count of 20 on October 6, 2002. The third peaked from October 14 (1999) to October 18 (2000) with eight on both dates. The fourth peaked from November 8 (2000) to November 12 (1999) with a high count of ten on November 8, 2000. The fifth peaked from November 25 (2001) to November 30 (1998) with a high count of 13 on November 25, 2001. The lowest numbers of the year occurred during "clustered" influxes. The first peaked from December 2 (2001) to December 8 (1998) with a high count of 15 on December 8, 1998. The second is indicated by a peak count of three on December 11, 2002. The third peaked from December20 (1998) to December 28 (2002) with a high count of eight on December 20, 1998. The fourth peaked from January 1 (2000) to January 5 (2003) with a high count of nine on January 1, 2000. Counts now gradually climb again. The early spring passage ran from January 1 (1999) to March 2 (2003). January 1 was an exceptionally early start date for this passage for the other years the earliest date was January 9 (2003). There were four "clustered" influxes. The first peaked from January 10 (2002) to January 14 (2001) with a high count of 16 on January 12, 1999. The second peaked on January 24 (2001, 2002) with a high count of nine on January 24, 2001. The third peaked from February 2 (2003) to February 6 (2000) with a high count of 21 on February 2, 2003. The fourth peaked from February 10 (1999, 2002) to February 16 (2000) with a high count of 21 on February 10, 1999. The main spring

passage followed from February 21 (2001) to May 9 (2002), there were five "clustered" influxes. The first peaked from March 14 (2000) to March 17 (2002) with a high count of 17 on March 16, 2003. The second is indicated by a peak count of eight on March 25, 1999. The third peaked from April 6 (2000) to April 8 (2001) with a high count of 21 on April 8, 2001. The fourth peaked from April 19 (2000) to April 21 (2003) with a high count of 34 on April 21, 2003. The fifth peaked from April 26 (1999) to April 29 (2001) with a high count of 35 on April 28, 2002. Next came the main event(s), there was a large summer population and this possibly led to a post-breeding gathering. The passage ran from April 30 (2000) to August 8 (2003), there were six "clustered" influxes. Again the records suggest passage rather than a stable population. The first three influxes were indicated by isolated peak counts of 39 on May 12, 2002, 111 on May 21, 2003 and 63 on June 2, 2002. The count of 111 is still the highest count for Zellwood. The fourth peaked from June 9 (2000) to June 12 (1999) with a high count of 69 on June 26, 2003. The fifth peaked from June 19 (2002) to June 26 (2003) with a high count of 54 on June 26, 2003. The sixth peaked from July 6 (1999, 2003) to July 8 (2000, 2001) with a high count of 55 on July 6, 2003. If there was a post-breeding gathering it appeared to run from June 12 (2002) to August 8 (2003). From the first year this species has puzzled me, I know it is secretive but the pattern is that of a migrant. Perhaps one day we will understand it.

Budgerigar (*Melopsittacus undulatus*)

This is an exotic escape from captivity. There was a female from July 23, 1999 to August 6, 1999 at Lust Road. It was initially with Brown-headed Cowbirds but later it was on its own. Its plumage was the same as that of a wild female in Australia.

Cockatiel (*Nymphicus hollandicus)*

This is another exotic escape from captivity. Its preferred habitat in its native range is that of trees by water. There was one by the side of Lake Apopka just to the south of Lust Road on September 2, 2002. On January 2, 2003 a different individual flew west down Lust Road towards Lake Apopka. Despite being raised in captivity they are searching out the best habitat. This also explains why other species of parrots have not been recorded.

Black-billed Cuckoo (*Coccyzus erythropthalmus)*

This is a very rare migrant, just four records for the five years. In 1999 singles seen on May 10 and September 30, their age was not recorded. There were also single adults on September 21, 2000 and October 7, 2001.

Yellow-billed Cuckoo (*Coccyzus americanus)*

This is a summer visitor and passage migrant. Once again a difficult species in that it is not possible to separate out any spring passage from the arrival of the local breeding population as this species is known to be a late migrant. The spring and the summer span the period April 16 (2003) to July 23 (2003) with a high count of 23 on May 4, 2003, I am detailing the 2003 influxes. There was one on April 16 with two on April 24, seven on April 27 and 23 on May 4, then 13 seen on May 7 with eight on May 12 and five on May 15. There were six on May 18 with 15 on May 21, then six seen to May 29. There were nine on June 1 with 12 on June 11, then ten seen on June 16 with five to June 29, four to July 9, three on July 13 and one to July 23. If I were to treat the first influx from April 16 to May 15 as the spring passage that might be okay but the spring passage can continue into late May so do I extend the spring passage to May 29? If I did so then the summer would only run from June 1 to July 23 and most of that time is covered by a declining population. It is just not possible to separate the two events. Later in this analysis I describe the three steps that occur in the evolving local breeding population, they are well shown here. There were seven pairs in 1999 with ten pairs in 2000, 16 pairs in 2001, 26 pairs in 2002, 48 pairs in 2003 and 49 pairs in 2004. The latter is outside the period covered here but it is included for completeness. This species moved from breeding in the wooded borders to breeding in the wooded borders but feeding out in the Elderberry covered fields to finally nesting out in the Elderberry filled fields. There was a fall passage from July 1 (2001) to October 28 (2002) with a high count of 12 on July 3, 2002. This is a problematic species.

The spring and the summer covered the period April 16 (2003) to July 23 (2003), there were six "clustered" influxes. The first peaked from April 30 (2000) to May 4 (2003) with a high count of 23 on May 4, 2003. This was the highest count during the first five years of the survey. The second is indicated by a peak count of 12 on May 12, 2002. The third peaked from May 18 (1999) to May 21 (2003) with a high count of 15 on May 21, 2003. The fourth peaked from May 29 (1999) to June 6 (2000) with a high count of seven on May 30, 2002. The fifth peaked from June 10 (2001) to June 14 (1999) with a high count of 12 on June 11, 2003. The sixth is indicated by a peak count of two on June 23, 2002. The fall passage followed from July 1 (2001) to October 28 (2002), there were seven "clustered" influxes. The first peaked from July 1 (2001) to

July 3 (2002) with a high count of 12 on July 3, 2002. The second peaked from July 19 (2000) to July 25 (2003) with a high count of five on July 25, 2003. The third peaked from August 2 (2000) to August 10 (2003) with two on both dates. The fourth peaked from August 20 (2000) to August 25 (1999) with a high count of two on August 20, 2000. The fifth peaked from September 3 (2000) to September 5 (2001) with a high count of two on September 3, 2000. The sixth peaked from October 6 (2002) to October 12 (1999) with a high count of five on October 12, 1999. The seventh peaked from October 23 (1999) to October 28 (2002) with one on both dates.

Smooth-billed Ani (*Crotophaga ani)*

This was a most unexpected vagrant, especially as this species has such a very limited distribution in south Florida. There was one on June 26, 2003 working its way south down the side of Lake Apopka towards the pump house at the end of Lust Road. This was likely an overshooting migrant from the Caribbean

Groove-billed Ani (*Crotophaga sulcirostris)*

This is an irregular early spring and late fall migrant. To detail all the records, there was one on February 8, 2000. This was by the Lake Level Canal. It later crossed the canal onto the Duda property. There were also two at the Sand Farm from October 20, 2002 to October 23, 2002. Although outside the report period there was one at the Sand Farm from November 2, 2003 to November 16, 2003 with three there on November 12, 2003.

Barn Owl (*Tyto alba*)

This is a resident and just possibly a passage migrant. During this five year period this species nested in a series of derelict buildings and probably in the woods. The actual size of the breeding population is not known but one pair located in 1999 with four pairs in 2000, none in 2002, and four pairs again in 2002 and 2003, broods of one to four noted at nest sites from May 4 (2003) to August 27 (2000). Normally one to three could be seen or heard out in the fields through the year, the greatest activity being in the fall when the young join the adults. There is little to suggest passage, there were three on December 20, 2000 with five on December 22, 2000, then two seen on December 31, 2000 otherwise singles seen from December 12, 2000 to January 4, 2001. In 2001 there were two influxes in the early spring. The first ran from January 7 to January 17 with a peak cunt of five on January 7. The second ran from January 21 to February

11 with a peak count of ten on February 7, 2001. This was the highest count during the first five years of the survey. There were also two influxes in the fall but these may relate more to the young being out in the fields than to actual passage. The first influx ran from July 13, 2003 to August 13, 2003 with a peak count of seven on August 10, 2003. The second ran from September 11, 2002 to October 13, 2002 with a peak count of five on September 15, 2002.

Eastern Screech-Owl (*Otus asio*)

This species is a resident but the size of the population is unknown as I do not use recordings. There are no April records. Noted from May 4 (1999) but very few heard until September. In fact for all the five years from May to August on average only three a month heard. Counts were higher in September and October with a total of six for each month. Just two noted in November with five in December, six in January, five in February and seven in March, the last date being March 25 (1999). In all only 49 birds located over the five years. The highest counts (of two) were on March 23, 1999, July 23, 1999 and December 20, 1998. These were the highest counts during the first five years of the survey. There is so little information.

Great Horned Owl (*Bubo virginianus)*

This is a resident whose numbers are gradually increasing. There were two pairs in 1999 with five pairs in 2000, seven pairs in 2001, ten pairs in 2002 and eight pairs in 2003. In 2004 although outside the period covered by this analysis there were 13 pairs. Normally one to two a day noted often perched atop a utility pole. There were counts of four on January 1, 2001, June 7, 2001, August 26, 2001, August 27, 2000, September 3, 2000 and September 16, 2001. The only suggestion of passage comes from October 2003 which again is outside the period covered by this analysis. A Great Horned Owl was seen on the edge of the wood just to the north of the Hooper Farms Road gate on October 9, 2003. This individual was a pale gray not brown with gray barring on the under parts. It would appear to be a western bird, race not determined.

Burrowing Owl (*Athene cuncicularia*)

This is a vagrant. There was an adult near the Lust Road gate on June 18, 2003. This species has been seen near Zellwood but I do not know the nearest breeding site to Lust Road. This was another of the unexpected finds.

Barred Owl (*Strix varia)*

This is a resident, breeding in the wooded borders. Unlike many other species that breed in the survey area the numbers of this owl remain low. There were three pairs in 1999 with two pairs in 2000, four pairs in 2001, two pairs in 2002 and four pairs again in 2003. Normally only one to two a day recorded and that is on one out of every four to five visits. Counts of three only made from November 24 (2002) to January 30 (2003), the highest count was that of four on December 14, 2002. There have been higher counts in later years.

Short-eared Owl (*Asio flammeus)*

This is an uncommon passage migrant and winter visitor, seen in very low numbers hunting over the fields at dawn and dusk. This is a social species which will hunt in loose groups, calling from time to time. According to the books this species does not normally call in Florida but that is not true, all you need is for there to be two or more and they will be keeping in touch by calling. Noted in the fall from October 23 (1999) to December 3 (1998), only singles seen making it hard to discern any pattern. There were singles on October 23, 1999, November 5, 2000 and November 15, 2001. Whether or not these mark the locations of influxes if the numbers had been higher is not known. There was however a clear influx from November 26 (1999) to November 30 (1998) with records for four of the five years. The winter passage is the main event, it ran from December 4 (1999) to January 11 (2000, 2003), there were four "clustered" influxes. The first is indicated by a peak count of three on December 7, 1999. The second peaked from December 19 (1999) to December 20 (1998) with a high count of two on December 19, 1999. The third peaked from December 27 (1999) to January 1 (2001) with a high count of three on December 27, 1999. The fourth is indicated by a peak count of one on January 7, 2003. The party of three seen on December 27, 1999 stayed to January 7, 2000 with two on January 11, 2000. These counts of three were the highest during the first five years of the survey. Whilst the spring passage was very light it was still heavier than the fall passage. The passage ran from January 14 (2001) to March 25 (2000) with two on January 26, 2003, otherwise singles seen on 12 dates. The only indication of an influx came from February with singles on February 7, 2001 and February 8, 2000.

Northern Saw-whet Owl (*Aegolius acadicus)*

There was one by the Lake Level Canal on November 5, 2002. This was a most unexpected find as this is way south of its wintering range.

Lesser Nighthawk (*Chordeiles acutipennis)*

This is a western species, whilst a few come to winter in south Florida this is a vagrant anywhere in central Florida. There was one by the Sod Farm on December 16, 1998. Others have been seen in later years.

Common Nighthawk (*Chordeiles minor)*

This is a summer visitor and passage migrant. This species is now nesting out in the fields. There were five pairs in 1999 with four pairs in 2000, 13 pairs in 2001, eight pairs in 2002 and 12 pairs in 2003. In the spring and early summer this species is easy to locate because it calls frequently early and late and at other times especially around thunderstorms. That is not the case in the fall when the birds are silent. Seen in the spring from April 11 (2000) to June 12 (2002) with a high count of 12 on April 24, 2003. Although there should be no passage during the summer that pattern of a series of influxes is still there. The passage ran from May 29 (2003) to August 4 (2002) with a high count of 11 on June 17, 2001. Next came the main event, the fall passage it ran from August 2 (2001) to October 16 (2002) with a high count of 1,233 on September 11, 2002. In the early fall I arrive at Zellwood at or before dawn but leave before dusk. This species migrates at night so I have limited information on their departure at dusk. On September 11, 2002 I arrived at the Laughlin Road gate late in the day to find what developed into streams of nighthawks flying to the south over a broad front. I counted a total of 1,233 but that is certainly only going to be a part of the total passage that day. This is one of the largest movements ever recorded in Florida. On the 18th I arrived at the McDonald's Canal's junction with Laughlin Road a little later in the day only to find droves of nighthawks feeding over the fields to the east. I counted some 470 and even that number was a spectacle. I can only assume that the 1,233 did likewise i.e. stop at the fields to feed. On the 18th they were still over the fields when it got dark so I do not know whether or not they left to the south that night. Limited information from the later years suggests that they did leave to the south. On September 22 there were only 57 with 36 on September 26. There was a further influx on September 29 as 173 seen on that date, then 52 seen on October 2 with 28 on October 6, 12 on October 9 and nine on October 16. The highest count for the other years was only that of 28 on August 22, 2001. The events of September 11 and September 18 constitute one of the most memorable spectacles that I have seen at Zellwood.

The spring passage ran from April 11 (2000) to June 12 (2002), there were five "clustered" influxes. The first peaked from April 14 (2002) to April 19 (2000) with a high count of five on April 17, 1999. The second peaked from April 24 (2003) to April 26 (2001) with a high count of 12 on April 24, 2003. The third peaked from May 1 (2002) to May 4 (1999, 2000, 2003)

with a high count of six on May 1, 2002. The fourth peaked from May 13 (2000) to May 15 (2003) with high counts of six on May 14, 2001 and May 15, 2003. The fifth peaked from May 27 (2001) to June 2 (2002) with a high count of eight on May 27, 2001. The summer passage ran from May 29 (2003) to August 4 (2002), again there were five "clustered" influxes. The first peaked from June 9 (2000) to June 11 (2003) with a high count of six on June 11, 2003. The second peaked from June 16 (2002) to June 17 (2001) with a high count of 11 on June 17, 2001. The third peaked from June 25 (1999) to July 2 (2003) with a high count of four on June 25, 1999. The fourth peaked from July 8 (2000) to July 13 (2003) with a high count of five on July 13, 2003. The fifth peaked from July 21 (2002) to July 25 (2001) with a high count of five on July 25, 2001. Now to the main event, the fall passage, this ran from August 2 (2001) to October 16 (2002), again there were five "clustered" influxes. The first peaked from August 5 (2001) to August 9 (2000) with a high count of four on August 5, 2001. The second peaked from August 22 (2001) to August 27 (2000) with a high count of 28 on August 22, 2001. The third peaked from September 8 (1999) to September 11 (2002) with a high count of 1,233 on September 11, 2002. This is still the highest count for Zellwood and one of the highest counts for Florida as a whole. The fourth peaked from September 16 (2001) to September 19 (2000) with a high count of three on September 16, 2001. The fifth is indicated by a peak count of 173 on September 29, 2002. There were no winter records during the first five years of the survey.

Chuck-will's-widow (*Caprimulgus carolinensis*)

This is a summer visitor and passage migrant. There were five pairs in 1999 with two pairs in 2000, one pair in 2001 and five pairs in 2002. Initially I could only listen for these birds from the start of Canal Road then in 2002 I was able to check for these birds further down that road to the west, hence the extra pairs in 2002. In 2003 and 2004 I was able to check the eastern border and in both years I found a total of 20 pairs. Whilst doing the Breeding Bird Survey on June 4, 2003 I counted 13 along the northern and eastern borders. This was the highest count during the first five years of the survey. The spring passage ran from March 24 (2002) to June 9 (2000), there were five "clustered" influxes. The first peaked from March 29 (2003) to April 3 (2000) with a high count of four on March 29, 2003. The second peaked from April 10 (2002) to April 16 (2001) with a high count of eight on April 16, 2001. The third is indicated by a peak count of nine on April 21, 2002. The fourth peaked from April 29 (2001) to May 4 (2003) with a high count of six on May 4, 2003. The fifth peaked from May 21 (2000) to May 27 (2001, 2002) with a high count of four on May 27, 2002. The summer spanned the period June 13 (2001) to August 5 (2001), four of the peak counts fit into the period June 29 (1999) to July 4 (2001, 2003) with a high count of five on June 29, 1999. However there is no evidence of passage during this season. This is a woodland species that is exceptionally hard to

locate in the fall when the calling ceases. Only singles noted in the fall on 11 dates from August 22 (2001) to October 10 (2001), there were two on September 2, 2001.

Eastern Whip-poor-will (*Caprimulgus vociferus)*

This is an uncommon passage migrant and winter visitor. It is an exceptionally difficult nocturnal species to locate unless it is singing in the spring. It is certainly under-recorded even at that season. There was a very light fall passage from September 2 (2001) to November 29 (2002), the limited records only indicate one “clustered” influx. The influx peaked from October 18 (2000) to October 20 (2002) with one on both dates. Otherwise singles noted in the fall with a high count of three on September 13, 2000. The winter passage ran from December 5 (2001) to January 7 (2003), only singles seen. There did appear to be one “clustered” influx and that peaked from December 21 (2002) to December 22 (1999, 2001), singles on all dates. The early spring passage ran from January 7 (2002) to March 3 (2001), there were two “clustered” influxes. The first peaked from January 7 (2002) to January 9 (2003), with one on both dates. The second peaked from January 24 (2001) to January 28 (2000) with one on both dates. Only singles noted during this passage. The main spring passage followed, it was a little heavier but only because some birds were singing. This passage ran from March 5 (2003) to April 13 (2003), there were two “clustered” influxes. The first peaked from March 5 (2003) to March 10 (2002) with a high count of two on March 10, 2002. The second peaked from March 29 (2003) to April 7 (2002) with a high count of three on April 4, 2001. The counts of three on September 13, 2000 and April 4, 2001 were the highest counts during the first five years of the survey. Birds first noted as singing on February 25 (2001). Exceptionally there was one singing on September 2, 2001.

Chimney Swift (*Chaetura pelagica)*

This is a passage migrant and a non-breeding summer visitor. There is a small population in Zellwood Township that visits the area daily. The spring passage appears to run from March 22 (2001, 2002) to June 19 (2000) with a high count of 233 on April 29, 2001. The summer passage followed from June 8 (2003) to August 14 (2001) with a high count of 30 on July 23, 2003. The fall is the only important passage for this species, the passage ran from July 30 (2000) to October 26 (1999) with a high count of 1,510 on October 2, 1999. To detail the 1999 influxes, there were six on August 3 with two on August 6. There were three on August 10 with 66 on August 18, then nine seen on August 20 with three on August 27. There were 165 on August 31 with 173 on September 6, then three seen on September 8 with two on September 10. There were 151 on September 17 with 270 on September 23, then 60 seen on September 25 with 26

on September 30. On October 2 a total of 1,510 flew to the south with 177 in the area on October 6 and 35 on October 8. There were 390 on October 12 with 400 on October 14, then 19 seen on October 19 with one on October 26. Excluding the count of 1,510 this was not a very impressive set of influxes, the other years were no better. On just three counts I noted the birds as flying to the south, there were 865 on August 8, 2003 with 165 on August 10, 2003 and the 1,10 mentioned above. It was more normal to note flocks feeding over the fields, often at a great height.

The summer passage ran from March 22 (2001, 2002) to June 19 (2000), there were nine "clustered" influxes. With such a high number of influxes the majority if not all have to be basic influxes. The first peaked from March 22 (2001, 2002) to March 24 (2003) with a high count of two on March 22, 2001 and March 24, 2003. The second peaked from April 3 (2000, 2002) to April 6 (1999) with a high count of 17 on April 4, 2001. The third is indicated by a peak count of 21 on April 11, 2003. The fourth peaked from April 17 (1999) to April 21 (2003) with a high count of 52 on April 17, 1999. The fifth peaked from April 29 (2001) to May 1 (1999) with high counts of 102 on May 1, 1999 and 233 on April 29, 2001. The sixth peaked from May 8 (2001) to May 9 (2002) with a high count of 41 on May 8, 2001. The seventh peaked from May 15 (2002) to May 20 (2001) with a high count of 23 on May 16, 2000. The eighth is indicated by a peak count of 11 on May 29, 2003, note how the numbers rose and fell making April 29 to May 1 the center of this passage. As is often the case there was a late flurry. The last influx peaked from June 7 (1999) to June 10 (2001) with a high count of 38 on June 7, 1999. The counts in the summer were much lower but a pattern of influxes still emerges. The summer passage ran from June 8 (2003) to August 14 (2001), there were six "clustered" influxes. The first peaked from June 11 (2003) to June 19 (1999, 2000) with a high count of 12 on June 19, 1999. The second was indicated by a peak count of nine on June 30, 2000. The third peaked from July 6 (2003) to July 11 (2001) with a high count of 27 on July 6, 2003. The fourth peaked from July 14 (1999) to July 17 (2002) with a high count of five on July 16, 2000. The fifth peaked from July 23 (2003) to July 25 (2002) with a high count of 30 on July 23, 2003. The sixth peaked from July 30 (2003) to August 3 (1999) with a high count of 16 on July 30, 2003. The fall is the only important season for this species. The fall passage ran from July 30 (2000) to October 26 (1999), there were eight "clustered" influxes. The first peaked from August 8 (2003) to August 11 (2002) with a high count of 865 on August 8, 2003. The second peaked from August 13 (2003) to August 15 (1998) with a high count of 270 on August 13, 2003. The third peaked from August 22 (2001) to August 25 (2002) with a high count of 55 on August 22, 2001. The fourth peaked from September 4 (2002) to September 6 (1999) with a high count of 185 on September 4, 2002. The next two influxes were indicated by isolated peak counts of 415 on September 13, 2000 and 270 on September 23, 1999. The seventh peaked from September 27 (2001) to October 2 (1999, 2002) with high counts of 800 on September 27, 2001 and 1,510 on October 2, 1999. The latter was the highest count during the first five years of the survey. The last influx

peaked from October 10 (2001) to October 15 (2000) with a high count of 400 on October 10, 2001.

Ruby-throated Hummingbird (*Archilochus colubris*)

This is a very uncommon passage migrant. This species prefers wooded land not the open spaces of Zellwood. Over the five years only 12 individuals seen, there were four in the spring and eight in the fall. Noted in the spring from April 1 (1999) to May 14 (1999). There are indications of a single "clustered" influx, this peaked from May 13 (2000) to May 14 (1999) with one on both dates. Seen in the fall from July 4 (1999) to October 24 (2001). There are indications of a single "clustered" influx, this peaked from September 17 (1999) to September 18 (2002) with one on both dates. With the exception of 2002 only singles recorded. From October 13, 2002 to October 16, 2002 there were two at the Sand Farm. This is still the highest count for the survey. There were also two on August 22, 1971.

Black-chinned Hummingbird (*Archilochus alexandri*)

This is a vagrant to central Florida but a regular winter visitor to the northern counties. There is one record for the winter passage there was one on the northern border on December 19, 1999.

Belted Kingfisher (*Megaceryle alcyon*)

This is a passage migrant and winter visitor, most sightings were along the shore of Lake Apopka especially after the fields of Unit Two drained. Others were at the Lake Level Canal and the Sand Farm Cattail Marsh once that had formed. There are two June records that I am treating as fall records. In 1999 the last in the spring was one on March 16, then one seen on June 25, 1999. In 2003 the last in the spring was one on May 15, then two seen on June 18. The early fall passage otherwise ran from July 8 (2000) to August 21 (2002) with high counts of three on July 27, 1999 and August 13, 2000. The main fall passage followed and it ran from August 15 (1998) to December 11 (2002) with a high count of 19 on November 9, 2002. This passage was a long series of basic influxes. To detail the 2002 influxes, there were three from August 25 to September 4 with two to September 11. There were three on September 15 with five on September 18, eight on September 26 and 12 on September 29, then nine seen on October 6 with eight on October 9 and six on October 13. There were 13 on October 16 with nine to October 23. There were 12 on October 28 with 19 on November 9, then 15 seen on

November 21 with ten to November 29. There were 11 on November 30 with eight on December 2, seven on December 8 and five on December 11. The winter passage ran from December 5 (2001) to January 11 (2000) with a high count of 11 on December 19, 2001. To detail the 2001/2002 influxes, there were nine on December 5 with eight on December 9, six on December 13 and five on December 16. There were 11 on December 19 with nine to December 27, eight on January 3 and five on January 7. In the fall there had been nine influxes but for the winter there were only four. For the year detailed above there were two regular influxes, the basics were hidden. Also note both of the influxes were type 2. The early spring passage ran from January 4 (2001) to February 28 (2001) with a high count of 14 on February 10, 2002. Finally there was the late spring passage, this ran from February 29 (2000) to April 27 (2003) with a late individual on May 15, 2003. The highest counts were of nine on March 6, 2002 and April 2, 2003.

I believe that the fall started with singles on June 18, 2003 and June 25, 1999. Excepting these sightings the early fall passage ran from July 8 (2000) to August 21 (2002), there were four "clustered" influxes. This was a very light passage. The first peaked from July 14 (1999) to July 18 (2001) with one on both dates. The second peaked from July 23 (2000) to July 27 (1999) with a high count of three on July 27, 1999. The third peaked from August 5 (2001) to August 7 (2002) with a high count of two on August 7, 2002. The fourth is indicated by a peak count of three on August 13, 2000. The main fall passage was afloat in basic "clustered" influxes, nine in all. The passage ran from August 15 (1998) to December 11 (2002). The first influx peaked from August 20 (1999) to August 25 (2002) with a high count of three on August 25, 2002. The second peaked from September 3 (2000) to September 9 (2001) with high counts of five on September 6, 1999 and September 9, 2001. The third peaked from September 17 (1998) to September 19 (2000) with a high count of 13 on September 17, 1998. The fourth peaked from September 29 (2002) to October 3 (2001) with a high count of 12 on September 29, 2002. The fifth peaked from October 14 (1999) to October 16 (2002) with a high count of 13 on October 16, 2002. The sixth is indicated by a peak count of seven on October 27, 2000. The seventh peaked from October 29 (1999) to November 5 (2000) with a high count of 14 on November 2, 1998. The eighth peaked from November 9 (2002) to November 16 (1999) with a high count of 19 on November 9, 2002. This was the highest count during the first five years of the survey. The ninth peaked from November 27 (2001) to November 30 (2002) with a high count of 11 on November 30, 2002. The winter passage was more normal, just four "clustered" influxes from December 5 (2001) to January 11 (2000). The first peaked from December 5 (2001) to December 8 (1998) with a high count of nine on December 5, 2001. The second peaked from December 11 (1999) to December 14 (2002) with a high count of ten on December 14, 2002. The third peaked from December 19 (2001) to December 20 (2000) with a high count of 11 on December 19, 2001. The fourth peaked from December 28 (2002) to January 1 (1999, 2000) with a high count of eight on December 28, 2002. The early spring passage came next and it ran

from January 4 (2001) to February 28 (2001), there were five "clustered" influxes. Numbers now a little lower. The first peaked from January 5 (2003) to January 10 (2002) with a high count of 11 on January 10, 2002. The second peaked from January 4 (2000, 2001) to January 15 (1999) with a high count of six on January 14, 2001. The third is indicated by a peak count of ten on January 26, 2003. The fourth peaked from February 2 (2000) to February 4 (2001) with a high count of seven on February 4, 2001. The fifth peaked from February 10 (2002) to February 15 (2003) with a high count of 14 on February 10, 2002. Numbers again lower for the late spring passage, this ran from February 29 (2000) to April 27 (2003) with a late individual on May 15, 2003. There were four "clustered" influxes. The first peaked from March 2 (2003) to March 6 (2002) with a high count of nine on March 6, 2002. The second peaked from March 10 (2000) to March 16 (1999, 2003) with a high count of eight on March 16, 2003. The third is indicated by a peak count of four on March 25, 2000. The fourth peaked from April 2 (2003) to April 6 (2001) with a high count of nine on April 2, 2003. There were also two on April 21, 2002 but I am not sure that a separate influx is involved here.

Red-headed Woodpecker (*Melanerpes erythrocephalus)*

This is an irregular passage migrant, in all only 16 individuals seen over the five years. The majority were seen near the northern border. Of those that were aged eight were adults and four were juveniles. In the spring passage noted from March 29 (2003) to May 23 (2002), potentially there were four "clustered" influxes. The first peaked from March 29 (2003) to April 3 (2000) with one on both dates, then one seen on April 14, 1999. There was one on May 6, 2001 and May 8, 2001 with one on May 23, 2002. There were no summer records. Seen in the fall from July 31 (2002) to October 12 (2000), however with the exception of the one on July 31, 2002 this passage did not really start until August 29 (2001). There may be six "clustered" influxes. The first peaked from August 29 (2001) to September 2 (2001) with one on both dates. The second is indicated by a peak count of one on September 9, 2001. The third peaked from September 19 (2000) to September 22 (2002) again with one on both dates. The fourth peaked from September 27 (2000) to September 30 (2001) with one on both dates. The last two influxes were indicated by isolated peak counts of one on October 5, 2000 and October 12, 2000. The one on October 5 was a juvenile whilst the one on October 12 was an adult. Finally there was an unexpected winter record, there was one on December 16, 1998, age not noted. This all comes down to six sightings of five birds in the spring, ten birds in the fall and one bird in the winter. The main passage was from mid-September to early October.

Red-bellied Woodpecker (*Melanerpes carolinus*)

This is a resident and a passage migrant. As with most resident species the local breeding population has grown significantly, there were 27 pairs in 1999 with 39 pairs in 2000, 58 pairs in 2001, 56 pairs in 2002 and 76 pairs in 2003. In 2004, although outside the period covered in this analysis there were 94 pairs. Exceptionally the summer covers an extended period from April 15 (2000) to August 18 (1999) with a high count of 24 on July 2, 2003. The fall passage followed from August 18 (2002) to December 12 (2000), with the exception of 2000 this passage ended on December 5 (2001) or earlier, with a high count of 28 on September 24, 2000. To detail the 2000 influxes, there were 11 on August 20 with 13 to September 3, 15 to September 13, 18 on September 19, 24 on September 21 and 28 on September 24, then 16 seen on September 27. There were 18 on October 1 with 24 on October 5, then 13 seen to October 22 with eight on October 25, seven on October 29 and five to November 15. There were six on November 19 with seven on November 26, eight on November 30 and 11 on December 3, then ten seen on December 6 with eight on December 12. Just looking at this one year suggests that the fall passage ran from August 20 to October 22 with no passage from October 25 to November 15 after that date another event started. I have placed that last influx in the fall passage as it seems to start too early for it to be a winter influx. The winter passage ran from December 2 (2002) to January 14 (2000) with a high count of 16 on January 7, 2001. To detail the 2000/2001 influxes, there were 12 on December 15 with nine on December 20 and eight on December 22. There were 11 on December 31 with 15 on January 4 and 16 on January 7, then 11 seen on January 10. The early spring passage came next, this ran from January 7 (2002) to March 7 (2000) with a high count of 20 on January 9, 2003. To continue with the 2001 records, there were 15 on January 14 with 16 on January 17 and 17 on January 24, then 13 seen on January 28 with 11 on January 31. There were 14 on February 4 with 12 on February 11, 11 on February 14 and nine on February 18. There were 19 on February 21 with 12 on February 25, seven on February 28 and six on March 3. Finally there was the main spring passage, this ran from March 5 (2003) to May 12 (2003), excluding 2003 this passage ended on May 1 (1999). Very exceptionally the highest count was that of 48 on April 27, 2003. To detail the 2003 influxes, there were 16 on March 5 with 17 on March 12 and 19 on March 16, then 15 seen on March 19 with 11 on March 24 and ten on March 29. There were 14 on April 2 with 15 on April 6, 19 from April 13 to April 21, 22 on April 24 and 48 on April 27, then 29 seen on May 4 with 17 on May 7 and 11 on May 12. In this instance I have chosen to detail numerous influxes in an effort to show why I see passage in this and other species that are basically treated as being resident. An increase in activity in the spring could create the appearance of an influx, but a series? I also feel that the jump from 22 to 48 does not fit that scenario. Just to add to the evidence of passage the fall high counts have climbed as follows, there were 57 on October 16, 2005 and 91 on October 1, 2006.

The summer covers an extended period from April 15 (2000) to August 18 (1999), there was no passage during this time but there appeared to be three “clustered” influxes. The first peaked from May 31 (2001) to June 2 (2002) with a high count of 19 on June 2, 2002. This may just be a coincidence whist the other two influxes may just relate to the fledged young joining the population. The first peaked from July 2 (2003) to July 3 (2002) with a high count of 24 on July 2, 2003. The second peaked from July 19 (2000) to July 21 (2002) with a high count of 23 on July 21, 2002. The fall passage ran from August 18 (2002) to December 12 (2000), with the exception of 2000 this passage ended on December 5 (2001), there were four “clustered” influxes. The first peaked from September 4 (2002) to September 5 (2001) with a high count of 19 on September 5, 2001. The second peaked from September 23 (1999) to September 29 (2002) with a high count of 28 on September 24, 2000. The third peaked from October 13 (2002) to October 19 (1999) with a high count of 20 on October 13, 2002. The fourth peaked from November 29 (2002) to December 3 (2000) with a high count of 14 on November 29, 2002. The winter passage followed from December 2 (2002) to January 14 (2000), there were four “clustered” influxes. The first is indicated by a peak count of 12 on December 15, 2000. The second peaked from December 19 (2001) to December 22 (1999) with a high count of 13 on December 22, 1999. The third peaked from December 31 (2000) to January 1 (1999) with a high count of 11 on December 31, 2000. The fourth is indicated by a peak count of 16 on January 7, 2001. Next came “clustered” influxes. The first peaked from January 9 (2003) to January 10 (2002) with a high count of 20 on January 9, 2003. The second peaked from January 24 (2001) to January 28 (2000) with a high count of 18 on January 28, 2000. The third peaked from February 2 (2003) to February 4 (2001) with a high count of 19 on February 3, 2002. The fourth peaked from February 16 (2000) to February 21 (2001) with a high count of 19 on February 21, 2001. The fifth peaked from February 26 (2003) to February 29 (2000) with a high count of 17 on February 26, 2003. The main spring passage was somewhat shortened by the early start to the summer. This passage ran from March 5 (2003) to May 12 (2003), excluding 2003 this passage ended from late April to May 1 (1999), there were four “clustered” influxes. The first peaked from March 10 (2000) to March 16 (2003) with high counts of 19 on March 14, 2002 and March 16, 2003. The second peaked from March 25 (2001) to March 31 (2002) with a high count of 14 on March 25, 2001. The third peaked from April 6 (1999) to April 8 (2001) with a high count of 17 on April 8, 2001. The fourth peaked from April 21 (2002) to April 27 (2003) with a high count of 48 on April 27, 2003. This was the highest count during the first five years of the survey. I was not conducting a Breeding Bird Survey on that date, so it was a real increase.

Yellow-bellied Sapsucker (*Sphyrapicus varius*)

This is an uncommon passage migrant and winter visitor, part of the problem being that I had to work the edges of the woods rather than the inside where most of the birds are. There was one on September 24, 2000, this is one of the earliest fall records for Florida. The actual fall passage ran from October 13 (2000) to November 26 (1999). In 1999 there was one on October 14 with two on October 19 and four on October 23, then two seen on October 26 with one to November 9, Later there were singles on November 19 and November 26. The only other fall records relate to singles on October 13, 2000 and November 7, 2001. The count of four was the highest count during the first five years of the survey. The winter passage was a little stronger with records from December 7 (1999) to January 7 (1999, 2002, 2003), there were four "clustered" influxes. The first is indicated by a peak count of two on December 7, 1999. The second peaked from December 14 (2002) to December 16 (1998, 2002) with one on all dates. The third peaked from December 20 (2000) to December 21 (2002) with one on both dates. The fourth peaked from January 1 (2000) to January 7 (2003) with a high count of two on January 1, 2000. The early spring passage ran from January 11 (2000) to February 29 (2000), there were four "clustered" minor influxes. The first peaked from January 11 (2000) to January 15 (2003) with one on both dates. The second is indicated by a peak count of two on January 20, 2002. The third peaked from January 27 (2003) to January 28 (2001) with one on both dates. The fourth peaked on February 2 (2000, 2003) with a high count of two on February 2, 2003. As stated earlier the early spring passage ran to February 29 (2000). The only evidence of a late spring passage comes from mid-March with records from March 13 (1999) to March 25 (1999). The single "clustered"influx peaked from March 13 (1999) to March 16 (2003) with one on both dates. There may have been a total of 28 birds over the five years.

Downy Woodpecker (*Picoides pubescens*)

This is a resident and a passage migrant. As with many other species the breeding population grew during the five years, however growth stalled in 2003. There were 12 pairs in 1999 with 14 pairs in 2000, 31 pairs in 2001, 37 pairs in 2002 and 39 pairs in 2003. In 2004 there were 38 pairs. Many species show a pattern of increments every second year, my belief being that species initially bred in the wooded borders adjacent to what had been cultivated fields, then as the vegetation thickened in the fields they changed from a linear territory to one that encompassed both the wood and the field. The third stage occurred when the species started breeding in the Elderberry, Ludwigia and Saltbush filled fields. This species (surprisingly), the Northern Flicker and the Pileated Woodpecker did not make that final jump, whereas the Red-

bellied Woodpecker did. All of this is detailed more fully in Appendix A. For much of the year the population is stable, with the fledged young being first seen from June 3 (2000). There are however some indications of passage, there appears to be a minor fall passage from September 3 (2000) to November 1 (2000), there were three "clustered" influxes. The first is indicated by a peak count of 19 on September 19, 2000. The second peaked from September 29 (2002) to October 3 (2001) with a high count of 16 on October 3, 2001. The third is indicated by a peak count of 14 on October 19, 1999. To detail the 2000 influx, there were five on September 3 with eight on September 7, 16 on September 13 and 19 on September 19, then 16 seen from September 21 to October 1 with 15 on October 5, 13 on October 12, nine on October 18, seven on October 25 and six on November 1. The count of 19 was the highest count during the first five years of the survey. There was only the suggestion of a winter passage from December 2 (2001) to January 12 (1999), there were two "clustered" influxes. The first is indicated by a peak count of 11 on December 2, 2001. The second peaked from December 31 (1998) to January 1 (2000) with a high count of nine on January 1, 2000. There was an early spring passage from January 8 (2000) to February 29 (2000), there were three "clustered" influxes. The first peaked from January 24 (2001) to January 28 (2000) with a high count of 14 on January 24, 2001. The second peaked from February 9 (1999) to February 15 (2003) with a high count of ten on February 15, 2003. The third is indicated by a peak count of 14 on February 21, 2001. No passage noted from March to August.

Hairy Woodpecker (*Picoides villosus*)

This is a very rare visitor with seven records of six birds for the five years. I have no knowledge as to the nearest breeding site. All the sightings were perhaps significantly along the northern border. There is no discernible pattern to the records. There was one on February 11, 2000, one on March 13, 1999 and one on April 30, 2003. In the fall there was one on August 27, 1999 with singles on October 12, 2000 and October 25, 2000. Finally there was one on November 27, 2001. There were no winter or summer sightings.

Red-cockaded Woodpecker *(Picoides borealis)*

This was certainly one of the least expected visitors to Zellwood. On June 23, 2003 there was an adult by the Sand Farm Bridge. It was in a very thick stand of Elderberry and other plants. It was not the plants that were important but the location. This was the last bit of cover for a bird if it was flying to the east. This position was raised up high above the fields which stretched out for two miles or more to a distant wooded border on the other side. The woodpecker took off and flew out to the east over the fields. It is understandable that it would

pause before such a flight. I have since had a Brown-headed Nuthatch apparently doing the same thing but from the eastern border.

Northern Flicker (*Colaptes auratus)*

This is a resident and to a degree a passage migrant. During the Breeding Bird Survey five pairs located in 1999 and 2000 with ten pairs in 2001, 12 pairs in 2002, and ten pairs in 2003. This species nests in the larger pieces of woodland but individuals can turn up anywhere. Seen on most visits, counts normally in the range of one to five. There is the suggestion of passage in the spring and the fall but not the winter. The early spring passage ran from January 7 (2001) to March 5 (2003), there were three "clustered" influxes. The first peaked from January 15 (1999) to January 17 (2001) with a high count of eight on January 17, 2001. The second is indicated by a peak count of six on January 28, 2000. The third peaked from February 23 (2003) to February 25 (2001) with a high count of seven on February 25, 2001. There was a minor fall passage from September 25 (1999) to October 25 (2000), there was one "clustered" influx. This influx peaked from October 12 (2000) to October 19 (1999) with a high count of eight on October 17, 2001 and October 19, 1999. The counts of eight were the highest counts during the first five years of the survey.

Pileated Woodpecker (*Dryocopus pileatus)*

This is a resident, no indications of passage! There were normally one to three seen or heard regularly through most of the year with one to six a day from January to early May. During the Breeding Bird Survey three pairs found in 1999 and 2000 with eight pairs in 2001, ten pairs in 2002 and eight pairs again in 2003. The higher counts were those of seven on January 7, 2001, eight on January 14, 2001 and six on February 2, 2000. The count of eight was the highest count during the first five years of the survey. These higher counts in the spring are not enough to make me consider this species a partial migrant.

Eastern Wood-Pewee (*Contopus virens*)

This is principally a fall passage migrant. There are just four records for the spring, there being singles on April 17, 2002, April 20, 1999, April 30, 2000 and May 14, 2001. The April 17 and April 20 records could mark the location "clustered" influxes. The first is indicated by a peak count of one on August 21, 2002. The second peaked from August 30 (2000) to August 31 (1999) with two on both dates. The third peaked from September 5 (2001) to September 8 (2002) with one on both dates. The fourth peaked from September 18 (2002) to September 19

(2001) with a high count of two on September 19, 2001. The fifth peaked from September 24 (2000) to September 25 (1999) with a high count of six on September 24, 2000. This was the highest count during the first five years of the survey. The sixth peaked from October 5 (2000) to October 7 (2001) with one on both dates and also on October 6, 2002. Very exceptionally there was a late individual on November 9, 2002. It appeared darker but it was silent. This just might have been a Western Wood-Pewee *Contopus sordidulus*

Acadian Flycatcher (*Empidonax virescens*)

This is an uncommon fall migrant. There was also a single spring record, there being one on May 4, 2003. Seen in the fall from August 5 (2001) to October 3 (2001), there were six "clustered" influxes. The first two influxes were indicated by isolated peak counts of one on August 5, 2001 and August 18, 2002. The third peaked from August 29 (2001) to August 31 (1999) with one on both dates. The fourth peaked from September 7 (2000) to September 11 (2002) with a high count of two on September 11, 2002. This was the highest count during the first five years of the survey. The fifth peaked from September 21 (2000) to September 23 (1999) with one on both dates. The sixth is indicated by a peak count of one on September 30, 2001. Without access to the interior of a wood this will always remain a very uncommon migrant.

Willow Flycatcher (*Empidonax traillii*)

This is yet another vagrant. There was an adult by Canal Road on July 27, 1999, it was singing. Apparently this species is known to sing occasionally on fall passage.

Least Flycatcher (*Empidonax minimus*)

This is an increasing passage migrant and winter visitor which was not recorded until October 15, 2000. Whilst this species can be found throughout the area, where ever there is water, the bulk of the records come from the track that runs for one and a half miles due west from the Sand Farm bridge. This track marks the boundary between the Sand Farm and the Duda properties. There is a wide canal with parallel ditches on either side. It is along these ditches and the surrounding scrub and willows that the majority are either heard or seen. There is an exceptionally early record of one on August 28, 2002, this may be the earliest fall record for Florida (by one day). There is now a noticeable fall passage from September 29 (2002) to December 14 (2002), the highest count was that of eight on December 2, 2002. To

detail that particular influx, there were two on November 21 with four on November 24, five on November 29 and eight on December 2, then three seen to December 11 with one on December 14. The winter passage appears to be an extension of the fall passage, it ran from December 12 (2000) to January 14 (2000). As often happens there is an influx that concerns me, is it a fall influx or a winter influx? The influx ran from November 26 to December 6 in 2000, from November 25 to December 9 in 2001 and from November 21 to December 14 in 2002. I have placed it in the fall passage but it just might be a winter influx. Excluding this influx there were just two influxes for the winter passage with a high count of four on December 21, 2002. The early spring passage was the strongest event of the year, it ran from January 7 (2001) to March 5 (2003) with high counts of five on January 9, 2003 and January 27, 2002. The late spring passage was a minor event, it ran from March 4 (2002) to April 2 (2003) with a secondary passage from April 17 (2002) to April 21 (2002). The highest counts were those of two on March 10, 2002 and April 2, 2003. In the first year I did not note locations but I did so for the last two years, this means that I can attempt to quantify the numbers passing through. At best this is a very rough estimate.

Year	Fall	Winter	Early Spring	Main Spring	Totals
2001/2002	7	1	6	4	18
2002/2003	14	8	7	6	35

There is a very early fall record, there being one on August 28, 2002. This may be the earliest fall record for Florida (by one day). The fall passage ran from September 29 (2002) to December 14 (2002), there were five “clustered” influxes. The first is indicated by a peak count of two on September 29, 2002. The second peaked from October 15 (2000) to October 20 (2002) with a high count of three on October 20, 2002. The third peaked from November 9 (2002) to November 11 (2001) with a high count of three on November 11, 2001. The fourth peaked from November 25 (2001) to November 26 (2000) with a high count of two on November 25, 2001. The fifth is indicated by a peak count of eight on December 2, 2002. This was the highest count during the first five years of the survey. The winter passage followed from December 12 (2000) to January 14 (2000), there were two “clustered” influxes. The first peaked from December 17 (2000) to December 21 (2002) with a high count of four on December 21, 2002. The second is indicated by a peak count of two on January 1, 2001. The early spring passage was the strongest event of the year with passage from January 7 (2001) to March 5 (2003), there were four “clustered” influxes. The first peaked from January 9 (2003) to January 10 (2002) with a high count of five on January 9, 2003. The second peaked from January 14 (2001) to January 19 (2003) with three on both dates. The third peaked from January 27 (2002) to January 28 (2001) with a high count of five on January 27, 2002. The fourth peaked from February 19 (2003) to February 20 (2002) with a high count of three on February

19, 2003. The late spring passage is in this case the minor event, it ran from March 4 (2002) to April 2 (2003) with a final flurry from April 17 (2002) to April 21 (2002). There were four "clustered" influxes. The first peaked from March 10 (2002) to March 12 (2003) with a high count of two on March 10, 2002. The next two influxes were indicated by isolated peak counts of one on March 26, 2003 and two on April 2, 2003. Somewhat surprisingly there is a further influx in late April, this ran from April 17 (2002) to April 21 (2002) with one on both dates and on April 19, 2001.

Eastern Phoebe (*Sayornis phoebe)*

This is a common passage migrant and winter visitor. Individuals set up territories and defend them rigorously. This is not a social species. The territories are set up along water courses providing there is some shelter so they can hunt on windy days. Seen in the fall from September 25 (1999) to December 7 (1999) with a high count of 257 on November 5, 2000. To detail the 2000 influxes, there were two on October 5 with 13 on October 9, 36 on October 12, 73 on October 15, 91 on October 18, 129 on October 22, 154 on October 25, 223 on October 29 and 257 on November 5, then 224 seen on November 12 with 135 on November 15. There were 149 on November 19 with 159 on November 26 and 219 on November 28, then 159 seen on November 26 with 157 on December 3. The winter passage followed from December 2 (2002) to January 14 (2000) with a high count of with 205 on December 12, then 151 seen on December 15 with 51 on December 17. There were 108 on December 20 with 118 on December 22, then 70 seen on January 1 with 42 on January 4. Next came the early spring passage, this ran from January 7 (1999, 2001, 2002) to February 26 (2003) with a high count of 149 on January 17, 2001. To detail the 2001 influxes, there were 123 on January 7 with 136 on January and 145 on January 17, then 78 seen on January 21. There were 108 on January 24 with 113 on January 28, then 97 seen on January 31 with 84 on February 4. There were 103 on February 7 with 120 on February 11 and 135 on February 14, then 129 seen on February 21 with 88 on February 25, 60 on February 28, 57 on March 11, 40 on March 18, 32 on March 22, 13 on March 27 and one on April 2. So where in 2001 was the main spring passage? It should have started in late February or the first few days of March but the early spring passage eclipsed it. For the other years the late spring passage ran from February 20 (2002) to April 7 (2002) with a high count of 70 on March 2, 2003.

There was a fall passage from September 25 (1999) to December 7 (1999), there were five "clustered" influxes. The first peaked from October 21 (1998) to October 24 (2001) with a high count of 163 on October 24, 2001. The second is indicated by a peak count of 107 on October 29, 1999. The third peaked from November 5 (2000, 2002) to November 9 (1999) with a high count of 257 on November 5, 2000. This was the highest count during the first five years

of the survey. The fourth is indicated by a peak count of 41 on November 13, 1998. The fifth peaked from November 26 (1999) to November 30 (1998) with a high count of 219 on November 28, 2000. This passage really consisted of three regular influxes but two basic influxes were visible in different years. This is normally the case with these isolated peak counts as they tend to be basic influxes. The winter passage again appears to be an extension of the fall passage. This passage ran from December 2 (2002) to January 14 (2000), there were four "clustered" influxes. The first is indicated by a peak count of 186 on December 2, 2002. The second peaked from December 8 (1998) to December 14 (1999) with a high count of 205 on December 12, 2000. The third peaked from December 22 (2000) to December 27 (2001) with a high count of 123 on December 26, 2003. The fourth peaked from December 31 (1998) to January 1 (2000) with a high count of 62 on January 1, 2000. The early spring passage followed from January 7 (1999, 2001, 2002) to February 26 (2003). In 2001 this passage totally enveloped any main spring passage and it continued exceptionally to April 2. There were five "clustered" influxes. The first peaked from January 9 (2003) to January 10 (2002) with a high count of 112 on January 9, 2003. The second peaked from January 15 (1999) to January 19 (2003) with a high count of 149 on January 17, 2001. The third peaked from January 27 (2002) to February 2 (2003) with a high count of 113 on January 28, 2001. The fourth peaked from February 9 (1999) to February 11 (2000) with a high count of 87 on February 10, 2002. The fifth peaked from February 14 (2001) to February 19 (2003) with a high count of 135 on February 14, 2001. In 2001 there was just one influx from February 7 to April 2 (detailed in segment one) it covered most of the early spring passage and all of the late spring passage. The peak count however fits into the fifth influx of the early spring passage so the whole influx goes into that passage. Excluding 2001 the late spring passage ran from February 20 (2002) to April 7 (2002), there were four "clustered"influxes. The first is indicated by a peak count of 59 on February 24, 2002. The second peaked from February 29 (2000) to March 2 (2003) with a high count of 70 on March 2, 2003. The third peaked from March 9 (2003) to March 11 (1999) with a high count of 30 on March 9, 2003. The fourth is indicated by a peak count of 50 on March 16, 2003. Unlike many other migrant species there was no late flurry at the end of the spring passage.

Vermillion Flycatcher (*Pyrocephalus rubinus*)

This is a vagrant, only females or immature females seen. There was one on February 10, 2002, then two seen on March 4, 2002 with one on March 6, 2002. In the fall there were singles on October 17, 2001 and October 19, 1999.

Ash-throated Flycatcher (*Myiarchus cinerascens)*

This is an irregular fall passage migrant, an uncommon winter visitor and a regular spring migrant, if in small numbers. Fall passage only noted in two years with passage from November 1 (2001) to November 29 (2002) with a high count of five on November 25, 2001. The winter passage was noted in three winters with records from November 29 (2001) to January 10 (2002) with high counts of two on November 29, 2001, December 12, 2001 and January 1, 2001. The early spring passage was by far the heaviest event with passage from January 13 (2002) to March 7 (2000) with a high count of nine on January 20, 2002. To detail that influx, there were four on January 13 with six on January 16 and nine on January 20, then six seen to January 27 with three on February 3, two on February 10 and one on February 20. There were no further sightings until one seen on March 4, the start of the late spring passage. The late spring passage ran from March 4 (2002) to April 19 (2002) with high counts of two on March 14, 2002 and April 7, 2002. Finally there was a very late individual on May 4, 2001. Whilst this species was first seen on February 6, 2000 it was only in 2001 that I started to record the locations where they were seen. The following is an attempt to estimate the numbers that passed through.

Year	Fall	Winter	Early Spring	Main Spring	Totals
2001/2002	8	2	8	7	25
2002/2003	2	2	4	1	9

Both this species and the Least Flycatcher are first and foremost early spring passage migrants. The numbers alone do not show it but both species tended to stay longer in the early spring and this caused there to be higher numbers on a daily basis at that time.

There was a light fall passage from November 1 (2001) to November 29 (2002), there were two “clustered” influxes. The first is indicated by a peak count of one on November 1, 2001. The second peaked from November 21 (2002) to November 25 (2001) with a high count of five on November 25, 2001. The winter passage followed from November 29 (2001) to January 10 (2002), there were indications of four “clustered” influxes. Exceptionally there were four isolated peak counts of two on November 29, 2001, two on December 12, 2001, one on December 21, 2002 and two again on January 1, 2001. The early spring passage was by far the heaviest passage, it ran from January 13 (2002) to March 7 (2000), there were four “clustered” influxes. The first is indicated by a peak count of four on January 14, 2001. The second peaked from January 20 (2002) to January 24 (2001) with a high count of nine on January 20, 2002. This was the highest count during the first five years of the survey. The third is indicated by a peak count of two on February 5, 2003. The fourth peaked from February 19 (2003) to February 25 (2001) with a high count of three on February 23, 2000. The late spring passage was a minor event and it ran from March 4 (2002) to April 19 (2002), there were three “clustered” influxes. The first two are indicated by isolated peak counts of two on March 14, 2002 and one

on March 22, 2001. The third peaked from April 7 (2002) to April 11 (2001, 2003) with a high count of two on April 7, 2002. Finally there was a very late individual on May 4, 2001.

Great Crested Flycatcher (*Myiarchus crinitus)*

This is a summer visitor and a passage migrant. Exceptionally there was a winter record, there being one by the Lake Level Canal on December 20, 1998. Seen in the spring from March 24 (2002, 2003) to June 10 (2001) with a high count of 14 on May 1, 2002. To detail the 2002 influxes, there was one on March 24 with four on March 31 and six on April 3, then three seen on April 7 with one on April 10. There were two on April 14 with four on April 17 and 12 on April 21, then seven seen on April 24 with four on April 28. There were 14 on May 1 with eight on May 6, seven on May 12, six on May 15 and five on May 20. During the Breeding Bird Survey a total of 17 pairs found in 1999 with ten pairs in 2000, 13 pairs on 2001, 25 pairs in 2002 and 30 pairs in 2003. This was another species that was taking advantage of the Elderberry "forests" out in the fields. I have found it hard to identify the summer period but fledged young were first seen from June 19 (2000) to July 6 (2003). I am therefore treating the summer as running from May 23 (2002) to July 27 (2003) with a high count of 18 on July 3, 2002. To detail the 2002 influxes, there were eight on May 23 with nine on May 30, then five seen on June 5 with three on June 12 and two on June 16. There were three from June 19 to June 26 with eight on June 30 and 18 on July 3, then eight seen on July 10 with three to July 17. The fall passage ran from July 4 (2001) to October 3 (2001) with a high count of 11 on August 7, 2002.

There was a single winter record, there being one by the Lake Level Canal on December 20, 1998. Seen in the spring from March 24 (2002, 2003) to June 10 (2001), there were four "clustered" influxes. The first peaked from April 3 (2002) to April 6 (1999) with a high count of six on April 3, 2002. The second peaked from April 20 (1999) to April 22 (2001) with a high count of 12 on April 21, 2002. The third peaked from May 1 (2002) to May 2 (2000) with a high count of 14 on May 1, 2002. The fourth peaked from May 14 (2001) to May 22 (1999) with a high count of ten on May 14, 2001. I am treating the summer as running from May 23 (2002) to July 27 (2003), again there were four "clustered" influxes. The first peaked from May 30 (2002) to June 4 (2003) with a high count of nine on May 30, 2002. The second peaked on June 19 (2000, 2002) with a high count of five on June 19, 2000. The third is indicated by a peak count of eight on June 27, 2001. The fourth peaked from July 3 (2002) to July 6 (2003) with high counts of ten on July 6, 2003 and 18 on July 3, 2002. The latter was the highest count during the first five years of the survey. Again I do not understand this pattern of influxes through the summer, that is why I detailed the 2002 summer influxes in segment one. The fall passage ran

from July 4 (2001) to October 3 (2001), there were eight "clustered" basic influxes. The first is indicated by a peak count of nine on July 11, 2001. The second peaked from July 16 (2000) to July 21 (2002) with a high count of ten on July 21, 2002. The third peaked from August 5 (2001) to August 10 (2003) with a high count of 11 on August 7, 2002. The fourth peaked from August 13 (2000) to August 16 (2001) with a high count of four on August 16, 2001. The fifth is indicated by a peak count of five on August 20. 1999. The sixth peaked from August 27 (2000) to August 29 (2001) with a high count of five on August 29, 2001. Finally there were two isolated peak counts of two on September 7, 2000 and one on September 26, 2001, the latter stayed to October 3, 2001 creating the latest record.

Brown-crested Flycatcher (*Myiarchus tyrannulus*)

This is a vagrant with four spring records. No sightings in the fall or the winter. There was one near the Lust Road gate on January 14, 2001, later there was another at the same location on March 11, 2001. It is just possible that this was the same individual. They had just roller-chopped the fields near the gate when the bird was seen in March. The Elderberry creates its own mini-climate which would have been much warmer than the open fields, it could have wintered there. There was one near the Workshops on February 12, 2003. Finally there was one by Lust Road just to the west of Airport Road on April 13, 2003. This individual was having a territorial dispute with a Great Crested Flycatcher, it lost.

Tropical Kingbird (*Tyrannus melancholicus*)

This is also a vagrant, just one record. There was one on the southern border on December 9, 2001. It was with a number of Western Kingbirds, they were all in a line of trees bordering Lake Apopka. The westerns were calling back and forth and this bird joined in with its distinctive call.

Cassin's Kingbird (*Tyrannus vociferans)*

This is now a winter and spring visitor. This species was almost unknown in Florida when this individual turned up on December 4, 1999. There may have been four previous records for Florida. That year it stayed through to April 26, 2000. It may well have roosted with the Western Kingbirds but it normally spent its day over a mile to the west, in and around an isolated tree at the junction of Hooper Farms Road and Airport Road. Towards the end of its stay it switched locations to the scrub covered bank of Lake Apopka, a site perhaps 200 to 300

yards from the tree. The next winter it was seen from January 14, 2001 to April 16, 2001. It was earlier the next year being present from December 2, 2001 to April 3, 2002. Its pattern of behavior was the same in all three years. Then there was one at the eastern end of the McDonald Canal on November 9, 2002. This sighting may just relate to a separate individual as there were no further sightings until one seen in the usual area on November 29, 2002. This time it stayed through to April 6, 2003. I do not know whether its earlier departure in the last two years has any significance. Because of their importance I am including details for 2003/2004 although this is outside the period covered by this analysis. I did not see this species until December 26, 2003 but it had been seen on the Christmas Bird Count at the Western Kingbird roost, in fact there were thought to be two. On February 21, 2004 Lyn Atherton et al saw two at the kingbird roost on the east side of CR 437. With improving weather the birds were out in the fields and I saw two from February 22 to March 10, one of them was a young bird, it was not seen after March 10. The adult was presumably the returning bird from 1999/2000.

Western Kingbird (*Tyrannus verticalis)*

This is a spring passage migrant, a winter visitor with a limited fall passage. That is the reverse of many species. There is a major roost opposite the eastern end of Hooper Farms Road across CR 437 in a citrus grove. The roost site is shared with hoards of American Robins. When the birds leave the roost they appear to travel as far north as the McDonald Canal, as far west as Laughlin Road and south to at least the southern border of the survey area. Others must leave to the east. In cold, wet, or windy conditions I never found out where they went, some did go to the southern border near Magnolia Park. These facts make it hard to identify with any certainty the various influxes. There was also at times a very small roost at the Sand Farm. There was a light fall passage from October 1 (2000) to November 26 (1999) with a high count of six on November 9, 2002. In contrast there was a significant winter passage from November 24 (2003) to January 13 (2002) with a high count of 52 on December 30, 2001. To detail the 2001/2002 influx, there was one on November 27 with six on December 2, seven on December 9, 20 on December 21 and 52 on December 30, then 42 seen on January 10 with 13 on January 13. The early spring passage ran from January 7 (2000, 2001, 2003) to March 18 (2000) with a high count of 72 on January 27, 2002. To detail the main 2002 influx, there were 43 on January 16 with 54 on January 20 and 72 on January 27, then 58 seen on February 3 with 35 on February 10, three on February 17 and two on February 20. The main spring passage followed and this was also a significant event, it ran from February 24 (2002) to May 16 (2000) with a high count of 35 on April 8, 2001. To detail the 2002 influxes, there were 13 on February 24 with 24 on March 10 and 33 on March 14, then 28 seen on March 19 with 21 on March 24 and

19 on March 27. There were 22 on March 31 with 16 on April 3 and 11 on April 7. There were 34 on April 10 with 25 on April 17, 19 on April 21, nine to April 28, seven on May 1, two on May 6 and one on May 9. Finally there was a very late record. There was one at the western end of Lust Road on May 26, 2003.

There was a light fall passage from October 1 (2000) to November 26 (1999), there were two "clustered" influxes, for the rest of this passage just scattered records of one to two. The first peaked from November 9 (2002) to November 11 (1998) with a high count of six on November 9, 2002. The second peaked from November 25 (1998) to November 26 (1999) with one on both dates. In contrast there was a significant winter passage from November 24 (2003) to January 13 (2002), there were three "clustered" influxes. The first peaked from December 9 (2001) to December 15 (2000) with a high count of 14 on December 15, 2000. The second peaked from December 21 (2002) to December 22 (1999) with a high count of 34 on December 21, 2002. The third peaked from December 30 (2002) to December 31 (1998) with a high count of 52 on December 30, 2002. Note how the peak counts were getting higher. The early spring passage ran from January 7 (2000, 2001, and 2003) to March 18 (2000), there were four "clustered" influxes. The first peaked from January 7 (2000) to January 11 (2003) with a high count of 24 on January 11, 2003. The second is indicated by a peak count of 72 on January 27, 2002. This is still the highest count for Zellwood and this may even be the highest count for Florida. The third peaked from February 10 (1999) to February 14 (2001) with a high count of 24 on February 14, 2001. The fourth is indicated by a peak count of 33 on March 3, 2000. The main spring passage followed an "clustered" influxes. The first peaked from March 13 (1999) to March 14 (2002) with a high count of 33 on March 14, 2002. The second peaked from March 23 (1999) to March 29 (2003) with a high count of 30 on March 29, 2003. The third peaked from April 8 (2001) to April 14 (1999) with a high count of 35 on April 8, 2001. The fourth peaked from May 2 (2001) to May 7 (2000) with a high count of 19 on May 2, 2001. It is unusual for a species to remain in such numbers so late in the spring. Finally there was an exceptionally late individual on May 26, 2003. It was at the western end of Lust Road.

Eastern Kingbird (*Tyrannus tyrannus*)

This is a passage migrant and possibly a non-breeding summer resident. There is no evidence of any attempts to breed in the survey area even so it is a possibility. Seen in the spring from March 19 (2002) to May 29 (1999) with a high count of 23 on April 20, 1999. To detail the 1999 influxes, there was one on April 6 with two on April 9, six on April 17 and 23 on April 20, then six seen on April 23 with three to May 1. There were four on May 14 with six on May 18, then two seen on May 29. The summer passage followed from May 21 (2000) to June 27 (2001) with high counts of three on May 29, 2003 and June 24, 2001. Next came the early

fall passage, this ran from July 3 (2002) to August 16 (2000) with a high count of seven on July 8, 2001. The main fall passage ran from August 14 (2001) to September 29 (2002) with a high count of 347 on August 31, 1999. Excluding that count the highest for this passage was that of 30 on September 26, 2002. The passage on August 31, 1999 when 347 counted relates to a movement to the south and south-east as a major front approached. They were initially traveling to the east along the northern shore of Lake Apopka some followed the border of the lake to the south whilst others struck out to the south-east on reaching the north-east corner of the lake. On reaching the raised eastern border they turned to the south. None were seen to head south directly over the lake. During a similar event in a later year many traveled down the side of the lake to Lust Road before heading for the eastern border.

Seen in the spring from March 19 (2002) to May 29 (1999), there were six "clustered" influxes. The initial arrival date has been getting earlier i.e. from April 6 (1999, 2000) to March 24 (2003) and even March 19 in 2002. The first influx peaked from March 24 (2003) to March 31 (2002) with one on both dates. The second peaked from April 6 (2000) to April 8 (2001) with a high count of three on April 6, 2000. The third peaked from April 16 (2003) to April 20 (1999) with a high count of 23 on April 20, 1999. The fourth peaked on April 26 (2000, 2001) with a high count of 13 on April 26, 2000. The fifth peaked from May 1 (2002) to May 4 (1999, 2003) with a high count of 13 on May 4, 1999. The sixth is indicated by a peak count of six on May 18, 1999. The summer passage followed and it ran from May 21 (2000) to June 27 (2001), there were three "clustered" influxes. The first is indicated by a peak count of three on May 29, 2003. The second peaked from June 7 (2001) to June 11 (2003) with a high count of two on June 9, 2000 and June 11, 2003. The third peaked from June 22 (1999) to June 24 (2001) with a high count of three on June 24, 2001. Next came the early fall passage, this ran from July 3 (2002) to August 16 (2000), again there were three "clustered" influxes. The first peaked from July 3 (2002) to July 9 (2003) with a high count of seven on July 8, 2001. The second peaked from July 23 (2000) to July 27 (2001) with two on both dates. The third peaked from August 4 (2002) to August 10 (1999) with a high count of two on August 9, 2000. This is a good example of how the peak counts are clustered with longer gaps between the clusters. The main fall passage ran from August 14 (2001) to September 29 (2002), there were three "clustered" influxes. The first peaked from August 25 (2002) to August 31 (1999) with high counts of eight on August 25, 2002 and 347 which flew to the south or south-east on August 31, 1999. The latter is still the highest count for Zellwood. The second peaked from September 5 (2001) to September 10 (2000) with a high count of 12 on September 5, 2001. The third peaked from September 23 (1999) to September 27 (2000) with a high count of 30 on September 26, 2002. It seems strange that the highest off-passage count for the main fall passage should be in the last influx.

Gray Kingbird (Tyrannus *dominicensis*)

This is an irregular migrant. Seen in the spring from March 27 (2002) to May 27 (2001), there were two "clustered" influxes. However over the five years only seven birds seen in the spring. The first influx peaked from April 6 (2000) to April 9 (1999) with one on both dates. The second peaked from May 22 (1999) to May 27 (2001) again with one on both dates. Seen in the fall from August 2 (2001) to October 21 (1998), there were two "clustered" influxes. In all just nine birds seen in the fall over the five years. The first influx peaked from August 13 (1999) to August 16 (2000) with a high count of two on August 16, 2000. The second peaked from October 17 (2001) to October 21 (1998) with two on both dates. These counts of two are still the highest counts for Zellwood.

Scissor-tailed Flycatcher (*Tyrannus forficatus*)

This is an irregular fall passage migrant and winter visitor, passage is stronger in the spring. Seen in the fall from October 26 (1999) to November 19 (2000), there were singles on both dates. The only other fall records come from 2002 with one on October 28, two on November 5 and three on November 9. The winter passage was no better, it ran from November 29 (2002) to January 2 (2003), there did however appear to be two "clustered" influxes. The first peaked from December 2 (2002) to December 3 (1998) with a high count of two on December 2, 2002. The second peaked from December 20 (1998) to December 21 (2002) with one on both dates. The spring passage was much stronger even if the numbers remained low. This passage ran from January 7 (2000) to May 6 (2002) there were six "clustered" influxes. The first peaked from January 7 (2000) to January 14 (2001) with one on both dates. The second peaked from February 10 (1999) to February 15 (2003) with three on both dates. The third peaked from March 11 (2001) to March 18 (2000) with a high count of three on March 13, 1999. Beyond this there were three isolated peak counts of five on March 31, 2002, two on April 11, 2001 and two on April 21, 2003. The count of five was the highest count during the first five years of the survey. Most sightings were from the Lust Road and Hooper Farms Road area.

Fork-tailed Flycatcher (*Tyrannus savana)*

This species is a vagrant anywhere in the United States. There was one on July 23, 2000. It was on the utility wires just to the west of the Lust Road gate. Even more surprisingly an adult wintered from December 10, 2005 to January 15, 2006, those are my dates. Others may have seen it earlier or later. This one was at Hooper Farms Road.

Loggerhead Shrike (*Lanius ludovicianus)*

This is a resident, a passage migrant and a winter visitor. Most of the birds were in the border habitats especially in areas with barbed wire fencing. The breeding population was steady through the five years with five to six pairs a year. Fledged young were first noticed from May 30 (2000) to June 19 (2002). To start with the winter passage, this ran from November 30 (2002) to January 10 (2001). This was a significant event following a very weak passage in November. The highest count was that of 14 on December 4, 1999. To detail the 1999 influxes, there were 14 on December 4 with 13 on December 7, ten on December 11 and nine on December 14. There were 13 on December 19 with seven on December 22 and three on December 27. There were seven on December 30 with 11 on January 1 and 13 on January 4 then 12 seen on January 7. The early spring passage ran from January 8 (1999) to March 3 (2000) with a high count of 18 on February 3, 2002. To detail the 2002 influxes, there were six on January 10 with four to January 16. There were seven on January 20 with 11 on January 24 and 18 on February 3, then five seen on February 6 with four on February 10 and one on February 17. There were three on February 20 with four on February 24, then two on February 27. The late spring passage came next and it ran from February 26 (2003) to May 16 (2000) with a high count of eight on April 19, 2001. The summer is more difficult to define but it appears to cover the period May 14 (1999) to June 26 (2003). There is no discernible pattern to the counts through to the end of June, up to seven a day seen during this period. There was a post-breeding gathering from June 17 (2001) to August 27 (1999), the highest count was that of 17 on July 4, 2000. The fall passage ran from August 21 (2002) to December 3 (1998, 2000) with high counts of 16 on September 3, 1999 and October 23, 1999. Basically this species is in decline nationally, the analysis detailed above does not address this issue, so the following may be useful. The highest counts for the fall were as follows, there were 16 on September 3 and October 23 in 1999, in 2000 there were 14 on October 5, in 2001 there were 12 on September 2, and in 2002 there were eight on October 16. That is a steady decline. For the winter of 1999/2000 there were 14 on December 4, in 2000/2001 there were 12 on December 12, in 2001/2002 there were seven on December 5 and December 27, finally in 2002/2003 there were ten on December 16. That is still a decline. For the spring in 2000 there were 16 on January 11, in 2001 there were 11 on January 17, in 2002 there were 18 on February 3 and in 2003 no more than five a day seen. Despite the 2002 count the trend is down. Overall this is an exceedingly rapid decline.

The winter passage ran from November 30 (2002) to January 10 (2001), there were four “clustered” influxes. The first peaked from December 4 (1998, 1999) to December 5 (2001) with a high count of 14 on December 4, 1999. The second peaked from December 12 (2000) to

December 16 (2002) with a high count of 12 on December 12, 2000. The third peaked from December 19 (1999) to December 20 (2000) with a high count of 13 on December 19, 1999. The fourth peaked from December 27 (2001) to January 1 (1999, 2000) with a high count of 11 on January 1, 2000. The early spring passage was in reality the main spring passage, it ran from January 8 (1999) to March 3 (2000), there were four "clustered"influxes. The first peaked from January 8 (1999) to January 11 (2000, 2003) with a high count of 16 on January 11, 2000. The second is indicated by a peak count of 11 on January 17, 2001. The third peaked from January 29 (1999) to February 3 (2002) with a high count of 18 on February 3, 2002. This is still the highest count for Zellwood. The fourth peaked from February 21 (2001) to February 25 (2000) with five on both dates. The late spring passage was much lighter, it ran from February 26 (2003) to May 16 (2000), there were five "clustered" influxes. The first peaked from March 10 (2000) to March 16 (2003) with four on both dates and also on March 11, 1999. The second peaked from March 22 (2001) to March 24 (2002) with a high count of seven on March 22, 2001. The third peaked from April 3 (2000) to April 7 (2002) with a high count of six on April 3, 2000. The fourth peaked from April 15 (2000) to April 19 (2001) with a high count of eight on April 19, 2001. The fifth influx peaked from May 1 (1999) to May 2 (2000) with a high count of four on May 1, 1999. The summer is difficult to define but it appears to run from May 14 (1999) to June 26 (2003) There is no discernible pattern to the counts through to the end of June, up to seven a day seen during this period. There is a post-breeding gathering from June 17 (2001) to August 27 (1999) there were two "clustered" influxes. The first peaked from July 4 (2000) to July 8 (2001) with a high count of 17 on July 4, 2000. The second peaked from July 23 (1999, 2000) to July 27 (2001) with a high count of 15 on July 23, 1999. The fall passage ran from August 21 (2002) to December 3 (1998, 2000), there were eight "clustered" influxes. The first peaked from August 23 (2000) to August 25 (2002) with a high count of 13 on August 25, 2002. The second peaked from September 2 (2001) to September 4 (2002) with a high count of 16 on September 3, 1999. The third peaked from September 17 (1999) to September 23 (2001) with a high count of 13 on September 17, 1999. The fourth peaked from October 5 (2000) to October 9 (2002) with a high count of 14 on October 5, 2000. The fifth peaked from October 22 (2000) to October 28 (2001) with a high count of 16 on October 23, 1999. That was the main fall passage, in November passage came more or less to a halt. There were however indications of three influxes. The first is indicated by a peak count of six on November 9, 2002. In 1999 there was an influx that ran from November 22 to November 30 with a peak count of 13 on November 22. The third is indicated by a peak count of six on November 29, 2001. Basically there was little or no passage in November.

White-eyed Vireo (*Vireo griseus*)

This is a resident, a passage migrant and a winter visitor. Most occur in the very thick scrub, often with tangles of vines. During the Breeding Bird Survey no pairs found in 1999 but there were five pairs in 2000 with three pairs in 2001, 13 pairs in 2002 and 14 pairs in 2003. As with other resident species it is hard to identify the summer period. It appears to run from April 28 (2002) to August 10 (1999) with a high count of five on May 15, 2002. The only record of fledged young relates to one on June 30, 2002. The fall passage ran from July 21 (2002) to December 5 (2001). The highest counts for this passage for four of the five years all fell inside one influx. There were 12 on October 6, 1999, 15 on October 10, 2001, 21 on October 9, 2002 and 27 on October 5, 2000. To detail the 2002 influxes, there were three on July 21 with five on July 31 and seven on August 11, then singles seen from August 18 to August 25. There were five on August 28 with three on September 2. There were four on September 4 with eight on September 8 and 18 on September 18, then 15 seen on September 22 with two on September 26. There were 20 on September 29 with 17 on October 2 and 15 on October 6. There were 21 on October 9 with 13 on October 13 and ten on October 16. There were 16 on October 20 with 12 on October 28, ten on November 9, eight to November 24, four on November 29 and two on November 30. This was a mixture of type 1 and type 2 influxes. The latter are normally very short-lived events. The winter passage followed and it ran from December 2 (2002) to January 11 (2003) with a high count of 13 on December 8, 2002. The early spring passage was the heavier spring passage, it ran from January 7 (2000) to March 11 (2001) with a high count of 18 on February 23, 2003. To detail the 2003 influxes, there was initially in this year no passage from January 9 to January 26, there was a static population of six. There were two on January 30 with three on February 2, six on February 12, eight on February 15, ten on February 19 and 18 on February 23, then 13 seen on February 26 with 11 on March 2. The late spring passage ran from March 4 (2002) to April 30 (2003) with a high count of 11 on March 6, 2002.

The summer ran from April 28 (2002) to August 10 (1999), there were seven “clustered” influxes. The first is indicated by a peak count of three on May 4, 2000. The second peaked from May 12 (2003) to May 15 (2002) with a high count of five on May 15, 2002. The third peaked from June 1 (2003) to June 7 (2001) with three on both dates. The fourth is indicated by a peak count of four on June 19, 2000. The fifth peaked from June 25 (1999) to June 26 (2003) with a high count of four on June 26, 2003. The sixth peaked from July 1 (2001) to July 3 (2002) with three on both dates. The seventh peaked from July 19 (2000) to July 23 (1999) with a high count of three on July 19, 2000. Unlike the last species there was no increase in the second half of this period to indicate a post-breeding gathering. Again I do not understand these summer influxes but the clustering of the peak counts has to have a meaning. The fall passage ran from July 21 (2002) to December 5 (2001), there were eight “clustered” influxes. The first peaked from July 29 (2001) to August 2 (2000) with a high count of three on August 2, 2000. The second is indicated by a peak count of seven on August 11, 2002. The third peaked from August 27 (2000) to August 28 (2002) with a high count of five on August 28, 2002. The fourth is indicated by a

peak count of 13 on September 25, 1999. The fifth peaked from October 5 (2000) to October 10 (2001). This influx was in four out of the five years the center of the fall passage with peak counts of 12 on October 6, 1999, 15 on October 10, 2001, 21 on October 9, 2002 and 27 on October 5, 2000. The latter was the highest count during the first five years of the survey. The sixth is indicated by a peak count of 16 on October 20, 2002. The seventh peaked from November 18 (2001) to November 20 (1998) with a high count of six on November 18, 2001. The eighth peaked from November 26 (1999) to November 28 (2000) with a high count of three on November 28, 2000. The winter passage followed and it ran from December 2 (2002) to January 11 (2003), there were two "clustered" influxes. The first peaked from December 8 (2002) to December 13 (2001) with a high count of 13 on December 8, 2002. The second peaked from December 30 (2001, 2002) to December 31 (1998) with a high count of eight on December 30, 2002. The early spring passage was the heavier spring event, it ran from January 7 (2000) to March 11 (2001), there were four "clustered" influxes. The first is indicated by a peak count of four on January 7, 2000. The second peaked from January 12 (1999) to January 17 (2001) with a high count of eight on January 13, 2002. The third peaked from February 2 (2003) to February 10 (2002) with a high count of 11 on February 10, 2002. The fourth peaked from February 21 (2001) to February 25 (2000) with a high count of 18 on February 23, 2003. The late spring passage ran from March 4 (2002) to April 30 (2003), there were four "clustered" influxes. This was a minor event. The first peaked from March 6 (2002) to March 11 (1999) with a high count of 11 on March 6, 2002. The second is indicated by a peak count of five on March 21, 2000. The third peaked from April 2 (2003) to April 3 (2002) with six on both dates. The fourth peaked from April 15 (2000) to April 17 (1999) with a high count of five on April 16, 2003. This is a secretive species that is almost certainly under-recorded.

Bell's Vireo (*Vireo bellii)*

This is a vagrant, a species that is in decline in the eastern United States. There was one on the northern border on February 6, 2000 and February 16, 2000. This is an early spring record. For the winter passage there was one at the Sand Farm on December 16, 2002. At both locations the birds were in some very thick cover by water.

Yellow-throated Vireo (*Vireo flavifrons*)

This is an irregular passage migrant. In the early fall there were singles on July 31, 2002 and August 19, 2001. The main fall passage, such as it was, ran from August 30 (2000) to October 5 (2000), only one "clustered" influx could be identified. This peaked from August 30 (2000) to September 3 (1999) with singles on three dates. There were only singles in the fall,

perhaps eight birds in all for the five years. Surprisingly there was an early spring record, there being one by the Lake Level Canal on January 11, 2003. The main spring passage ran from March 21 (2000) to April 10 (2002), again only one "clustered" influx could be identified. This peaked from March 21 (2000) to March 24 (2003) with singles in four of the five years. Later there were two on April 3, 2002 with one on April 10, 2002. This may indicate the site of a second influx. The count of two is still the highest count for Zellwood. It is most unusual to have most of the records for a passage concentrated into a four day period. There were perhaps six birds in all for the spring making for a total of 15 individuals over the five years. This is a very low total for a species that breeds within 30 miles.

Blue-headed Vireo (*Vireo solitarius*)

This is an uncommon passage migrant and winter visitor to the wooded borders. I had little access to the interior of this habitat. All I could really do was check the edges of some of the woods. A number did also occur in the scrub borders. Seen in the fall from October 12 (2000) to December 3 (2000), there were three "clustered" influxes. The first peaked from October 12 (2000) to October 17 (2001) with a high count of two on October 17, 2001. The second peaked from November 4 (2001) to November 9 (1999) with one on three dates. The third peaked from November 24 (2002) to November 30 (2000) with three on both dates. The winter passage followed from December 2 (2002) to January 11 (2000), there were two "clustered" influxes. The first peaked from December 2 (2002) to December 9 (2001) with a high count of four on December 2, 2002. This was the highest count during the first five years of the survey. The second peaked from December 20 (1998) to December 22 (1999) with high counts of three on December 21, 2002 and December 22, 1999. The early spring passage was next, it ran from January 7 (2003) to February 28 (2001), there were five "clustered" influxes. The first peaked from January 7 (2003) to January 8 (1999) with a high count of two on January 7, 2003. The second peaked from January 16 (2002) to January 21 (2000) with a high count of three on January 16, 2002. The third peaked from February 3 (2002) to February 8 (2000) with a high count of three on February 3, 2002. The fourth peaked from February 15 (2003) to February 17 (2002) also with a high count of three on February 17, 2002. The fifth peaked from February 21 (2001) to February 26 (2003) with one on both dates. In contrast the late spring passage was a minor event, it ran from February 23 (2000) to April 20 (1999), there were three "clustered" influxes. The first peaked from February 27 (2002) to February 29 (2000) with a high count of two on February 29, 2000. The second peaked from March 18 (2000) to March 19 (1999) with one on both dates. The third peaked from March 27 (2002) to March 30 (1999) again with one on both dates. It is unusual for a species that was only seen in very low numbers to have such a clear pattern.

Philadelphia Vireo (*Vireo philadelphicus*)

This is a vagrant, there were two records for the late fall passage. There was one on October 14, 1999, however I did not record its location. There was also one on the eastern border on October 13, 2002. These records although isolated do appear to mark the location of an influx.

Red-eyed Vireo (*Vireo olivaceus)*

This is a passage migrant, the greatest numbers were seen in the fall. Seen in the spring from March 12 (2003) to June 16 (2003) although passage normally over by May 22 (1999). The highest counts were of three on April 2, 2003 and May 14, 2001. The June records relate to singles on June 3, 2001, June 11, 2003 and June 16, 2003. There is no evidence of breeding. Seen in the fall from June 30 (2002) to October 20 (2002) with a high count of 17 on September 21, 2000. There was a late record of three on November 11, 1998. To detail the 2000 fall influx, there were two on August 16 with three on August 30, five on September 3, nine on September 7, 11 on September 19 and 17 on September 21, then 14 seen on September 24 with six on October 5, four on October 12 and two on October 15. A single influx covered the whole passage.

Seen in the spring from March 12 (2003) to June 16 (2003) although passage normally over by May 22 (1999), there were four "clustered"influxes. The first peaked from April 2 (2003) to April 7 (2002) with a high count of three on April 2, 2003. The second peaked from April 13 (2003) to April 17 (1999) with two on both dates. The third peaked from May 1 (2002) to May 4 (2001, 2003) with singles on four dates. The fourth peaked from May 14 (2001) to May 21 (2000) with a high count of three on May 14, 2001. The June records relate to singles on June 3, 2001, June 11, 2003 and June 16, 2003. There is no evidence of breeding. Noted in the fall from June 30 (2002) to October 20 (2002) with a late record of three on November 11, 1998. There were eight "clustered"influxes. The first peaked from July 8 (2001) to July 9 (1999) with one on both dates. The second peaked from July 16 (2000) to July 17 (2002) with a high count of three on July 17, 2002. The third peaked from August 5 (2001) to August 8 (2003) with one on both dates. The fourth peaked from August 10 (1999) to August 16 (2000) with a high count of three on August 14, 2002. The fifth peaked from August 26 (2001) to August 31 (1999) with a high count of four on August 31, 1999. The next two influxes were indicated by isolated peak counts of three on September 4, 2002 and 17 on September 21, 2000. The latter is the highest count for Zellwood. The last influx peaked from September 26 (2001) to September 30 (1999) with a high count of six on September 30, 1999. As mentioned earlier there was a count of three on November 11, 1998, a very late record.

Blue Jay (*Cyanocitta cristata)*

This is a resident, a passage migrant and a winter visitor, it normally resides in the oak woodlands but it can and does turn up anywhere. During the Breeding Bird Survey a total of 26 pairs located in 1999 with 25 pairs in 2000, 42 pairs in 2001, 49 pairs in 2002 and 62 pairs in 2003. There were 70 pairs in 2004. This is another species that shows the three step changes to the shape and location of their territories in the breeding season. The summer appears to run from May 10 (1999) to July 21 (2003) with a high count of 31 on July 4, 2003. There was an early fall passage from July 17 (2002) to September 6 (1999) with a high count of 25 on July 27, 2003. The main fall passage was very unusual in that a single influx tended to cover the whole event. This passage ran from August 16 (2000) to December 3 (2000) with a high count of 46 on October 5, 2000. To detail the 2000 influx, there were 13 on August 16 with 14 on August 20, 19 on August 27, 34 on September 7, 39 from September 19 to October 1 and 46 on October 5, then 45 seen from October 15 to October 22 with 31 on October 25, 24 on November 1, 15 to November 26 and seven to December 3. The winter passage followed from November 26 (1999) to January 10 (2001) with a high count of 20 on December 28, 2002. The early spring passage ran from January 5 (2003) to March 14 (2002) with a high count of 30 on January 17, 2001. To detail the 2001 influxes, there were 20 on January 14 with 30 on January 17, then 16 seen on January 24 with 15 on January 28. There were 18 on January 31 with 19 on February 4, then 18 seen on February 11 with 11 on February 14. There were 22 on February 18 with 18 on February 25, nine on February 28, eight on March 3 and seven on March 11. Finally there was the main spring passage this ran from February 19 (2003) to May 30 (2000) with high counts of 25 on March 18, 2001 and May 12, 2002.

The summer ran from May 10 (1999) to July 21 (2003), there are indications of four “clustered” influxes. The first peaked from May 24 (2001) to June 1 (2003) with 18 on both dates. The next two influxes are indicated by isolated peak counts of 17 on June 12, 1999 and 14 on June 27, 2001. The fourth peaked from July 4 (2003) to July 8 (2000) with a high count of 31 on July 4, 2003. The early fall passage ran from July 17 (2002) to September 6 (1999), there were two “clustered” influxes. The first is indicated by a peak count of 15 on July 20, 1999. The second peaked from July 27 (2001, 2003) to August 2 (2000) with high counts of 24 on July 31, 2002 and 25 on July 27, 2003. The main fall passage was very unusual in that a single “clustered” influx tended to cover the whole event, this passage ran from August 16 (2000) to December 3 (2000), there were six “clustered” influxes. There were four extended influxes. In 1999 the influx ran from September 8 to November 22 with a high count of 25 on October 14. In 2000 it ran from August 16 to December 3 with a high count of 46 on October 5. In 2001 it ran from August 26 to November 29 with a high count of 33 on October 3. In 2002 it ran from

September 18 to November 17 with a high count of 34 on September 29. Now to the influxes, the first is indicated by a peak count of 19 on August 21, 2002. The second peaked from September 29 (2002) to October 6 (1998) with a high count of 46 on October 5, 2000. This was the highest count during the first five years of the survey. This influx included three of the mega influxes. The fourth mega influx constitutes the third influx, an isolated peak count of 25 on October 14, 1999. The last three influxes are isolated peak counts of three on November 6, 1998, 22 on November 21, 2002 and five on November 30, 1998. The winter passage followed from November 26 (1999) to January 10 (2001), there were four "clustered" influxes. The first peaked from December 2 (2001) to December 8 (1998) with a high count of 12 on December 2, 2001. The second peaked from December 13 (2001) to December 15 (2000) with a high count of 17 on December 15, 2000. The third is indicated by a peak count of eight on December 22, 1999. The fourth peaked from December 27 (2001) to January 1 (2001) with a high count of 20 on December 28, 2002. The early spring passage ran from January 5 (2003) to March 14 (2002), there were five "clustered" influxes. The first peaked from January 7 (2003) to January 11 (2000) with a high count of 21 on January 7, 2003. The second is indicated by a peak count of 30 on January 17, 2001. The third peaked from January 27 (2002) to January 30 (2003) with a high count of 22 on January 27, 2002. The fourth peaked from February 17 (1999) to February 18 (2001) with a high count of 22 on February 18, 2001. The fifth is indicated by a peak count of 21 on February 24, 2002. The main spring passage followed from February 19 (2003) to May 30 (2000), there were six "clustered" influxes. The first peaked from March 16 (2003) to March 19 (1999) with a high count of 25 on March 18, 2001. The second was indicated by a peak count of 16 on March 27, 2002. The third peaked from April 6 (1999) to April 8 (2001) with a high count of 23 on April 8, 2001. The fourth peaked from April 17 (2002) to April 19 (2001) with a high count of 16 on April 17, 2002. The fifth peaked from April 27 (2003) to May 2 (2000, 2001) with a high count of 24 on April 27, 2003. The sixth is indicated by a peak count of 25 on May 12, 2002. It is always a surprise to find a species that breaks the "rules" as this one does with the extended influxes in the fall.

Florida Scrub-Jay (*Aphelocoma coerulescens)*

This is a vagrant. There were two adults by the Lust Road gate on April 17, 2002. There was also one at the Sand Farm on May 4, 2003. This species does breed within four miles of the Sand Farm location but I have no idea where the Lust Road birds could have come from.

American Crow (*Corvus brachyrhynchos*)

This is a non-breeding resident and also it seems to be a passage migrant. I had expected there to be no pattern of passage with this species. The only exception is the summer and perhaps the early fall. The summer ran from May 14 (2001) to August 26 (2001), there were no discernible influxes. This species did not breed in the survey area but will have done so just to the north and the east. However the highest count for the first five years of the survey did occur during the summer, there were six on July 4, 2003. The fall passage ran from September 9 (2001) to December 3 (2000), there were five "clustered" influxes. The first peaked from September 23 (1999, 2001) to September 28 (2002) with high counts of three on September 23, 2001 and September 28, 2002. The second peaked from October 7 (2001) to October 15 (2000) with three on both dates. The third peaked from October 26 (1999) to October 29 (2000) with a high count of five on October 26, 1999. The fourth peaked from November 11 (2001) to November 15 (2000) with a high count of two on November 15, 2000. The fifth is indicated by a peak count of two on November 30, 2002. The winter passage followed and it ran from December 2 (2001) to January 12 (1999), there were three "clustered" influxes. The first peaked from December 2 (2001) to December 8 (2002) with high counts of two on December 4, 1999 and December 6, 2000. The second peaked from December 19 (1999) to December 22 (2000) with a high count of three on December 22, 2000. The third peaked from December 27 (2001) to January 5 (2003) with high counts of two on January 1, 1999 and January 1, 2001. Next came the early spring passage, this ran from January 10 (2002) to March 7 (2000), there were five "clustered" influxes. The first is indicated by a peak count of two on January 13, 2002. The second peaked from January 21 (2000) to January 22 (2003) with one on both dates. The third peaked from January 27 (1999) to February 2 (2000) with high counts of four on January 28, 2001 and February 2, 2000. The fourth peaked from February 10 (2002) to February 15 (2003) with three on both dates. The fifth peaked from February 24 (2002) to February 29 (2000) with a high count of three on February 24, 2002. The main spring passage ran from March 2 (2003) to May 10 (1999), there were seven "clustered" basic influxes. The first is indicated by a peak count of two on March 2, 2003. The second peaked from March 10 (2002) to March 11 (1999) with a high count of four on March 10, 2002. The third peaked from March 22 (2002) to March 25 (2001) with two on both dates. The fourth peaked from April 2 (2003) to April 7 (2002) also with two on both dates. The fifth peaked from April 16 (2001) to April 20 (1999) with a high count of two on April 16, 2001. The sixth is indicated by a peak count of two on April 24, 2002. Finally the seventh peaked from May 6 (2001) to May 12 (2003) with a high count of four on May 6, 2001. As I said at the beginning I am surprised.

Fish Crow (*Corvus ossifragus)*

This is a summer resident, a passage migrant and a winter visitor. There is a major event in the early spring with a smaller event in the early fall. During the Breeding Bird Survey a total of six pairs located in 1999 with 11 pairs in 2000, six pairs in 2001, four pairs in 2002 and six pairs again in 2003. The nest sites were all in woods along the shore of Lake Apopka. At the end of the summer these birds appear to leave to be replaced shortly afterwards by others. This species is different. The summer covers the period April 3 (2002) to June 19 (2000), the highest count was that of 100 on May 23, 2002. There is a very early fall passage from June 5 (2002) to September 2 (2001). This passage is exceptional in its strength and because it often involves tight flocks going very fast to the east or south-east very early in the morning, this behavior is not seen at other times of the year. The highest count was that of 730 on July 27, 2001. To detail the two main 2001 influxes, there were 11 on July 1 with 38 on July 4 and 195 on July 8, then 176 seen on July 15 with 83 on July 18 and three on July 22. There were 404 on July 25 with 730 on July 27, then 220 seen on July 29 with 38 on August 5. Note how much higher these counts were than the summer high count of 100. The late fall passage was also a minor event. This is rather significant as the main fall passage is normally for most species so much stronger than the early fall passage. This passage ran from August 28 (2002) to December 8 (1998) with a high counts of 55 on November 25, 2001 and 246 on November 13, 1998. The winter passage followed from November 30 (1999) to January 11 (1999, 2003) with a high count of 395 on January 5, 2003. Now all hell breaks loose with the early spring passage! This event ran from January 10 (2001, 2002) to April 17 (1999). Normally this passage only goes to the end of February or the first week in March but for this species there is just one spring passage. Some of the higher counts are, 4,400 on January 27, 2002, 2,475 on February 5, 1999, 2,830 on February 14, 2001, and 4,330 on February 27, 2002. To detail the 2002 influxes, there were 19 on January 10 with 98 on January 13, 183 on January 20 and 4,400 on January 27, then 3,350 seen on February 3 with 1,028 on February 10, 270 on February 17 and 160 on February 20. There were 2,560 on February 24 with 4,330 on February 27, then 1,100 seen on March 4 with 73 on March 6. There were 485 on March 10 with 2,085 on March 14, then 300 seen on March 19 with 56 on March 24 and 30 to March 31.

The summer covers the period from April 3 (2002) to June 19 (2000), there were eight “clustered” influxes. The first is indicated by a peak count of 93 on April 3, 2002. The second peaked on April 11 (2000, 2003) with a high count of 16 on April 11, 2003. The third is indicated by a peak count of 37 on April 26, 1999. The fourth peaked on May 4 (2000, 2001) with a high count of 21 on May 4, 2000. The fifth peaked from May 14 (1999) to May 15 (2003) with a high count of 18 on May 14, 1999. The sixth peaked from May 20 2001) to May 23 (2002) with a high count of 100 on May 23, 2002. The seventh is indicated by a peak count of 21 on May 29, 2003. The eighth peaked from June 10 (2001) to June 14 (1999) with a high count of 24 on June 14, 1999. For many species I question the pattern of influxes for the summer months but not for this species, just look at the size of the local breeding population. There is a very early fall

passage from June 5 (2002) to September 2 (2001), there were four “clustered” influxes. It is exceptional in its strength and because it often involves tight flocks flying very fast to the east or south-east in the early morning. The first peaked from July 3 (2002) to July 8 (2000) with a high count of 167 on July 8, 2000. The second peaked from July 14 (1999) to July 19 (2003) with a high count of 132 on July 14, 1999. The third peaked from July 25 (2002) to July 30 (2000) with a high count of 730 on July 27, 2001. The fourth peaked from August 8 (2003) to August 16 (2001) with a high count of 110 on August 11, 2002. Note how much higher these counts are than those for the summer. The late fall passage was also a minor event. This is rather significant as the main fall passage is normally the stronger of the two fall passages. The passage ran from August 28 (2002) to December 8 (1998), there were eight “clustered” influxes. Again the lighter passages have the greatest number of influxes (basics). The first is indicated by a peak count of 14 on September 4, 2002. The second peaked from September 17 (1999) to September 22 (2002) with a high count of 37 on September 19, 2000. The third peaked on September 30 (1998, 1999) with ten on both dates. The fourth is indicated by a peak count of 11 on October 7, 2001. The fifth peaked from October 15 (2000) to October 20 (2002) with a high count of 25 on October 15, 2000. The next two influxes were indicated by isolated peak counts of 22 on November 1, 2000 and 246 on November 13, 1998. The eighth peaked from November 22 (1999) to November 25 (2001) with a high count of 55 on November 25, 2001. The winter passage followed from November 30 (1999) to January 11 (1999, 2003), there were four “clustered” influxes. The first peaked from December 7 (1999) to December 12 (2000) with a high count of 210 on December 12, 2000. The second peaked from December 16 (2001) to December 19 (1999) with a high count of 93 on December 19, 1999. The third is indicated by a peak count of 65 on December 26, 2002. The fourth peaked from January 1 (2000) to January 7 (1999) with a high count of 395 on January 5, 2003. Now all hell breaks loose with the early spring passage, this ran from January 10 (2001, 2002) to April 17 (1999). Normally this passage only goes to the end of February or into the first week of March but for this species there is just one spring passage. There were eight “clustered” influxes. The first peaked from January 11 (2000) to January 19 (2003) with a high count of 550 on January 19, 2003. The second is indicated by a peak count of 4,400 on January 27, 2002. This is still the highest count for Zellwood. The third peaked from February 2 (2003) to February 6 (2000) with a high count of 2,475 on February 5, 1999. The fourth peaked from February 14 (2001) to February 15 (2003) with a high count of 2,830 on February 14, 2001. The fifth peaked from February 21 (2000) to February 27 (2002) with high counts of 2,220 on February 21, 2000 and 4,330 on February 27, 2002. The sixth peaked from March 11 (2001) to March 14 (2002) with high counts of 2,050 on March 11, 2001 and 2,085 on March 14, 2002. The seventh peaked from March 19 (1999) to March 21 (2000) with a lowly high count of 137 on March 19, 1999. The eighth peaked from April 1 (1999) to April 2 (2003) with a high count of 850 on April 1, 1999. When I started this analysis I expected to see a single pattern with minor variations. That has not proved to be the

case. This is an extreme example. The summer should be quiet but there is clearly passage at that time. The early fall passage with birds rushing to the east or south-east is previously unrecorded in Florida, what it represents I do not know. The lack of a serious main fall passage is puzzling. The winter is the only "normal" season. Then there is the very heavy early spring passage, as there was no corresponding fall passage from what direction did these birds come? For just this one species there are so many unanswered questions.

Purple Martin (*Progne subis*)

This is a non-breeding summer visitor with a limited spring passage and in two years there was a major fall passage. The earliest in the spring were two males flying north over the Sand Farm on January 2, 2003. This may be the earliest spring record for Florida. Otherwise seen in the spring from January 30 (2003) to May 24 (2001) with a high count of 14 on April 19, 2001. The spring passage is so light it is not possible to identify when it ends and the summer begins. It is however possible to identify the fall passage, it ran from May 14 (1999) to September 25 (1999) with high counts of 1,440 on May 26, 2003, 1,,935 on June 19, 1999 and 1,795 on July 4, 1999. To detail the 1999 influxes, there were 15 on May 14 with 19 on May 25, 63 on May 31, 700 on June 7, then 200 seen on June 12 with 50 on June 14. There were 1,935 on June 19 with 815 on June 25 and 575 on June 29. There were 1,795 on July 4 with 1,365 on July 6, 675 on July 12, 535 on July 16, 290 on July 20, 235 on July 23 and 28 on July 27. There were 34 on August 3 with 140 on August 6 and 436 on August 10, then 12 seen on August 13 with three on August 20. There were seven on September 3 with eight on September 8, then one seen on September 10. Finally there were two on September 25. Now to detail the 2003 influxes, there were 43 on May 15 with 11 on May 18. There were 13 on May 21 with 1,440 on May 26, then 395 seen to June 14 with 370 on June 8, 320 on June 16, 180 on June 18, 155 on June 23, 54 on June 26, 28 on June 29 and two on July 2. There were 11 on July 4 with 610 on July 6, then 15 seen on July 13 with seven on August 8 and two on August 10. The main 2003 influx has no companion peak count in 1999. The peak count of 610 on July 6 does link up with the count of 1,795 on July 4. Although it is outside the period covered by this analysis it is useful to look at the fall of 2004. To detail the fall of 2004, there were 14 on May 14 with 19 on May 20, 73 on May 23 and 345 on May 26, then 210 seen on June 2 with 140 on June 9 and 22 on June 16. There were 2,850 on June 20 with 2,180 on June 23, 770 on July 2, 160 on July 4, 25 on July 7, 12 on July 11, ten on July 14, five on July 18 and one on July 24. In both 2003 and 2004 I did not continue to the end of the passages. Now the picture is clear. There are three very significant periods in the fall. First in 2003 and 2004 there were peak counts on May 26 (1,440 in 2003 and 345 in 2004). Second there were peak counts that would form an influx which

peaked from June 19 (1999) to June 20 (2004) with high counts of 1,935 on June 19, 1999 and 2,850 on June 20, 2004. Third there were peak counts that would form an influx which peaked from July 4 (1999) to July 6 (2003) with high counts of 610 on July 6, 2003 and 1,795 on July 4, 1999). This fall passage has proved to be totally different from that of other species in that the passage clearly consists of three waves.

The earliest were two males flying north over the Sand Farm on January 2, 2003, this may be the earliest spring record for Florida. Otherwise seen in the spring from January 30 (2003) to May 24 (2001), there were eight "clustered" influxes. The first peaked from January 30 (2003) to January 31 (2001) with a high count of two on January 30, 2003. The second peaked from February 8 (2000) to February 11 (2001) with a high count of eight on February 8, 2000. The third peaked from February 15 (2003) to February 17 (2002) with a high count of four on February 15, 2003. The fourth peaked from February 23 (2000) to February 25 (2001) with a high count of eight on February 23, 2000. The fifth peaked from March 12 (2003) to March 14 (2000) with a high count of nine on March 14, 2000. The sixth peaked from March 25 (1999) to March 27 (2001) with a high count of ten on March 27, 2001. The seventh peaked from April 11 (2000) to April 13 (2003) with a high count of 11 on April 11, 2000. The eighth peaked from April 17 (1999) to April 19 (2001) with a high count of 14 on April 19, 2001. Because the passage was so very light only basic influxes recorded. The usual "rules" appear to be broken as I cannot identify a summer period. The spring just seems to go on until the fall passage starts. In contrast the start of that passage is well defined. The fall passage ran from May 14 (1999) to September 25 (1999), there were 12 "clustered" influxes, these again are basic influxes. Passage was very light in three of the five years. The heavy passage in 1999 and 2003 is documented in segment one. The first influx is indicated by a peak count of 43 on May 15, 2003. The second peaked from May 26 (2003) to May 27 (2001, 2002) with a high count of 1,440 on May 26, 2003. The third peaked from June 7 (1999) to June 10 (2001, 2002) with a high count of 700 on June 7, 1999. The fourth peaked on June 19 (1999, 2002) with a high count of 1,935 on June 19, 1999. This was the highest count during the first five years of the survey. The fifth peaked from June 28 (2000) to July 1 (2001) with a high count of 685 on June 28, 2000. The sixth peaked from July 4 (1999) to July 10 (2002) with a high count of 1,795 on July 4, 1999. The seventh is indicated by a peak count of 140 on July 22, 2001. The eighth peaked from August 5 (2001) to August 10 (1999) with a high count of 436 on August 10, 1999. The ninth is indicated by a peak count of 18 on August 13, 2000. The tenth peaked from August 23 (2000) to August 28 (2002) with a high count of 18 on August 23, 2000. The eleventh influx peaked from September 5 (2001) to September 11 (2002) with a high count of 12 on September 5, 2001. The twelfth peaked from September 19 (2001) to September 25 (1999) with a high count of six on September 19, 2001. That is an awful lot of influxes. This is a useful species to show the different methods that I have used to look at these records. In this segment you see the mechanics of the passage, because there are so many influxes it is hard to see any patterns. For

some of the species with fewer influxes one can see the shape of the passage. In segment one I was able to show the overall form of the fall passage by dissecting individual passages. Normally I detail a series of influxes to show their shape and to show what I think have to be influxes at a time or for a species where no passage is expected.

Tree Swallow (*Tachycineta bicolor)*

This is a passage migrant and winter visitor with the heaviest passage in the spring. There are a series of early fall records, there were two on July 3, 2002 with singles on July 12, 1999, July 22, 2001, July 30, 2003 and August 6, 1999. In 2001 there was an early influx that ran from August 19 to August 29 with a peak count of two on August 19. The fall passage ran from September 2 (2001) to December 9 (2001. The highest count was that of 1150 on November 18, 1998. To detail the 1998/1999 influxes, there were six on October 16 with 55 on October 21 and 200 on November 2, then eight seen on November 6. There were 50 on November 11 with 450 on November 13 and 1,150 on November 18, then 30 seen on November 25. There were 160 on November 30 with 865 on December 3, then 140 seen on December 8 with 55 on December 12 and six on December 18. The winter passage ran from November 30 (1998) to January 16 (2002) with a high count of 715 on January 4, 2000. The spring passage followed and this ran from January 7 (2001) to May 27 (2000) with an extension to June 25 in 1999. I cannot differentiate in this instance between the early and main spring passages. The highest count was that of 7,120 on March 9, 2003. To detail the main 1999 influxes, there were 300 on March 6 with 2,570 on March 11, then 1,910 seen on March 16 with 1,340 on March 18, 920 on March 19, 900 on March 23 and 350 on March 25. There were 4,500 on March 30 with 1,760 on April 1, 640 on April 9 and 350 on April 14. There were 2,020 on April 17 with 2,340 on April 20, then 125 seen on April 23. There were 182 on April 26 with 1,360 on May 1, then 140 seen on May 4 with 70 on May 7. To detail the main 2001 influxes, there were 287 on March 3 with 5,925 on March 11, then 347 seen on March 18 with 215 on March 22. There were 4,410 on March 25 with 4,295 on March 27, 1,590 on April 2, 450 on April 4, 355 on April 6, 36 on April 11 and seven on April 16. To detail the main 2003 influxes, there were 450 on February 5 with 260 on February 9 and 105 on February 12. There were 675 on February 15 with 960 on February 19, 1,160 on February 23, 3,020 on March 2 and 7,120 on March 9, then 1,635 seen on March 16 with 115 on March 19. There were 140 on March 24 with 290 on March 26 with 665 on March 29, then 360 seen on April 2 with 295 on April 11 and 122 on April 13. Unlike the last species the highest counts line up. As stated earlier the spring passage ended on May 27 (2000)

however in 1999 not only was the passage heavy through April it also continued longer. There were four on May 29 with two on May 31 and singles through to June 12, then two seen on June 22 with one on June 25. For much of the spring we are looking at type 2 influxes.

There are a series of early fall records, there were two on July 3, 2002 with singles on July 12, 1999, July 22, 2001, July 30, 2003 and August 6, 1999. In 2001 there was an early influx which ran from August 19 to August 29 with a peak count of two on August 19. The fall passage ran from September 2 (2001) to December 9 (2001), there were seven "clustered" influxes. The first peaked from September 9 (2001) to September 10 (2000) with a high count of seven on September 9, 2001. The second peaked from September 18 (2002) to September 25 (1999) with a high count of 42 on September 25, 1999. The third peaked from October 8 (1999) to October 10 (2001) with high counts of 760 on October 8, 1999 and 680 on October 10, 2001. The fourth peaked from October 16 (2002) to October 21 (2001) with a high count of 515 on October 21, 2001. The fifth peaked on November 1 (2000, 2001) with a high count of 267 on November 1, 2001. The sixth peaked from November 9 (2002) to November 12 (2000) with a high count of 171 on November 12, 2000. The seventh peaked from November 16 (1999) to November 18 (1998) with a high count of 1,150 on November 18, 1998. The winter passage ran from November 30 (1998) to January 16 (2002), there were four "clustered" influxes. The first is indicated by a peak count of 865 on December 3, 1998. The second peaked from December 11 (2002) to December 15 (2000) with a high count of 190 on December 13, 2001. The third peaked from December 20 (1998) to December 22 (1999) with a high count of 458 on December 22, 1999. The fourth peaked from January 4 (2000) to January 5 (2003) with a high count of 715 on January 4, 2000. The spring passage ran from January 7 (2001) to May 27 (2000) with an extension to June 25 in 1999. I cannot in this case separate the early spring passage from the main spring passage, there were eight "clustered" influxes. The first peaked from January 11 (2003) to January 18 (2000) with a high count of 1,170 on January 18, 2000. The second is indicated by a peak count of 195 on February 7, 2001. The third peaked from February 25 (2000) to February 27 (2002) with high counts of 1,030 on February 25, 2000 and 1,035 on February 27, 2002. The fourth peaked from March 9 (2003) to March 14 (2000) with high counts of 2,570 on March 11, 1999, 5,925 on March 11, 2001 and 7,120 on March 9, 2003. The latter was the highest count during the first five years of the survey. The fifth peaked from March 25 (2001) to March 30 (1999, 2000) with high counts of 1,290 on March 27, 2002, 4,410 on March 25, 2001 and 4,500 on March 30, 1999. Peak passage occurred in March with heavy passage at the beginning and at the end of the month (two waves). The sixth peaked from April 14 (2002) to April 20 (1999) with a high count of 2,340 on April 20, 1999. The main passage was over at the end of April. The seventh influx peaked from April 30 (2003) to May 4 (2001) with a high count of eight on May 4, 2001. The eighth is indicated by a peak count of three on May 15, 2002. Passage in 1999 was very different from the other years, it did share the early and late March peak counts but passage continued at a high level with peak counts of 2,340 on April 20

and 1,360 on May 1. It is therefore not that surprising that the passage continued later in that year. There were four on May 29 with two on May 31, then singles seen to June 12. There were two on June 22 with one on June 25. This all made for a somewhat complicated story.

Northern Rough-winged Swallow (*Stelgidopteryx serripennis*)

This is a passage migrant that was only seen in low numbers. Spring passage noted from March 16 (1999) to June 14 (1999) there were five "clustered" influxes. The first peaked from March 16 (1999) to March 18 (2001) with high counts of two on March 16, 1999 and March 17, 2002. The second peaked from April 1 (1999) to April 4 (2001) with a high count of five on April 3, 2002. The third peaked from April 11 (2003) to April 17 (1999) with a high count of seven on April 17, 1999. This was the highest count during the first five years of the survey. The fourth peaked from April 29 (2001) to May 1 (1999, 2002) with a high count of five on May 1, 1999. The fifth peaked from May 23 (2002) to May 29 (1999) with a high count of three on May 23, 2002. Passage in the fall started early, it ran from June 25 (1999) to October 23 (1999), there were nine "clustered" influxes. The first peaked from June 25 (1999) to June 26 (2000) with a high count of three on June 25, 1999. The second peaked from July 3 (2002) to July 4 (1999) with one on both dates. The third is indicated by a peak count of two on July 12, 2000. The fourth peaked from July 27 (2001) to July 30 (2000) with three on both dates. The fifth peaked from August 6 (1999) to August 13 (2000) with a high count of three on August 6, 1999. The sixth peaked from August 16 (2001) to August 23 (2000) with high counts of three on August 16, 2001 and August 18, 1999. The seventh peaked from September 11 (1998, 2002) to September 19 (2000) with high counts of four on September 16, 2001 and September 19, 2000. The eighth peaked from September 30 (1998, 1999, 2001) to October 1 (2000) with a high count of five on September 30, 1999. The ninth peaked from October 10 (2001) to October 18 (2000) with a high count of six on October 10, 2001. There were no winter records. So the spring passage peaked in mid-April whilst the fall passage peaked in late September and early October.

Bank Swallow (*Riparia riparia)*

This is a passage migrant with the greatest numbers in the fall. In 2001 one summered from June 13 to at least July 15 at the Barn Swallow colony alongside Lust Road. This is the only known instance of this species summering in Florida. Seen in the spring from March 27 (2000, 2001) to June 1 (2003) with a high count of 21 on May 1, 1999. The fall passage ran from July 16 (2000) to October 16 (1998) with a high count of 145 on September 2, 2001. To detail the 2001 influxes, there were three on August 16 with 12 on August 19, 64 on August 26 and 145 on September 2, then 50 seen on September 5 with 48 on September 9, 43 on September 13, ten

on September 16 and one on September 19. There were two on September 23 with 22 on September 30 only singles then seen to October 10.

One summered in 2001 from June 13 to at least July 15. This is the only known instance of this species summering in Florida. Seen in the spring from March 27 (2000, 2001) to June 1 (2003), there were five "clustered" influxes. The first peaked from March 27 (2001) to April 3 (2002) with a high count of three on March 30, 1999. The second peaked from April 15 (2000) to April 17 (1999) with a high count of 11 on April 17, 1999. The third peaked from April 30 (2003) to May 4 (2000, 2001) with a high count of 21 on May 1, 1999. The fourth peaked from May 20 (2001, 2002) to May 22 (1999) with a high count of 13 on May 20, 2002. The fifth is indicated by a peak count of two on June 1, 2003. The fall passage ran from July 16 (2000) to October 16 (1998), there were nine "clustered" influxes. This passage was so much stronger than that in the spring. The first influx peaked from July 18 (2001) to July 25 (2002) with high counts of three on July 23, 2000 and July 18, 2001. The second peaked from August 6 (1999) to August 10 (2003) with a high count of six on August 6, 1999. The third peaked from August 13 (2000) to August 15 (1998) with a high count of five on August 13, 2000. The fourth peaked from August 21 (2002) to August 27 (2000) with high counts of 21 on August 27, 2000 and 23 on August 21, 2002. The fifth peaked from September 2 (2001) to September 6 (1999) with high counts of 29 on September 6, 1999, 41 on September 4, 2002 and a very high 145 on September 2, 2001. The latter is the highest count during the first five years of the survey. The sixth peaked from September 10 (2000) to September 11 (1998) with a high count of 35 on September 11, 1998. The seventh peaked from September 17 (1999) to September 21 (2000) with a high count of 23 on September 21, 2000. The eighth peaked from September 25 (1999) to October 1 (2000) with high counts of 22 on September 30, 2001 and 24 on September 25, 1999. The final influx peaked from October 6 (1999) to October 9 (2000, 2002) with a high count of four on October 9, 2002. This plethora of influxes in this particular instance means that this species did not stop off-passage for extended periods as many species did.

Cliff Swallow (*Petrochelidon pyrrhonota)*

This is a passage migrant that is normally seen in very low numbers. Seen in the spring from April 17 (1999) to May 27 (2001), there were four "clustered" influxes. The first was indicated by a peak count of one on April 17, 1999. The second peaked from April 26 (2001) to May 1 (1999) with two on both dates. The third is indicated by a peak count of one on May 6, 2002. The fourth peaked from May 20 (2002) to May 27 (2001) with a high count of three on May 20, 2002. It is likely that no more than 13 birds seen over the five years in the spring. Exceptionally there was an adult at the Sand Farm Bridge Barn Swallow colony from June 11, 2003 to June 16, 2003. Noted in the fall from July 2 (2003) to October 10 (2001), there were

seven “clustered” influxes. Initially only adults seen but I did not record the arrival of the juveniles. The first influx was indicated by a peak count of one on July 2, 2003. The second peaked from July 17 (2002) to July 23 (2000) with a high count of three on July 17, 2002. The third peaked from August 8 (2003) to August 13 (1999) with three on both dates. The fourth peaked from August 19 (2001) to August 21 (2002) with a high count of four on August 19, 2001. The fifth peaked from September 2 (2002) to September 8 (1999) with high counts of three on September 8, 1999 and September 7, 2000. The sixth peaked from September 18 (2002) to September 26 (2001) with high counts of 18 on September 26, 2001 and 68 on September 25, 1999. The latter was the highest count during the first five years of the survey. To detail the 1999 influx, there were three on September 17 with nine on September 23 and 68 on September 25, then three seen on September 30, no later records. The actual highest count for the survey is that of 71 on October 1, 2006. These are two of the highest ever counts for Florida. The seventh influx peaked from October 5 (2000) to October 10 (2001) with one on both dates. It is unusual for the highest counts to be so late in the passage.

Cave Swallow (*Petrochelidon fulva)*

This is a vagrant away from south Florida. There was an adult of the Mexican race *P*.f. *Pelodoma* by the Lust Road Pump House on March 18, 2001. In central Florida it is this western race that is most likely to be found.

Barn Swallow (*Hirundo rustica*)

This is a summer visitor and passage migrant. This species nests under the bridges and under the roof that joins two buildings at what was Plant Express. During the Breeding Bird Survey a total of 25 pairs located in 1999 with 48 pairs in 2000, 52 pairs in 2001, 44 pairs in 2002 and 34 pairs in 2003. The decline in numbers was caused by some of the bridges being replaced with structures that were not suitable as nest sites. Spring passage noted from February 16 (2000) to May 18 (1999) with a high count of 2,200 on April 17, 1999. Excluding that exceptional count the highest was that of 565 on May 1, 1999. To detail the 1999 influxes, there was one on March 11 with three on March 16, five on March 23 and six on April 1, then five seen on April 6 with four on April 9. There were 16 on April 14 with 2,200 on April 17, then 80 seen on April 20 with six on April 23. There were 30 on April 26 with 565 on May 1, then 90 seen on May 4. The population settled down to approximately 60 a day for the summer. The first birds to arrive in the spring are the local breeding birds and nesting starts quickly. The first fledged young were first seen on May 24, 2001, May 12, 2002 and April 27, 2003. That pattern is probably not significant as there is no similar pattern of the birds arriving earlier. However it

is interesting that in 2003 at least the first young were out of the nest whilst others were still migrating north. I believe that many of these local breeding birds leave soon after the young have fledged. There is a summer passage that may reflect this situation. The passage ran from May 9 (2002) to July 14 (1999) with a high count of 115 on July 8, 2000. The fall passage followed from July 4 (2003) to November 30 (1999). Whilst the highest count was in the spring the fall passage is by far the stronger event. Unlike the majority of the fall migrants there was no separate early fall passage. This event lasted for just under five months however the peak passage was concentrated into just one month from August 13 (2000) to September 11 (1998). The highest count was that of 1,450 on September 2, 2001. To detail the 2001 influxes, there were 83 on July 8 with 117 on July 15 and 308 on July 22, then 191 seen on July 27 with 35 on July 29. There were 92 on August 2 with 144 on August 5, 161 on August 12 and 341 on August 16, then 244 seen on August 19. There were 298 on August 22 with 392 on August 26 and 1,450 on September 2, then 465 seen on September 5 with 360 on September 7. There were 500 on September 13 with 350 on September 16 with 70 on September 19 and ten on September 23. There were 48 on September 26 with 480 on September 30, then 410 seen to October 10 with 225 on October 14, 120 on October 21, 34 on October 28 and 26 on November 1. Finally there were 82 on November 4 with 17 on November 7. Very exceptionally there was a winter influx. There was one on December 16, 1998 with two on December 31, 1998 and one on January 1, 1999. These were at the junction of the Lake Level Canal and Interceptor Road.

Spring passage noted from February 16 (2000) to May 18 (1999), there were six “clustered” influxes. The first peaked from March 18 (2001) to March 24 (2003) with a high count of 78 on March 18, 2001. The second peaked from March 30 (2000) to April 1 (1999) with a high count of 43 on March 30, 2000. The third peaked from April 6 (2001) to April 7 (2002) with a high count of 70 on April 6, 2001. The fourth is indicated by a peak count of 2,200 on April 17, 1999. This is the highest count during the first five years of the survey. The fifth peaked from April 26 (2000, 2001) to May 1 (1999) with a high count of 565 on May 1, 1999. The sixth is indicated by a peak count of 126 on May 8, 2001. The summer is treated as running from May 9 (2002) to July 14 (1999), there were five “clustered” influxes. The first peaked from May 18 (2003) to May 23 (2000) with a high count of 100 on May 20, 2001. The second peaked from June 2 (2002) to June 5 (1999) with a high count of 77 on June 5, 1999. The third peaked from June 12 (2002) to June 16 (2003) with a high count of 110 on June 13, 2001. The fourth peaked from June 25 (1999) to June 30 (2002) with a high count of 103 on June 30, 2002. The fifth peaked from July 8 (2000) to July 9 (1999) with a high count of 115 on July 8, 2000. Whilst the highest count was in the spring the fall passage was by far the main event. This passage ran from July 4 (2003) to November 30 (1999). Unlike the majority of the fall migrants there was no separate early fall passage. This is another species that moves through quickly creating in this instance a total of 13 “clustered” influxes. The first is indicated by a peak count of 219 on July 14, 2002. The second peaked from July 19 (2000, 2003) to July 23 (1999) with a high count of

308 on July 22, 2001. The third peaked from August 8 (2003) to August 10 (1999) with a high count of 444 on August 10, 1999. The fourth peaked from August 13 (2000) to August 16 (2001) with a high count of 710 on August 13, 2000. The fifth peaked from August 20 (1999) to August 27 (2000) with high counts of 830 on August 25, 2002 and 832 on August 20, 1999. The sixth is indicated by a peak count of 1,450 on September 2, 2001. The seventh peaked from September 8 (1999, 2002) to September 11 (1998) with a high count of 840 on September 8, 2002. The eighth peaked from September 13 (2001) to September 19 (2000) with a high count of 500 on September 13, 2001. The ninth peaked from September 26 (2002) to October 1 (2000) with a high count of 480 on September 30, 2001. The tenth peaked from October 16 (2002) to October 18 (2000) with a high count of 335 on October 18, 2000. The eleventh peaked from October 21 (1998) to October 23 (1999) with a high count of 80 on October 21, 1998. The twelfth [h] peaked from November 2 (1998) to November 9 (1999) with a high count of 85 on November 9, 1999. The thirteenth peaked from November 12 (2000) to November 17 (2002) with a high count of nine on November 17, 2002. Note the clear rise and fall of the highest counts. Whilst this event lasted for just under five months the peak passage was concentrated into just one month from August 13 (2000) to September 11 (1998). Very exceptionally there was a winter influx. There was one on December 16, 1998 with two on December 31, 1998 and one on January 1, 1999. These were at the junction of the Lake Level Canal and Interceptor Road.

Carolina Chickadee (*Poecile carolinensis*)

This is an accidental visitor, there are four records. There was one on August 11, 2002, that suggests dispersal of the fledged young. There were singles on October 29, 2000 and November 9, 1999, these suggest a fall passage. Finally there was one on December 27, 2001, a winter record. I do not know the nearest breeding area.

Tufted Titmouse (*Baeolophus bicolor*)

This is a rarity, a resident species. During the Breeding Bird Survey a total of three pairs located in 1999 and 2000 with seven pairs in 2001, nine pairs in 2002 and 16 pairs in 2003. There were also 16 pairs in 2004. This species nested in the wooded borders. Normally one to two a day recorded through the year with scattered counts of three to four from April 7 (2002) to October 19 (1999). During this period there were higher counts of five on June 30, 2002 and six on July 2, 2003. The latter was the highest count during the first five years of the survey. After October 19 (1999) the only records of three or more until late December were in 2001, there were three on November 15 and four on November 27. Unexpectedly counts were higher from December 30 (2001) to February 20 (2002) with three a day on 24 dates. There were also

four on February 3, 2002 with five on February 9, 2003. From February 21 to April 6 there were counts of only one to two a day again. It is to be expected that counts would be higher in the spring and early summer with males advertising their territories. Later in June and July the fledged young would become evident. The only information for fledged young that I have is that there were two on May 27, 2002 and two on June 29, 2003. The only event that I cannot explain is the higher counts in the early spring. I just do not consider this to be any form of passage.

Brown-headed Nuthatch (*Sitta pusilla*)

This is just one of those unexpected events that seem to happen at Zellwood, There was one in the small pine wood at the Sand Farm on December 17, 2003. I do not know the nearest breeding site.

Carolina Wren (*Thryothorus ludovicianus)*

This is a resident and just possibly a passage migrant. During the Breeding Bird Survey a total of 79 pairs located in 1999 with 69 pairs in 2000, 153 pairs in 2001, 162 pairs in 2002 and 185 pairs in 2003. This is a perfect example of what I described earlier, the territories became linear, then they became narrower and included part of a field and finally pairs started nesting out in the fields. As with all resident species it is hard to identify the summer but I believe that it ran from March 30 (2000) to August 2 (2000), during this period there did appear to be three "clustered" influxes but I am not certain of their validity. For the record the first "influx" peaked from May 9 (2002 to May 10 (1999) with a high count of 44 on May 9, 2002. The second peaked from May 30 (2002) to May 31 (1999) also with a high count of 44 on May 30, 2002. The third peaked from June 29 (2003) to July 4 (2000) with a high count of 52 on June 29, 2003. The actual highest counts for the summer were 42 on April 17, 2002, 44 on May 9, 2002, 42 on May 21, 2000, 52 on June 29, 2003 and a very high 103 an April 24, 2003. The latter is still the highest count for Zellwood. The only note I have on fledged young relates to two on May 4, 2000. Now the situation becomes complicated. The rise and fall in the numbers do suggest influxes and their peak counts for the five years do fit into neat clusters so there may be some form of passage through the rest of the year. This being said there appears to be a fall passage from July 21 (2002) to November 30 (2002), with a total of seven "clustered" influxes. The first peaked from July 21 (2002, 2003) to July 23 (1999) with a high count of 53 on July 21, 2002. The second peaked from August 7 (2002) to August 10 (2003) with a high count of 40 on August 7, 2002. The third peaked from August 16 (2001) to August 18 (2002) with a high count of 38 on August 18, 2002. The fourth peaked from September 2 (2001) to September 3 (1999) with a high count of 36 on September 2, 2001. Note how each successive high count was lower than

the one before, do not know why. The fifth peaked from September 13 (2000) to September 15 (2002) with a high count of 52 on September 13, 2000. The sixth peaked from October 5 (2000) to October 6 (2002) with a high count of 44 on October 5, 2000. The seventh peaked from November 9 (2002) to November 12 (2000) with high counts of 18 on November 11, 2001 and November 12, 2000. With the last three influxes the high counts rose again only to decline. There has to be a reason for this, but… The winter passage appears to run from November 22 (1999) to January 25 (2000) which is an exceptionally long period. There were four "clustered"influxes. The first is indicated by a peak count of 17 on November 26, 2000. The second peaked from December 2 (2002) to December 9 (2001) with a high count of 21 on December 9, 2001. The third peaked from December 27 (1999) to January 1 (2001) with a high count of 25 on December 30, 2001. The fourth is indicated by a peak count of 30 on January 9, 2003. The early spring passage followed from January 2 (1999) to February 27 (2002), there were four "clustered" influxes. It is perhaps worth pointing out that whilst the winter passage in 2000 over-ran to January 25 in 1999 the early spring passage started rather early on January 2. This is an extreme example but it is normal for these passages to overlap. The first influx is indicated by a peak count of 35 on January 24, 2002. The second peaked from January 28 (2000) to January 31 (2001) with a high count of 37 on January 31, 2001. The third peaked from February 9 (1999) to February 10 (2002) with a high count of 33 on February 10, 2002. The fourth peaked from February 14 (2001) to February 16 (2000) with a high count of 38 on February 14, 2001. The main spring passage was very short-lived, it ran from February 15 (2003) to April 11 (2003), there were two "clustered" influxes. The first peaked from February 28 (2001) to March 3 (2000) with a high count of 83 on March 2, 2003. The second peaked from March 19 (2002) to March 21 (2000) with a high count of 62 on March 19, 2002.

Bewick's Wren (*Thryomanes bewickii*)

This is a vagrant anywhere in Florida. There was one in the field on the north side of Lust Road near the Lust Road gate on February 25, 2000 and March 14, 2000. On both occasions it had come to a scrub filled ditch to drink and bathe. The field was filled with plants such as ludwigia sp. so it was easy for this bird to stay out of sight.

House Wren (*Troglodytes aedon*)

This is a common passage migrant and winter visitor. This species could be found in virtually any habitat with the exception of a grass field. Seen in the fall from September 24 (2000) to December 16 (1998) with a high count of 674 on November 5, 2000. To detail the 2000 influxes, there was one on September 24 with three on October 1, 21 on October 5, 83 on

October 12, 124 on October 15, 283 on October 18, 328 on October 22, 353 on October 25, 580 on October 29 and 674 on November 5, then 525 seen on November 8 with 417 on November 12 and 141 on November 15. There were 235 on November 19 with 374 on November 26, then 297 seen on November 28 with 226 on November 30 and 213 on December 3. The winter passage followed from December 2 (2002) to January 11 (1999) with a high count of 271 on December 12, 2000. To detail the 2000/2001 winter, there were 215 on December 6 with 271 on December 12, then 234 seen on December 15 with 52 on December 17. There were 79 on December 20 with 162 on December 22, then 118 seen on January 1 with 100 on January 7 and 62 on January 10. The early spring passage ran from January 7 (2000, 2002) to March 9 (2003) with a high count of 124 on January 14, 2001. To detail the 2001 influxes, there were 124 on January 14 with 97 on January 17 and 53 on January 21. There were 107 on January 24 with 96 on January 28, 81 on January 31 and 49 on February 4. There were 106 on February 7 with 82 on February 14 and 49 on February 18. There were 68 on February 21 with 75 on February 25, then 58 seen on February 28 with 31 on March 3. In the fall and the winter of 2000/2001 there were type 1 influxes. With the exception of this last influx the early spring passage involved type 2 influxes, this means that for most of this passage in this year there were just three arrivals. This also makes for much shorter influxes. The main spring passage ran from March 3 (2000) to May 9 (2002) with a high count of 95 on March 19, 2002. To detail the 2001 influxes, there were 37 on March 11 with 49 on March 18, then 43 seen on March 25 with 33 on March 27. There were 86 on April 2 with 76 on April 4, 64 on April 6, 54 on April 8, 26 on April 11, 17 on April 19, five on April 22, three on April 26, two on April 29 and one to May 6. This is perhaps the first time that I have detailed every influx from the fall to the spring for a single year (2000/2001).

Seen in the fall from September 24 (2000) to December 16 (1998), there were only three “clustered” influxes. The first peaked from October 20 (2002) to October 24 (2001) with a high count of 264 on October 20, 2002. The second peaked from November 5 (2000) to November 7 (2001) with high counts of 282 on November 7, 2001 and an exceptionally high 674 on November 5, 2000. This is still the highest count for Zellwood. The third peaked from November 20 (1998) to November 26 (1999, 2000) with a high count of 374 on November 26, 2000. Noticeably these influxes tended to cover extended periods ranging from one month to over two months. It is more normal for an influx to cover two weeks or less. The winter passage followed from December 2 (2002) to January 11 (1999), there were four “clustered” influxes. I get the impression that this is an extension of the fall passage. The first is indicated by a peak count of 219 on December 2, 2002. The second peaked from December 9 (2001) to December 16 (2002) with a high count of 271 on December 12, 2000. The third is indicated by a peak count of 162 on December 22, 2000. The fourth peaked from December 30 (1999) to January 2 (2003) with a high count of 118 on January 2, 2003. In four of the five years each year had just two influxes but the peak counts indicated the location of the underlying four basic influxes, the

other year had just one influx. The early spring passage ran from January 7 (2000, 2002) to March 9 (2003), there were six "clustered"influxes. The first peaked from January 7 (2000) to January 9 (2003) with a high count of 108 on January 9, 2003. The second is indicated by a peak count of 124 on January 14, 2001. The third peaked from January 24 (2001) to January 28 (2000) with high counts of 107 on January 24, 2001 and January 27, 2002. The fourth peaked from February 4 (2002) to February 9 (1999) with a high count of 106 on February 7, 2001. The fifth is indicated by a peak count of 61 on February 12, 2003. The sixth peaked from February 25 (2001) to February 26 (2003) with a high count of 75 on February 25, 2001. At this season the influx pattern was very different with from two to four influxes each year in the early spring, there were no extended influxes. Type 2 instead of type 1 influxes would create this situation. The main spring passage ran from March 3 (2000) to May 9 (2002), there were seven "clustered" influxes. The first peaked from March 8 (2001) to March 10 (2000) with a high count of 60 on March 10, 2000. The second peaked from March 16 (2003) to March 19 (2002) with a high count of 95 on March 19, 2002. The third peaked from March 25 (2000) to March 26 (2003) with a high count of 55 on March 26, 2003. The fourth peaked from April 2 (2001) to April 3 (2000) with a high count of 86 on April 2, 2001. Finally there were three isolated peak counts of 33 on April 13, 2003, 37 on April 20, 1999 and three on April 30, 2000. As in the fall there were exceptionally long influxes. The two longest ran from March 7, 1999 to May 4, 1999 and from March 4, 2002 to May 9, 2002. To detail the 2002 influx, there were 48 on March 4 with 57 on March 6, 78 on March 10, 84 on March 14, 88 on March 17 and 95 on March 19, then 94 seen on March 27 with 92 on April 3, 81 on April 7, 49 on April 10, 42 on April 14, nine on April 17, five on April 21, three on April 24, two on May 1 and one on May 9. This species is the exception with this tendency for very long lasting influxes.

Winter Wren (*Troglodytes troglodytes*)

This is another vagrant that has strayed too far to the south. This individual was seen on January 19, 2003 by the canal that runs east-west between the Duda and Sand Farm properties. This was a very cold day and it was working its way through dead scrub by the water.

Sedge Wren (*Cistothorus platensis)*

This is a passage migrant and winter visitor. It is normally the least common of the three migrant wrens. They often occur out in the grassy fields as well as along the grassed banks of canals and ditches. Seen in the fall from October 6 (2002) to December 20 (2000), this passage over-ran by two weeks in two years (2000, 2002), the highest count was that of 108 on November 26, 2000. To detail the 2000 influx, there were three on October 12 with four on

October 15, 16 on October 18, 20 on October 25, 23 on October 29, 28 on November 1, 68 on November 5, 83 on November 8, 102 on November 12 and 108 on November 26, then 101 seen on November 28 with 73 on November 30, 56 on December 6, 53 on December 12, 43 on December 15, 15 on December 17 and 12 on December 20. The peak count did not fit in with the peak count for the House Wren. The winter passage followed from December 4 (1998, 1999) to January 15 (1999, 2003), the highest count was that of 44 on December 27, 1999. To detail the 1999 influxes, there were 36 on December 4 with 40 on December 7, then 35 seen on December 11 with 33 on December 14 and 29 on December 19. There were 36 on December 22 with 44 on December 27, then 31 seen on January 1 with 20 on January 4, 19 on January 7, 18 on January 11 and six on January 14. The early spring passage ran from January 7 (2002) to March 10 (2002) with a high count of 34 on January 14, 2001. To detail the 2001 influxes, there were 34 on January 14 with 29 on January 17 and 13 on January 21. There were 18 on January 24 with 28 on February 7 and 29 on February 11, then 21 seen on February 14 with seven on February 18. There were 25 on February 21 with 13 on February 25, ten on February 28 and six on March 3. Two out of three were type 2 influxes. The main spring passage ran from February 29 (2000) to May 14 (2001) with a high count of 42 on April 15, 2000. To detail the 2000 influxes, there were 18 on February 29 with 17 on March 7, 13 on March 10 and nine on March 14. There were 27 on March 18 with 28 on March 21, and 34 on March 25, 41 on April 3 and 42 on April 15, then 34 seen on April 19 with 13 on April 26 and eight on April 30.

Seen in the fall from October 6 (2002) to December 20 (2000), this passage over-ran by two weeks in two years (2000, 2002), there were four “clustered” influxes. The first is indicated by a peak count of five on October 21, 1998. The second peaked from November 7 (2001) to November 9 (2002) with a high count of 13 on November 7, 2001. The third peaked from November 13 (1998) to November 16 (1999) with a high count of 42 on November 16, 1999. The fourth peaked from November 26 (2000) to November 29 (2001) with high counts of 22 on November 29, 2001 and an exceptionally high 108 on November 26, 2000. The latter is still the highest count for Zellwood. Just one influx covered the whole fall passage both in 2000 and 2002. The winter passage ran from December 4 (1998, 1999) to January 15 (1999, 2003), again there were four “clustered” influxes. The first peaked from December 7 (1999) to December 9 (2001) with a high count of 40 on December 7, 1999. The second peaked from December 16 (2002) to December 20 (1998) with 12 on both dates. The third peaked from December 27 (1999) to January 1 (2001) with a high count of 44 on December 27, 1999. The fourth peaked from January 5 (2003) to January 7 (1999) with 13 on both dates. The early spring passage followed from January 7 (2002) to March 10 (2002), there were four “clustered” influxes. The first peaked from January 14 (2001) to January 18 (2000) with a high count of 34 on January 14, 2001. The second peaked from January 26 (2003) to January 27 (2002) with a high count of 20 on January 26, 2003. The third peaked from February 9 (1999) to February 16 (2000) with high counts of 29 on February 11, 2001 and February 16, 2000. The fourth peaked from February 19

(2003) to February 21 (2001) with a high count of 25 on February 21, 2001. The main spring passage ran from February 29 (2000) to May 14 (2001) and it was very different. For the rest of the year the number of influxes was very limited, but not so here, in all there were eight "clustered" influxes. The first is indicated by a peak count of 18 on February 29, 2000. The second peaked from March 11 (2001) to March 13 (1999) with a high count of 15 on March 11, 2001. The third was indicated by a peak count of five on March 17, 2002. The fourth peaked from March 26 (2003) to April 2 (2001) with a high count of 18 on April 2, 2001. The fifth peaked from April 6 (1999) to April 8 (2001) with a high count of 24 on April 8, 2001. The sixth peaked from April 13 (2003) to April 15 (2000) with a high count of 42 on April 15, 2000. The seventh peaked from April 19 (2001) to April 20 (1999) with a high count of 16 on April 19, 2001. The final influx peaked from May 2 (2001) to May 4 (1999) with a high count of five on May 2, 2001. It surprises me how different each species is.

Marsh Wren (*Cistothorus palustris)*

This is a passage migrant and winter visitor. Of the three migrant wrens this species has the most restricted habitat. It is confined to the Sand Farm Cattail Marsh or to the grassed edges of the lake, the canals and the ditches. Seen in the fall from September 18 (2002) to November 24 (2002) with a high count of 126 on November 5, 2000. This was the date of the House Wren's fall high count. To detail the 2000 influx, there was one on October 1 with two on October 9, three on October 12, 12 on October 15, 15 on October 18, 20 on October 22, 42 on October 29 and 126 on November 5, then 98 seen on November 8 with 72 on November 12, 64 on November 15 and 34 on November 19. Now to the winter passage, this was an exceptional event in that it started in November each year and it continued further into January than normal. Instead of the normal one month passage there was a winter passage of up to two months. Overall it ran from November 18 (2001) to January 25 (2000) with a high count of 109 on December 14, 1999. To detail the 1999/2000 influxes, there were 22 on November 19 with 41 on November 26, 68 on December 4, 69 on December 7, 107 on December 11 and 109 on December 14, then 64 seen on December 19. There were 73 on December 22 with 83 on December 27, 92 on December 30 and 94 on January 1, then 83 seen on January 7 with 82 on January 18, 56 on January 21 and 36 on January 25. The early spring passage ran from January 7 (2002) to March 21 (2000) with a high count of 103 on February 8, 2000. To return to detailing the 2000 influxes, there were 88 on January 28 with 72 on February 2. There were 74 on February 6 with 103 on February 8, then 76 seen on February 11 with 73 on February 16, 52 on February 23, 48 on February 29, 36 on March 3, 35 on March 10, 33 on March 14, 22 on March 18 and 19 on March 21. The main spring passage ran from March 6 (2002) to May 15 (2003) with a high count of 61 on April 15, 2000. Back to the influxes of 2000, there were 30 on March

25 with 22 on March 27. There were 26 on March 30 with 36 on April 3. 45 on April 6, 53 on April 11 and 61 on April 15, then 36 seen on April 19 with 18 on April 26, 12 on April 30, five on May 4, two on May 7 and one on May 13. It is unusual for a species to have exceptionally high counts in three seasons i.e. 126 on November 5, 2000, 109 on December 14, 1999 and 103 on February 8, 2000.

Seen in the fall from September 18 (2002) to November 24 (2002), there were four "clustered" influxes. The first peaked from September 18 (2002) to September 25 (1999) with a high count of two on September 25, 1999. The second is indicated by a peak count of six on October 9, 2002. The third peaked from October 26 (1999) to October 28 (2001) with a high count of 18 on October 26, 1999. The fourth peaked from November 5 (2000) to November 9 (2002) with high counts of 25 on November 9, 2002 and 126 on November 5, 2000. The latter was the highest count during the first five years of the survey. The winter passage covered a longer period than normal it ran from November 18 (2001) to January 25 (2000), there were five "clustered" influxes. The first peaked from November 26 (2000) to November 29 (2001) with a high count of 65 on November 26, 2000. The second peaked on December 8 (1998, 2002) with a high count of 26 on December 8, 2002. The third is indicated by a peak count of 109 on December 14, 1999. The fourth peaked from December 21 (2002) to December 27 (2001) with a high count of 26 on December 27, 2001. The fifth peaked from January 1 (2000) to January 7 (2001) with a high count of 94 on January 1, 2000. The early spring passage ran from January 7 (2002) to March 21 (2000), there were four "clustered" influxes. The first peaked from January 12 (1999) to January 13 (2002) with a high count of 26 on January 13, 2002. The second peaked from January 26 (2003) to January 29 (1999) with a high count of 88 on January 28, 2000. The third peaked from February 8 (2000) to February 12 (2003) with a high count of 103 on February 8, 2000. The fourth is indicated by a peak count of 14 on February 23, 2003. There is with the main spring passage a significant change in the pattern. It switches from regular influxes to a series of basic influxes. This passage ran from March 6 (2002) to May 15 (2003), there were "clustered" influxes. The first peaked from March 10 (2002) to March 16 (2003) with high counts of 12 on March 11, 2001 and March 16, 2003. The second peaked from March 24 (2002) to March 25 (2000) with a high count of 30 on March 25, 2000. The third peaked from April 2 (2003) to April 6 (2001) with a high count of 13 on April 2, 2003. The fourth peaked from April 14 (2002) to April 15 (2000) with a high count of 61 on April 15, 2000. The fifth peaked from April 19 (2001) to April 24 (2002, 2003) with a high count of 22 on April 24, 2003. The sixth peaked from May 1 (2002) to May 4 (1999, 2001) with a high count of four on May 4, 2001. The seventh is indicated by a peak count of two on May 14, 1999.

Golden-crowned Kinglet (*Regulus satrapa*)

This is one of those species that does not normally come this far south in the winter. There were two winter records of singles on December 7, 1999 and December 20, 2000. For the early spring there was one on January 25, 2000.

Ruby-crowned Kinglet (*Regulus calendula)*

This is a regular passage migrant and winter visitor. Seen in the fall from October 3 (2001) to December 11 (2002) with a high count of 23 on November 24, 2002. To detail the 2002 records, there was one from October 6 to October 28. This is an extreme example but passage often starts slowly but it then suddenly takes off. There were four on November 5 with five on November 9, nine on November 21 and 23 on November 24, then 19 seen on November 29 with six on November 30. The winter passage followed from November 30 (1999) to January 11 (2000) with a high count of 15 on December 12, 2000. To detail the 2000/2001 influxes, there were 13 on December 6 with 15 on December 12, then ten seen on December 15 with one on December 17. There were 12 on December 20 with five on December 22 and three on December 31. There were five on January 1 with three on January 4. The early spring passage ran from January 5 (2003) to March 5 (2003) with a high count of 17 on January 28, 2000. To detail the 2000 influxes, there were five from January 14 to January 21 with 13 on January 25 and 17 on January 28, then 11 seen through to February 16 with eight on February 23, six on February 29 and four on March 3. The main spring passage ran from March 6 (2002) to May 1 (1999) with a high count of 11 on March 14, 2002.

Seen in the fall from October 3 (2001) to December 11 (2002), there were five "clustered" influxes. The first peaked from October 6 (2002) to October 12 (2000) with one on both dates. The next two influxes were indicated by isolated peak counts of three on October 21, 2001 and six on October 29, 1999. The fourth peaked from November 18 (2001) to November 20 (1998) with a high count of 11 on November 19, 1999. The fifth peaked from November 24 (2002) to November 30 (2000) with high counts of 20 on November 30, 2000 and 23 on November 24, 2002. The latter was the highest count during the first five years of the survey. In this particular instance the fall passage could be broken down into two events. Firstly to the early fall passage from October 3 (2001) to November 6 (1999) with the first three influxes and secondly to the main fall passage from November 1 (2000) to December 11 (2002) with the last two influxes. The winter passage followed from November 30 (1999) to January 11 (2000), there were three "clustered" influxes. The first peaked from December 7 (1999) to December 12 (2000) with a high count of 15 on December 12, 2000. The second peaked from December 20 (2000) to December 22 (1999) with a high count of 12 on December 20, 2000. The third peaked from December 27 (2001) to January 1 (2000) with a high count of nine on December 27, 2001. The decline in the highest numbers from influx to influx suggests that in

this instance the winter passage was in fact a continuation of the fall passage. The early spring passage ran from January 5 (2003) to March 5 (2003), there were five "clustered" influxes. Unlike the winter passage the numbers now rose to a peak in late January and early February. The first influx peaked from January 7 (2003) to January 8 (1999) with a high count of 13 on January 7, 2003. The second peaked from January 14 (2001) to January 16 (2002) with a high count of 14 on January 16, 2002. The third peaked from January 22 (2003) to January 28 (2000) with a high count of 17 on January 28, 2000. The fourth peaked from February 9 (1999) to February 15 (2003) with a high count of 15 on February 11, 2001. The fifth is indicated by a peak count of ten on February 24, 2002. The main spring passage ran from March 6 (2002) to May 1 (1999), there were four "clustered" influxes. The first peaked from March 7 (2000) to March 11 (1999) with a high count of ten on March 7, 2000. The second peaked from March 14 (2002) to March 19 (1999) with a high count of 11 on March 14, 2002. The third peaked from March 22 (2001) to March 24 (2002) with a high count of seven on March 24, 2002. The fourth peaked on April 6 (1999, 2001) with a high count of four on April 6, 1999. It is so nice to deal with a straight forward species.

Blue-gray Gnatcatcher (*Polioptila caerulea)*

This is a passage migrant and winter visitor. This species is most likely to be found in areas of shrubs and the wooded borders. Seen in the winter from November 26 (2000) to January 7 (2003) with a high count of 87 on November 30, 2000. To detail the 2000/2001 influx, there were 45 on November 26 with 79 on November 28 and 87 on November 30, then 81 seen on December 6 with 71 on December 15, 70 on December 20, 63 on December 22, 21 on January 1 and 12 on January 4. The early spring passage ran from January 7 (1999, 2000, 2001, 2002) to March 29 (2003) with a high count of 78 on February 4, 2001. To detail the 2001 influxes, there were 29 on January 7 with 49 on January 14, then 43 seen on January 17 with 24 on January 21. There were 51 on January 24 with 39 on January 28. There were 46 on January 31 with 78 on February 4, then 54 seen on February 7 with 44 on February 11. There were 46 on February 14 with 51 on February 18 and 54 on February 21, then 39 seen on February 25 with 37 on February 28, 13 on March 11, six on March 18 and five on March 22. Yet again a species surprises me. In this case there is really no main spring passage. The early spring passage continues through to mid to late March. There are later records that form at best an event from March 11 (1999) to May 1 (2002). No more than three a day noted during this period. Breeding has not been confirmed and is probably unlikely to have occurred. There are some summer sightings. There were two from May 9, 2002 to May 15, 2002 with one to May 23, 2002. In June there was one on June 3, 2001, two on June 9, 2000, one on June 19, 2000 and one on June 14, 1999. I do not understand what these summer sightings represent. There is

an early fall passage from June 23 (2002) to August 13 (1999, 2003) with a high count of four on July 31, 2002. Now to the main event of the year, the main fall passage. This ran from August 11 (2002) to December 8 (1998) with a high count of 96 on October 5, 2000. To detail the 2000 influxes, there were three on August 13 with six on August 15, then four seen on August 23 with three on August 27. There were nine on August 30 with 12 on September 3, 18 on September 7, 50 on September 13, 62 on September 19 and 67 on September 24, then 50 seen on September 27 with 40 on October 1. There were 96 on October 5 with 57 on October 12 and 55 on October 15. There were 59 on October 18 with 54 on October 22 and 37 on October 25. There were 58 on October 29 with 44 on November 1, 39 on November 5 and 35 on November 8. There were 67 on November 12 with 46 on November 15 and 38 on November 19. This species is unusual as it has a tendency to arrive all at once, then there is a decline in numbers but the next arrival occurs before the numbers have fallen far. Hence the large number of basic influxes.

Seen in the winter from November 26 (2000) to January 7 (2003), there were four "clustered" influxes. The first peaked from November 30 (2000) to December 2 (2001, 2002) with a high count of 87 on November 30, 2000. The second peaked from December 7 (1999) to December 11 (1998) with as high count of 34 on December 7, 1999. The third peaked from December 20 (1998) to December 21 (2001, 2002) with a high count of 45 on December 21, 2001. The fourth peaked from December 30 (2002) to January 1 (2000) with a high count of 46 on December 30, 2002. The early spring passage followed, it ran from January 7 (1999, 2000, 2001, 2002)) to March 29 (2003), there were seven "clustered" influxes. The first peaked from January 9 (2003) to January 12 (1999) with a high count of 43 on January 9, 2003. The second peaked from January 14 (2001) to January 16 (2002) with a peak count of 73 on January 16, 2002. The third is indicated by a peak count of 51 on January 24, 2001. The fourth peaked from February 4 (2001) to February 5 (1999) with a high count of 78 on February 4, 2001. The fifth peaked from February 10 (2002) to February 16 (2000) with a high count of 68 on February 16, 2000. The sixth peaked from February 19 (2003) to February 25 (2000) with a high count of 54 on February 21, 2001. The seventh is indicated by a peak count of 55 on March 4, 2002. Peak passage clearly occurred from January 16 to February 16. There was in reality no main spring passage, there were records from March 11 (1999) to May 1 (2002) but no more than three a day seen. Breeding has not been confirmed and it is unlikely to have happened. There were a few summer records. There were two from May 9, 2002 to May 15, 2002 with one to May 23, 2002. In June there was one on June 3, 2001 with two on June 9, 2000, one on June 19, 2000 and one on June 14, 1999. I do not understand what these summer sightings represent. There is an early fall passage from June 23 (2002) to August 13 (1999, 2003), there were four "clustered" influxes. The first peaked from June 23 (2002) to June 29 (1999) with one on both dates. The second is indicated by a peak count of two on July 19, 2000. The third peaked from July 29 (2001) to August 3 (1999) with a high count of four on July 31, 2002. The fourth is

indicated by a peak count of three on August 13, 2003. Now to the main event, the main fall passage. This ran from August 11 (2002) to December 8 (1998), there were ten "clustered" influxes. The first peaked from August 11 (2002) to August 16 (2000) with a high count of ten on August 12, 2001. The second peaked from August 21 (2002) to August 29 (2001) also with a high count of ten on August 29, 2001. The third is indicated by a peak count of 42 on September 15, 2002. The fourth peaked from September 24 (2000) to September 30 (1999) with a high count of 67 on September 24, 2000. The fifth peaked from October 3 (2001) to October 6 (2002) with high counts of 60 on October 6, 2002, 62 on October 3, 2001 and 96 on October 5, 2000. The latter was the highest count during the first five years of the survey. The sixth peaked from October 18 (2000) to October 19 (1999) with a high count of 59 on October 18, 2000. The seventh is indicated by a peak count of 58 on October 29, 2000. The eighth peaked from November 5 (2002) to November 9 (1999) with a high count of 53 on November 7, 2001. The ninth is indicated by a peak count of 67 on November 12, 2000. The tenth peaked from November 24 (2002) to November 30 (1998) with a high count of 77 on November 24, 2002. I have always considered this to be an interesting species. When you look at the fall peak counts there is an interesting pattern. The counts rise from August 12 to October 5 and then decline to November 7. That is normal but the counts then rise again from November 12 to November 30 and decline again to December 7. Counts then stagnate from December 21 to January 9 before climbing again in the spring. Exactly what does this November movement represent? I still feel the influxes should be split as described even if the peak counts for November 30 are split between the fall and winter passages.

Eastern Bluebird (*Sialia sialis*)

This is a vagrant. There was one at the Sand Farm on October 12, 2000. There were six by the Hooper Farms Road gate on October 21, 2002, later one seen at that site on January 5, 2003 with six again on January 7. I believe that the October flock had wintered just to the south. It is an area that I cannot get into. The counts of six are still the highest counts for Zellwood.

Veery (*Catharus fuscescens)*

This is an uncommon fall passage migrant. There was an early record of one on September 5, 2001, then passage noted from September 18 (2002) to October 9 (2002), there were three "clustered" influxes. The first peaked from September 18 (2002) to September 19 (2000) with a high count of two on September 19, 2000. The second peaked from September 24 (2000) to September 26 (2001) with a high count of 11 on September 26, 2001. The third

peaked from October 2 (1999, 2002) to October 7 (2001) with a high count of 12 on October 2, 2002. This is still the highest count for Zellwood. Finally for the fall there was a late record of one on November 3, 1999. There was a single spring record. There was one on May 1, 1999. The counts of 11 and 12 were one day events so there are no influxes to detail.

Gray-cheeked Thrush (*Catharus minimus)*

Surprisingly this has turned out to be a rare fall migrant, just five individuals seen over the five years. The records cover the period September 30 (2001) to October 24 (2001), they indicate a "clustered" influx that peaked from September 30 (2001) to October 6 (1999) with one on September 30, 2001, October 1, 2000, October 2, 2002, October 3, 2001 and October 6, 1999. There was a late record of one on October 24, 2001. The sightings on September 30, 2001 and October 3, 2001 are treated as relating to the same individual.

Bicknell's Thrush (*Catharus bicknelli*)

This is a vagrant. There was a very late record of one on the northern border on May 27, 2000.

Swainson's Thrush (*Catharus ustulatus)*

This is a passage migrant with most sightings in the fall. Seen in the spring from April 9 (1999) to April 24 (2002, 2003), there were two "clustered" influxes. The first peaked from April 15 (2000) to April 16 (2003) with one on both dates. The second peaked on April 24 (2002, 2003) with one on both dates. Seen in the fall from September 16 (2001) to October 7 (2001), there were three "clustered" influxes. The first peaked from September 16 (2001) to September 19 (2000) with one on both dates. The second peaked from September 22 (2002) to September 26 (2001) no more than two a day with the exception of a fall of 36 on September 26, 2001. On that date there were also 11 Veery. The count of 36 is still the highest count for Zellwood. The third is indicated by a peak count of three on October 2, 2002.

Hermit Thrush (*Catharus guttatus*)

This is an uncommon passage migrant and winter visitor. Seen in the fall from October 24 (2001) to November 30 (1998), there were four "clustered" influxes. The first peaked from

October 24 (2001) to October 28 (2002) with one on both dates. The second is indicated by a peak count of one on November 3, 1999. The third peaked from November 12 (2000) to November 18 (2001) with a high count of two on November 17, 2002. That was the highest count during the first five years of the survey! The fourth peaked from November 29 (2002) to November 30 (1998) with one on both dates. There is a seven day gap between the end of the fall passage and the beginning of the winter passage, not sure if this is significant. The winter passage ran from December 8 (2002) to January 1 (2000), there were three "clustered" influxes. The first peaked from December 8 (2002) to December 11 (1999) with one on both dates. The second peaked from December 20 (1998, 2000) to December 21 (2002) with one on all dates. The third is indicated by a peak count of one on January 1, 2000. The early spring passage ran from January 5 (2003) to February 6 (2000), there were three "clustered" influxes. The first peaked from January 5 (2003) to January 7 (1999) with one on both dates. The second is indicated by a peak count of one on January 20, 2002. The third peaked from January 26 (2003) to January 31 (2001) with one on both dates. Finally there was one present from February 23, 2000 to February 25, 2000. It is perhaps surprising that this series of influxes can be identified from a series of ones and zeros.

Wood Thrush (*Hylocichla mustelina*)

This is a very rare fall migrant. There were four records of singles on October 3, 2001, October 9, 2002, October 12, 2000 and October 19, 1999. These records are nicely scattered so no influxes can even be surmised.

American Robin (*Turdus migratorius*)

This is a passage migrant and winter visitor with the greatest numbers in the winter and the early spring. The largest counts are often tied to spells of cold weather. This species is equally at home in the woods or the fields. They do however tend to stick to the fields near the woods so that they can dash for shelter if threatened. Seen in the fall from November 5 (2000, 2002) to November 26 (1999) with a high count of 291 on November 16, 1999. The winter passage followed from November 27 (2001) to January 10 (2001) with a high count of 2,820 on January 3, 2002. To detail the 1998 influxes, there were 13 on November 30 with 23 on December 3, 140 on December 7 and 1,185 0n December 11, then 205 seen on December 16 with 50 on December 18. There were 72 on December 20 with 265 on December 28, then 177 seen on January 1 with 41 on January 7. The count of 2,820 on January 3, 2002 was a one day event during a cold spell. The early spring passage ran from January 7 (2000) to February 26 (2003) with extensions to March 14 in 2000, to March 19 in 2003 and to April 4 in 2001, this

was the stronger of the two spring passages. The highest count was that of 3,100 on March 2, 2003. To detail the 2003 influxes, there were 264 on January 11 with 104 on January 15 and 64 on January 19. There were 125 on January 22 with 145 on January 26, 170 on February 2, 335 on February 5, 1,930 on February 9 and 2,140 on February 15, then 1,490 seen on February 19 with 1,065 on February 23 and 1,050 on February 26. There were 3,100 on March 2 with 1,400 on March 5, 665 on March 9, 40 on March 12, 11 on March 16 and six on March 19. Because the early spring passage overran in three years I am detailing a second year. To detail the 2001 influx, there were 172 on February 11 with 490 on February 14, then 190 seen to February 21 with 130 on February 25, 54 on February 28, 40 on March 3, 35 on March 11, 27 on March 18, six on March 22, two to March 27 and one on April 4. Finally there was the late spring passage, this ran from February 27 (2002) to March 30 (1999) with a high count of 42 on March 14, 2002. There were later records with singles on April 9, 1999, April 16, 2003 and April 20, 1999.

Seen in the fall from November 5 (2000, 2002) to November 26 (1999), there were three "clustered" influxes. The first peaked from November 5 (2002) to November 7 (2001) with a high count of 13 on November 7, 2001. The second peaked from November 12 (2000) to November 18 (1998, 2001) with a high count of 291 on November 16, 1999. The third peaked from November 22 (1999) to November 24 (2002) with a high count of 11 on November 24, 2002. The winter passage followed from November 27 (2001) to January 10 (2001), there were four "clustered" influxes. The first peaked from November 28 (2000) to November 30 (1998, 1999) with a high count of 63 on November 29, 2002. Placing this influx in the winter passage was a judgment call, if it should be better placed in the fall passage it would alter the final date of that passage to December 3 (2000). It would not alter the start date of the winter passage. The second influx is indicated by a peak count of two on December 6, 2000. The third peaked from December 11 (1998) to December 16 (2001) with high counts of 1,185 on December 11, 1998 and 1,376 on December 14, 2002. The fourth peaked from December 28 (1998, 2002) to January 4 (2001) with a high count of 2,820 on January 3, 2002. The early spring passage is in this instance the main spring passage, it ran from January 7 (2000) to February 26 (2003) with extensions to March 14 in 2000, to March 19 in 2003 and to April 4 in 2001. To have three years over-running is very exceptional. There were five "clustered" influxes. The first peaked from January 11 (2003) to January 15 (1999) with a high count of 860 on January 15, 1999. The next two influxes were indicated by isolated peak counts of 570 on January 20, 2002 and 1,725 on January 28, 2000. The fourth peaked from February 14 (2001) to February 17 (2002) with a high count of 2,140 on February 15, 2003. The fifth peaked from February 28 (2001) to March 2 (2003) with a high count of 3,100 on March 2, 2003. This was the highest count during the first five years of the survey. Finally there is the late spring passage, this ran from February 27 (2002) to March 30 (1999), there were two "clustered" influxes. The first peaked from March 11 (1999) to March 14 (2002) with a high count of 42 on March 14, 2002. The second peaked from March 19 (2002) to March 25 (1999) with a high count of 20 on March 25, 1999. There were

later records of singles on April 9, 1999, April 16, 2003 and April 20, 1999. During this five year period there will have been a roost in a citrus grove on the eastern side of CR 437 opposite the eastern end of Hooper Farms Road but I did not record the numbers using this roost. The highest count in later years is that of 240,000 on December 29, 2006, and that total is probably an under-estimate!

Gray Catbird (*Dumetella carolinensis*)

This is a common passage migrant and winter visitor, they can be found in any thick cover. Seen in the winter from November 30 (1998, 2002) to January 11 (1999, 2003) with a high count of 137 on December 2, 2002. To detail the 2002/2003 influxes, there were 100 on November 30 with 137 on December 2, then 84 seen on December 8 with 54 on December 11 and 42 on December 14. There were 104 on December 16 with 101 on December 21, 72 on December 26 and 60 on December 28. There were 113 on December 30 with 125 on January 2, then 114 seen on January 5 with 102 on January 9 and 48 on January 11. The early spring passage followed from January 7 (2000, 2001) to March 11 (2001) with a high count of 93 on January 26, 2003. To continue detailing the 2003 influxes, there were 66 on January 15 with 86 on January 19 and 93 on January 26, then 86 seen on February 2 with 40 on February 5 and 16 on February 9. There were 55 on February, 12 and February 19 with 34 on February 23 and 30 on February 26. There were 37 on March 2 and 13 on March 5. The main spring passage ran from March 7 (1999) to May 13 (2000) with a high count of 78 on April 21, 2003. Back to the 2003 influxes, there were 17 on March 9 with 20 on March 12 and 45 on March 16, then 19 seen on March 19 with ten on March 24. There were 22 on March 26 with 23 on March 29, 16 on April 6 and seven on April 11. There were 34 on April 13 with 47 on April 16 and 78 on April 21, then 74 seen on April 24 with 69 on April 27, 29 on April 30, 12 on May 4 and four on May 7. This last influx is unusual in the length of time that numbers remained high, April 21 to April 27. This would be quite normal in the fall but in the spring when birds are hurrying north? It seems likely that additional birds were arriving at a similar rate to those that were departing. In the late spring there was one on May 21, 2000. In 2003 there was a pair near Hogshead Road from May 12 to June 4 but no evidence of breeding. There was one on June 20, 2001 and I treat this as an early fall record. There was one on July 8, 2001 and July 29, 2001 with two on July 30, 2003. Later there was one from August 4, 2002 to August 14, 2002. Finally in 2002 there were three on September 2 with one on September 4. There are really not enough sightings to call this an early fall passage. The main fall passage ran from September 11 (2002) to December 5

(2001) with a high count of 270 on October 13, 2002. To detail the 2002 influxes, there were two from September 11 to September 26 with seven on September 29, 98 on October 2, 165 on October 6, 207 on October 9 and 270 on October 13, then 223 seen on October 20 with 138 on October 23 and 123 on October 28. There were 140 on November 5 with 81 on November 9 and 36 on November 17. There were 85 on November 21 with 107 on November 24, then 98 seen on November 29.

Seen in the winter from November 30 (1998, 2002) to January 11 (1999, 2003), there were three "clustered"influxes. The first peaked from December 2 (2002) to December 3 (1998) with a high count of 137 on December 2, 2002. The second peaked from December 9 (2001) to December 16 (2002) with a high count of 104 on December 16, 2002. The third peaked from December 30 (1999, 2001) to January 2 (2003) with a high count of 125 on January 2, 2003. The early spring passage followed from January 7 (2000, 2001) to March 11 (2001), there were six "clustered" influxes. The first peaked from January 7 (2000) to January 8 (1999) with a high count of 19 on January 7, 2000. The second peaked from January 15 (1999) to January 20 (2002) with a high count of 60 on January 20, 2002. The third peaked from January 26 (2003) to January 31 (2001) with a high count of 93 on January 26, 2003. The fourth peaked from February 9 (1999) to February 16 (2000) with a high count of 68 on February 14, 2001. The fifth peaked from February 24 (2002) to February 25 (2001) with a high count of 54 on February 24, 2002. The sixth peaked from February 29 (2000) to March 2 (2003) with a high count of 37 on March 2, 2003. Note the pattern to the peak counts with peak passage in late January. This species shows clearly why I divide the spring passage into two segments i.e. the early and the late/main passages. The main spring passage ran from March 7 (1999) to May 13 (2000), there were six "clustered" influxes. The first peaked from March 7 (1999) to March 10 (2000, 2002) with a high count of 62 on March 10, 2002. The second peaked from March 16 (2003) to March 19 (1999) with a high count of 45 on March 16, 2003. The third peaked from March 25 (2000) to March 29 (2003) with a high count of 29 on March 25, 2000. The next two influxes are indicated by isolated peak counts of 26 on April 4, 2001 and 42 on April 14, 1999. The sixth peaked from April 19 (2000, 2001) to April 21 (2002, 2003) with a high count of 78 on April 21, 2003. So this species has three well defined peaks to the spring passage, in late January, early March and mid to late April, an interesting species. In the late spring there was one on May 21, 2000. In 2003 there were a pair near Hogshead Road from May 12 to June 4 but there was no evidence of breeding. There was one on June 20, 2001 and I treat this as an early fall record. There was one on July 8, 2001 and July 29, 2001. There were two on July 30, 2003. Later there was one from August 4, 2002 to August 14, 2002. Finally there were three on September 2, 2002 with one on September 4, 2002. Really there are not enough sightings to describe this as an early fall passage. The main fall passage ran from September 11 (2002) to December 5 (2001), there were seven "clustered" influxes. The first peaked from September 16 (2001) to September 19 (2000) with a high count of three on September 19, 2000. The next two influxes were indicated

by isolated peak counts of 74 on October 5, 2000 and 270 on October 13, 2002. The latter was the highest count during the first five years of the survey. The fourth peaked from October 22 (2000) to October 24 (2001) with high counts of 143 on October 22, 2000 and 148 on October 24, 2001. The fifth is indicated by a peak count of 140 on November 5, 2002. The sixth peaked from November 11 (2001) to November 16 (1999) with a high count of 93 on November 11, 2001. The seventh peaked from November 20 (1998) to November 26 (1999, 2000) with high counts of 101 on November 26, 2000 and 107 on November 24, 2002. The highest counts show a particularly clear picture.

Northern Mockingbird (*Mimus polyglottos)*

This is a resident and it seems a passage migrant and winter visitor. During the Breeding Bird Survey a total of 55 pairs located in 1999 with 51 pairs in 2000, 59 pairs in 2001, 62 pairs in 2002 and 61 pairs in 2003. Unlike most other resident species the numbers did not climb much over the five years. The records do show a pattern of influxes in the fall, the winter and the spring. This fact appears to indicate that there was passage during these seasons. I am therefore detailing the records for 2002/2003, a year chosen at random, so that you can see the various influxes that I am talking about. So the winter passage ran from November 30 (2002) to January 11 (1999) with a high count of 28 on December 15, 2000. To detail the 2002/2003 influxes, there were 15 on November 30 with 25 on December 2, then 22 seen to December 11 with 15 on December 14. There were 19 on December 16 with 24 on December 21, then 23 on December 26 with 17 on December 28. There were 22 on December 30 with 24 on January 2, then 21 seen to January 7. The early spring passage followed and this ran from January 4 (2001) to March 9 (2003) with a high count of 31 on January 24, 2002. To detail the 2002 influxes, there were 24 on January 9 with 23 on January 11, 21 on January 19, 14 on January 22 and 13 on January 26. There were 15 on January 30 with 19 on February 5 and 20 on February 15, then 19 seen on February 23 with 14 on February 26. There were 20 on March 2 with 16 on March 5 and 13 on March 9. The main spring passage ran from March 4 (2002) to May 24 (2001) although in 2002 and 2003 this passage ended in late April. The highest count was that of 53 on April 13, 2003. To detail the 2003 records, there were 26 on March 12 with 39 on March 16, then 25 seen to March 24. There were 28 on March 26 with 23 on March 29 and 22 on April 2. There were 25 on April 6 with 53 on April 13, then 32 seen on April 21 with 30 on April 27 and 16 on April 30. The summer was different, whilst there were individual influxes there was none of the clustering of the peak counts that I would expect if passage was taking place. I treat the summer as running from April 28 (2002) to June 19 (1999, 2000, 2002). The peak counts were 26 on May 7, 2003, 33 on May 21, 2000, 47 on May 31, 1999, 30 on June 1, 2003, 29 on June 3, 2001 and 23 on June 12, 2002. The only record of fledged young relates to two on May 30,

2002. There is a post-breeding gathering from June 18 (2003) to August 7 (2002) with a high count of 102 on July 6, 2003. Species such as this do not all gather at one location rather a number of family parties may gather into a loose group at a favored location with other groups at other locations. To detail the 2003 passage, there were 21 on June 18 with 23 on June 26, 40 on June 29, 46 on July 2, 84 on July 4 and 102 on July 6, then 65 seen on July 13 with 52 on July 19, 32 on July 23, 26 on July 27 and 23 on July 30. The fall passage ran from August 5 (2001, 2003) to December 3 (2000) with a high count of 81 on September 29, 2002. To detail the 2002 influxes, there were 14 on August 11 with 15 on August 14, then 12 seen to August 21. There were 24 from August 25 to September 2 with 19 on September 4 and 15 on September 8. There were 22 on September 11 with 23 on September 15, 41 on September 18, 67 on September 22 and 81 on September 29, then 39 seen on October 2. There were 42 on October 6 with 54 on October 9, then 42 seen on October 16 with 24 on October 20 and 21 on October 23. There were 33 on October 28 with 16 to November 9 and seven on November 17. There were 15 on November 21 with 28 on November 24, then 14 seen on November 29. That is a total of six influxes, for the five years as a whole there were 11 influxes. I have detailed all the influxes for one year, excluding the summer in the hope that someone will come up with an explanation as to what they represent.

The winter passage ran from November 30 (2002) to January 11 (1999), there were four “clustered” influxes. The first peaked from December 2 (2001, 2002) to December 4 (1999) with a high count of 25 on December 2, 2002. The second peaked from December 15 (2000) to December 16 (2001) with a high count of 28 on December 15, 2000. The third peaked from December 21 (2002) to December 22 (1999, 2000) with a high count of 24 on December 21, 2002. The fourth peaked from December 27 (2001) to January 2 (2003) with a high count of 24 on January 2, 2003. The early spring passage came next from January 4 (2001) to March 9 (2003), there were eight “clustered” influxes. The first peaked from January 9 (2003) to January 11 (2000) with a high count of 24 on January 9, 2003. The next two influxes are indicated by isolated peak counts of 29 on January 17, 2001 and 31 on January 24, 2002. The fourth peaked from January 27 (1999) to January 31 (2001) with a high count of 23 on January 31, 2001. The fifth peaked from February 8 (2000) to February 9 (1999) with a high count of 21 on February 9, 1999. The sixth is indicated by a peak count of 20 on February 15, 2003. The seventh peaked from February 24 (2002) to February 25 (2000, 2001) with a high count of 21 on February 25, 2001. The eighth is indicated by a peak count of 20 on March 2, 2003. The main spring passage ran from March 4 (2002) to May 24 (2001) although in 2002 and 2003 this passage ended in late April. There were seven “clustered” influxes. The first peaked from March 7 (1999) to March 11 (2001) with a high count of 20 on March 11, 2001. The second peaked from March 16 (2003) to March 18 (1999) with high counts of 39 on March 17, 2002 and March 16, 2003. The third peaked from March 25 (2000) to March 30 (1999) with a high count of 31 on March 27, 2002. The fourth is indicated by a peak count of 20 on April 6, 2000. The fifth peaked from April

13 (2003) to April 16 (2001) with a high count of 53 on April 13, 2003. The sixth is indicated by a peak count of 28 on April 21, 2002. The seventh peaked from May 2 (2000, 2001) to May 4 (1999) with a high count of 34 on May 2, 2001. The summer was different, whilst there were individual influxes there was none or little of the clustering of the peak counts that I would expect if passage was taking place. The summer ran from April 28 (2002) to June 19 (1999, 2000, 2002). The peak counts were 26 on May 7, 2003, 33 on May 21, 2000, 47 on May 31, 1999, 30 on June 1, 2003, 29 on June 3, 2001 and 23 on June 12, 2002. There was a post-breeding gathering from June 18 (2003) to August 7 (2002), there were four "clustered" influxes. The first peaked from June 23 (2002) to June 27 (2001) with a high count of 51 on June 27, 2001. The second peaked from July 6 (2003) to July 8 (2000) with a high count of 102 on July 6, 2003. This was the highest count during the first five years of the survey. The third is indicated by a peak count of 38 on July 14, 2002. The fourth peaked from July 20 (1999) to July 27 (2001) with a high count of 35 on July 27, 2001. The fall passage ran from August 5 (2001, 2003) to December 3 (2000), there were a host of "clustered" influxes, 11 in all. The first peaked from August 5 (2001) to August 10 (1999) with a high count of 32 on August 8, 2003. The second is indicated by a peak count of 15 on August 14, 2002. The third peaked from August 25 (2002) to August 26 (2001) with a high count of 31 on August 26, 2001. The fourth is indicated by a peak count of 76 on September 19, 2000. The fifth peaked from September 29 (2002) to September 30 (1999) with a high count of 81 on September 29, 2002. The sixth peaked from October 7 (2001) to October 9 (2002) with a high count of 54 on October 9, 2002. The seventh peaked from October 16 (1998) to October 22 (2000) with a high count of 66 on October 22, 2000. The next two influxes are indicated by isolated peak counts of 33 on October 28, 2002 and six on November 11, 1998. The tenth peaked from November 18 (2001) to November 19 (1999, 2000) with a high count of 30 on November 19, 2000. The eleventh peaked from November 24 (2002) to November 25 (1998) with a high count of 28 on November 24, 2002. Whilst the pattern is not totally clear the high counts do indicate a peak fall passage from mid-September to mid-October.

Brown Thrasher (*Toxostoma rufum*)

This is a resident, a passage migrant and probably a summer visitor. This is a very secretive species so it is hard to identify its exact status. Its preferred habitat is areas of thick scrub especially if there are tangles of vines. During the Breeding Bird Survey a total of seven pairs located in 1999 with 12 pairs in 2000, 20 pairs in 2001, 20 pairs in 2002 and 22 pairs in 2003. There were 38 pairs in 2004, this species had finally moved out into the fields. The summer passage appears to run from April 28 (2002) to July 4 (2003) with a high counts of ten on June 19, 2000 and June 24, 2001. Fledged young were noted with two on June 9, 2000, five

on June 19, 2000, three on June 24, 2001 and four on June 29, 1999. To detail the 2003 influxes, there were two on May 18 with three on May 21, and six on May 29, then two seen on June 1. There were three on June 4 with four on June 8 and seven on June 11, then two seen on June 16. There were four on June 18 with nine on June 26 and July 2, then five seen on July 4. Whilst there was no post-breeding gathering as such there were roaming family parties from June 25 (1999) to September 2 (2002) with a high count of 20 on July 8, 2001. To detail the 2001 influxes, there were eight on July 1 with ten on July 4 and 20 on July 8, then nine seen on July 11 with six on July 8 and three on July 22. There were eight on July 25 with ten on July 27, then seven seen on July 29 with six on August 2. There were 17 on August 5 with eight on August 12, seven on August 14, six on August 22 and two on August 26. The fall passage followed from August 29 (2001) to November 7 (2001) with a high count of 23 on October 7, 2001. To continue detailing the 2001 influxes, there were nine on August 29 with 11 on September 5, then six seen on September 9 with one on September 13. There were seven on September 16 with 12 on September 19, then ten seen to September 26 with nine on September 30. There were 15 on October 3 with 23 on October 7, then 15 seen on October 14 with six on October 17. There were seven on October 21 with 12 on October 24, then five seen on November 1 with two on November 4 and one on November 7. Now something unusual happened, all passage stopped. There was no passage from October 28 (2002) to March 9 (2003), just one to two in the area. In 2003 there was no passage through to May 18! In the other years there were indications of a very minor spring passage from February 23 (2000) to May 8 (2001) with a high count of five on March 17, 2002. This species tells a different story.

The summer passage ran from April 28 (2002) to July 4 (2003), as usual there were "clustered" influxes, six in all. The first peaked from April 28 (2002) to May 2 (2000) with four on both dates. The second is indicated by a peak count of four on May 14, 2000. The third peaked from May 23 (2000) to May 29 (2003) with a high count of six on May 29, 2003. The fourth peaked from June 5 (2002) to June 12 (1999) with a high count of seven on June 11, 2003. The fifth peaked from June 16 (2002) to June 19 (2000) with a high count of ten on June 19, 2000. The sixth peaked from June 24 (2001) to June 26 (2003) with a high count of ten on June 24, 2001. An event somewhat similar to a post-breeding gathering occurred from June 25 (1999) to September 2 (2002), there were six "clustered" influxes. The first peaked from July 4 (1999, 2000) to July 8 (2001) with a high count of 20 on July 8, 2001. The second peaked from July 19 (2000) to July 21 (2002) with a high count of 12 on July 19, 2000. The third peaked from July 27 (2001) to July 31 (2002) with a high count of ten on July 27 (2001). The fourth peaked from August 3 (1999) to August 5 (2001, 2003) with a high count of 17 on August 5, 2001. The fifth peaked from August 11 (2002) to August 18 (1999) with a high count of 12 on August 11, 2002. The sixth peaked from August 23 (2000) to August 25 (2002) with a high count of 13 on August 23, 2000. The fall passage followed from August 29 (2001) to November 7 (2001), there were seven "clustered" influxes. The first is indicated by a peak count of 11 on September 5,

2001. The second peaked from September 10 (1999) to September 13 (2000) with a high count of 15 on September 13, 2000. The third is indicated by a peak count of 12 on September 19, 2001. The fourth peaked from September 29 (2002) to September 30 (1999) with a high count of 11 on September 29, 2002. The fifth peaked from October 5 (2000) to October 7 (2001) with a high count of 23 on October 7, 2001. This was the highest count during the first five years of the survey. The last two influxes were indicated by isolated peak counts of 11 on October 14, 1999 and 12 on October 24, 2001. Now something unusual happened, all passage stopped, from October 28 (2002) to March 9 (2003) there was no passage, just one to two in the area! In 2003 there was no passage through to May 18. In the other years there were indications of a very minor spring passage from February 23 (2000) to May 8 (2001), there were five "clustered" influxes. The first peaked from February 23 (2000) to February 25 (2001) with a high count of four on February 23, 2000. The second peaked from March 10 (2000) to March 12 (2003) with a high count of four on March 10, 2000. The third is indicated by a peak count of five on March 17, 2002. The fourth peaked from March 31 (2002) to April 3 (2000) with another high count of four on March 31, 2002. The last influx peaked from April 19 (2000) to April 26 (2001) with four on both dates. To go back to the fall passage, this has become a more significant event since 2002. The highest counts are those of 36 on October 12, 2005, 46 on September 30, 2007 and 74 on October 8, 2008. All these dates would fit in with influxes identified for the five years of this analysis.

European Starling (*Sturnus vulgaris*)

This is a resident, a passage migrant, a winter visitor with a significant post-breeding gathering. During the Breeding Bird Survey a total of 16 pairs located in 1999 with 11 pairs in 2000, eight pairs in 2001, 11 pairs in 2002 and nine pairs in 2003. The only record of fledged young comes from 2003; there was one on May 4. Most nest sites were in old buildings but one nest was built in an old woodpecker hole. Nest sites were only near or in buildings on the northern and eastern borders. There does not appear to be a summer as such. The main spring passage leads straight into the post-breeding gathering. The local breeding population is so small that these outside events swamp it. The post-breeding gathering ran from May 12 (2003) to August 14 (2001) with a high count of 860 on July 8, 2002. These birds gather in areas with groves of Elderberry. They and the Fish Crows gorge on the ripe fruit of these shrubs. To detail the 2002 influxes, there were 52 on May 20 with 94 on May 23, then 80 seen on May 27 with 16 on May 30. There were 92 on June 2 with 287 on June 10, 306 on June 16, 374 on June 19, 565 on June 23, 650 on June 30 and 860 on July 8, then 260 seen on July 10 with 240 on July 14, 200 on July 17, 16 on July 21, eight on July 25 and one on July 28. The early fall passage was a minimal event it ran from July 30 (2000) to September 27 (2000) with a high count of 25 on

August 15, 1998. The main fall passage followed from September 23 (1999) to December 4 (1999) with a high count of 260 on October 7, 2001. To detail the 2001 influxes, there were 11 on September 26 with 15 on September 30, 150 on October 3 and 260 on October 7, then 122 seen on October 10 with 110 on October 17 and three on October 21. There were 26 on October 24 with 21 on November 7 and 13 on November 11. There were 27 on November 15 with two to November 25 and one to November 29. Next came the winter passage, this ran from November 20 (1998) to January 10 (2001, 2002) with a high count of 390 on December 3, 1998. To detail the 1998/1999 influxes, there were 91 on November 20 with 150 on November 25, 158 on November 30 and 390 on December 3, then 120 seen on December 8 with 72 on December 16, 65 on December 20 and 30 on December 28. There were 40 on December 31 with 120 on January 1, then 18 seen on January 7 with 12 on January 8. November 20 was a very early start date for the winter passage but when that influx runs to December 28 you can see why it is in the winter passage. The early spring passage ran from January 1 (2001) to March 6 (2002) with a high count of 225 on February 9, 1999. To detail the 1999 influxes, there were 60 on January 11 with 110 on January 15, then 51 seen on January 19. There were 75 on January 27 with 109 on January 29, then 35 seen on February 3 with 28 on February 5. There were 225 on February 9 with 54 on February 10 and 46 on February 17. After that date the area was closed for two months. Locally we would be looking for the summer passage but instead we have the main spring passage, this ran from February 29 (2000) to May 15 (2002) with a high count of 173 on March 27, 2000. Whilst the post-breeding gathering was the most obvious event the strong passage in October/early November and late March/early April surprised me.

The post-breeding gathering ran from May 12 (2003) to August 14 (2001), there were eight “clustered” influxes. The first three were indicated by isolated peak counts of six on May 12, 2003, 94 on May 23, 2002 and 155 on June 8, 2003. The fourth peaked from June 18 (2003) to June 19 (1999) with a high count of 680 on June 19, 1999. The fifth peaked from June 27 (2001) to June 30 (2000) with a high count of 850 on June 27, 2001. The sixth peaked from July 6 (1999) to July 11 (2001) with high counts of 695 on July 6, 1999, 775 on July 11, 2001 and 860 on July 8, 2002. The latter was the highest count during the first five years of the survey. The seventh peaked from July 13 (2003) to July 16 (1999, 2000) with high counts of 590 on July 16, 2000 and 735 on July 16, 1999. The eighth peaked from July 23 (2003) to July 25 (2001) with a high count of 242 on July 25, 2001. Note how the counts peaked in late June and early July. The fall is a veritable mass of basic influxes, many of these influxes only lasting one to two weeks. The early fall passage was the lightest event of the year, it ran from July 30 (2000) to September 27 (2000), there were five “clustered” influxes. The first peaked from August 2 (2000) to August 7 (2002) with a high count of 18 on August 2, 2000. The second peaked from August 15 (1998) to August 16 (2001) with a high count of 25 on August 15, 1998. The third peaked from August 23 (2000) to August 27 (1999) with high counts of seven on August 27, 1999 and August 26, 2001. The fourth peaked from September 5 (2001) to September 8 (1999) with a high count of

22 on September 7, 2000. The fifth peaked from September 15 (2002) to September 19 (2000) with a high count of 19 on September 16, 2001. The numbers noted for this passage are so very low when compared to the preceding post-breeding gathering. For many species the line that separates the various passages is there but obscured, here it is exceedingly clear. The main fall passage ran from September 23 (1999) to December 4 (1999), there were seven “clustered” influxes. The first peaked from September 29 (2002) to October 2 (1999) with a high count of 16 on September 29, 2002. The next two influxes were indicated by isolated peak counts of 260 on October 7, 2001 and 16 on October 15, 2000. The fourth peaked from October 23 (2002) to October 28 (2001) with a high count of 114 on October 28, 2001. The fifth peaked from November 5 (2002) to November 9 (1999) with a high count of 154 on November 9, 1999. The sixth peaked from November 15 (2001) to November 21 (2002) with a high count of 27 on November 15, 2001. The seventh is indicated by a peak count of 28 on November 28, 2000. Next came the winter passage, this ran from November 20 (1998) to January 10 (2001, 2002), there were five “clustered” influxes. The first peaked from December 3 (1998) to December 6 (2000) with a high count of 390 on December 3, 1998. The second peaked from December 14 (2002) to December 16 (1998) with a high count of 72 on December 16, 1998. The third peaked from December 19 (1999) to December 21 (2001) with a high count of 119 on December 21, 2001. The fourth peaked from December 30 (2002) to January 3 (2002) with a high count of 130 on January 3, 2002. The fifth is indicated by a peak count of 220 on January 7, 2001. The early spring passage ran from January 1 (2001) to March 6 (2002), there were five “clustered” influxes. The first peaked from January 11 (2000) to January 15 (1999) with a high count of 110 on January 15, 1999. The second peaked from January 21 (2001) to January 22 (2003) with a high count of 40 on January 22, 2003. The third peaked from January 29 (1999) to February 3 (2002) with a high count of 109 on January 29, 1999. The fourth peaked from February 6 (2000) to February 9 (1999, 2003) with a high count of 225 on February 9, 1999. The fifth peaked from February 18 (2001) to February 24 (2002) with a high count of 21 on February 24, 2002. The main spring passage continues the stream of basic influxes, this passage ran from February 29 (2000) to May 15 (2002), there were seven “clustered” influxes. This makes for a grand total of 37 “clustered” influxes for the year. The first influx peaked on March 3 (2000, 2001) with a high count of 32 on March 3, 2000. The second peaked from March 9 (2003) to March 11 (1999) with a high count of 36 on March 9, 2003. The third peaked from March 18 (1999) to March 22 (2001) with a high count of 20 on March 18, 1999. The fourth peaked from March 27 (2000) to April 2 (2003) with a high count of 173 on March 27, 2000. The fifth is indicated by a peak count of 11 on April 16, 2001. The sixth peaked from April 24 (2002, 2003) to April 30 (2000) with a high count of 43 on April 26, 1999. The seventh peaked on May 6 (2001, 2002) with a high count of 13 on May 6, 2001. The post-breeding gathering came next so where is the summer passage?

American Pipit (*Anthus rubescens)*

This is a passage migrant and winter visitor. This species is very habitat dependent in that it needs fields with very short grass, ploughed fields or area of dried mud. Seen in the fall from October 21 (1998) to December 4 (1999), there were three “clustered” influxes. It may not be significant but this species was first seen a little later each year i.e. October 21, 1998, October 26, 1999, October 29, 2000, November 7, 2001 and November 9, 2002. The highest count was that of 370 on November 20, 1998. To detail the 1998 influx, there was one on October 21 with six on October 29, ten on November 2, 56 on November 6, 217 on November 11, 320 on November 18 and 370 on November 20, then 355 seen on November 25 with 35 on November 30. The winter passage ran from December 3 (1998) to January 4 (2000, 2001) with a high count of 570 on December 8, 1998. To continue detailing the 1998/1999 influx, there were 430 on December 3 with 570 on December 8 and December 20, then 235 seen on December 31 with 170 on January 1. The count did drop to 480 on December 16 between the two counts of 570 but I am treating the population as stable. There was a single spring passage and this ran from January 3 (2002) to April 17 (1999) with a high count of 395 on January 7, 1999. To continue detailing the 1999 influxes, there were 395 on January 7 with 175 on January 8 and 157 on January 12. There were 220 on January 15 with 270 on January 19, 315 on January 27 and 335 on January 29, then 218 seen on February 3 with 35 on February 5 and 20 on February 9. There were 185 on February 10 with 75 on February 17 when the area closed. There were 150 on March 11 with 20 on March 13. There were 65 on March 16 with 115 on March 23 and 220 on April 6, then 210 seen on April 14 with 105 on April 17. Because of the gap from April 17 to March 11 I am detailing the records for 2000 from February 16. There were 48 on February 16 with 120 on February 21 and 125 on February 23, then 110 seen on February 25 with 35 on March 3, 29 on March 7, ten on March 10 and one on March 14.

Seen in the fall from October 21 (1998) to December 4 (1999), there were three “clustered”influxes. The first is indicated by a peak count of 273 on November 14, 1999. The second peaked from November 19 (2000) to November 20 (1998) with as high count of 370 on November 20, 1998. The third peaked from November 24 (2002) to November 26 (1999) with a high count of 143 on November 26, 1999. The winter passage ran from December 3 (1998) to January 4 (2000, 2001), there were four “clustered” influxes. The first peaked from December 5 (2001) to December 8 (1998) with a high count of 570 on December 8, 1998. This was the highest count during the first five years of the survey. The second peaked from December 15 (2000) to December 16 (2002) with a high count of 308 on December 16, 2002. The third peaked from December 22 (1999) to December 26 (2002) with a high count of 145 on December 22, 1999. The fourth is indicated by a peak count of 29 on January 1, 2001. There was a single spring passage, this ran from January 3 (2002) to April 17 (1999), there were eight “clustered” influxes. The first peaked from January 5 (2003) to January 7 (1999) with a high

count of 395 on January 7, 1999. The second peaked from January 11 (2000) to January 13 (2002) with a high count of 257 on January 13, 2002. The third peaked from January 26 (2003) to January 29 (1999) with high counts of 248 on January 28, 2001 and 335 on January 29, 1999. The fourth peaked from February 6 (2002) to February 11 (2001) with a high count of 185 on February 10, 1999. The fifth peaked from February 20 (2002) to February 25 (2001) with high counts of 125 on February 23, 2000 and February 20, 2002. The sixth peaked from March 2 (2003) to March 3 (2000) with a high count of 35 on March 3, 2000. After January 29 (1999) all the highest counts gradually fell to March 3 (2000), surprisingly there is a significant late spring passage. The seventh influx peaked from March 10 (2002) to March 16 (2003) with high counts of 150 on March 11, 1999 and 185 on March 10, 2002. The last influx peaked from March 29 (2003) to April 6 (1999) with a high count of 220 on April 6, 1999.

Cedar Waxwing (*Bombycilla cedrorum)*

This is basically a spring passage migrant. It is very uncommon in the winter and rare in the fall. Initially many were to be seen out in the weedy fields but later as shrubs took over they returned to their more normal woodland habitat. There are only two fall records, there being singles on October 23, 2002 and November 17, 2002. Seen in the winter from November 28 (2000) to December 27 (2001) with a high count of 35 on December 11, 1998. There were no records for 1999. Whilst the numbers were low there was a marked early spring passage from January 3 (2002) to March 18 (2001) with a high count of 76 on February 5, 1999. To detail the 2001 influxes, there was one on January 4 with 13 on January 7 and 43 on January 10, then 28 seen on January 14 with two on January 17. There were eight on January 21 with 24 on January 28, then ten seen on January 31 with four on February 4. There were 15 on February 11 with 16 on February 18 and 64 on February 21, then three seen on February 25. The main spring passage followed from March 3 (2001) to May 22 (1999) with a high count of 615 on April 6, 1999. To detail the 1999 influxes, there were eight on March 6 with three on March 13 and two on March 18. There were six on March 23 with 14 on March 25, 314 on March 30 and 615 on April 6, then 367 seen on April 9 with 248 on April 14 and 227 on April 17. There were 259 on April 20 with 178 on April 23. There were 201 on April 26 with 480 on May 1 and 570 on May 4, then 135 seen on May 7 with 90 on May 10 and 53 on May 14. There were 125 on May 18 with three on May 22.

There are only two fall records there being singles on October 23, 2002 and November 17, 2002. Seen in the winter from November 28 (2000) to December 27 (2001), there were three “clustered” influxes. There were no records for 1999. The first influx is indicated by a peak count of 16 on November 28, 2000. The second peaked from December 11 (1998) to December 14 (2002) with a high count of 35 on December 11, 1998. The third is indicated by a peak count

of two on December 26, 2002. Whilst numbers low there was a marked early spring passage from January 3 (2002) to March 18 (2001), there were seven "clustered" influxes. The first is indicated by a peak count of 12 on January 3, 2002. The second peaked from January 10 (2001) to January 11 (2000) with a high count of 43 on January 10, 2001. The third is indicated by a peak count of five on January 19, 1999. The fourth peaked from January 27 (2002) to January 28 (2000, 2001) with a high count of 26 on January 28, 2000. The fifth peaked from February 5 (1999, 2003) to February 8 (2000) with a high count of 76 on February 5, 1999. The sixth peaked from February 17 (1999) to February 19 (2003) with a high count of 36 on February 17, 1999. The seventh peaked from February 21 (2001) to February 25 (2000) with a high count of 64 on February 21, 2000. The main spring passage followed from March 3 (2001) to May 22 (1999), again there were seven "clustered" influxes. Numbers remained low in March but passage was heavy in April and May. The first influx peaked from March 3 (2001) to March 6 (1999) with a high count of 30 on March 3, 2001. The second is indicated by a peak count of two on March 12, 2003. The third peaked from March 22 (2001) to March 25 (2000) with a high count of 18 on March 22, 2001. Whilst the early spring passage normally ends at the end of February or in the first few days of March in this instance these three influxes may better fit that passage. If so the early spring passage ran from January 3 (2002) to April 2 (2003) with ten "clustered" influxes, whilst the main spring passage ran from March 23 (1999) to May 22 (1999) with four "clustered" influxes. Now to the main event, the first influx peaked from April 6 (1999) to April 11 (2003) with a high count of 615 on April 6, 1999. This was the highest count during the first five years of this survey. The second is indicated by a peak count of 259 on April 20, 1999. The third peaked from May 2 (2000) to May 7 (2003) with high counts of 256 on May 2, 2000, 415 on May 4, 2001 and 570 on May 4, 1999. The last influx is indicated by a peak count of 125 on May 18, 1999. Hardly any are seen in the fall and winter. Numbers are a little higher in the early spring so from which direction do these birds appear in April and May? This is yet another thing that has always puzzled me.

Blue-winged Warbler (*Vermivora pinus*)

This is a very rare passage migrant, just four records of five birds. For the spring passage there was one on April 26, 1999. For the early fall passage there was one on August 14, 2002 with one on August 27, 1999 and two on September 3, 2000. The latter is still the highest count for the survey. The records for August 27 and September 3 may indicate the location of an influx.

Tennessee Warbler (*Vermivora peregrina*)

This is a regular fall passage migrant but there are only two spring records. There were two on April 17, 1999 and one on May 1, 1999. Seen in the fall from August 31 (1999) to October 23 (1999), there are six "clustered" influxes. The first two are indicated by isolated peak counts of one on August 31, 1999 and one on September 5, 2001. The third peaked from September 17 (1999) to September 19 (2000) with a high count of seven on September 19, 2000. The fourth peaked from September 26 (2001) to September 27 (2000) with a high count of five on September 27, 2000. The fifth peaked from October 2 (1999) to October 6 (2002) with high counts of two on October 2, 1999 and October 5, 2000. The sixth peaked from October 13 (2002) to October 14 (1999) with a high count of seven on October 13, 2002. The counts of seven were the highest counts during the first five years of the survey. To detail the 2000 influx, there were seven on September 19 and September 21 with two on September 24. There were five on September 27 with two on October 5 and one on October 12. To detail the 2002 influx, there was one on October 6 and October 9 with seven on October 13, then three seen on October 16 with one on October 20.

Orange-crowned Warbler (*Vermivora celata)*

This is a passage migrant and winter visitor. During the winter this species is to be found in thick scrub near water. Seen in the fall from October 26 (1999) to December 14 (1999) with a high count of 16 on November 21, 2002. To detail the 2002 influxes, there were five on October 28 with three on November 5. There were five on November 9 none then seen to November 17. There were five on November 17 with 16 on November 21, then nine seen to November 29 with seven on November 30. There were nine on December 2 with 11 on December 8, then six seen on December 11. The winter passage ran from December 3 (2000) to January 18 (2000) with a high count of 36 on December 15, 2000. To detail the 2000/2001 influxes, there were 11 on December 3 with 32 on December 6 and 36 on December 15, then 15 seen on December 17. There were 17 on December 20 with 28 on December 22, then 17 seen on January 1 with ten on January 4. There were 28 on January 7 with 13 on January 10. The single spring passage ran from January 7 (2002) to March 27 (2000, 2001) with a high count of 23 on January 17, 2001. To detail the 2001 influxes, there were 17 on January 14 with 23 from January 17 to January 24, then 14 seen on January 31 with ten on February 4, seven on February 7, four on February 11, three on February 14 and two to February 25. There were five on February 28 with four on March 3, two on March 11 and singles on four dates to March 27.

Seen in the fall from October 26 (1999) to December 14 (1999), there were five "clustered" influxes. The first is indicated by a peak count of five on October 28, 2002. The second peaked from November 8 (2000) to November 9 (1999, 2002) with a high count of eight on November 8, 2000. The third peaked from November 18 (2001) to November 21 (2002) with

a high count of 16 on November 21, 2002. The fourth peaked from November 28 (2000) to December 3 (1998) with a high count of 15 on November 28, 2000. The fifth peaked from December 7 (1999) to December 8 (2002) with a high count of 11 on December 8, 2002. Normally this last influx would have been placed in the winter passage but this is a very late migrant and the pattern of the highest counts suggests that it belongs in the fall passage. The winter passage ran from December 3 (2000) to January 18 (2000), there were four "clustered" influxes. The first peaked from December 13 (2001) to December 19 (1999) with a high count of 36 on December 15, 2000. This is still the highest count for Zellwood. The second is indicated by a peak count of 28 on December 22, 2000. The third peaked from December 30 (1999, 2001) to January 2 (2003) with a high count of 19 on January 2, 2003. The fourth peaked on January 7 (1999, 2000, 2001) with a high count of 28 on January 7, 2001. It is unusual for the winter passage to be the strongest event but in this case it is. There was a single spring passage and it ran from January 7 (2002) to March 27 (2000, 2001), there were eight "clustered"influxes. The first is indicated by a peak count of 15 on January 13, 2002. The second peaked from January 17 (2001) to January 19 (2003) with a high count of 23 on January 17, 2001. The third peaked from January 27 (1999) to January 28 (2000) with a high count of seven on January 28, 2000. The fourth peaked from February 3 (2002) to February 9 (1999) with a high count of ten on February 3, 2002. The fifth is indicated by a peak count of 12 on February 15, 2003. The sixth peaked from February 28 (2001) to February 29 (2000) with a high count of 15 on February 29, 2000. The seventh peaked from March 4 (2002) to March 6 (1999) with a high count of nine on March 4, 2002. The eighth is indicated by a peak count of two on March 19, 1999. If the pattern of the highest counts means anything then the records suggest two separate events in the spring. The first covered the month of January peaking in mid-month. The second covered February and March peaking in late February.

Nashville Warbler (*Vermivora ruficapilla)*

This is a vagrant with seven records for the five years, only singles seen. There were two fall records with singles on October 10, 2001 and November 27, 2001. There were no winter records. Seen in the early spring from January 2 (2003) to March 18 (1999). There were singles from January 2, 2003 to January 11, 2003, from January 11, 1999 to January 15, 1999, on January 24, 2001 and on January 28, 2000. Finally there was one by Canal Road on February 5, 1999. There was one at the same location from March 13, 1999 to March 18, 1999. Whilst this may be the same individual this area was checked on every visit. Three at least were thought to be of the western race V.r.*ridgwayi*, these were the individuals in 1999 and 2003.

Northern Parula (*Parula americana)*

This is a summer visitor and passage migrant. During the Breeding Bird Survey a total of two pairs located in 1999 and 2000 with ten pairs in 2001, six pairs in 2002 and ten pairs again in 2003. The only note on fledged young relates to two on June 25, 1999. There was a spring passage from February 10 (2002) to April 15 (2000) with a high count of 15 on March 5, 2003. To detail the 2003 influxes, there were six on March 2 with 15 on March 5, then 11 seen on March 9 with six on March 12 and three on March 16. There were seven on March 19 with three on March 26 and two on March 29. There were three on April 2 with four on April 6, then three seen on April 11 with two on April 13. The situation is now less clear, the summer appears to run from April 3 (2002) to July 10 (2002) with high counts of seven on April 17, 1999, six on May 4, 2003 and nine on June 30, 2002. With the exception of 2002 there were no sightings from July 11 to August 10. After the young fledge the local breeding population appears to leave the area (see Barn Swallow). In 2002 there were two on July 14 with singles on three dates to August 7. There was a fall passage from August 11 (2002) to October 19 (1999) with a high count of seven on September 21, 2000. To detail the 2000 influx, there were two on September 10 with four on September 19 and seven from September 21 to September 27, then four seen to October 5. That was it! No winter records.

The spring passage ran from February 10 (2002) to April 15 (2000), there were five "clustered" influxes. The first peaked from February 25 (2001) to February 29 (2000) with a high count of 11 on February 25, 2001. The second peaked from March 5 (2003) to March 10 (2002) with high counts of ten on March 10, 2002 and 15 on March 5, 2003. The latter was the highest count during the first five years of the survey. The third peaked from March 18 (2000) to March 19 (2003) with a high count of seven on March 19, 2003. The fourth is indicated by a peak count of five on March 27, 2001. The fifth peaked from April 3 (2000) to April 6 (2003) with a high count of four on April 6, 2003. The situation is now less clear, the summer appears to run from April 3 (2002) to July 10 (2002). There are a series of "clustered" influxes from April 8 (2001) to May 26 (2003), five in all. It would appear that overlapping our "summer", passage continues to the north through to late May. The first two were indicated by isolated peak counts of three on April 11, 2001 and seven on April 17, 1999. The third peaked from April 22 (2001) to April 24 (2002) with a high count of three on April 24, 2002. The fourth peaked from May 2 (2000) to May 4 (2003) with a high count of six on May 4, 2003. The fifth peaked from May 8 (2001) to May 10 (1999) with three on both dates. During our "summer" there are two "clustered" influxes that I suspect relate to the departure of the local breeding population. The first peaked from June 6 (2000) to June 10 (2001) with a high count of four on June 10, 2001. The second peaked from June 29 (1999) to July 1 (2001) with a high count of nine on June 30, 2002. With the exception of 2002 there were no sightings from July 11 to August 10. After the young fledge the local breeding population appears to leave the area. In 2002 there were two on July 14

with singles on three dates to August 7. There was a fall passage from August 11 (2002) to October 19 (1999), there were six “clustered” influxes. The first peaked from August 12 (2001) to August 14 (2002) with a high count of three on August 14, 2002. The second peaked from August 22 (2001) to August 25 (1998) with a high count of three on August 25, 1998. The third peaked from September 8 (2002) to September 9 (2001) with a high count of three on September 9, 2001. The fourth peaked from September 17 (1999) to September 21 (2000) with a high count of seven on September 21, 2000. The fifth peaked from October 2 (2002) to October 6 (1999) with a high count of four on October 6, 1999. The sixth is indicated by a peak count of two on October 14, 2001. There were no winter records.

Yellow Warbler (*Dendroica petechia*)

This is a common fall passage migrant, in contrast there are only two spring records. Most are found in cover along the shore of Lake Apopka but they also occur in any cover along the ditches and canals. This is one of the few warblers that can be found out in the tall grass fields. For the spring there were singles on April 17, 1999 and April 27, 2003. Seen in the fall from July 11 (2001) to October 20 (2002) with a high count of 119 on August 28, 2002. To detail the 2002 influxes, there was one on July 21 with eight on July 25, then three seen on July 28. There were six on July 31 with 25 on August 4, 27 on August 11 and 64 on August 14, then 57 seen on August 18 with 44 on August 21. There were 79 on August 25 with 119 on August 28, then 34 seen on September 2. There were 43 on September 4 with 66 on September 8, then 51 seen on September 15 with 33 on September 18, 18 on September 22 and 14 on September 26. There were 19 on September 29 with 11 on October 2, nine on October 6, four on October 9 and singles on October 13 and October 20.

There are only two spring records. There were singles on April 17, 1999 and April 27, 2003. Seen in the fall from July 11 (2001) to October 20 (2002), there were seven “clustered” influxes. The first peaked from July 19 (2000) to July 25 (2002) with a high count of eight on July 25, 2002. The second peaked from July 30 (2000) to August 6 (1999) with a high count of 49 on August 6, 1999. The third peaked from August 13 (2003) to August 16 (2000, 2001) with high counts of 36 on August 13, 2003, 64 on August 16, 2000, 64 on August 14, 2002 and 71 on August 16, 2001. The fourth peaked from August 25 (1999) to August 28 (2002) with high counts of 57 on August 25, 1999 and 119 on August 28, 2002. The latter was the highest count during the first five years of the survey. The fifth peaked from September 8 (2002) to September 10 (2000) with a high count of 66 on September 8, 2002. The sixth peaked from September 17 (1998) to September 19 (2001) with a high count of 14 on September 19, 2001. The seventh peaked from September 25 (1999) to September 30 (1998) with a high count of 25 on September 25, 1999. This is one of the best locations in Florida for seeing this species on fall passage.

Chestnut-sided Warbler *(Dendroica pensylvanica*)

This is a rare fall migrant, there are no spring sightings. Seen in the fall from September 7 (2000) to October 19 (1999), perhaps 12 birds in all. Even with this limited number of records there is a pattern of "clustered" influxes, four in all. The first peaked from September 7 (2000) to September 9 (2001) with one on both dates. The second is indicated by a peak count of six on September 21, 2000. This is still the highest count for Zellwood. The third peaked from October 5 (2000) to October 8 (1999) with a high count of two on October 5, 2000. The fourth is indicated by a peak count of one on October 16, 2002. To detail the 2000 influxes, there was one on September 7, September 10 and September 13 with two on September 19 and six on September 21, then one seen on September 24 and September 27. Finally there were two on October 5.

Magnolia Warbler (*Dendroica magnolia)*

This is a rare fall migrant, just six records of seven birds over the five years, none seen in 2002. Again there is a pattern of influxes. The fall passage ran from September 19 (2000) to October 19 (1999), there were four "clustered" influxes. The first is indicated by a peak count of one on September 19, 2000. The second peaked from September 23 (1999) to September 26 (2001) with one on both dates. The third is indicated by a peak count of two on October 5, 2000. This was the highest count during the first five years of the survey. The fourth peaked from October 12 (2000) to October 14 (1999) with one on both dates.

Cape May Warbler (*Dendroica tigrina*)

This is an uncommon spring migrant. There are only two fall records for the five years. For the fall there was a male on September 21, 2000 and September 24, 2000 with one (sex/age not noted) on September 26, 2001. Seen in the spring from April 2 (2001) to May 8 (2001, there were three "clustered" influxes. The first peaked from April 15 (2000) to April 17 (1999) with high counts of two on April 15, 2000 and 13 on April 17, 1999. The latter was the highest count during the first five years of the survey. The second peaked from April 21 (2002) to April 27 (2003) with a high count of two on April 27, 2003. The third peaked from May 1 (1999, 2002) to May 2 (2000) with a high count of five on May 1, 1999. Finally there was a late record of one on May 20, 2002. To detail the 1999 influxes, there were 13 on April 17 with two

on April 20 and one on April 26. There were five on May 1 with one on May 7. Two type 2 influxes.

Black-throated Blue Warbler (*Dendroica caerulescens*)

This is an uncommon passage migrant. Seen in the spring from April 14 (2002) to May 14 (2001), there were three "clustered" influxes. The first peaked from April 14 (2002) to April 20 (1999) with a high count of three on April 20, 1999. The second peaked from April 26 (2000) to April 27 (2003) with a high count of two on April 27, 2003. The third peaked from May 1 (1999) to May 4 (2001, 2003) with a high count of five on May 1, 1999. This was the highest count during the first five years of the survey. In 1999 there were two type 2 influxes with three on April 20 and one on April 26, then five seen on May 1. There were possibly 16 birds in all seen in the spring over the five years. Seen in the fall from August 27 (1999) to October 19 (1999), there are indications of four "clustered" influxes. The first peaked from August 27 (1999) to August 30 (2000) with a high count of two on August 30, 2000. The next two potential influxes were indicated by isolated peak counts of one on September 7, 2000 and September 19, 2000. The fourth peaked from September 29 (2002) to October 2 (1999) with a high count of three on September 30, 2001. There were possibly 12 birds in the fall for the five years making a grand total of 28 birds for the five years.

Yellow-rumped Warbler (*Dendroica coronata)*

This is a passage migrant and winter visitor. In two years, 2002 and 2003 there were mega influxes in the spring. This species can normally be found in the wooded borders. In very cold weather it often moves to the vegetated waterways where it hunts for food on or near the water surface. Seen in the fall from October 6 (2002) to December 3 (1998) with a high count of 575 on November 21, 2002. To detail the 2002 influxes, there was one on October 6. There were no further sightings until two seen on October 20 with four on October 28, 39 on November 5, 50 on November 9, 215 on November 17 and 575 on November 21, then 275 seen on November 24 with 175 on November 29. The winter passage followed from November 29 (2001) to January 7 (1999) with an extension to January 24 in 2002. The highest count was that of 300 on December 16, 2002. To continue detailing the 2002/2003 influxes, there were 207 on November 30 with 233 on December 2, then 176 on December 8. There were 220 on December 11 with 245 on December 14 and 300 on December 16, then 245 seen on December 21. There were 247 on December 26 with 265 on December 28 and 275 on December 30, then 240 seen on January 2. To detail the 2001/2002 influxes, there were 115 on November 29 with 137 on December 2, then 64 seen on December 5. There were 90 on December 9 with 149 on

December 13, then 121 seen on December 19 with 63 on December 21. There were 90 on December 27 with 175 on December 30, then 125 seen on January 3 with 122 on January 10, 117 on January 16, 59 on January 20 and 57 on January 24. The early spring passage ran from January 5 (2003) to March 29 (2003) with high counts of 1,210 on March 6, 2002 and 8,470 on March 5, 2003. To detail the 2002 influxes, there were 138 on January 27 with 194 on February 6 and 690 on February 17, then 470 seen on February 20. There were 570 on February 24 with 755 on February 27, 810 on March 4 and 1,210 on March 6, then 725 seen on March 14 with 405 on March 17, 280 on March19 and 23 on March 22. Now to detail the 2003 influxes, there were 425 on January 5 with 380 on January 7, 275 on January 9, 230 on January 11 and 210 on January 15. There were 255 on January 19 with 595 on January 26, 1,730 on January 30, 3,140 on February 2, 4,410 on February 5, 5,370 on February 12, 7,635 on February 15, 8,290 on February 23, 8,360 on February 26 and 8,470 on March 5, then 3,560 seen on March 9 with 1,075 on March 12, 280 on March 16, 49 on March 19, nine on March 24, five on March 26 and one on March 29. That really was a mega influx. The late spring passage was a minor event, it ran from February 29 (2000) to April 10 (2002) with a high count of 150 on Marc h 23, 1999. There were two late records of singles on April 17, 1999 and April 28, 2002. On November 11, 2001 a female showing the characteristics of the race D.c.*auduboni* was seen by Canal Road.

Seen in the fall from October 6 (2002) to December 3 (1998), there were three "clustered"influxes. The first peaked from November 4 (2001) to November 6 (1998) with a high count of 75 on November 4, 2001. The second peaked from November 12 (1999) to November 18 (1998, 2001) with a high count of 90 on November 12, 1999. The third peaked from November 21 (2002) to November 26 (2000) with high counts of 196 on November 26, 2000 and 575 on November 21, 2002. The next influx could be part of either the fall or the winter passages but I have placed it in the winter passage. This passage ran from November 29 (2001) to January 7 (1999) with an extension to January 24 in 2002, there were four "clustered" influxes. The first peaked from November 30 (1999) to December 2 (2001, 2002) with a high count of 233 on December 2, 2002. The second is indicated by a peak count of 153 on December 7, 1999. The third peaked from December 13 (2001) to December 16 (2002) with a high count of 300 on December 16, 2002. The fourth peaked from December 30 (1999, 2001, 2002) to December 31 (1998, 2000) with a high count of 275 on December 30, 2002. The early spring passage followed from January 5 (2003) to March 3 (2001), there were five "clustered" influxes. In 2002 and 2003 there were mega influxes that started in this passage but continued through the late spring passage. The peak counts for these two events occurred in the first few days of March. Again this is a judgment call but I have placed these events in the early spring passage. This extends the early spring passage to March 29 (2003) and the number of "clustered" influxes to six. The first peaked from January 5 (2003) to January 7 (2001) with a high count of 425 on January 5, 2003. The second is indicated by a peak count of 110 on January 12, 1999. The third peaked from January 21 (2000) to January 24 (2001) with a high

count of 351 on January 21, 2000. The fourth peaked from February 5 (1999) to February 11 (2001) with a high count of 295 on February 6, 2000. The fifth peaked from February 17 (2002) to February 21 (2000) with a high count of 690 on February 17, 2002. The sixth influx peaked from March 3 (2000) to March 7 (1999) with high counts of 1,210 on March 6, 2002 and 8,470 on March 5, 2003. The latter was the highest count during the first five years of the survey i.e. there has been at least one higher count since. In this case the higher count was that of 10,220 on February 23, 2007. This would fit into the 5th and not the 6th influx. For the "normal" years the highest count for the sixth influx was that of 105 on March 3, 2000. The two mega influxes covered the following periods, in 2002 from February 24 to March 22 and in 2003 from January 19 to March 29. Now to the late spring passage, this ran from February 29 (2000) to April 10 (2002), there were two "clustered" influxes. The first peaked from March 11 (2001) to March 14 (2000) with a high count of 80 on March 14, 2000. The second peaked from March 23 (1999) to March 27 (2002) with a high count of 150 on March 23, 1999. Finally there were two late records. There were singles on April 17, 1999 and April 28, 2002. It is so nice to deal with a species that has regular influxes and not the basic influxes. On November 11, 2001 a female showing the characteristics of the race D.c.*auduboni* was seen by Canal Road. After the text for the Palm Warbler there will be a section that will look at the two types of spring passage for these two species.

Black-throated Green Warbler (*Dendroica virens*)

This is a rare passage migrant and winter visitor, only nine individuals seen over the five years. For the late fall passage there were singles on October 5, 2000, October 28, 2001, November 9, 1999 and November 21, 2002. For the winter passage there were two on December 20, 1998 with one on December 22, 2000. These two records may indicate the location of an influx. The count of two is still the highest count for Zellwood. Finally for the early spring passage there were singles on January 7, 2003 and January 15, 1999.

Blackburnian Warbler (*Dendroica fusca)*

This is a rare passage migrant. There is only one spring record. There was a female by Lake Apopka on May 20, 2002. This is a late date for Florida. Seen in the fall from September 11 (2002) to October 5 (2000), ten birds in all. There were singles on September 11, 2002 and September 15, 2002, then four seen on September 19, 2000 and September 21, 2000 with one on September 24, 2000. There were two on September 27, 2000 and October 1, 2000 with one on October 5, 2000. Finally there were two on October 2, 2009. The counts of four are still the highest counts for Zellwood.

Yellow-throated Warbler (*Dendroica dominica*)

This is an uncommon passage migrant, there are no winter records. Seen in the fall from July 17 (2002) to November 12 (2000), there were seven "clustered" influxes. The first is indicated by a peak count of two on August 10, 2003. The second peaked from August 25 (1999) to August 29 (2001) with one on both dates. The third is indicated by a peak count of two on September 11, 2002. The fourth peaked from September 18 (2002) to September 23 (2001) with two on both dates. The fifth is indicated by a peak count of one on September 27, 2000. The sixth peaked from October 20 (2002) to October 22 (2000) with one on both dates. The seventh peaked from November 9 (1999) to November 12 (2000) with one on both dates. The counts of two were the highest counts during the first five years of the survey. For the earlier years there was a count of five on July 29, 1972. In the fall a total of at least 21 birds seen over the five years. Seen in the early spring passage from January 7 (2003) to February 20 (2002) with singles on three dates. Seen in the late spring passage from March 2 (2003) to April 1 (1999) again with singles on three dates. This makes for a grand total of 27 individuals for the five years, fall and spring combined.

Pine Warbler (*Dendroica pinus*)

This is an uncommon passage migrant and an irregular winter visitor. Exceptionally there were singles on July 22, 2001 and August 25, 2002. The fall passage followed from September 21 (2000) to November 30 (2000), there were six "clustered" influxes. The first peaked from September 30 (1999) to October 3 (2001) with one on both dates. The second is indicated by a peak count of four on October 15, 2000. The third peaked from October 19 (1999) to October 23 (2002) with a high count of three on October 23, 2002. The fourth peaked from October 29 (1999) to November 1 (2000) with a high count of six on October 29, 1999. This was the highest count during the first five years of the survey. The fifth is indicated by a peak count of two on November 12, 2000. The sixth peaked from November 29 (2002) to November 30 (2000) with a high count of three on November 30, 2000. For the most part this species was not recorded during the winter. There was one on December 12, 2000. The other records cluster to form an influx which peaked from December 28 (2002) to January 2 (2003) with singles on four dates in three winters. Whilst numbers were low there was a noticeable spring passage from January 7 (2002, 2003) to April 2 (2003), there were seven "clustered" influxes. The first peaked on January 7 (2002, 2003) with one on both dates. The second peaked from January 14 (2001) to January 19 (2003) with a high count of three on January 19, 2003. The third peaked from January 24 (2001) to January 26 (2003) with a high count of two on both

dates and on January 25, 2000. The fourth is indicated by a peak count of one on February 3, 2002. The fifth peaked from February 14 (2001) to February 17 (2002) with a high count of four on February 14, 2001. The sixth peaked on February 23 (2000, 2003) with a high count of two on February 23, 2000. The seventh is indicated by a peak count of two on March 4, 2002. There were later spring records. There was one from April 14, 2002 to April 24, 2002 and there was one on April 20, 1999. To detail the 2001 influxes, there were two on January 14 with singles to January 21. There were two from January 24 to January 31 with one on February 4. There were two on February 7 and February 11 with four from February 14 to February 21, then two seen on February 25 with one on February 28. Finally there was a male on territory by Canal Road from May 6, 2002 to May 20, 2002. No evidence of breeding but that is a possibility. There have been sightings at this site, the eastern end of a small pine wood, in later summers.

Prairie Warbler (*Dendroica discolor*)

This is a passage migrant and an uncommon winter visitor. Seen in the early fall from July 11 (2001) to September 10 (1999, 2000) with a high count of 30 on July 30, 2003. To detail the 2003 influxes, there was one on July 21 with six on July 23, ten on July 25 and 30 on July 30, then 19 seen on August 5 with eight on August 8, seven on August 10 and five on August 13. There were ten on August 20 with 15 on August 24, then ten seen on August 27. This last influx is taken from the 2003/2004 year which is not part of this analysis. The main fall passage followed from August 21 (2002) to December 6 (2000) with a high count of 39 on September 9, 2001. To detail the 2001 influxes, there were nine on August 29 with 15 on September 2 and 39 on September 9, then 17 seen on September 13 with 11 to September 19. There were 19 on September 23 with six to September 30. There were 15 on October 3 with four on October 7 and three on October 10. There were five on October 14 with four on October 17 and three on October 21. There were five on October 24 with three to November 29 and one on December 2. There was only a minor winter passage from December 2 (2002) to January 7 (2002) with a high count of five on December 8, 2002. The early spring passage was a stronger event it ran from January 2 (2003) to March 12 (2003) with a high count of seven on January 20, 2002. To detail the 2002 influxes, there were five in January 10 with three on January 13 and January 16. There were seven on January 20 with one on January 24. There were two on January 27 with three on February 3, Up to three continued to be seen to February 17 with two on February 20. The main spring passage ran from February 24 (2002) to May 7 (2003) with an extension to May 27 in 2001. The highest count was that of ten on April 3, 2002. To continue detailing the 2002 influxes, there were three on February 24 with four on March 4, then three seen on March 6 with two on March 10. There were five on March 14 with four on March 17 and three on March 19. There were six on March 22 with seven on March 27 and ten from April 3 to April 14, then

one seen on April 17. Finally there were two on May 1, 2002. In 2001 this passage really ended on May 2 but one stayed to May 27. Very unexpectedly there was one on June 12, 1999.

Seen in the early fall from July 11 (2001) to September 10 (1999, 2000), there were three "clustered" influxes. The first peaked from July 22 (2001) to July 23 (2000) with a high count of five on July 22, 2001. The second peaked from July 30 (2003) to August 3 (1999) with a high count of 30 on July 30, 2003. The third peaked from August 16 (2000, 2001) to August 20 (1999) with a high count of 25 on August 16, 2001. The main fall passage ran from August 21 (2002) to December 6 (2000), there were eight "clustered" influxes. The first is indicated by a peak count of 39 on September 9, 2001. This was the highest count during the first five years of the survey. The second peaked from September 15 (2002) to September 17 (1999) with a high count of 24 on September 15, 2002. The third peaked from September 21 (2000) to September 23 (2001) with a high count of 29 on September 21, 2000. The fourth peaked from October 3 (2001) to October 6 (1998) with a high count of 15 on October 3, 2001. The fifth peaked from October 12 (1999) to October 14 (2001) with a high count of five on October 14, 2001. The sixth peaked from October 20 (2002) to October 24 (2001) with a high count of ten on October 20, 2002. The seventh is indicated by a peak count of two on November 6, 1999. The eighth peaked from November 24 (2002) to November 26 (1999, 2000) with a high count of four on November 24, 2002. There was only a minor winter passage from December 2 (2002) to January 7 (2002), there were two "clustered" influxes. The first peaked from December 5 (2001) to December 8 (2002) with a high count of five on December 8, 2002. The second peaked from December 15 (2000) to December 19 (2001) with high counts of four on December 16, 2002 and December 19, 2001. The early spring passage followed from January 2 (2003) to March 12 (2003), there were six "clustered" influxes. The first peaked from January 7 (2001, 2003) to January 10 (2002) with a high count of six on January 7, 2003. The second peaked from January 14 (2000) to January 20 (2002) with a high count of seven on January 20, 2002. The third peaked from January 30 (2003) to February 3 (2002) with three on both dates. The fourth is indicated by a peak count of three on February 8, 2002. The fifth peaked from February 14 (2001) to February 15 (2003) with four on both dates. The sixth peaked from February 25 (2000) to February 26 (2003) with three on both dates. The main spring passage ran from February 24 (2002) to May 7 (2003) with an extension to May 27 in 2001, there were seven "clustered" influxes. The first is indicated by a peak count of four on March 4, 2002. The second peaked from March 14 (2002) to March 18 (1999) with a high count of five on March 14, 2002. The third is indicated by a peak count of three on March 25, 2000. The fourth peaked from April 3 (2002) to April 6 (2003) with a high count of ten on April 3, 2002. The fifth peaked from April 15 (2000) to April 19 (2001) with a high count of four on April 15, 2001. The sixth peaked from April 26 (2000) to May 1 (2002) with a high count of seven on April 27, 2003. The last influx peaked from May 4 (1999) to May 7 (2003) with a high count of four on May 4, 1999. In 2001 this passage really ended on May 2 but one individual stayed to May 27. Very unexpectedly there was one on June 12, 1999.

Palm Warbler (*Dendroica palmarum)*

This is a common passage migrant and winter visitor. There was a mega influx in the spring of 2003. Seen in the fall from September 9 (2001) to December 3 (2000) with a high count of 416 on November 9, 2002. To detail the 2002 influxes, there were two on September 18 with four on September 26, 40 on September 29 and 110 on October 6, then 97 seen on October 9 with 71 on October 13. There were 89 on October 16 with 227 on October 20 and 234 on October 28, then 119 seen on November 5. There were 416 on November 9 with 152 on November 17. There were 173 on November 21 with 220 on November 24, then 150 seen on November 29 with 113 on November 30. The winter passage followed from November 29 (2001) to January 14 (2000) with a high count of 605 on January 2, 2003. To continue detailing the 2002/2003 influxes, there were 294 on December 2 with 265 on December 11 and 146 on December 14. There were 180 on December 16 with 275 on December 21, 295 on December 28, 475 on December 30 and 605 on January 2, then 305 seen on January 5. The early spring passage ran from January 7 (2001, 2002, 2003) to March 24 (2003) with a high count of 3,120 on February 26, 2003. To detail the 2003 influxes, there were 380 on January 7 with 1,025 on January 9, then 430 seen on January 15 with 305 on January 19 and 205 on January 22. There were 640 on January 26 with 820 on January 30, 960 on February 5, 2,425 on February 15, 2,890 on February 19 and 3,120 on February 26, then 1,825 seen on March 2 with 1,530 on March 5, 1,170 on March 9, 1,060 on March 122, 830 on March 16, 330 on March 29 and 250 on March 24. There were 440 on March 26 with 330 on March 19, 317 on April 2, 182 on April 6 and 124 on April 11. There were 245 on April 13 with 66 on April 16 and 16 on April 21. There were 19 on April 24 with 64 on April 27, then 12 on May 4, two on May 7 and one on May 15. There was a late spring passage from March 4 (2002) to May 15 (2003) with a high count of 440 on March 26, 2003. The 2003 influxes have already been detailed under the early spring passage. Nearly all the Palm Warblers seen at Zellwood are of the western race D.p.*palmarum*. In 2003 I started to note any "yellow" Palm Warblers that I saw, this is the eastern race D.p.*hypochrysea*. In 2003 I saw single Yellow Palm Warblers on January 11, February 5 and April 6.

Seen in the fall from September 9 (2001) to December 3 (2000), there were s "clustered" influxes. The first peaked from September 26 (2001) to September 27 (2000) with a high count of 292 on September 26, 2001. The second peaked from October 2 (1999) to October 7 (2001) with a high count of 128 on October 7, 2001. The third peaked from October 19 (1999) to October 25 (2000) with a high count of 259 on October 25, 2000. The fourth is indicated by a peak count of 234 on October 28, 2002. The fifth peaked from November 4 (2001) to November 9 (2002) with a high count of 416 on November 9, 2002. The sixth peaked

from November 16 (1999) to November 20 (1998) with a high count of 240 on November 20, 1998. The seventh peaked from November 24 (2002) to November 26 (1999, 2000) with a high count of 220 on November 24, 2002. The winter passage followed from November 29 (2001) to January 14 (2000), there were five "clustered" influxes. The first peaked from November 29 (2001) to December 2 (2002) with a high count of 294 on December 2, 2002. The second peaked from December 8 (1998) to December 9 (2001) with a high count of 370 on December 8, 1998. The next two influxes were indicated by isolated peak counts of 274 on December 12, 2000 and 250 on December 20, 2000. The fifth peaked from December 27 (2001) to January 2 (2003) with a high count of 605 on January 2, 2003. The early spring passage came next it ran from January 7 (2001, 2002, 2003) to March 24 (2003), there were six "clustered" influxes. The first peaked from January 7 (2001) to January 9 (2003) with a high count of 1,025 on January 9, 2003. The second is indicated by a peak count of 230 on January 16, 2002. The third peaked from January 24 (2001) to January 27 (2002) with a high count of 289 on January 27, 2002. The fourth peaked from February 7 (2001) to February 9 (1999) with a high count of 250 on February 9, 1999. The fifth peaked from February 20 (2002) to February 21 (2001) with a high count of 247 on February 20, 2002. The sixth peaked from February 26 (2003) to February 29 (2000) with an exceptionally high count of 3,120 on February 26, 2003. This is still the highest count for Zellwood. The other high count for the sixth influx was only that of 77 on February 29, 2000. In 2003 there was a mega influx from January 26 to March 24 i.e. two months! There was a similar mega influx involving Yellow-rumped Warblers, these will be discussed in a special segment after this species. The main spring passage followed from March 4 (2002) to May 15 (2003), there were seven "clustered" influxes. The numbers involved in this passage varied dramatically. In 1999, 2000 and 2001 numbers peaked with up to 79 a day. In 2002 and 2003 numbers peaked with up to 440 a day. Again this is probably an unknown wintering area factor. The first influx is indicated by a peak count of 232 on March 4, 2002. The second peaked from March 14 (2002) to March 16 (1999) with high counts of 40 on March 16, 1999 and 230 on March 14, 2002. The third peaked from March 24 (2002) to March 26 (2003) with high counts of 46 on March 25, 2000 and 440 on March 26, 2003. The fourth peaked from March 30 (1999) to April 6 (2000) with high counts of 79 on April 4, 2001 and 137 on April 3, 2002. The fifth peaked from April 13 (2003) to April 20 (1999) with high counts of 55 on April 20, 1999 and 245 on April 13, 2003. The sixth peaked from April 26 (2000) to April 27 (2003) with high counts of 31 on April 26, 2000 and 64 on April 27, 2003. The last influx is indicated by a peak count of 12 on May 4, 2003. This is an interesting species.

The variations in the spring passage of the Yellow-rumped and Palm Warblers.

The following mainly relates to the Yellow-rumped Warbler but the major passage of Palm Warblers in the spring of 2003 is included. There appear to be two very different patterns to the early spring passage. First to take a look at the one that is best described as years with a normal passage.

Major influx period:	Highest count:
January 27, 1999 to April 6, 1999	190 on February 5, 1999
January 11, 2000 to March 27, 2000	351 on January 21, 2000
February 4, 2001 to April 6, 2001	75 on February 11, 2001
January 21, 2004 to March 31, 2004	340 on February 4, 2004.

It seems likely that these four years only involved birds that had wintered in Florida. The numbers were all low and the date of the highest count was in late January or early February.

January 24, 2002 to April 10, 2002	1,210 on March 3, 2002
January 26, 2003 to March 29, 2003	8,470 on March 5, 2003
February 2, 2005 to April 6, 2005	3,820 on February 20, 2005
January 29, 2006 to March 26, 2006	1,675 on March 1, 2006
January 26, 2007 to March 30, 2007	10,220 on February 23, 2007

Information suggests that these birds had wintered in the Caribbean. The numbers were all very much higher and the date of the highest count was in late February or early March. The difference in numbers and dates is so striking.

Now to the Palm Warbler, there is only one year that involves a major influx and that is 2003. I believe that in this year it had shared the same wintering area with the Yellow-rumped Warblers.

January 9, 2003 to April 2, 2003	3,120 on February 26, 2003.

Although not relevant on February 26, 2003 there were 8,360 Yellow-rumped Warblers and 3,120 Palm Warblers. A total of 11,480 warblers, they made some noise…The Yellow-rumped Warblers were mainly in the trees and the Palm Warblers were mainly in the fields.

Bay-breasted Warbler (*Dendroica castanea)*

This is a vagrant, there were only two records. For the late fall passage there were singles on October 12, 2000 and October 19, 1999.

Blackpoll Warbler (*Dendroica striata)*

This is a spring passage migrant. Seen in the spring from April 15 (2000) to May 20 (2001, 2002)) with a high count of 18 on May 1, 2002. To detail the 1999 influxes, there were four from April 17 to April 26 with 14 on May 1, then two seen on May 4 with one on May 7. There were 14 on May 10 with one on May 14 and May 18. To detail the 2002 influxes, there were three on April 21 with four on April 24 and 18 on May 1, then three seen on May 6. There was one on May 15 with two on May 20. There was a single individual seen in the fall there was one on October 16, 2002 and October 20, 2002.

Seen in the spring from April 15 (2000) to May 20 (2001, 2002), there were five "clustered" influxes. The first peaked from April 26 (2001) to April 27 (2003) with a high count of ten on April 27, 2003. The second peaked from April 30 (2000) to May 1 (1999, 2002) with high counts of ten on April 30, 2000, 14 on May 1, 1999 and 18 on May 1, 2002. The latter was the highest count during the first five years of the survey. The third is indicated by a peak count of 11 on May 4, 2003. The fourth peaked from May 10 (1999) to May 15 (2003) with a high count of 14 on May 10, 1999. The fifth is indicated by a peak count of two on May 20, 2002. There was also a single fall record. There was one present on October 16, 2002 and October 20, 2002.

Cerulean Warbler (*Dendroica cerulea*)

This is a vagrant. There were four records of five birds for the five years. For the spring passage there was one on May 10, 1999. In the fall singles were seen on August 13, 2000 and September 15, 2002 with two on September 21, 2000 , then one seen on September 24, 2000. The count of two is still the highest count for Zellwood.

Black-and-white Warbler (*Mniotilta varia*)

This is an uncommon passage migrant and winter visitor. Normally only one to two a day seen so I did not expect to identify a pattern, but it was there. In the early fall there was one on July 17, 2002. The fall passage ran from August 23 (2000) to October 19 (1999), there were five "clustered" influxes. The first peaked from August 23 (2000) to August 25 (1999) with a high count of two on August 23, 2000. The second is indicated by a peak count of two on August 31, 1999. The third peaked from September 9 (2001) to September 13 (2000) with a high count of two on September 13, 2000. The fourth peaked from September 30 (2001) to

October 1 (2000) with a high count of two on October 1, 2000. The fifth is indicated by a peak count of one on October 6, 1999. There were no records from October 20 to November 29. It is situations such as this that encourages me to treat the winter as starting at the end of November or in the first few days of December. The winter passage ran from November 30 (1999) to December 30 (2001), there were three "clustered"influxes. The first peaked from November 30 (1999) to December 3 (1998) with one on both dates. The second peaked from December 20 (1998, 2000) to December 22 (1999) with one on all dates. The third is indicated by a peak count of one on December 30, 2001. There were just six individuals over the five years for the winter passage. The early spring passage ran from January 7 (1999, 2000, 2001, and 2002) to February 28 (2001), there were six "clustered" influxes. The first peaked on January 7 (1999, 2000, 2002) with one on each date. The second is indicated by a peak count of two on January 14, 2001. The third peaked from January 22 (2003) to January 25 (2000) with one on both dates. The fourth peaked from February 3 (1999) to February 6 (2002) with a high count of two on February 6, 2002. The fifth peaked from February 14 (2001) to February 17 (2002) with a high count of two on February 14, 2001. The sixth is indicated by a peak count of one on February 23, 2000. There were no records from February 29 to March 31. There is a possible explanation for the gaps in the spring and the fall. The major part of the population migrates well to the south in the early fall and returns in the late spring. There could be a second, smaller population that comes south slower and later to winter and that population returns north, albeit slowly in the early spring. The main spring passage ran from April 1 (1999) to May 10 (1999), there were four "clustered" influxes. The first peaked from April 1 (1999) to April 3 (2002) with one on both dates. The second peaked from April 15 (2000) to April 17 (1999) with high counts of two on April 15, 2000 and six on April 17, 1999. The latter was the highest count during the first five years of the survey. The third peaked on April 24 (2002, 2003) with a high count of two on April 24, 2002. The fourth peaked from May 1 (1999) to May 2 (2000) with two on both dates. To detail the 1999 influxes, there was one on April 1. There were six on April 17 with two on April 20 and one on April 26. There were two on May 1 with one on May 10. The low numbers for this and many of the other warbler species are due in part to the limited amount of woodland habitat in the survey area. Especially limited was the amount of woodland that I could get inside.

American Redstart (*Setophaga ruticilla*)

This is a regular passage migrant that stayed through one winter. There was an exceptionally early record there being one on March 10, 2000. Otherwise seen in the spring from April 9 (1999) to June 3 (2001) with a high count of 48 on May 14, 2001. To detail the 1999 influxes, there was one on April 9 and April 14 with five on April 17, then three seen on April 20

with one on April 23. There were eight on April 26 and May 1 with four on May 4 and three on May 7. There were 22 on May 10 with 12 on May 18, two on May 22 and one on May 25. To detail the 2001 influxes, there were four on May 2 with two to May 6. There were 48 on May 14 with six on May 20 and singles on May 24 and June 3. Four out of five of these detailed influxes were type 2. The fall passage was noted from July 22 (2001) to October 23 (1999) with a high count of 27 on September 21, 2000. To detail the 2000 influxes, there were eight on August 13 with five on August 16, four on August 20 and two on August 23. There were nine on August 27 with four on August 30 and two on September 3. There were five on September 7 and September 10 with three on September 13. There were 27 on September 21 with 16 on September 27, ten on October 1, eight on October 5 and six on October 9. There were eight on October 12 with two on October 15 and singles on October 18 and October 22. Again these are all type 2 influxes. These type 2 influxes indicate a much lower level of passage as most, if not all arrive on the first day of the influx. Finally in 1998 there was one on December 11 and December 20 with two on December 28, 1998. This species is known to winter occasionally in central Florida.

There was an early spring record, there being one on March 10, 2000. The main spring passage ran from April 9 (1999) to June 3 (2001), there were four “clustered” influxes. The first peaked from April 14 (2002) to April 17 (1999) with a high count of five on April 17, 1999. The second peaked from April 21 (2003) to April 26 (1999) with a high count of eight on April 26, 1999. The third peaked from April 30 (2000) to May 4 (2003) with a high count of 12 on April 30, 2000. The heaviest passage was all linked to the last influx. This influx peaked from May 10 (1999) to May 15 (2002) with high counts of 15 on May 15, 2002, 22 on May 10, 1999 and 48 on May 14, 2001. The latter is still the highest count for Zellwood. Fall passage noted from July 22 (2001) to October 23 (1999), there were eight “clustered” influxes. The first peaked from July 22 (2001) to July 25 (2002) with a high count of three on July 25, 2002. The second peaked from August 4 (2002) to August 5 (2001) with a high count of five on August 4, 2002. The third peaked from August 13 (2000) to August 18 (1999) with a high count of eight on August 13, 2000. The fourth peaked on August 27 (1999, 2000) with a high count of nine on August 27, 2000. The fifth peaked from September 7 (2000) to September 9 (2001) with high counts of five on September 7, 2000 and September 8, 2002. The sixth peaked from September 21 (2000) to September 26 (2001) with high counts of 11 on September 25, 1999 and 27 on September 21, 2000. The seventh is indicated by a peak count of two on September 29, 2002. The eighth peaked from October 10 (2001) to October 12 (2000) with a high count of eight on October 12, 2000. Finally in 1998 there was one on December 11 and December 20 with two on December 28. These are the only winter records.

Prothonotary Warbler (*Protonotaria* citrea)

This is a rare passage migrant, there were only 12 individuals seen over the five years, six in the spring and six in the fall. Seen in the spring from March 18 (1999) to April 21 (2003) with a high count of two on April 14, 2002. No pattern of influxes. Noted in the fall from August 7 (2002) to August 25 (1999) with a high count of two on August 7, 2002. No discernible pattern to the records. Finally there was a late individual on September 17, 1999. The counts of two are still the highest counts for the survey. For the early years there were counts of three on July 26, 1980 and August 17, 1974.

Worm-eating Warbler (*Helmitheros vermivora*)

This is a very rare passage migrant, there were only four records. For the spring passage there was one on April 17, 1999, with for the fall passage singles on August 7, 2002, October 5, 2000 and October 8, 1999. The two October records appear to indicate the location of an influx. There were no sightings in 2002/2003.

Swainson's Warbler (*Limnothlypis swainsonii*)

This is a very rare passage migrant with six records for the five years. For the spring passage there were singles on April 16, 2001 and April 21, 2003. For the fall there were singles on August 16, 2000, September 2, 2001, September 15, 2002 and September 21, 2000. There is no discernible pattern to the records. This is a very secretive species, doubtless under-recorded.

Ovenbird (*Seiurus aurocapilla*)

This is first and foremost a fall passage migrant with limited passage in the winter and the spring. There is a single fall passage from August 16 (2001) to November 30 (2000) with a high count of 22 on October 2, 2002. To detail the 2002 influxes, there was one on August 18, 2002. Later there were singles on September 2 and September 4 with six on September 8, then five seen on September 11 with four on September 15. There were 12 on September 18 with three on September 22 and two on September 26. There were 12 on September 29 with 22 on October 2, then eight seen on October 6. There were ten on October 9 with 11 on October 13, then six seen to October 23 with singles to November 9. Later there were two on November 21. The winter passage was a minor event from November 29 (2001) to January 11 (2003) with

high counts of two on December 2, 2001 and December 8, 2002. The early spring passage ran from January 3 (2002) to March 3 (2001) with a high count of four on February 5, 2003. The late spring passage ran from February 24 (2002) to May 27 (2000) with a high count of four on March 4, 2002.

The fall passage ran from August 16 (2001) to November 30 (2000), there were nine "clustered" influxes. The first is indicated by a peak count of one on August 18, 2002. The second peaked from August 26 (2001) to August 27 (2000) with a high count of two on August 26, 2001. The third peaked from September 6 (1999) to September 8 (2002) with a high count of six on September 8, 2002. The fourth is indicated by a peak count of 12 on September 18, 2002. The fifth peaked from September 23 (1999) to September 24 (2000) with a high count of 15 on September 24, 2000. The sixth peaked from October 2 (2002) to October 6 (1999) with high counts of 13 on October 3, 2001 and 22 on October 2, 2002. The latter was the highest count during the first five years of the survey. The seventh peaked from October 13 (2002) to October 15 (2000) with 11 on both dates. The eighth peaked from November 7 (2001) to November 12 (1999, 2000) with a high count of three on November 12, 1999. The ninth peaked from November 20 (1998) to November 26 (2000) with a high count of two on November 21, 2002. The highest counts clearly show the peak passage to be in late September and early October. The winter passage was a minor event from November 29 (2001) to January 11 (2003), even so there were four "clustered" influxes. The first peaked from December 2 (2001) to December 4 (1999) with a high count of two on December 2, 2001. The second peaked from December 8 (2002) to December 15 (2000) with a high count of two on December 8, 2002. The third peaked from December 19 (2001) to December 21 (2002) with one on both dates. The fourth peaked from December 31 (2000) to January 5 (2003) with one on both dates. The early spring passage was a little stronger, it ran from January 3 (2002) to March 3 (2001), there were five "clustered" influxes. The first peaked from January 10 (2001) to January 13 (2002) with two on both dates. The second is indicated by a peak count of two on January 19, 2003. The third peaked from January 27 (2002) to February 5 (2003) with a high count of four on February 5, 2003. The fourth peaked from February 14 (2001) to February 17 (1999) with high counts of two on February 14, 2001 and February 16, 2000. The fifth peaked from February 21 (2001) to February 24 (2002) with a high count of two on February 23, 2003. The late spring passage ran from March 4 (2002) to May 27 (2000), there were eight "clustered" influxes. The first was indicated by a peak count of four on March 4, 2002. The second peaked from March 10 (2000) to March 12 (2003) with a high count of two on March 12, 2003. The third peaked from March 18 (2001) to March 19 (2003) with two on both dates. The fourth peaked from March 31 (2002) to April 2 (2001) with one on both dates. The fifth peaked from April 17 (1999) to April 24 (2002) with one on both dates. The sixth peaked from April 30 (2000) to May 1, 1999 with a high count of two on May 1, 1999. The last two influxes were indicated by isolated peak counts of two on May 14, 2001 and one on May 27, 2000.

Northern Waterthrush (*Seiurus noveboracensis*)

This is a passage migrant with a low number staying to winter. The greatest numbers can be found in the scrub filled ditches that parallel the canal that runs to the west from the Sand Farm Bridge. Smaller numbers can be found in similar habitats elsewhere in the area. The records indicate a single fall passage and this ran from August 12 (2001) to November 30 (1999, 2002) with a high count of 102 on September 26, 2002. To detail the 2002 influxes, there two on August 25 with four on September 2, 25 on September 8, 30 on September 11, 57 on September 15, 65 on September 18 and 102 on September 26, then 31 seen on September 29 with 18 on October 2, 14 on October 9, eight on October 13, six on October 20, four on October 28 and two on November 5. This influx covered over two months, it was a mega influx. Finally there were four on November 21 with three on November 24 and one on November 30. The winter passage by contrast was a very minor event although numbers are increasing. This passage ran from November 29 (2001) to January 13 (2002) with high counts of three on December 16, 2002 and December 27, 2001. The early spring passage was stronger, it ran from January 2 (2003) to March 17 (2002) with high counts of six on January 30, 2003 and February 15, 2003. To detail the 2003 influxes, there were three on January 2 with four on January 7, then two seen on January 9 with one on January 11. There was one on January 19 with two on January 22, four on January 26 and six from January 30 to February 2, then four seen on February 5 with one on February 9. There were six on February 12 with four to February 23 and two on February 26. There were five on March 2 with one to March 9. The main spring passage followed from March 12 (2003) to May 20 (2001) with a high count of 27 on April 27, 2003. To continue detailing the 2003 influxes, there were two on March 12 with three on March 19 and four on March 26, then singles seen to April 6. There were two on April 16 with five on April 21, 13 on April 24 and 27 on April 27, then nine seen to May 4 with singles on May 7, May 15 and May 18. This species is said not to sing on spring passage, but it does so regularly in late April and early May. All it needs is for a number to be holding temporary territories in close proximity to each other. I did not record this activity in the early years, the only note I have for this period is that some were singing on April 24, 2003.

Seen in the fall from August 12 (2001) to November 30 (1999, 2002), there were eight “clustered” influxes. The first is indicated by a peak count of three on August 16, 2001. The second peaked from August 25 (2002) to August 29 (2001) with a high count of four on August 29, 2001. The third peaked from September 3 (1999) to September 7 (2000) with a high count of seven on September 7, 2000. The fourth is indicated by a peak count of 24 on September 13, 2001. The fifth peaked from September 21 (2000) to September 26 (2002) with high counts of 14 on September 23, 2001, 38 on September 21, 2000 and 102 on September 26, 2002. The

latter was the highest count during the first five years of the survey. The sixth peaked from October 3 (2001) to October 6 (1999) with a high count of 11 on October 3, 2001. The seventh peaked from October 12 (2000) to October 14 (2001) with a high count of eight on October 14, 2001. The last influx peaked from November 19 (1999) to November 21 (2002) with a high count of four on November 21, 2002. The winter passage by contrast was a very minor event, it ran from November 29 (2001) to January 13 (2002), there were three "clustered" influxes. The first peaked from December 4 (1999) to December 6 (2000) with one on both dates. The second is indicated by a peak count of three on December 16, 2002. The third peaked from December 27 (2001) to December 31 (1998) with a high count of three on December 27, 2001. The early spring passage was stronger, it ran from January 2 (2003) to March 17 (2002), there were five "clustered" influxes. The first is indicated by a peak count of four on January 7, 2003. The second peaked from January 16 (2002) to January 21 (2001) with a high count of four on January 16, 2002. The third peaked from January 30 (2003) to February 3 (2002) with a high count of six on January 30, 2003. The fourth peaked from February 12 (2003) to February 14 (2001) with a high count of six on February 12, 2003. The fifth peaked from March 2 (2003) to March 7 (2000) with a high count of five on March 2, 2003. The main spring passage followed from March 12 (2003) to May 20 (2001), there were three "clustered" influxes. The first peaked from March 26 (2003) to March 27 (2002) with four on both dates. The second peaked from April 23 (1999) to April 27 (2003) with high counts of 11 on April 26, 2000, 22 on April 24, 2002 and 27 on April 27, 2003. The third peaked from May 14 (2001) to May 15 (2002, 2003) with a high count of six on May 14, 2001.

Louisiana Waterthrush (*Seiurus motacilla*)

This is a passage migrant with the greatest numbers in the fall. It selects the same habitats as the Northern Waterthrush. In the early spring there were singles on February 10, 2002 and February 11, 2001. I can only assume that these had wintered in south Florida. The main spring passage ran from March 2 (2003) to May 8 (2001) with a high count of eight on March 14, 2002. To detail the 2002 influxes, there were two on March 4 with four on March 10 and eight on March 14, then seven seen on March 17 with six on March 19, five on March 22 and four to March 31. There were five on April 3 with one on April 7. There were two on April 14 with one on April 17. Passage in the fall was heavier, the passage ran from July 8 (2001) to September 24 (2000) with a high count of 34 on August 16, 2000. To detail the 2000 influxes, there was one from July 23 to August 9 with eight on August 13 and 34 on August 16, then 23 seen on August 20 with 18 on August 27, five on August 30 and singles to September 13. There were three on September 21 with one on September 24. The only notes on this species singing

on passage came from 2001 and 2003. There was one singing against a Northern Waterthrush by Canal Road from April 29 to May 8. In 2003 one was noted as singing on April 24.

In the early spring there were singles on February 10, 2002 and February 11, 2001, they formed a "clustered" influx. I can only assume that they had wintered in south Florida. The main spring passage ran from March 2 (2003) to May 8 (2001), there were six "clustered" influxes. The first is indicated by a peak count of two on March 3, 2001. The second peaked from March 10 (2000) to March 14 (2002) with a high count of eight on March 14, 2002. The third peaked from March 18 (2001) to March 24 (2003) with a high count of three on March 24, 2003. The fourth peaked from April 2 (2001) to April 3 (2000, 2002) with a high count of five on April 3, 2002. The fifth peaked from April 14 (2002) to April 15 (2000) with a high count of three on April 15, 2000. The sixth peaked from April 24 (2003) to April 29 (2000) with a high count of two on April 24, 2003. Passage in the fall was heavier, the passage ran from July 8 (2001) to September 24 (2000), there were seven "clustered" influxes. The first peaked from July 8 (2001) to July 13 (2003) with two on both dates. The second peaked from July 21 (2003) to July 25 (2002) with one on both dates. The third is indicated by a peak count of two on August 8, 2003. The fourth peaked on August 16 (2000, 2001) with high counts of 11 on August 16, 2001 and 34 on August 16, 2000. The latter was the highest count during the first five years of the survey. The fifth peaked on August 25 (1999, 2002) with a high count of nine on August 25, 2002. The sixth peaked from September 3 (1999) to September 8 (2002) with a high count of five on September 3, 1999. The last influx is indicated by a peak count of three on September 21, 2000.

Kentucky Warbler (*Oporornis formosus*)

This is a very rare migrant with six records for the five years. Four were in the spring there were singles on April 2, 2001, April 14, 1999, April 24, 2003 and May 14, 2001. In the fall there were singles on September 15, 2002 and September 24, 2000. There are too few records to identify any influxes. This is a secretive species.

Common Yellowthroat (*Geothlypis trichas*)

This is a common passage migrant and winter visitor. It was present during the summer in some years but there is no evidence of breeding. Seen in the early fall from August 6 (1999) to September 2 (2002) with a high count of two on August 25, 1999. The main fall passage ran from August 27 (2000) to November 30 (2000) with a high count of 321 on October 2, 2002. To detail the 2002 influxes, there were two on September 4 with nine on September 8, 16 on September 11, 51 on September 15, 64 on September 18, 85 on September 26, 108 on

September 29 and 321 on October 2, then 209 seen on October 9 with 125 on October 13, 116 on October 20, 114 on October 28, 103 on November 5, 74 on November 9 and 30 on November 17. It is perhaps unusual for the counts to stay so high from October 13 to November 5. There were 85 on November 21 with 95 on November 24, then 52 seen on November 29. The winter passage ran from November 26 (1999) to January 7 (2003) with an extension to January 25 in 2000. The highest count was that of 119 on December 30, 2002. To continue detailing the 2002/2003 influxes, there were 58 on November 30 with 114 on December 2, then 112 seen on December 8 with 30 on December 11. There were 56 on December 14 with 84 on December 16, then 83 seen on December 21 with 55 on December 26. There were 66 on December 28 with 119 on December 30, then 95 seen on January 5 with 56 on January 7. The early spring passage followed from January 7 (1999, 2001, 2002) to March 13 (1999) with an extension to March 27 in 2001. The highest count was that of 124 on January 9, 2003. To detail the 2003 influxes, there were 124 on January 9 with 80 on January 15, 75 on January 19 and 45 on January 22. There were 88 on January 26 with 93 on January 30, then 76 seen on February 2 with 47 on February 5 and 13 on February 9. There were 71 on February 12 with 55 on February 19 and 28 on February 23. There were 46 on February 26 with 51 on March 2 and 53 on March 5, then 29 seen on March 9. The late spring passage ran from February 20 (2002) to June 6 (2000) with a high count of 88 on March 16, 2003. To detail the 2003 influxes, there were 51 on March 12 with 88 on March 16, then 36 seen on March 19 with 23 on April 2. There were 14 on April 6 with 31 on April 13, then 23 seen to April 21. There were 37 on April 24 with 33 on April 27, 20 on May 4, seven on May 7, five on May 12, two on May 15 and one on May 18. That was the end of the passage in that year. The summer appears to run from May 29 (2003) to August 10 (2003) with a high count of four on June 1, 2003.

Seen in the early fall from August 6 (1999) to September 2 (2002), there were three “clustered” influxes. The first two were indicated by isolated peak counts of singles on August 6, 1999 and August 14, 2002. The third peaked from August 22 (2001) to August 25 (1999) with a high count of two on August 25, 1999. The main fall passage ran from August 27 (2000) to November 30 (2000), there were ten “clustered” influxes. The first is indicated by a peak count of nine on September 17, 1998. The second peaked from September 25 (1999) to September 26 (2001) with a high count of 176 on September 25, 1999. The third peaked from October 2 (2002) to October 5 (2000) with high counts of 120 on October 5, 2000 and 321 on October 2, 2002. The latter was the highest count during the first five years of the survey. The fourth is indicated by a peak count of 108 on October 14, 2001. The fifth peaked from October 19 (1999) to October 21 (1998) with a high count of 112 on October 19, 1999. The sixth peaked from October 24 (2001) to October 29 (2000) with a high count of 97 on October 29, 2000. The seventh is indicated by a peak count of 20 on November 6, 1998. The eighth peaked from November 11 (2001) to November 12 (2000) with a high count of 110 on November 12, 2000. The ninth peaked from November 19 (1999) to November 20 (1998) with a high count of 32 on

November 19, 1999. The tenth peaked from November 25 (2001) to November 26 (2000) with a high count of 84 on November 26, 2000. It is possible that the passage in November relates to a separate event. In 2002 there was what amounts to a mega influx from September 4 to November 17 with the high count of 321 noted above. This influx was detailed in segment one. The winter passage ran from November 26 (1999) to January 7 (2003) with an extension to January 25 in 2000 there were four "clustered" influxes. The first peaked from November 30 (1998) to December 2 (2001, 2002) with a high count of 114 on December 2, 2002. The second peaked from December 11 (1999) to December 16 (2002) with a high count of 84 on December 16, 2002. The third peaked from December 20 (1998) to December 22 (2000) with a high count of 76 on December 22, 2000. The fourth peaked from December 27 (2001) to January 1 (2000) with a high count of 119 on December 30, 2002. The early spring passage followed from January 7 (1999, 2001, 2002) to March 13 (1999) with an extension to March 27 in 2001. This was the strongest of the two spring passages, there were six "clustered" influxes. The first is indicated by a peak count of 124 on January 9, 2003. The second peaked from January 14 (2001) to January 16 (2002) with a high count of 104 on January 16, 2002. The third peaked from January 24 (2001) to January 30 (2003) with a high count of 106 on January 27, 2002. The fourth peaked from February 8 (2000) to February 12 (2003) with a high count of 94 on February 10, 2002. The fifth peaked from February 17 (1999) to February 21 (2001) with a high count of 67 on February 21, 2001. The sixth peaked from February 29 (2000) to March 5 (2003) with a high count of 53 on March 5, 2003. The late spring passage ran from February 20 (2002) to June 6 (2000), there were eight "clustered" influxes. The first peaked from March 10 (2000) to March 16 (1999, 2003) with a high count of 88 on March 16, 2003. The second peaked from March 21 (2000) to March 26 (2003) with a high count of 51 on March 26, 2003. The third peaked from April 2 (2001) to April 3 (2000) with a high count of 24 on April 3, 2000. The fourth peaked from April 13 (2003) to April 19 (2001) with a high count of 31 on April 13, 2003. The fifth peaked from April 24 (2002, 2003) to April 26 (1999, 2000) with a high count of 37 on April 24, 2003. The sixth is indicated by a peak count of 17 on May 2, 2001. The seventh peaked from May 13 (2000) to May 15 (2002) with a high count of nine on May 15, 2002. The last influx is indicated by a peak count of seven on May 20, 2001. The summer appears to run from May 29 (2003) to August 10 (2003). There is no evidence of breeding but males are often present. Surprisingly the records show a pattern of passage, there were four "clustered" influxes. The first peaked from June 1 (2003) to June 5 (1999) with a high count of four on June 1, 2003. The second is indicated by a peak count of three on June 12, 2002. The third peaked from June 23 (2003) to June 24 (2001) with a high count of three on June 24, 2001. The fourth peaked from July 3 (2002) to July 4 (2003) with two on both dates. No indication of passage in the last month of this event, the highest count during this period was that of two on July 13, 2003.

Hooded Warbler (*Wilsonia citrina)*

This is a very uncommon passage migrant. In the spring there was one on March 23, 1999 and March 30, 1999, then singles seen on April 13, 2003 and April 14, 2002. Finally for the spring there were two on April 17, 1999. This is still the highest count for Zellwood. All the April records could relate to a single "clustered" influx. Seen in the fall from August 4 (2002) to September 29 (2002). Singles were seen on a total of nine dates. Of these four were seen in August from the 4th to the 12th. Finally there was an exceptionally late individual there being an adult male in the woods between Lust and Hooper Farms Roads on November 1, 2001.

Wilson's Warbler (*Wilsonia pusilla*)

This is a very rare passage migrant with four records for the five years. In the fall there was one on November 21, 2002. There were no winter records. In the early spring there were singles on January 10, 2001, January 27, 2002 and February 8, 2000.

Yellow-breasted Chat (*Icteria virens)*

This is a summer visitor and passage migrant. That simple statement does not do the situation justice. This species was known to nest in north-west Florida but not here in central Florida. There were no pairs located in 1999 but in 2000 there were 19 pairs with seven pairs in 2001, 25 pairs in 2002 and 56 pairs in 2003. Although outside the period covered by this analysis in 2004 there were a staggering 103 pairs. I say pairs but in reality this is a count of singing males on territory. I did see females (or second birds) from time to time. I saw adults carrying food etc. This is such a secretive species when not singing but I did manage to see broods of two young on July 6, 2003 and July 19, 2000. This has been one of the most important ornithological events at Zellwood. The summer appears to run from April 21 (2003) to August 5 (2003) with a high count of 30 on June 11, 2003. Because of my efforts to track down these birds during the Breeding Bird Survey I am not able to identify any influxes during this period. There does appear to be a fall passage from August 11 (2002) to October 20 (2002) with a high count of three on August 25, 2002. The only winter sightings stem from 2002, there were two on November 29 with singles on three dates to December 26, 2002. The early spring was no better, the only record relates to one on January 14, 2001. Seen in the spring from March to May 27 (2000, 2002). Initially there was one on March 2, 2003 and March 9, 2003. There were

no further sightings until March 27 (2002) when the passage really started. The highest count was that of six on April 21, 2002.

The summer appears to run from April 21 (2003) to August 5 (2003) with high counts of 11 on June 9, 2000, 21 on June 10, 2002 and 30 on June 11, 2003. The latter was the highest count during the first five years of the survey. In 2004 the highest count was that of 41 on May 23. I do not know whether or not there was a pattern of influxes during the summer as my efforts to track the breeding population would have skewed any figures. There was a fall passage from August 11 (2002) to October 20 (2002), there were five "clustered" influxes. The first peaked from August 11 (2002) to August 16 (2001) with one on both dates. The second peaked from August 23 (2000) to August 25 (2002) with a high count of three on August 25, 2002. The third peaked from August 29 (2001) to September 3 (2000) with one on both dates. The last two influxes were indicated by isolated peak counts of one on September 8, 2002 and two on October 6, 2002. The only winter records came from 2002, there were two on November 29 with singles on November 30, December 2 and December 26. The early spring was no better, the only record relates to one on January 14, 2001. Later there was one on March 2, 2003 and March 9, 2003. This would be part of the main spring passage. That event otherwise ran from March 27 (2002) to May 27 (2000, 2002), there were four "clustered" influxes. The first is indicated by a peak count of three on April 13, 2003. The second peaked from April 17 (1999) to April 19 (2000, 2001) with a high count of two on April 19, 2001. The third peaked from April 21 (2002) to April 24 (2003) with a high count of six on April 21, 2002. The fourth is indicated by a peak count of four on May 8, 2001. This is another Zellwood specialty.

Summer Tanager (*Piranga rubra)*

This is a very uncommon passage migrant. There were only two spring records, there being singles on April 4, 2001 and April 21, 2003. Surprisingly there was one on June 7, 2001. I do not know how to define that sighting. Seen in the fall on seven dates from July 16 (2000) to October 19 (1999). All were singles apart for two on October 19, 1999. That is still the highest count for Zellwood. Two of the sightings, those on September 26, 2001 and September 30, 1999 may indicate the location of an influx.

Scarlet Tanager (*Piranga olivacea*)

This is a rare passage migrant with one sighting in the spring and four in the fall. For the spring there was an adult male on May 4, 2003. In the fall there were singles on September 21,

2000, October 2, 1999, October 7, 2001 and October 10, 2001. There were in all probably only four individuals. The counts of October 2, 1999 and October 7, 2001 may indicate the location of an influx.

Eastern Towhee (*Pipilo erythrophthalmus)*

This is a widespread resident, a passage migrant and a winter visitor. During the Breeding Bird Survey a total of ten pairs located in 1999 with 48 pairs in 2000, 72 pairs in 2001, 91 pairs in 2002 and 206 pairs in 2003. To go from ten pairs to 206 pairs in just five years is very exceptional. The greatest numbers are at the Sand Farm. When I started the survey there were many days when I did not locate a towhee but that quickly changed, the explosion in the breeding population has influenced the counts detailed below. To my surprise the records suggest passage throughout the year. To start with the winter passage this ran from November 30 (1999, 2002) to January 11 (1999, 2000) with a high count of 29 on December 11, 2002. To detail the 2002/2003 influxes, there were 15 on November 30 with 22 on December 2 and 29 on December 11, then 18 seen on December 14 with 17 on December 21, 15 on December 26 and nine on December 28. There were 20 on December 30 with 21 on January 2, then 20 seen on January 5 with 11 on January 7. The early spring passage followed from January 7 (2001, 2002) to March 3 (2001) with a high count of 60 on February 14, 2001. To detail the 2001 influxes, there were nine on January 7 with 20 on January 14, 21 on January 17, 26 on January 24, 28 on January 28 and 40 on January 31, then 38 seen on February 4 with 35 on February 7. There were 53 on February 11 with 60 on February 14, then 26 seen on February 18. There were 32 on February 21 with 39 on February 25, then 24 seen on February 28 with 20 on March 3. The main spring passage ran from February 26 (2003) to May 24 (2001) with a high count of 76 on May 7, 2003. To detail the 2003 influxes, there were 28 on February 26 with 73 on March 2, then 52 seen on March 5 with 27 on March 9. There were 51 on March 12 with 68 on March 16, then 43 seen on March 19 with 36 on March 26 and 28 on April 2. There were 29 on April 6 with 49 on April 13, then 33 seen on April 16. There were 38 on April 21 with 65 on April 24, then 49 seen on April 27 with 34 on April 30. There were 72 on May 4 with 76 on May 7, then 54 seen on May 12 with 49 on May 15. The summer is somewhat complicated, it ran from May 10 (1999) to August 14 (2001) with excluding 2003 a high count of 49 on June 2, 2002. Then there was 2003, in that year there were two major influxes. The first ran from June 23 to July 21 with a peak count of 191 on July 2. The second ran from July 23 to August 13 with a peak count of 228 on July 30, 2003. This is not a major time for migration so this has to be a flood of juveniles joining the population creating as far as the numbers go two post-breeding gatherings. To detail the 2003 influxes, there were 52 on May 15 with 113 on May 21, then 50 seen on May 26 with 44 on May 29 and 38 on June 1. There were 53 on June 4 with 60 on June

11, then 53 seen on June 16 with 47 on June 18. Those were two of the summer influxes that puzzle me so much. Then there were 57 on June 23 with 129 on June 26, 135 on June 29 and 191 on July 2, then 172 seen on July 4 with 156 on July 6, 147 on July 9, 118 on July 13, 84 on July 19 and 63 on July 21. There were 65 on July 23 with 103 on July 25, 109 on July 27 and 228 on July 30, then 83 seen on August 5 with 77 on August 10 and 54 on August 13. Numbers were much lower in the fall, passage noted from July 28 (2002) to December 3 (2000) with a high count of 52 on August 14, 2002. To detail the 2002 influxes, there were 26 on July 28 with 29 on July 31, 32 on August 4, 41 on August 7 and 52 on August 14, then 40 seen on August 18 with 38 on August 25, 27 on August 28 and 11 on September 2. There were 13 on September 4 with 14 on September 8 and 30 on September 11, then 26 seen on September 15 with 13 on September 18 and nine on September 22. There were 12 on September 26 with 15 on September 29, 24 on October 2 and 28 on October 9, then 19 seen on October 16 with 15 on October 20 and six on October 23. There were 17 on October 28 with four on November 5. There were 11 on November 9 with 17 on November 21, then 14 seen on November 24 with nine on November 29. I have not knowingly picked the best set of influxes rather I have just detailed the influxes that relate to the highest count for that season. Please note the counts on October 28 and November 5 in 2002. If I had been seeing more entries of that nature I would not be talking about influxes. I have again shown the influxes for a whole year for a species that is at least partially resident. There really is this pattern of influxes for so many of the “resident” species.

The winter passage ran from November 30 (1999, 2002) to January 11 (1999, 2000), there were three “clustered” influxes. The first peaked from December 2 (2001) to December 4 (1999) with a high count of 11 on December 2 (2001). The second peaked from December 11 (2002) to December 15 (2000) with a high count of 29 on December 11, 2002. The third peaked from December 30 (1999, 2001) to January 2 (2003) with high counts of 21 on January 1, 2001 and January 2, 2003. The early spring passage ran from January 7 (2001, 2002) to March 3 (2001), there were five “clustered” influxes. The first peaked from January 18 (2000) to January 22 (2003) with a high count of 30 on January 22, 2003. The second peaked from January 31 (2001) to February 2 (2003) with a high count of 40 on January 31, 2001. The third peaked from February 9 (1999) to February 10 (2002) with a high count of 26 on February 10, 2002. The fourth peaked from February 14 (2001) to February 15 (2003) with a high count of 60 on February 14, 2001. The fifth peaked from February 21 (2000) to February 25 (2001) with a high count of 39 on February 25, 2001. The influxes continued through the main spring passage. This event ran from February 26 (2003) to May 24 (2001), there were seven “clustered” influxes. The first peaked from February 29 (2000) to March 2 (2003) with a high count of 73 on March 2, 2003. The second is indicated by a peak count of six on March 7, 1999. The third peaked from March 16 (2003) to March 19 (2002) with a high count of 68 on March 16, 2003. The fourth peaked from March 23 (1999) to March 27 (2002) with a high count of 19 on March 27, 2002.

The fifth peaked from April 9 (1999) to April 13 (2003) with a high count of 49 on April 13, 2003. The sixth peaked from April 21 (2002) to April 24 (2003) with a high count of 65 on April 24, 2003. The seventh peaked from May 2 (2000) to May 8 (2001) with a high count of 76 on May 7, 2003. The year 2003 dominated the highest counts so the corresponding highest counts for the other years were 14 on February 29, 2000, 32 on March 18, 2001, 22 on April 11, 2001, 31 on April 21, 2002 and 26 on May 4, 2001. The summer is somewhat complicated, there was a single event from May 10 (1999) to August 14 (2001) but 2003 appeared to have the equivalent of two post-breeding gatherings from June 23 to August 13. There were ten "clustered"influxes for these two combined events. The first peaked on May 21 (2000, 2003) with high counts of 20 on May 21, 2000 and 113 on May 21, 2003. The second peaked from May 30 (2000) to June 2 (2002) with a high count of 49 on June 2, 2002. The third peaked from June 7 (1999) to June 11 (2003) with a high count of 60 on June 11, 2003. The fourth peaked from June 17 (2001) to June 19 (2002) with a high count of 37 on June 17, 2001. The fifth is indicated by a peak count of six on June 22, 1999. The sixth peaked from June 30 (2000) to July 1 (2001) with a high count of 29 on July 1, 2001. The seventh is indicated by a peak count of 32 on July 8, 2002. The eighth peaked from July 14 (1999) to July 16 (2000) with a high count of 20 on July 16, 2000. The ninth is indicated by a peak count of 38 on July 21, 2002. The tenth peaked from July 29 (2001) to August 3 (1999) with a high count of 34 on July 29, 2001. Then there was 2003, in that year there were two major influxes. The first ran from June 23 to July 21 with a peak count of 191 on July 2. The second ran from July 23 to August 13 with a peak count of 228 on July 30, 2003. The latter is still the highest count for Zellwood. These high counts fit into influxes six and ten respectively. Numbers were much lower in the fall, the passage ran from July 28 (2002) to December 3 (2000), there were eleven "clustered influxes. It is just possible that this passage could be split into two events (the early and the main fall passages) with the break occurring at the end of September. The first influx peaked from August 14 (2002) to August 16 (2001) with a high count of 52 on August 14, 2002. The next two influxes were indicated by isolated peak counts of seven on August 20, 1999 and 20 on September 2, 2001. The fourth peaked from September 10 (2000) to September 11 (2002) with a high count of 30 on September 11, 2002. The fifth peaked from September 23 (1999, 2001) to September 24 (2000) with a high count of 14 on September 23, 2001. The sixth is indicated by a peak count of 16 on October 3, 2001. The seventh peaked from October 9 (2002) to October 14 (1999) with a high count of 28 on October 9, 2002. The eighth peaked from October 24 (2001) to October 28 (2002) with a high count of 17 on October 28, 2002. The ninth peaked from November 7 (2001) to November 9 (1999) with a peak count of nine on November 7, 2001. The tenth peaked from November 18 (2001) to November 22 (1999) with a high count of 17 on November 21, 2002. The final influx is indicated by a peak count of 15 on November 26, 2000. And I had expected there to be a limited passage.

Chipping Sparrow (*Spizella passerina)*

This is an uncommon passage migrant and winter visitor. Most sightings are along the wooded borders. Seen in the fall from October 9 (2000) to November 7 (2001), there were three "clustered" influxes. The first peaked from October 12 (1999) to October 16 (2002) with a high count of three on October 16, 2002. The other two influxes are indicated by isolated peak counts of two on October 22, 2000 and three on November 7, 2001. There were no further sightings until the winter passage. This break in the records clearly shows the winter passage to be a separate event. The winter passage ran from December 2 (2001) to January 7 (1999, 2000), there were five "clustered" influxes. The first peaked from December 2 (2001) to December 3 (1998) with two on both dates. The second peaked from December 6 (2000) to December 7 (1999) with one on both dates. The third peaked from December 15 (2000) to December 16 (1998) with a high count of three on December 16, 1998. The fourth peaked from December 27 (1999) to January 1 (1999) with one on both dates. The fifth is indicated by a peak count of one on January 7, 2000. There was a very limited spring passage. In the early spring there were singles on January 13, 2002 and January 19, 1999. These could mark the location of an influx. The main spring passage was not much better. There were singles on March 4, 2002 and April 13, 2003. In 2002 there were four on April 14 with two on April 17. The count of four was the highest count during the first five years of the survey.

Clay-colored Sparrow (*Spizella pallida*)

This is an uncommon passage migrant and winter visitor. Unlike the last species these sparrows are not so tied to the wooded borders, they are quite likely to be found out in the weedy fields. The fall passage was very limited. There were two from October 25, 2000 to November 1, 2000 with one on November 12, 2000. There were also two on November 21, 2002 with three on November 29, 2002. That is the extent of the fall passage. The winter passage was a much more significant event. The passage ran from December 2 (2001) to January 7 (2002, 2003), there were four "clustered" influxes. The first is indicated by a peak count of four on December 5, 2001. The second peaked from December 11 (2002) to December 12 (2000) with a high count of two on December 12, 2000. The third peaked from December 19 (2001) to December 22 (2000) with a high count of three on December 20, 1998. The fourth peaked from January 3 (2002) to January 5 (2003) with a high count of two on January 3, 2002. The early spring passage followed from January 11 (2000) to February 19 (2003), the passage in 1999 is dealt with separately. There were four "clustered" influxes. The first peaked from January 11 (2000) to January 13 (2002) with a high count of three on January 11, 2000. The second is indicated by a peak count of one on January 22, 2003. The third peaked from January 28 (2001) to February 3 (2002) with a high count of two on February 1, 2001. The fourth is

indicated by a peak count of one on February 12, 2003. So to 1999, in that year before the woody plants took over from the weeds there was a major influx. This influx ran from January 7 to February 19 with a peak count of 46 on February 3. That is still the highest count for Zellwood. To detail the 1999 influx, there were two on January 7 with seven on January 15, 13 on January 19, 19 on January 17, 24 on January 29 and 46 on February 3, then 34 seen on February 5 with 21 on February 9, 16 on February 10 and three on February 19. The area was actually closed from the 17th although I still had access to the border. It is always possible that there was a second early spring influx in that year. In contrast to the comparatively strong early spring passage the late spring passage was minimal. There was one from March 10, 2002 to March 19, 2002, later there was one on April 10, 2002 with two on April 14, 2002. Finally there was one on April 23, 1999. So this species is in reality a winter and early spring passage migrant. What the 1999 records show is that if the habitat is provided then the birds will come, even if they are not known to visit Florida in such numbers.

Field Sparrow (*Spizella pusilla*)

This is an uncommon winter visitor and spring passage migrant. There is only one fall record, there being one on November 20, 1998. Seen in the winter from December 11 (2002) to January 10 (2002), there were three "clustered" influxes. The first peaked from December 11 (2002) to December 13 (2001) with a high count of two on December 13, 2001. The second peaked from December 17 (2000) to December 21 (2001) with a high count of two on December 21, 2001. The third peaked from January 3 (2002) to January 5 (2003) also with high counts of two on both dates. The early spring passage ran from January 11 (2000) to March 10 (2000), there were three "clustered" influxes. The first peaked from January 19 (1999) to January 20 (2002) with a high county of five on January 20, 2002. The second peaked from February 2 (2000) to February 3 (2002) also with a high count of five on February 2, 2000. The third is indicated by a peak count of four on February 24, 2002. The main spring passage followed from March 4 (2002) to March 31 (2002), there were two "clustered" influxes. The first peaked from March 14 (2000, 2002) to March 16 (1999) with high counts of three on March 14, 2000 and 12 on March 14, 2002. The latter was the highest count during the first five years of the survey. The second influx is indicated by a peak count of five on March 27, 2002. To detail the 2002 influxes for both the spring passages, there were two on January 13 with five on January 20, then two seen to February 20. There were four on February 24. Later there were five from March 4 to March 10 with 12 on March 14, then five seen on March 19 with one on March 22. There were four on March 24 with five on March 27 and on March 31. No later records.

Vesper Sparrow (*Pooecetes gramineus)*

This is a passage migrant and a winter visitor. Whilst this species is seen out in the open fields it prefers sites where there are nearby trees that they can fly up into if they feel threatened. Seen in the fall from November 6 (1999) to December 2 (2002) with a high count of five on November 29, 2002. To detail the 2002 influxes, there was one on November 9. There were five on November 29 with three on November 30 and one on December 2. The winter passage ran from December 3 (2000) to January 7 (2001) with a high count of nine on December 28, 2002. To detail the 2002/2003 influxes, there were five on December 8 with one on December 11. There were seven from December 21 to December 26 with nine on December 28, then three seen on December 30 with one on January 2. The early spring passage followed, it ran from January 4 (2000) to March 11 (2001) with a high count of 19 on January 7, 2003. To continue detailing the 2003 influxes, there were six on January 5 with 19 on January 7, then seven seen on January 9 with six on January 11. There were 15 on January 15 with one on January 19. There were two from January 22 to January 30 with six on February 2, then three seen on February 5. There were four on February 9 with five on February 12, then four seen to February 19. There were seven on February 23 with five on February 26 and singles to March 9. The late spring passage ran from March 6 (2002) to March 25 (1999) with a high count of 11 on March 19, 2002. To detail the 2002 influx, there were three on March 6 with eight on March 14 and 11 on March 19, then two seen to March 24. Finally there was one on April 23, 1999.

Seen in the fall from November 6 (1999) to December 2 (2002), there were three "clustered" influxes. The first peaked from November 6 (1999) to November 9 (2002) with a high count of three on November 6, 1999. The second peaked from November 11 (1998) to November 12 (2000) with a high count of three on November 12, 2000. The third peaked from November 27 (2001) to November 29 (2002) with a high count of five on November 29, 2002. That was the weakest event of the year. The winter passage ran from December 3 (2000) to January 7 (2001), there were three "clustered" influxes. The first peaked from December 5 (2001) to December 8 (2002) with a high count of six on December 6, 2000. The second peaked from December 17 (2000) to December 21 (2001) with a high count of five on December 17, 2000. The third peaked from December 28 (2002) to January 1 (2001) with a high count of nine on December 28, 2002. The early spring passage was by far the strongest event, it ran from January 4 (2000) to March 11 (2001), there were eight "clustered" influxes. The first influx peaked on January 7 (2000, 2003) with high counts of nine on January 7, 2000 and 19 on January 7, 2003. The latter was the highest count during the first five years of the survey. The second peaked from January 12 (1999) to January 15 (2003) with a high count of 15 on January 15, 2003. The third peaked on January 28 (2000, 2001) with six on both dates. The fourth peaked from February 2 (2003) to February 3 (2002) with a high count of six on February 2, 2003. The fifth peaked from February 11 (2000) to February 12 (2003) with a high count of 12

on February 11, 2000. The sixth is indicated by a peak count of 18 on February 17, 1999. The seventh peaked from February 23 (2003) to February 25 (2001) with a high count of nine on February 24, 2002. The eighth is indicated by a peak count of 15 on February 29, 2000. The late spring passage ran from March 6 (2002) to March 25 (1999), there were two "clustered" influxes. The first peaked from March 12 (2003) to March 14 (2000) with a high count of four on March 12, 2003. The second peaked on March 19 (1999, 2002) with high counts of nine on March 19, 1999 and 11 on March 19, 2002. As with other sparrow species there was a late record. In this case there was one on April 23, 1999.

Lark Sparrow (*Chondestes grammacus)*

This is a very rare passage migrant and winter visitor. Just five individuals found during the first three survey years but none located during the last two years. In the fall there was one on August 18, 1999. Later there were singles from September 30, 1999 to October 6, 1999 and from October 1, 2000 to October 18, 2000. These last two records indicate an influx peaking from September 30 (1999) to October 1 (2000). There was a single winter record, there being one on December 12, 2000. In the early spring there was one from February 9, 1999 to at least February 17, 1999 when the area was closed. The lack of records for the last two years could well be tied to the changing habitat with weeds giving way to woody shrubs and the shrubs giving way to grass with the roller-chopping and mowing.

Savannah Sparrow (*Passerculus sandwichensis*)

This is a common passage migrant and winter visitor. Seen in the fall from September 27 (2000) to December 4 (1999) with a high count of 715 on November 25, 1999. To detail the 1999 influxes, there was one on October 6 and October 16 with 30 on October 21, 250 on October 29, 420 on November 11, 535 on November 18, 540 November 20 and 715 on November 25, then 270 seen on November 30. The winter passage followed from December 2 (2002) to January 17 (2001) with a high count of 860 on December 8, 1998. To continue detailing the 1998/1999 influxes, there were 450 on December 3 with 860 on December 8, then 505 seen on December 20 with 410 on December 28. There were 840 on December 31 with 405 on January 7. The early spring passage ran from January 8 (1999) to March 7 (2000) with a high count of 700 on January 19, 1999. To detail the 1999 influxes, there were 420 on January 8 with 460 on January 12, 630 on January 15 and 700 on January 19, then 640 seen on January 29 with 610 on February 5, 540 on February 9, 465 on February 10 and 430 on February 17 when the area closed. To continue with the 2000 influxes, there were 82 on February 8 with 165 on February 16, then 23 seen on February 21. There were 35 on February 23 with 45 on February

25, then 42 seen on March 3 with 36 on March 7. The late spring passage ran from February 27 (2002) to May 7 (1999). In 2001 this passage continued to May 14 whilst in 2000 this passage continued to May 30. The highest count was that of 250 on March 11, 1999. To detail the 1999 influxes, there were 100 on March 7 with 250 on March 11, then 210 seen on March 13 with 30 on March 16. There were 70 on March 18 with 90 on March 19, then 60 seen on March 23 with 30 on March 25, 25 on March 30, 12 on April 1, nine on April 6, seven on April 20 and three on April 23. There were 55 on April 26 with eight on May 1, two on May 4 and one on May 7.

Seen in the fall from September 27 (2000) to December 4 (1999), there were five "clustered" influxes. The first peaked from October 21 (2001) to October 23 (1999) with a high count of 140 on October 23, 1999. The second is indicated by a peak count of 257 on October 29, 2000. The third peaked from November 5 (2002) to November 7 (2001) with a high count of 237 on November 7, 2001. The fourth is indicated by a peak count of 300 on November 12, 1999. The fifth peaked from November 25 (1998) to November 29 (2002) with high counts of 193 on November 26, 2000 and 715 on November 25, 1998. The winter passage ran from December 2 (2002) to January 17 (2001), there were four "clustered" influxes. The first peaked from December 5 (2001) to December 8 (1998) with high counts of 109 on December 5, 2001 and 860 on December 8, 1998. The latter is still the highest count for Zellwood. The second peaked from December 11 (1999, 2002) to December 12 (2000) with a high count of 235 on December 11, 1999. The third peaked from December 27 (2001) to January 1 (2001) with high counts of 190 on December 30, 2002 and 840 on December 31, 1998. The fourth peaked from January 4 (2000) to January 7 (2002) with a high count of 135 on January 4, 2000. The early spring passage followed from January 8 (1999) to March 7 (2000), there were five "clustered" influxes. The first peaked from January 18 (2000) to January 24 (2001) with high counts of 150 on January 19, 2003 and 700 on January 19, 1999. The second peaked from January 28 (2000) to January 30 (2003) with a high count of 190 on January 30, 2003. The third peaked from February 10 (2002) to February 12 (2003) with a high count of 170 on February 12, 2003. The fourth is indicated by a peak count of 165 on February 16, 2000. The fifth peaked on February 25 (2000, 2001) with a high count of 125 on February 25, 2001. The late spring passage ran from February 27 (2002) to May 7 (1999). In 2001 this passage continued to May 14 whilst in 2000 the passage continued to May 30. There were six "clustered" influxes. As the number of birds drop so do the number of influxes go up (more basic influxes). The first is indicated by a peak count of 135 on March 6, 2002. The second peaked on March 11 (1999, 2001) with a high count of 250 on March 11, 1999. The third peaked from March 16 (2003) to March 19 (1999) with a high count of 90 on March 19, 1999. The fourth peaked from March 27 (2002) to April 3 (2000) with a high count of 81 on March 27, 2002. The fifth peaked from April 7 (2002) to April 11 (2001) with a high count of 64 on April 7, 2002. The final influx is indicated by a peak count of 55 on April 26, 1999. In 2000 the last sightings were of singles on May 21, May 23, May 27 and May 30.

Grasshopper Sparrow (*Ammodramus savannarum)*

This is an uncommon passage migrant and winter visitor. Seen in the fall from October 6 (2002) to November 30 (1998, 2000), there were three "clustered" influxes. The first peaked from October 24 (2001) to October 25 (2000) with two on both dates. The second peaked from November 4 (2001) to November 5 (2000) also with two on both dates. The third peaked from November 20 (1998) to November 26 (2000) with high counts of two on November 25, 2001 and ten on November 20, 1998. To detail the 1998 influx, there was one on November 6 with three on November 11, six on November 13 and ten on November 20, then five seen on November 25 with two on November 30. The winter passage followed from December 2 (2001) to January 12 (1999), there were four "clustered" influxes. The first peaked from December 4 (1999) to December 8 (1998) with high counts of two on December 5, 2001 and six on December 8, 1998. The second is indicated by a peak count of two on December 13, 2001. The third peaked on December 22 (1999, 2000) with one on both dates. The fourth peaked from December 31 (1998) to January 5 (2003) with high counts of two on January 5, 2003 and seven on December 31, 1998. Next came the early spring passage and this ran from January 19 (1999, 2003) to February 25 (2001), there were four "clustered" influxes. The first peaked from January 19 (1999) to January 24 (2001) with high counts of one on January 24, 2001 and six on January 19, 1999. The second peaked from February 2 (2003) to February 3 (2002) with a high count of three on February 2, 2003. The third peaked from February 11 (2000) to February 17 (1999) with high counts of two on February 11, 2000 and 12 on February 17, 1999. The latter is still the highest count for Zellwood. With the area being closed after February 17, 1999 I do not know for certain that the counts did not go higher. It is quite possible that the peak counts for February 11 and February 17 represent different influxes. The fourth is indicated by a peak count of two on February 25, 2001. To detail the 1999 influxes, there were six on January 19 with one on January 20. There were two from January 27 to February 3 with three on February 5, four on February 9, five on February 10 and 12 on February 17 after which date the area was closed. The late spring passage ran from March 7 (2000) to April 19 (2000), there were four "clustered" influxes. The first is indicated by a peak count of two on March 7, 2000. The second peaked from March 13 (1999) to March 14 (2002) with a high count of two on March 13, 1999. The third peaked on March 27 (2000, 2002) with a high count of four on March 27, 2000. The fourth peaked from April 14 (2002) to April 19 (2000) with one on both dates. Finally whilst conducting the Breeding Bird Survey on May 31, 1999 I found one in a suitable nesting area north of the McDonald Canal. I could not relocate this individual on later visits.

Henslow's Sparrow (*Ammodramus henslowii)*

This is a very rare migrant. It is a very secretive species so will have been under-recorded. In the fall there were one on November 12, 2000 with another from November 20, 1998 to November 30, 1998. There was also one on November 21, 2002. The records for November 20 (1998) and November 21 (2002) create a "clustered" influx. There were no winter records. In the early spring the only records relate to singles on January 7, 1999 and January 19, 1999. There may have been only four individuals for the five years.

Le Conte's Sparrow (*Ammodramus leconteii*)

` This is a vagrant. This species is very hard to locate due to its preference for wet well vegetated grassy areas. As with all these secretive sparrows it will have been under-recorded. For the fall there was one on November 21, 2002. For the winter there was one on December 16, 1998 and December 31, 1998. Finally for the early spring there was one on January 18, 2000.

Nelson's Sparrow (*Ammodramus nelsoni)*

This is a vagrant. This sparrow is a coastal species so it was a most unexpected visitor. There was one in first-winter plumage in a bed of very tall grasses by Interceptor Road on November 5, 2000.

Fox Sparrow (*Passerella iliaca*)

This is another vagrant with two early spring sightings. There was one on January 5, 2003 and January 9, 2003. This was at the Sand Farm. There was also one on February 17, 1999. This individual was near the Laughlin Road gate. Because the area was closed after that date I was unable to follow up on this sighting. Both were believed to be of the eastern race P.i.*iliaca*. The early spring is the season as there is a historical record of one on February 7, 1965.

Song Sparrow (*Melospiza melodia)*

This is a passage migrant and winter visitor. This species prefers thick cover, often by water. Seen in the fall from October 17 (2001) to December 8 (2002) with a high count of 12 on November 17, 2002. To detail the 2002 influx, there were singles from October 23 to November 5 with four on November 9 and 12 on November 17, then ten seen on November 21 with eight

on November 24, six to November 30, five on December 2 and three on December 8. The winter passage followed from November 30 (1998) to January 15 (2003) with a high count of 16 on December 16, 2002. To detail the 2002/2003 influxes, there were six on December 11 with 16 on December 16, then five seen to December 26 with two on December 28. There were seven on December 30 with eight on January 5, then five seen on January 9 with four on January 11 and two on January 15. The early spring passage ran from January 7 (2002) to March 10 (2000) with high counts of six on January 10, 2002 and February 5, 1999. To detail the 1999 influxes, there were three on January 19 with five from January 27 to January 29 and six on February 5, then five seen on February 9 with four on February 10 and three on February 17. The area being closed after that date did make life difficult. The late spring passage was a minimal event, it ran from March 5 (2003) to April 2 (2003). There were only records for two of the five years (2001 and 2003). No more than two a day seen.

Seen in the fall from October 17 (2001) to December 8 (2002), there were four "clustered" influxes. The first peaked from October 26 (1999) to November 1 (2001) with a high count of three on November 1, 2001. The second is indicated by a peak count of one on November 11, 1998. The third peaked from November 15 (2000) to November 17 (2002) with high counts of nine on November 15, 2000 and 12 on November 17, 2002. The fourth is indicated by a peak count of three on November 27, 2001. The winter passage followed from November 30 (1998) to January 15 (2003), there were four "clustered" influxes. The first is indicated by a peak count of two on December 3, 1998. The second peaked from December 7 (1999) to December 12 (2000) with a high count of four on December 12, 2000. The third peaked from December 16 (1998, 2002) to December 19 (1999) with high counts of three on December 19, 1999 and 16 on December 16, 2002. The latter is still the highest count for Zellwood. The fourth peaked from December 30 (2001) to January 5 (2003) with high counts of eight on January 5, 2003 and ten on January 1, 2001. The early spring passage ran from January 7 (2002) to March 10 (2000), there were five i "clustered" influxes. The first is indicated by a peak count of six on January 10, 2002. The second peaked from January 17 (2001) to January 21 (2000) with a high count of four on January 17, 2001. The third peaked from January 24 (2001) to January 27 (2002) with a high count of five on January 27, 2002. The fourth peaked from February 4 (2001) to February 6 (2000) with a high count of six on February 5, 1999. The fifth peaked from February 20 (2002) to February 25 (2000) with a high count of three on February 20, 2002. The late spring passage was a minimal event with records for two of the five years (2001 and 2003). This passage ran from March 5 (2003) to April 2 (2003), there were two from March 5, 2003 to March 12, 2003 with one on March 19, 2003. Later there were singles on March 27, 2001 and April 2, 2003.

Lincoln's Sparrow (*Melospiza lincolnii)*

This is an uncommon passage migrant and winter visitor. This is another of the secretive species that prefers thick cover by water. It will be under-recorded. Seen in the fall from October 20 (2002) to November 30 (2000, 2002), there were three "clustered" influxes. The first is indicated by a peak count of three on October 20, 2002. The second peaked from November 15 (2000, 2001) to November 17 (2002) with high counts of three on November 15, 2000 and five on November 17, 2002. The latter is still the highest count for Zellwood. The third peaked from November 25 (1998, 2001) to November 26 (2000) with one on all dates. The winter passage was lighter, it ran from December 5 (2001) to January 7 (2003), there were four "clustered" influxes. The first peaked from December 5 (2001) to December 7 (1999) with one on both dates. The second peaked from December 11 (2002) to December 12 (2000) with one on both dates. The third peaked from December 20 (1998) to December 22 (1999) also with one on both dates. The fourth is indicated by a peak count of one on December 31, 2000. The early spring passage ran from January 7 (1999) to March 4 (2002), there were six "clustered" influxes. The first is indicated by a peak count of one on January 10, 2002. The second peaked from January 15 (1999) to January 17 (2001) with a high count of three on January 15, 1999. The third peaked from January 19 (2003) to January 21 (2000) with a high count of two on January 21, 2000. The fourth peaked from January 27 (2002) to February 3 (1999) with a high count of four on February 3, 1999. The last two influxes were indicated by isolated peak counts of one on February 15, 2003 and three on February 25, 2000. Passage really did end on March 4 (2002) as there were only scattered sightings after that date. There was one on March 14, 2000 with another on March 25, 2001. Finally there was one on April 10, 2002 and April 14, 2002.

Swamp Sparrow (*Melospiza georgiana*)

This is a common passage migrant and winter visitor. With the exception of the wooded borders this species can be found out in the fields especially along any drainage ditch or canal. Seen in the fall from October 15 (2000) to December 11 (2002) with a high county of 725 on December 2, 2002. To detail the 2002 influxes, there were 21 on October 20 with 22 on October 23, 132 on October 28 and 354 on November 5, then 163 seen on November 9 with 57 on November 17. There were 275 on November 21 with 287 on November 24, 434 on November 29 and 725 on December 2, then 246 seen on December 8 with 70 on December 11. The winter passage followed from December 2 (2001) to January 14 (2000) with a high count of 402 on December 21, 2002. To continue with the 2002/2003 influxes, there were 77 on December 14 with 181 on December 16 and 402 on December 21, then 172 seen on December 26 with 51 on December 28. There were 235 on December 30 with 213 on January 5, 112 on January 9 and 54 on January 11. The early spring passage ran from January 7 (1999, 2001, 2002)

to March 7 (2000) with a high count of 180 on January 16, 2002. To detail the 2003 influxes, there were 76 on January 15 with 94 on January 19, then 42 seen on January 22. There were 65 on January 26 with 78 on January 30, then 72 seen on February 2 with 27 on February 5 and 20 on February 9. There were 46 on February 12 with 66 on February 15, then 34 seen on February 19 with 33 on February 23, 32 on February 26, 27 on March 2 and 20 on March 5. The late spring passage ran from March 6 (1999) to May 20 (2001) with a high count of 55 on March 16, 2003. To complete the year with the remaining 2003 influxes, there were 28 on March 9 with 43 on March 12 and 55 on March 16, then 25 seen on March 19 with 17 on March 26 and 13 on March 29. There were 21 on April 2 with 12 on April 6 and three on April 11. There were 33 on April 13 with 11 on April 16, seven on April 24, four on April 27 and two to May 4.

Seen in the fall from October 15 (2000) to December 11 (2002), there were six "clustered" influxes. The first is indicated by a peak count of six on October 21, 2001. The second peaked from November 3 (1999) to November 5 (2002) with a high count of 354 on November 5, 2002. The third peaked from November 11 (2001) to November 12 (1999, 2000) with a high count of 254 on November 12, 2000. The fourth is indicated by a peak count of 30 on November 20, 1998. The fifth peaked from November 25 (2001) to November 28 (2000) with a high count of 154 on November 28, 2000. The sixth is indicated by a peak count of 725 on December 2, 2002. This was the highest count during the first five years of the survey. Next came the winter passage, this ran from December 2 (2001) to January 14 (2000), there were four "clustered" influxes. The first peaked from December 8 (1998) to December 9 (2001) with a high count of 87 on December 9, 2001. The second peaked from December 11 (1999) to December 12 (2000) with a high count of 104 on December 12, 2000. The third peaked from December 20 (1998) to December 21 (2002) with a high count of 402 on December 21, 2002. The fourth peaked from December 27 (2001) to January 1 (2000, 2001) with a high count of 235 on December 30, 2002. The early spring passage ran from January 7 (1999, 2001, and 2002) to March 7 (2000), there were six "clustered" influxes. The first is indicated by a peak count of 29 on January 12, 1999. The second peaked from January 16 (2002) to January 19 (2003) with a high count of 180 on January 16, 2002. The third peaked from January 27 (1999, 2002) to January 30 (2003) with a high count of 109 on January 27, 2002. The fourth peaked from February 7 (2001) to February 11 (2000) with a high count of 64 on February 7, 2001. The last two influxes are indicated by isolated peak counts of 66 on February 15, 2003 and 25 on February 25, 2000. The late spring passage ran from March 6 (1999) to May 20 (2001), there were seven "clustered" influxes. Note how as the numbers drop the number of basic influxes goes up. The first influx peaked from March 6 (1999) to March 10 (2002) with a high count of 24 on March 7, 2000. The second peaked from March 16 (2003) to March 21 (2000) with a high count of 55 on March 16, 2003. The third peaked from March 30 (1999) to April 3 (2002) with a high count of 35 on April 3, 2002.The fourth peaked from April 6 (2000) to April 8 (2001) with a high count of 32 on April 6, 2000. The fifth peaked from April 13 (2003) to April 14 (2002) with a

high count of 35 on April 14, 2002. The last two influxes were indicated by isolated peak counts of five on April 20, 1999 and four on May 6, 2001.

White-throated Sparrow (*Zonotrichia albicollis*)

This is a very uncommon passage migrant and winter resident. It is exceptionally secretive keeping to thick cover because of this it will be under-recorded. Noted in the fall from October 19 (1999) to November 28 (2000). There were singles on October 19, 1999 and November 3, 1999, then one seen on October 28, 2002. There was one from November 7, 2001 to November 15, 2001 with two on November 11, 2001. Later there were two on November 27, 2001. Finally for the fall there was one from November 19, 2000 to November 28, 2000. At least five birds involved in the above. The wintering birds arrived later but they appeared to stay put once they had arrived. There was one from December 8, 1998 to February 10, 1999, then up to two a day seen from December 15, 2000 to March 11, 2001 with four on February 25, 2001. There was one from December 16, 2001 to January 24, 2002 with another from December 2, 2002 to January 11, 2003. The count of four was the highest count during the first five years of the survey. This is one of a handful of species that can be treated as resident through the winter, no passage. There are later records. There were two from March 27, 2001 to April 2, 2001 with one on March 6, 2002. Finally there was an exceptionally late individual on May 4, 2003.

White-crowned Sparrow (*Zonotrichia leucophrys*)

This is a regular passage migrant and winter visitor although numbers are lower since the shrubs took over from the weeds. Seen in the fall from October 25 (2000) to December 3 (2000) with a high count of ten on November 25, 1998. To detail the 1998 influx, there was one on November 13 with two on November 18, seven on November 20 and ten on November 25, then three seen on November 30. The winter passage followed from December 2 (2002) to January 17 (2001) with a high count of 21 on December 3, 1998. To detail the 1998/1999 influxes, there were 21 on December 3 with 14 on December 8 and one on December 16. There were three on December 20 with 14 on December 31, then 11 seen on January 7 with seven on January 8 and one on January 11. Next came the early spring passage, this ran from January 12 (1999) to March 16 (2003) with a high count of 51 on February 3, 1999. To detail the 1999 influxes, there were 16 on January 12 with 28 on January 19, then 16 seen on January 27. There were 24 on January 29 with 51 on February 3, then 32 seen on February 9 with 24 on February 10 and 16 on February 17 after which the area was closed. The record for the other years suggests that there might have been another smaller influx before the end of that passage. The

main spring passage ran from March 3 (2000, 2001) to May 4 (1999) with a high count of 14 on April 14, 2002. To detail the 2002 influxes, there were two on March 31 with 13 on April 10 and 14 on April 14, then eight seen on April 17 with two on April 24.

Seen in the fall from October 25 (2000) to December 3 (2000), there were four "clustered" influxes. The first two were indicated by isolated peak counts of five on November 1, 2000 and four on November 7, 2001. The third peaked from November 16 (1999) to November 21 (2002) with a high count of five on November 19, 2002. The fourth peaked from November 25 (1998) to November 29 (2001, 2002) with a high count of ten on November 25, 1998. The winter passage followed from December 2 (2002) to January 17 (2001), there were four "clustered" influxes. The first peaked from December 3 (1998) to December 8 (2002) with a high count of 21 on December 3, 1998. The second peaked from December 12 (2000) to December 16 (2001) with a high count of 19 on December 12, 2000. The third peaked from December 21 (2002) to December 22 (1999) with a high count of four on December 21, 2002. The fourth peaked from December 31 (1998) to January 2 (2003) with high counts of 12 on January 1, 2000 and 14 on December 31, 1998. The early spring passage ran from January 12 (1999) to March 16 (2003), there were six "clustered" influxes. The first peaked from January 13 (2002) to January 15 (2003) with two on both dates. The second is indicated by a peak count of 28 on January 19, 1999. The third peaked from January 24 (2001) to January 25 (2000) with a high count of 15 on January 24, 2001. The fourth is indicated by a peak count of 51 on February 3, 1999. That is still the highest count for Zellwood. The fifth peaked from February 8 (2000) to February 9 (2003) with a high count of four on February 9, 2003. The sixth peaked from February 23 (2000) to February 26 (2003) with a high count of three on February 24, 2002. The main spring passage ran from March 3 (2000, 2001) to May 4 (1999), there were six "clustered" influxes. The first peaked from March 3 (2001) to March 4 (2002) with a high count of four on March 3, 2001. The second is indicated by a peak count of five on March 18, 1999. The third peaked from March 25 (1999) to March 27 (2001) with a high count of four on March 25, 1999. The fourth peaked from April 3 (2000) to April 6 (2003) with a high count of nine on April 3, 2000. The fifth is indicated by a peak count of 14 on April 14, 2002. The sixth peaked from April 26 (1999) to April 29 (2001) with a high count of eight on April 26, 1999. Please note the strong passage in April.

Lapland Longspur (*Calcarius lapponicus)*

This is another vagrant. It is a vagrant anywhere in central Florida with very occasional sightings on the Atlantic coast, so an inland record is all the more exceptional. There was a male on October 16, 1998 by Roach Road.

Northern Cardinal (*Cardinalis cardinalis*)

This is a resident, whilst there is no actual evidence of passage there were 33 "clustered" influxes. During the Breeding Bird Survey a total of 179 pairs located in 1999 with 176 pairs in 2000, 320 pairs in 2001, 380 pairs in 2002 and 575 pairs in 2003. To complete the picture there were 593 pairs in 2004. The only fledged young that I made a note of were seen on April 26, 2000. This is a perfect example of how the shape of the territories has changed and finally how they have moved out into the fields. This species is known to be a partial migrant but sorting out any passage has proved to be impossible. The pattern for most of the year is in the form of influxes with the peak counts forming clusters. To some extent the varying activities during the year can explain this but…..all I can do is show the pattern that I see. The early spring "passage" ran from January 7 (2002, 2003) to March 3 (2001) with a high count of 183 on February 24, 2002. To detail the 2003 influxes, there were 77 on January 7 with 89 on January 9, then 47 seen on January 11 with 44 on January 15 and 36 on January 19. There were 71 on January 22 with 74 on January 30, then 71 seen on February 2 with 62 on February 5 and 20 on February 9. There were 65 on February 12 with 92 on February 15, then 91 seen on February 19 with 89 on February 23. The main spring "passage" ran from February 25 (2000) to May 12 (2003) with a high count of 273 on May 4, 2003. Note how the peak counts grew through this "passage" as the activity level increased. To detail the 2003 influxes, there were 101 on February 26 with 134 on March 2, and 153 from March 12 to March 16, then 120 seen on March 19 with 96 on March 24. There were 218 on March 26 with 132 on March 29, 118 on April 6 and 90 on April 11. There were 235 on April 13 with 243 on April 24, 244 on April 27 and 273 on May 4, then 163 seen on May 7 with 133 on May 12. The summer would appear to cover an extended period from May 6 (2002) to August 31 (1999) with a high count of 190 on May 21, 2003. To detail the 2003 influxes, there were 166 on May 15 with 190 on May 21, then 109 seen on May 26 with 106 on May 29. There were 129 on June 1 with 119 on June 4 and 58 on June 8. There were 141 on June 11 with 93 on June 16. There were 96 on June 18 with 99 on June 23, 148 on June 26, 180 on June 29 and 186 on July 2, then 137 seen on July 4 with 133 on July 6. There were 140 on July 9 with 131 on July 13, 69 on July 19, 66 on July 21 and 56 on July 23. There were 58 on July 25 with 103 on July 30, then 45 seen on August 5 with 36 on August 8. There were 67 on August 10 with 38 on August 13. In 2003 there were seven influxes but for the five years there were a total of 13 influxes. The fall "passage" ran from August 26 (2001) to November 30 (1998, 2000, 2002) with a high count of 112 on October 10, 2001. To detail the 2002 influxes, there were 50 on September 2 with 69 on September 4, 80 on September 11 and 82 on September 15, then 81 on September 22 with 77 on September 26. There were 88 on September 29 with 96 on October 6 and 109 on October 9, then 90 seen on October 13 with 75 on October 16, 73 on October 20 and 68 on October 23. There were 83 on October 28, 64 on

November 5, 56 on November 9, 52 on November 21, 47 on November 24, 39 on November 29 and 31 on November 30. Now to the winter, this covered the period November 27 (2001) to January 11 (1999). There was no discernible "passage" in the form of influxes for the first three years. The highest counts were of 41 on December 3, 2000 and December 15, 2000. There were two influxes for the last two winters with a high count of 67 on December 30, 2002.

The early spring "passage" ran from January 7 (2002, 2003) to March 3 (2001), there were five "clustered"influxes. The first is indicated by a peak count of 89 on January 9, 2003. The second peaked from January 27 (2002) to January 31 (2001) with a high count of 137 on January 27, 2002. The third peaked from February 2 (2003) to February 5 (1999) with a high count of 71 on February 2, 2003. The fourth peaked from February 10 (2002) to February 15 (2003) with a high count of 137 on February 10, 2002. The fifth peaked from February 21 (2001) to February 24 (2002) with a high count of 183 on February 24, 2002. The main spring "passage" ran from February 25 (2000) to May 12 (2003), there were five "clustered" influxes. Note how the peak counts grew through this period as the level of activity increased. The first influx peaked from March 10 (2000) to March 12 (2003) with a high count of 153 on March 12, 2003. The second peaked from March 17 (2002) to March 18 (2001) with a high count of 209 on March 17, 2002. The third is indicated by a peak count of 218 on March 26, 2003. The fourth peaked from April 11 (2000) to April 17 (1999) with a high count of 235 on April 13, 2003. The fifth peaked from May 2 (2000) to May 6 (2001) with a high count of 273 on May 4, 2003. This was the highest count during the first five years of the survey. Now it gets really complicated. The summer would appear to cover an extended period from May 6 (2002) to August 31 (1999), there was a plethora of "clustered" influxes, thirteen in all. The first three influxes covering the month of May did not fit into any pattern. The first peaked from May 10 (1999) to May 12 (2002) with a high count of 102 on May 12, 2002. The second peaked from May 20 (2001) to May 21 (2000, 2003) with a high count of 190 on May 21, 2003. The third is indicated by a peak count of 129 on June 1, 2003. The highest counts now form a pattern of increasing numbers to late June/early July followed by declining numbers to late August. The fourth peaked from June 5 (2002) to June 7 (2001) with a high count of 102 on June 5, 2002. The fifth peaked from June 11 (2003) to June 12 (1999) with a high count of 141 on June 11, 2003. The sixth is indicated by a peak count of 83 on June 24, 2001. The seventh peaked from June 30 (2000) to July 2 (2003) with a high count of 186 on July 2, 2003. The eighth peaked from July 8 (2002) to July 9 (1999, 2003) with a high count of 140 on July 9, 2003. The ninth peaked from July 21 (2002) to July 23 (1999) with a high count of 106 on July 21, 2002. The tenth peaked from July 27 (2001) to August 2 (2000) with a high count of 103 on July 30, 2003. The eleventh peaked from August 7 (2002) to August 10 (2003) with a high count of 67 on August 10, 2003. The twelfth peaked from August 16 (2000) to August 18 (2002) with a high count of 61 in August 18, 2002. The final influx is indicated by a peak count of 35 on August 27, 1999. The fall "passage" followed from August 26 (2001) to November 30 (1998, 2000, 2002), there were nine "clustered" influxes. The

first peaked from September 2 (2000) to September 6 (1999) with a high count of 70 on September 2, 2000. The next two influxes were indicated by isolated peak counts of 82 on September 15, 2002 and 87 on September 24, 2000. The fourth peaked from October 5 (2000) to October 10 (2001) with a high count of 112 on October 10, 2001. The fifth is indicated by a peak count of 73 on October 14, 1999. The sixth peaked from October 18 (2000) to October 21 (1998) with a high count of 79 on October 18, 2000. The seventh peaked from October 28 (2002) to October 29 (1999) with a high count of 83 on October 28, 2002. The eighth peaked from November 4 (2001) to November 9 (1999) with a high count of 63 on November 4, 2001. The ninth peaked from November 20 (1998) to November 26 (2000) with a high count of 52 on November 21, 2002. Now to the winter period, yes period not passage. There were no discernible influxes during the first three winters. There were two "clustered" influxes for the last two winters. The first peaked from December 8 (2002) to December 9 (2001) with a high count of 57 on December 8, 2002. The second peaked from December 27 (2001) to December 30 (2002) with a high count of 67 on December 30, 2002. Whilst writing this text I realized that it is quite possible for the counts to show the ebb and flow in the numbers depending on the underlying activity and for there to be a level of activity on top i.e. a veneer of passage. That is all it would take to create these influxes. This is another perplexing species.

Rose-breasted Grosbeak (*Pheucticus ludovicianus)*

This is a very rare passage migrant. In the spring singles seen on April 19, 2001, April 28, 2002 and April 30, 2000, these records created a "clustered" influx which peaked from April 28 (2002) to April 30 (2000) with one on both dates. In the fall singles seen on October 6, 2002 and October 13, 2002, October 9, 2000 and October 15, 2000. Finally there was one on October 14, 2001. These records created a "clustered" influx from October 6 (2002) to October 9 (2000) with one on both dates. There would appear to have been just six individuals over the five years.

Blue Grosbeak (*Guiraca caerulea*)

This is a summer visitor and a passage migrant with a few staying to winter. During the Breeding Bird Survey a total of 41 pairs located in 1999 with 59 pairs in 2000, 76 pairs in 2001, 74 pairs in 2002 and 87 pairs in 2003. There were 81 pairs in 2004. Again the pattern fits the changes to the territory shape and then the move out into the fields. It is hard to identify the summer but it probably spans the period May 20 (2002) to August 2 (2000). Fledged young noted from June 5 (2002) to August 13 (1999), however most young first noted from June 19 to July 4. One of the pleasures of the summer is to listen to a series of Blue Grosbeaks and Indigo

Buntings with perhaps one to two Painted Buntings all singing in chorus. The highest count was that of 39 on July 4, 2000. To detail the 2000 influxes, there were 23 on June 3 with 30 on June 9, then 20 seen to June 19. There were 29 on June 26 with 39 on July 4, then 35 seen on July 8 with 31 on July 19, 30 on July 26, 27 on July 30 and 19 on August 2. There was an early fall passage from July 16 (1999) to October 12 (2000) with high counts of 34 on August 12, 2001 and August 29, 2001. To detail the 2000 influxes, there were 24 on August 6 with 33 on August 9, then 23 on August 13 with 22 on August 20, 18 on August 27, ten on August 30, eight on September 3, six on September 7 and five to September 12. There were 14 on September 19 with 12 on September 21, nine on September 24 and six on September 27. There were 11 on October 1 with 17 on October 5, then three seen on October 9 with one on October 12. The late fall passage ran from October 9 (2002) to November 30 (2000) with a high count of ten on October 13, 2002. To detail the 2001 influxes, there were three on October 10 with two to November 1 and one on November 7. There were two on November 18. In that year there was a limited late fall passage. This species is not meant to winter in the United States, however… the winter passage ran from December 2 (2001) to January 5 (2003) with a high count of five on December 28, 2002. To detail the 2002/2003 influxes, there were singles on December 8 and December 16. There were three on December 21 with five from December 28 to December 30, then two seen to January 5. The early spring passage is the weakest event of the year, there was no activity in 2001. The passage ran from January 7 (2002, 2003) to March 10 (2002) with a high count of six on January 16, 2002. To detail the 2002 influxes, there were singles on January 7 and January 10 with six on January 16, then four seen on January 20 with three on January 24, two on February 3 and singles to February 24. There were two on February 27 with singles again to March 10. The main spring passage followed from March 19 (1999) to June 6 (2000) with a high count of 32 on May 4, 2001. To detail the 2001 influxes, there was one on April 2 with two on April 6 and April 8 then one seen on April 11. There were nine on April 16 with 21 on April 19, then 14 seen on April 22 with 11 on April 26. There were 15 on April 29 with 22 on May 2 and 32 on May 4, then 22 seen on May 6 with 18 on May 8. There were 22 from May 14 to May 20 with 24 on May 27, then 19 seen on May 31.

The summer ran from May 20 (2002) to August 2 (2000), there were five “clustered” influxes. The first peaked from June 7 (2001) to June 12 (1999) with a high count of 32 on June 12, 1999. The second is indicated by a peak count of 20 on June 19, 2002. The third peaked from June 27 (2001) to June 29 (2003) with a high count of 29 on June 29, 2003. The fourth peaked from July 3 (2002) to July 4 (2000) with a high count of 39 on July 4, 2000. This was the highest count during the first five years of the survey. The fifth peaked from July 9 (2003) to July 12 (1999) with a high count of 27 on July 9, 2003. The early fall passage ran from July 16 (1999) to October 12 (2000), there were eight “clustered” influxes. The first is indicated by a peak count of 13 on July 20, 1999. The second peaked from July 28 (2002) to July 30 (2003) with a high count of 19 on July 30, 2003. The third peaked from August 7 (2002) to August 13 (1999)

with a high count of 34 on August 12, 2001. The fourth peaked from August 21 (2002) to August 25 (1999) with a high count of 18 on August 21, 2002. The fifth is indicated by a peak count of 34 on August 29, 2001. The sixth peaked from September 17 (1999) to September 19 (2000) with a high count of 14 on September 19, 2000. The seventh is indicated by a peak count of 11 on September 23, 2001. The eighth peaked from September 29 (2002) to October 5 (2000) with a high count of 17 on October 5, 2000. The late fall passage ran from October 9 (2002) to November 30 (2000), there were five "clustered" influxes. The first peaked from October 10 (2001) to October 16 (1998) with a high count of ten on October 13, 2002. The second is indicated by a peak count of two on October 29, 2000. The third peaked from November 9 (1999) to November 12 (2000) with a high count of two on November 12, 2000. The fourth peaked from November 17 (2002) to November 18 (1998, 2001) with a high count of two on November 18, 2001. The fifth peaked on November 26 (1999, 2000) with one on both dates. Note how low the numbers were from late October. I say that in part because the winter passage was a stronger event. That is saying something as this species is not "meant" to winter in the United States! The winter passage ran from December 2 (2001) to January 5 (2003), there were four "clustered" influxes. The first peaked from December 8 (2002) to December 9 (2001) with a high count of three on December 9, 2001. The second peaked from December 12 (2000) to December 16 (1998) with a high count of three on December 16, 1998. The third peaked from December 21 (2001) to December 22 (1999) with one on both dates. The fourth peaked from December 28 (2002) to January 1 (2000) with a high count of five on December 28, 2002. That is a lot of influxes for a species that is not here in the winter. The early spring passage was the weakest event of the year, it ran from January 7 (2002, 2003) to March 10 (2002), there were five "clustered" influxes. There was no passage in 2001. The first is indicated by a peak count of three on January 7, 2003. The second peaked from January 11 (1999) to January 16 (2002) with a high count of six on January 16, 2002. The third peaked from January 27 (1999) to February 3 (2002) with a high count of three on February 2, 2000. The fourth is indicated by a peak count of one on February 17, 2002. The fifth peaked from February 23 (2000) to February 27 (2002) with a high count of two on February 27, 2002. The main spring passage followed from March 19 (1999) to June 6 (2000), there were seven "clustered" influxes. The first peaked from March 19 (1999) to March 25 (2000) with a high count of two on March 25, 2000. The second peaked from April 2 (2003) to April 6 (2000, 2001) with a high count of four on April 2, 2003. The third is indicated by a peak count of 21 on April 19, 2001. The fourth peaked from April 27 (2003) to April 30 (2000) with a high count of 23 on April 30, 2000. The fifth peaked from May 4 (1999, 2001) to May 9 (2002) with high counts of 26 on May 9, 2002 and 32 on May 4, 2001. The sixth peaked from May 21 (2000, 2003) to May 22 (1999) with high counts of 24 on May 21, 2000 and May 21, 2003. The seventh is indicated by a peak count of 24 on May 27, 2001. This is a special and interesting species.

Lazuli Bunting (*Passerina amoena)*

This is a vagrant. There was a female with a Blue Grosbeak and two Indigo Buntings at the eastern end of the McDonald Canal on January 7, 2002. The date suggests the early spring rather than the winter passage.

Indigo Bunting (*Passerina cyanea)*

This is a summer visitor, a passage migrant and a winter visitor. During the Breeding Bird Survey a total of 11 pairs located in 1999 with 32 pairs in 2000, 54 pairs in 2001, 65 pairs in 2002 and 96 pairs in 2003. There were a staggering 157 pairs in 2004. This species did not follow the step pattern it just kept on expanding its breeding population through 2003 with explosive growth in 2004. Initially the population was only a quarter of that of the Blue Grosbeak, now in 2004 it is double the grosbeak's population breeding throughout the field system. Fledged young were noted from July 8 (2000, 2001) to August 13 (2003). The summer appears to run from May 29 (1999) to July 31 (2002) with a high count of 43 on July 6, 2003. To detail the 2003 influxes, there were 22 on June 4 with 31 on June 11, then 28 seen on June 18 with 23 on June 23. There were 36 on June 26 with 34 on July 2 and 21 on July 4. There were 43 on July 6 with 25 on July 9 and 11 on July 13. The period from July 19 (2003) to September 23 (2001) is ambiguous and that is unusual. The highest count was that of 26 on July 25, 2003. To detail the 2002 influxes, there were seven on August 4 with 14 on August 7, then 11 seen on August 11 with three on August 14. There were four on August 18 with six on August 21, then three seen on August 25. There were five on August 28 with eight on September 4, then five seen on September 11 with two on September 15 and one to September 22. The problem with this event is that whilst there are a number of influxes (three) there are also more than normal numbers of the isolated peak counts (four). This makes for a very weak passage. Of the three influxes that I detailed for 2002 two were "isolated peak counts". In contrast the main fall passage was a significant event, it ran from September 7 (2000) to December 2 (2002) with a high count of 281 on October 16, 2002. To detail the 2002 influxes, there were three on September 26 with ten on September 29, 12 on October 6, 30 on October 9, 117 on October 13 and 281 on October 16, then 48 seen on October 20 with 29 on October 23, 19 on October 28, eight on November 9 and one on November 17. There were two on November 21 with five from November 24 to November 30, then three seen on December 2. Numbers in November were generally low. The winter passage was stronger, it ran from December 2 (2001) to January 11 (2000) with a high count of 15 on December 13, 2001. To detail the 2001 influxes, there were four on December 2 with 13 on December 5 and 15 on December 13, then one seen on December 16. There were five on December 19 with 12 on December 21, then two seen to January 7. The early spring passage was by far the weakest event of the year, it ran from

January 8 (1999) to March 25 (2001) with a high count of seven on January 8, 1999. The main spring passage followed from March 25 (1999) to June 1 (2003) with a high count of 38 on May 4, 2003. To detail the 2003 influxes, there were two on April 6 with three on April 13, four on April 16, 13 on April 21, 16 on April 24, 34 on April 27 and 38 on May 4, then 25 seen on May 7 with 14 on May 12. There were 19 on May 15 with 20 on May 18 and 25 on May 21, then 20 seen on May 26 with 18 on May 29 and 17 on June 1. Whilst this species is present all year the fall and spring passages are condensed into comparatively short periods.

The summer ran from May 29 (1999) to July 31 (2002), there were four "clustered" influxes. The first peaked from June 7 (2001) to June 11 (2003) with a high count of 31 on June 11, 2003. The second is indicated by a peak count of seven on June 19, 1999. The third peaked from June 26 (2003) to July 1 (2001) with a high count of 36 on June 26, 2003. The fourth peaked from July 4 (1999, 2000) to July 8 (2002) with a high count of 43 on July 6, 2003. The period from July 19 (2003) to September 23 (2001) is awkward. The summer was clear cut and the main fall passage is clear cut but this period…..I just do not know what to make of it. I will put it together so that you can take a look at it. The first influx peaked from July 23 (1999) to July 25 (2003) with a high count of 26 on July 25, 2003. The next two influxes were indicated by isolated peak counts of 15 on July 29, 2001 and 14 on August 7, 2002. The fourth peaked from August 10 (2003) to August 13 (2000) with a high count of 19 on August 10, 2003. The fifth peaked from August 21 (2002) to August 25 (1999) with a high count of eight on August 22, 2001. The last two influxes are indicated by isolated peak counts of eight on September 4, 2002 and six on September 13, 2001. Note how each high count was, for the most part, lower than the one before. Perhaps this should just be treated as a secondary summer event. In contrast there was a marked fall passage from September 7 (2000) to December 2 (2002), there were seven "clustered" influxes. The first peaked from September 30 (2001) to October 2 (1999) with a high count of 23 on September 30, 2001. The second peaked from October 9 (2000) to October 10 (2001) with high counts of 49 on October 9, 2000 and 108 on October 10, 2001. The third peaked from October 16 (2002) to October 21 (1998) with high counts of 25 on October 19, 1999 and 281 on October 16, 2002. The latter was the highest count during the first five years of the survey. The next two influxes were indicated by isolated peak counts of 18 on October 25, 2000 and five on November 5, 2000. The sixth peaked from November 11 (2001) to November 13 (1998) with a high count of 14 on November 11, 2001. The seventh peaked from November 24 (2002) to November 27 (2001) with a high count of five on November 26, 2000 and November 24, 2002. Note how the main passage covered most of the month of October, with only small numbers in November. The winter passage was stronger, it ran from December 2 (2001) to January 11 (2000), there were three "clustered" influxes. The first peaked from December 12 (2000) to December 16 (1998) with high counts of 15 on December 13, 2001 and 14 on December 14, 2001. The second is indicated by a peak count of 12 on December 21, 2001. The third peaked from January 1 (1999) to January 5 (2003) with a high count of six on

January 5, 2003. The early spring passage was by far the weakest event of the year, it ran from January 8 (1999) to March 25 (2001), there were seven “clustered” influxes. The first peaked from January 8 (1999) to January 11 (2003) with a high count of seven on January 8, 1999. The second peaked from January 14 (2001) to January 20 (2002) with a high count of three on January 20, 2002. The third peaked from January 30 (2003) to February 4 (2001) with one on both dates. The fourth peaked from February 8 (2000) to February 9 (1999) with a high count of four on February 9, 1999. The fifth is indicated by a peak count of four on February 20, 2002. The sixth peaked from February 26 (2003) to February 29 (2000) with a high count of three on February 29, 2000. The seventh peaked from March 16 (2003) to March 19 (1999) with a high count of six on March 19, 1999. The main spring passage followed from March 25 (1999) to June 1 (2003), there were four “clustered” influxes. The first peaked from April 19 (2001) to April 21 (2002) with a high count of 31 on April 21, 2002. The second peaked from April 30 (2000) to May 4 (2001, 2003) with a high count of 38 on May 4, 2003. The third is indicated by a peak count of 25 on May 9, 2002. The fourth peaked from May 21 (2000, 2003) to May 22 (1999) also with a high count of 25 on May 21, 2003. As with the fall the heaviest passage took place inside a one month period.

Painted Bunting (*Passerina ciris*)

This is a non-breeding summer resident, a passage migrant and a winter visitor. During the Breeding Bird Survey singing adult and immature males were located on territory as follows: there were eight in 1999, nine in 2000, 19 in 2001, 20 in 2002 and 19 in 2003. Unlike the Blue Grosbeak and the Indigo Bunting this species never set up a territory out in the fields. Because of the presence of the immature males it is hard to track down any females. During the five years none located. There has yet to be a confirmed inland breeding record for Florida. The songs of the three species are very distinct but there is also a behavior trait that separates this species from the Blue Grosbeak and the Indigo Bunting. Those two species normally sing from an exposed branch or from the very top of the shrub or tree whereas this species normally sings from inside the outer foliage of the tree. The summer ran from May 30 (2000, 2002) to August 16 (2001) with a high count of eight on June 10, 2002. To detail the 2002 influxes, there were three on May 30 with six on June 2 and eight on June 10, then five seen on June 12 with three to June 23 and one to July 3. There were six on July 8 with two on July 10 and one to July 17. There were three on July 21 with two to July 28. There were four on July 31 with three on August 7, two on August 11 and one on August 14. There was no passage from August 6 (2000) to September 19 (2000), this is always a secretive species but only singles occasionally found during this period. This is the same period that was impossible to define with the Indigo Bunting. There was a fall passage from September 16 (2001) to October 23 (1999) with high

counts of five on September 24, 2000, October 3, 2001 and October 5, 2000. To detail the 2000 influxes, there were three on September 21 with five on September 24, then four seen on September 27 with one on October 1. There were five on October 5 with three to October 12 and one on October 15. Again there was little or no passage from October 16 (2002) to November 29 (2002). The highest count was that of three on November 9, 1999 otherwise only singles recorded. There did by contrast appear to be a minor winter passage from November 26 (2000) to January 3 (2002) with high counts of three on December 8, 2002 and December 9, 2001. There was also an early spring passage from January 1 (1999) to March 10 (2000) with a high count of four on February 10, 1999. Then everything stops again as there is no passage from early March to April 7 (2002), singles were seen during this period in three of the five years. Finally there was a marked spring passage, this ran from April 10 (2002) to June 1 (2003) with a high count of nine on May 9, 2002. To detail the 2002 influx, there were two on April 10 with four on April 17, six from April 24 to May 1, seven on May 6 and nine on May 9, then six seen on May 12 with four to May 23 and two on May 27. This is a most unusual species.

The summer ran from May 30 (2000, 2002) to August 16 (2001), there were six "clustered" influxes. The first peaked from May 31 (2001) to June 3 (2000) with a high count of six on May 31, 2001. The second peaked from June 10 (2002) to June 12 (1999) with a high count of eight on June 10, 2002. The third peaked from June 26 (2003) to June 30 (2000) with a high count of six on June 30, 2000. The fourth peaked from July 6 (1999) to July 8 (2001, 2002) also with a high count of six on July 8, 2002. The fifth peaked from July 21 (2002) to July 25 (2001) with three on both dates. The sixth peaked from July 30 (2003) to August 3 (1999) with a high count of four on July 31, 2002. From August 6 (2000) to September 19 (2000) there was no passage, this is always a secretive species but only singles occasionally found during this period. There was a fall passage from September 16 (2001) to October 23 (1999), there were two "clustered" influxes. The first peaked from September 24 (2000) to September 26 (2002) with a high count of five on September 24, 2000. The second peaked from September 30 (1999) to October 5 (2000) also with high counts of five on October 3, 2001 and October 5, 2000. Again there was little or no passage from October 16 (2002) to November 29 (2002), even so there was the suggestion of two "clustered" influxes, excluding these influxes only singles seen. The first peaked on November 9 (1999, 2002) with a high count of three on November 9, 1999. The second peaked from November 17 (2002) to November 18 (2001) with one on both dates. There did by contrast appear to be a minor winter passage from November 26 (2000) to January 3 (2002), there were two "clustered" influxes. The first peaked from December 8 (2002) to December 9 (2001) with three on both dates. The second peaked from December 19 (1999) to December 21 (2001, 2002) with two on each date. There was also an early spring passage from January 1 (1999) to March 10 (2000), there were six "clustered" influxes. The first peaked from January 4 (2001) to January 7 (1999, 2002, 2003) with a high count of three on January 7, 1999 and January 7, 2003.The second peaked from January 14 (2000, 2001) to January 20

(2002) with high counts of three on January 14, 2000 and January 20, 2002. The third is indicated by a peak count of three on January 27, 1999. The fourth peaked from February 3 (2002) to February 6 (2000) with a high count of three on February 6, 2000. The fifth is indicated by a peak count of four on February 10, 1999. The sixth peaked from February 25 (2000) to February 27 (2002) with a high count of two on February 25, 2000. Whilst there was no passage from early March to April 7 (2002) singles were seen in three of the five years. This period of inactivity was followed by a marked main spring passage from April 10 (2002) to June 1 (2003), there were three "clustered" influxes. The first peaked from April 20 (1999) to April 26 (2000) with a high count of six on April 26, 2000. The second peaked from May 4 (2001) to May 9 (2002) with high counts of eight on May 4, 2001 and nine on May 9, 2002. The latter was the highest count during the first five years of the survey. The third peaked from May 21 (2000, 2003) to May 25 (1999) with a high count of five on May 21, 2000. This is a most interesting species.

Dickcissel (*Spiza americana)*

This is an irregular summer visitor, passage migrant and winter visitor. This is the first species for which the records do not indicate a pattern of influxes. That in itself is a puzzle. This species is not meant to nest in Florida but it does so at Zellwood from time to time. Nests have been found and fledged young seen. This species is very social they tend to nest in loose groups. There were 13 singing males or pairs in 1999 with eight pairs/males in 2000 and four in 2003. None located in 2001 or 2002. In 1999 they were known to be present from May 31 to July 16 with two fledged young being seen on June 29. They were earlier in 2000 with sightings from April 30 to June 9. In 2003 they were present from at least June 18 to July 23. The erratic timing of the visits is typical of this species. It is likely that they were present ahead of the dates quoted, normally the birds select a territory before starting to sing and some of the nesting areas were found by chance. The summer may run from April 30 (2000) to August 4 (2002) with a high count of 11 on June 29, 1999. This comprised eight males, one female and two fledged young. The count of 11 was the highest count during the first five years of the survey. For the early fall the only records relates to two on September 9, 2001. Otherwise there were a scattering of records from September 26 (2002) to November 27 (2001). Singles were seen on five dates with two on September 26, 2002 and October 13, 2002. There were a few winter records from December 8 (1998) to December 28 (2002) with singles on three dates and a party of three on December 8, 1998. The only early spring records come from 1999 with sightings from January 11 to February 10, the highest count was that of three on January 19. The main spring passage was a little stronger with records for three years from March 16 (1999, 2003) to April 26 (1999). The highest count was that of three on March 30, 1999. This species will always be under-recorded as it tends to skulk low in the vegetation out in the fields.

Bobolink (*Dolichonyx oryzivorus*)

This is a common to abundant passage migrant, especially in the spring. To a great extent in the spring the males migrate before the females. Spring passage noted from April 6 (2003) to May 27 (2001) with a high count of 7,060 on May 1, 2002. The peak count of 7,060 was a one day event. During the afternoon of the 1st flocks started to gather on the north side of Interceptor Road near Laughlin Road, they were flying in from the south-east. They were still there at dusk but as this is a nocturnal migrant they may have left that night. I only saw 21 on my next visit (May 6th). To detail the 1999 influxes, there was one on April 9 with 105 on April 17, 110 on April 20, 1,600 on April 26 and 3,120 on May 1, then 1,920 seen on May 4 with 1,000 on May 7 and 20 on May 10. There were 46 on May 14 with 15 on May 18. The fall passage was much lighter, it ran from August 13 (2000) to October 14 (2001) with a high count of 700 on September 17, 1998. To detail the 2001 influxes, there were two on August 19 with seven on August 26 and 19 from August 29 to September 2, then 11 seen to September 9. There were 513 on September 13 with 111 on September 16, 110 on September 19, 98 on September 26, five on September 30, four on October 7 and one on October 14.

Seen in the spring from April 6 (2003) to May 27 (2001), there were three "clustered" influxes. The first 3,120 on May 1, 1999, 3,140 on April 30, 2000 and 7,060 on May 1, 2002. The latter was the highest count during the first five years of the survey. The next two influxes are indicated by isolated peak counts of 453 on May 6, 2001 and 46 on May 14, 2001. The fall "clustered" influxes. The first peaked from August 27 (2000) to September 2 (1998) with a high count of 104 on August 31, 1999. The second peaked from September 7 (2000) to September 8 (2002) with a high count of 18 on September 8, 2002. The third peaked from September 13 (2001) to September 17 (1998, 1999) with high counts of 513 on September 13, 2001 and 700 on September 17, 1998. The fourth peaked from September 24 (2000) to September 26 (2002) with a high count of 64 on September 26, 2002. This was a straight forward species.

Red-winged Blackbird (*Agelaius phoeniceus)*

This is a common resident, a passage migrant and a winter visitor. In addition there is a major post-breeding gathering which started to form in 2002 at the Sand Farm Cattail Marsh. Initially there were scattered roosts in cattails along the shore of Lake Apopka. This all changed in 2002 with the formation of a 300 acre cattail marsh at the Sand Farm. From the summer of 2002 to the fall of 2005 when three hurricanes decimated the marsh this site became the local center for this species. Since that time the cattail marshes at Duda have become the roost site.

For the first two years this species nested undisturbed out in the fields. After that time a regime of mowing and later roller-chopping started and as this work continued through the summer countless nests were destroyed. The displaced adults formed a new roost at the Sand Farm. Later it appeared that they tried to nest again as this roost was short-lived. One other fact worth mentioning is that the males continued to use the roost until the eggs hatched, they then joined the females out in the fields. For much of the year this species gathered into large flocks and worked the weedy fields. The young seemed to form their own flocks as did the adult males and the adult females. During the Breeding Bird Survey a total of 545 pairs located in 1999 with 1,109 pairs in 2000, 932 pairs in 2001, 826 pairs in 2002 and 2,582 pairs in 2003. It seems likely that this dramatic growth in the population in 2003 is due to the greater numbers being present early in the year. The earliest fledged young were seen on May 30 (2002). I am treating the summer as running from May 7 (2000) to July 21 (2002, 2003) with high counts of 490 on May 21, 2003 and 2,390 on June 23, 2003. The first count relates to the basic perceived population and the second to the temporary roost. To detail the 2003 influxes, there were 350 on May 15 with 490 on May 21, then 310 seen on May 26. There were 375 on May 29 with 600 on June 1 and 650 on June 4, then 450 seen on June 8. There were 600 on June 11 with 1,200 on June 16, 1,800 on June 18 and 2,390 on June 23, then 450 seen on June 29 with 370 on July 4, 190 on July 6 and 125 on July 9. As I stated earlier the roost would reform with the displaced adults, this happened in 2003 from June 16 to June 23. For the final influx there were 240 on July 13 with 280 on July 19, then 220 seen on July 21. Next came the event of the year, the post-breeding gathering this ran from July 8 (2000) to October 9 (2000) with high counts of 10,375 on September 15, 2002 and of 27,000 on August 13, 2003. In 2003 the counts continued to climb to a peak of 115,000 on September 16, 2003. That is outside the parameters of this analysis. In 2004 the highest count was that of 208,000 on August 9. In 2005 the highest count was that of 303,000 on July 17. Similar post-breeding gatherings were recorded by both the Common Grackle and the Boat-tailed Grackle. After the text for the latter species I will be including a special section on these spectacular events. To detail the 2003 influx, there were 290 on July 23 with 930 on July 25, 2,030 on July 27, 3,020 on July 30, 5,075 on August 5, 13,970 on August 8, 18,030 on August 10, 27,000 on August 13, *37,650 on August 20, 52,000 on August 24, 52,400 on August 27, 70,000 on September 1, 74,000 on September 3, 96,000 on September 14 and 115,000 on September 16, then 100,000 seen on September 21 with 80,000 on September 24, 31,000 on September 29, 11,100 on October 2 and 170 on October 5.* Now back to normality, the fall passage ran from September 26 (2001) to December 3 (1998) with a high count of 2,300 on November 15, 2001. To detail the 1998 influxes, there were 40 on October 16 with 185 on October 21, then 40 seen on October 29. There were 145 on November 2 with 500 on November 6, 550 on November and 1,020 on November 13, then 720 seen on November 20 with 585 on November 25 and 300 to December 3. The winter passage was stronger it ran from November 24 (2002) to January 14 (2001) with a high count of 8,580 on December 16, 2002. To

detail the 2002 influxes, there were 3,540 on November 24 with 4,150 on November 29, 6,030 on December 2, then 5,260 on December 8 with 1,400 on December 11. There were 3,850 on December 14 with 8,580 on December 16, then 3,610 seen on December 26 with 950 on December 28. There were 5,900 on December 30 with 4,120 on January 2 and 3,960 on January 5. There were 5,200 on January 7 with 1,275 on January 9 and 1,230 on January 11. The early spring passage followed from January 12 (1999) to March 17 (2002) with a high count of 8,660 on January 26, 2003. To detail the 2003 influxes, there were 4,950 on January 15 with 5,965 on January 19, 7,320 on January 22 and 8,660 on January 26, then 5,360 seen on January 30 with 3,440 on February 2, 2,925 on February 9, 1,895 on February 12, 1,685 on February 15 and 595 on February 19. There were 1,460 on February 23 with 4,000 on February 26, then 2,800 seen on March 5 with 225 on March 9. Finally there is the main spring passage, this ran from February 28 (2001) to May 14 (1999) with a high count of 13,475 on April 16, 2003. For the other years the highest count was that of 1,080 on March 16, 1999. With the exception of 2003 this passage was lighter than that of the early spring passage. To detail the 2003 influxes, there were 1,160 on March 12 with 2,240 on March 16, then 2,000 seen to March 24 with 1,600 on March 26. There were 2,000 on March 29 with 2,850 on April 2 and 13,310 on April 6, then 9,490 seen on April 11 with 7,230 on April 13. There were 13,475 on April 16 with 3,710 on April 24, 2,690 on April 27, 2,070 on April 30, 240 on May 4, 160 on May 7 and 12 on May 12. All these totals were of birds counted as they left the roost.

The summer ran from May 7 (2000) to July 21 (2002, 2003), there were seven “clustered” influxes. The first is indicated by a peak count of 295 on May 13, 2000. The second peaked from May 20 (2002) to May 21 (2003) with a high count of 490 on May 21, 2003. The third peaked from June 3 (2000) to June 7 (1999, 2001) with a high count of 650 on June 4, 2003. The fourth peaked from June 14 (2000) to June 19 (2002) with a high count of 435 on June 19, 2002. The fifth is indicated by a peak count of 2,390 on June 23, 2003. The sixth peaked from June 30 (2000) to July 4 (1999) with a high count of 810 on July 4, 1999. The seventh peaked on July 8 (2001, 2002) with a high count of 1,395 on July 8, 2002. Now we come to the most significant event of the year, the post-breeding gatherings, this event ran from July 8 (2000) to October 9 (2000), there were four “clustered” influxes. The first peaked from July 19 (2000, 2003) to July 25 (2001) with a high count of 1,430 on July 25, 2001. The second peaked from August 2 (2001) to August 6 (1999, 2000) with a high count of 860 on August 2, 2001. The third peaked from August 28 (2002) to September 2 (1998, 2001) with high counts of 3,000 on September 2, 1998 and 8,180 on August 28, 2002. The last influx was the event, it peaked from September 13 (2001) to September 16 (2003). In 2002 the high count was that of 10,375 on September 15. In 2003 this was a truly mega influx, it ran from July 23 to October 5 with a peak count of 115,000 on September 16. I have included details of this last influx even though the highest count and much of the data is for a period that is not covered by

this analysis. The highest count for the five years was that of 27,000 on August 13, 2003. Now back to normality. The fall passage ran from September 26 (2001) to December 3 (1998), there were six "clustered" influxes. The first is indicated by a peak count of 1,800 on September 26, 2001. The second peaked from October 8 (1999) to October 13 (2002) with a high count of 470 on October 13, 2002. The third peaked from October 21 (1998, 2003) to October 26 (1999) with a high count of 780 on October 23, 2000. The fourth peaked from November 1 (2001) to November 5 (2000) with a high count of 850 on November 5, 2000. The fifth peaked from November 9 (2002) to November 15 (2001) with a high count of 2,300 on November 15, 2001. The sixth peaked from November 21 (2002) to November 26 (2000) with a high count of 1,120 on November 26, 2000. The winter passage was stronger, it ran from November 24 (2002) to January 14 (2001), there were five "clustered" influxes. The first peaked from November 29 (2001) to December 3 (2000) with a high count of 6,030 on December 2, 2002. The second is indicated by a peak count of 8,580 on December 16, 2002. The third peaked from December 20 (2000) to December 22 (1999) with a high count of 1,165 on December 22, 1999. The fourth peaked from December 30 (2002) to January 4 (2000) with high counts of 2,040 on January 3, 2002 and 5,900 on December 30, 2002. The fifth is indicated by a peak count of 5,200 on January 7, 2003. The early spring passage ran from January 12 (1999) to March 17 (2002), there were six "clustered" influxes. The first peaked from January 15 (1999) to January 18 (2000) with a high count of 1,005 on January 15, 1999. The second peaked from January 26 (2003) to January 27 (2002) with a high count of 8,660 on January 26, 2003. The third peaked from February 2 (2000) to February 4 (2001) with a high count of 1,335 on February 4, 2001. The fourth peaked from February 11 (2000) to February 14 (2001) with a high count of 730 on February 14, 2001. The fifth peaked from February 26 (2003) to February 29 (2000) with a high count of 4,000 on February 26, 2003. The sixth is indicated by a peak count of 1,505 on March 4, 2002. The main spring passage followed from February 28 (2001) to May 14 (1999), there were six "clustered" influxes. Numbers now generally lower with the exception of 2003 when there was a heavy passage at this time. The first influx peaked from March 14 (2000) to March 18 (2001) with a high count of 2,240 on March 16, 2003. The second peaked on March 30 (1999, 2000) with a high count of 530 on March 30, 2000. The third peaked from April 3 (2002) to April 6 (2001, 2003) with high counts of 950 on April 3, 2002 and 13,310 on April 6, 2003. The fourth peaked from April 11 (2000) to April 16 (2003) with high counts of 410 on April 11, 2000 and 13,475 on April 16, 2003. In 2003 these last two influxes spanned the period March 29 to May 12. The fifth influx peaked from April 23 (1999) to April 24 (2002) with a high count of 365 on April 24, 2002. The last influx peaked from April 30 (2000) to May 4 (2001) with a high count of 385 on April 30, 2000. This is one of the most tragic species at Zellwood with the destruction of so many nests, in 2003 if the roost counts are correct some 1200 nests were destroyed. In 2010 when I am writing this the mowing and roller-chopping has ceased and the area is gradually being flooded one segment at a time. The future for this species is brighter.

Eastern Meadowlark (*Sturnella magna*)

This is a resident, a passage migrant and a winter visitor. This species prefers the fields with short grass or those with comparatively limited plant growth. Initially it was to be found at the Sod Farm and near the Lust Road entrance, these are still the major locations for this species but it is slightly more widespread now. During the Breeding Bird Survey a total of nine pairs located in 1999 with 22 pairs in 2000, 12 pairs in 2001, 15 pairs in 2002 and 26 pairs in 2003. There were 43 pairs in 2004. The only fledged young noted were first seen on July 4 (1999). The summer appears to cover the period May 2 (2001) to July 25 (2001) with a high count of 17 on May 24, 2001. Initially there were no influxes with high counts in the range of ten to 12. To detail the 2001 influxes, there were ten from May 8 to May 14 with 14 on May 20 and 17 on May 24, then 14 seen to June 7 with 12 on June 10, 11 on June 13 and six on June 17. There were 13 on June 20 with 11 on June 27 and seven on July 1. There were eight on July 4 with nine on July 8 and 15 on July 11, then eight seen on July 15 with six on July 18, four on July 22 and two on July 25. The early fall passage followed from July 4 (2001) to October 13 (2002) with a high count of 15 on July 11, 2001. To detail the 2001 influxes, there were three on July 27 with four on July 29 and up to four continued to be seen to August 19. There were 12 on August 22 with eight on August 29 and three on September 2. There were 14 on September 5 with three on September 9 and one on September 13. There were four on September 16 with three to September 23. There were five on September 26 with eight on September 30, then three seen to October 7 with two on October 10. Then there is the main fall passage. Whilst this species is not thought to migrate into central Florida I believe that it does. This is a strong passage and it ran from September 27 (2000) to November 30 (1998, 1999) with a high count of 24 on October 25, 2000. To detail the 2000 influxes, there were two on September 27 with four on October 5 and October 9, then three seen on October 12 with one on October 15. There were six on October 18 with seven on October 22 and 24 on October 25, then 23 seen on November 1 with 17 on November 8, 13 on November 12, eight on November 19, six on November 26 and four on November 28. The winter passage followed from November 29 (2001) to January 4 (2001) with a high count of 29 on December 16, 2001. To detail the 2001/2002 influxes, there were six on November 29 with two to December 5. There were four on December 9 with 29 on December 16, then 16 seen on December 19 with 13 on December 21 and seven on December 27. There were 14 on December 30 with five on January 3. The early spring passage ran from January 4 (2000) to March 10 (2002) with a high count of 62 on January 24, 2002. To detail the 2002 influxes, there were six on January 7 with seven on January 10, 11 on January 16 and 62 on January 24, then six seen on January 27. There were seven on February 3 with 16 on February 6, then five seen to February 17. There were ten on February 20 with seven on February 24, six from February 27 to March 6 and three on March 10. The count

of 62 on January 24, 2002 involved a large flock at Potter's Farm. One of these individuals was singing the song of a Western Meadowlark S.n.*neglecta* but I could not separate out the individual. The main spring passage came next, it ran from March 7 (1999) to May 16 (2000) with high counts of 17 on March 16, 2003, March 27, 2002 and April 19, 2000. To detail the 2002 influxes, there were six on March 14 with eight on March 17, then four seen on March 19. There were six on March 22 with 17 on March 27, then 16 seen on April 3 with ten on April 7. There were 11 on April 10 with 12 on April 14, then nine seen on April 21 with seven to May 1, four on May 6 and three on May 9.

The summer ran from May 2 (2001) to July 25 (2001), there were four "clustered" influxes. Initially there was little activity with high counts in the range of ten to 12. Then the influxes started. The first peaked from May 24 (2001) to May 26 (2003) with a high count of 17 on May 24, 2001. The second peaked from May 29 (1999) to June 3 (2000) with a high count of 14 on June 3, 2000. The third peaked from June 19 (1999) to June 23 (2003) with a high count of 13 on June 20, 2001. The fourth peaked from June 29 (1999) to June 30 (2002) with a high count of 15 on June 30, 2002. The early fall passage was full of basic "clustered" influxes, eight in all, this passage ran from July 4 (2001) to October 13 (2002). The first is indicated by a peak count of 15 on July 11, 2001. The second peaked from July 16 (1999) to July 17 (2002) with a high count of 11 on July 17, 2002. The third peaked from July 23 (2000) to July 25 (2003) with a high count of seven on July 23, 2000. The fourth is indicated by a peak count of four on July 29, 2001. The fifth peaked from August 11 (2002) to August 12 (2001) with a high count of four on August 12, 2001. The sixth peaked from August 22 (2001) to August 27 (2000) with a high count of 12 on August 22, 2001. The seventh peaked from September 5 (2001) to September 6 (1999) with a high count of 14 on September 5, 2001. The eighth peaked from September 16 (2001) to September 19 (2000) with a high count of seven on September 19, 2000. Then there was the main fall passage. Whilst this species is not thought to be a migrant into central Florida I believe that it is. There is a marked main fall passage from September 27 (2000) to November 30 (1998, 1999), there were seven "clustered" influxes. The first peaked from September 30 (2001) to October 2 (1999) with a high count of 16 on October 2, 1999. The second peaked from October 5 (2000) to October 6 (1998) with a high count of four on October 5, 2000. The third peaked from October 16 (2002) to October 17 (2001) with a high count of 15 on October 17, 2001. The fourth peaked from October 23 (1999) to October 25 (2000) with a high count of 24 on October 25, 2000. The fifth peaked from November 1 (2001) to November 6 (1998) with a high count of 16 on November 1, 2001. The sixth peaked from November 15 (2001) to November 17 (2002) with a high count of 18 on November 15, 2001. The seventh is indicated by a peak count of eight on November 26, 1999. The winter passage followed from November 29 (2001) to January 4 (2001), there were four "clustered" influxes. The first peaked from November 29 (2001) to November 30 (2000, 2002) with a high count of ten on November 30, 2000. The second peaked from December 7 (1999) to December 11 (2002) with a high count of ten on December 11,

2002. The third peaked from December 16 (2001) to December 20 (1998) with high counts of 11 on December 20, 1998 and 29 on December 16, 2001. The fourth peaked from December 30 (2001) to January 1 (2001) with a high count of 14 on December 30, 2001. The early spring passage ran from January 4 (2000) to March 10 (2002), there were seven "clustered" influxes. This was the strongest event of the year. The first peaked from January 7 (2000) to January 10 (2001) with a high count of seven on January 10, 2001. The second peaked from January 15 (1999) to January 18 (2000) with a high count of six on January 18, 2000. The third peaked from January 24 (2002) to January 28 (2000) with high counts of 21 on January 28, 2000 and 62 on January 24, 2002. The latter was the highest count during the first five years of the survey. The fourth peaked from February 3 (1999) to February 6 (2002) with high counts of 16 on February 6, 2002 and 25 on February 4, 2001. The fifth peaked from February 12 (2003) to February 17 (1999) with a high count of 12 on February 12, 2003. The sixth peaked from February 20 (2002) to February 23 (2000) with high counts of ten on February 20, 2002 and 23 on February 21, 2001. The seventh peaked from March 2 (2003) to March 3 (2000) with a high count of 12 on March 2, 2003. The main spring passage came next from March 7 (1999) to May 16 (2000), there were seven "clustered" influxes. The first is indicated by a peak count of nine on March 11, 1999. The second peaked from March 16 (2003) to March 19 (1999) with a high count of 17 on March 16, 2003. The third peaked from March 25 (2000) to March 27 (2002) with a high count of 17 on March 27, 2002. The fourth peaked from April 2 (2001) to April 6 (2003) with a high count of 12 on April 2, 2001. The fifth peaked from April 14 (2002) to April 16 (2001) with a high count of 16 on April 16, 2001. The sixth peaked from April 19 (2000) to April 21 (2002) with a high count of 17 on April 19, 2000. The seventh peaked from April 26 (1999) to April 30 (2003) with 12 on both dates. I really do believe that this is a passage migrant with peak passage in the fall from mid-October to mid-November and in the spring from late January to early February.

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus)*

This is a very uncommon passage migrant and winter visitor. Despite its distinctive plumage(s) this species will have been overlooked amongst the many thousands of blackbirds, cowbirds and grackles. Seen in the fall from September 2 (1998) to November 26 (2000). Initially there were singles on September 2, 1998 and October 19, 1999. Later there was an influx that peaked from November 23 (1998) to November 26 (2000) with a high count of three on November 23, 1998. There was a winter passage from December 3 (1998) to January 1 (1999), potentially there were three "clustered" influxes. The first peaked from December 8 (1998) to December 11 (1999) with a high count of three on December 8, 1998. The next two influxes were indicated by isolated peak counts of two on December 16, 1998 and five on December 31, 1998. The latter is still the highest count for Zellwood. Noted in the early spring

from January 7 (2001) to February 10 (1999, 2002), there were two “clustered” influxes. The first peaked from January 7 (2001) to January 11 (1999) with a high count of two on January 11, 1999. The second peaked from February 4 (2001) to February 10 (1999, 2002) with a high count of four on February 10, 1999. Later in the spring there was an influx in 1999. There was one on March 13, March 16 and March 18 with three on March 19, then two seen on March 30 and April 1. One of them was an adult male in full song! This party was by the Lust Road gate.

For a change I am now going to detail the 1998/1999 influxes, there was one on September 2. There were no further sightings until three seen on November 23. Those were the fall records. There was one on December 3 with three on December 8, then one seen on December 11. There were two on December 16. There was one on December 28 with five on December 31, then one seen on January 1. That completed the winter passage. There was one on January 8 with two on January 11, then one seen on January 15. There were singles on January 27 and January 29 with two on February 5 and four on February 10. That concludes the early spring passage. The March influx is already detailed in segment one. Between most of these influxes there was a gap, perhaps not a large one but there was a gap. Because of these gaps I feel that these probably were separate influxes.

Rusty Blackbird (*Euphagus carolinus)*

This is a vagrant with sightings in the winter only. There was a party of 13 in the wood between the Lake Level Canal and Lake Apopka on December 3, 1998. That is the highest count for Zellwood. There was a male on November 29, 2002 with two on November 30, 2002. They were by Lake Apopka to the south of Hooper Farms Road extension. There have been no later Zellwood records.

Brewer’s Blackbird (*Euphagus cyanocephalus)*

This is another vagrant. There was a male on December 19, 2001. There have been further sightings but only singles noted to date.

Common Grackle (*Quiscalus quiscula)*

This is a resident, a passage migrant, and a winter visitor with a minor post-breeding gathering. In 2004 this species joined the post-breeding gathering in a big way, it will therefore be included in the special segment that will follow the Boat-tailed Grackle text. This species

prefers the wet woodlands at all seasons and in that way it is very different from the others. During the Breeding Bird Survey a total of 25 pairs located in 1999 with 26 pairs in 2000, 45 pairs in 2001, 32 pairs in 2002 and 26 pairs in 2003. This species nested in a series of small colonies in the wetter woods. I know of no reason to account for the population changes. The summer appears to run from April 26 (1999) to July 14 (1999) with a high count of 92 on July 1, 2001. To detail the 2001 influxes, there were five on May 4 with six from May 6 to May 14 and 16 on May 20, then 13 seen on May 24 with three on May 27. There were nine on May 31 with 15 on June 3 and 34 on June 7, then 19 seen on June 10 with 18 on June 17, 16 on June 20 and six on June 24. There were eight on June 27 with 92 on July 1, then 63 seen on July 4 with 15 on July 8. This was followed by the post-breeding gathering, this ran from June 28 (2000) to September 13(2000, 2001) with a high count of 466 on August 18, 1999. To detail the 1999 influxes, there were 18 on July 9 with 13 on July 12 and six on July 14. There were 13 on July 16 with 34 on July 20 and 112 on July 23, then 26 seen on July 27 with 18 on August 3. There were 165 on August 6 with 238 on August 13 and 466 on August 18, then 414 seen on August 25, with 325 on August 27, 236 on August 31, 92 on September 3, 77 on September 8 and 72 on September 10. The fall passage ran from September 15 (2002) to December 3 (1998) with a high count of 960 on November 17, 2002. To detail the 2002 influxes, there were five on September 15 with eight on September 18, 32 on September 22, 140 on September 28 and 146 on September 29, then 80 seen on October 2 with three on October 6. There were five on October 9 with 27 on October 13 and 145 on October 20, then 32 seen on October 23. There were 50 on October 28 with 450 on November 5 and 960 on November 17, then 230 seen on November 21 with 67 on November 24 and four on November 29. The winter passage ran from November 25 (2001) to January 11 (1999) with a high count of 930 on December 14, 2002. To continue with the 2002/2003 influxes, there were 20 on November 30 with 49 on December 2, 485 on December 8 and 930 on December 14, then 540 seen on December 16 with 11 on December 21. There were 27 on December 26 with 178 on December 28, then 25 seen on December 30 with two on January 2. During the winter in 2001 a flock of 140 showing the characteristics of the race Q.q.*versicolor* was seen on December 2 and December 19. Both sightings were south of Hooper Farms Road. This flock also behaved differently in that it was in flight a very tightly packed flock moving very fast. This race has “vagrant” status in Florida. The early spring passage followed from January 5 (2003) to March 14 (2002) with a high count of 450 on February 4, 2001. To detail the 2001 influxes, there were nine on January 14 with 25 on January 17, 26 on January 24, 30 on January 28, 113 on January 31 and 450 on February 4, then 50 seen on February 11 with 22 on February 18 and three on February 21. The late spring passage ran from February 25 (2001) to May 7 (2000) with a high count of 54 on March 27, 2001. The influxes did not merit detailing.

The summer ran from April 26 (1999) to July 14 (1999), there were six “clustered” influxes. The first peaked on May 4 (1999, 2003) with a high count of 16 on May 4, 2003. The

second peaked from May 18 (2003) to May 23 (2002) with a high count of 41 on May 22, 1999. The third peaked from May 30 (2000) to May 31 (1999) with a high count of 29 on May 31, 1999. The fourth peaked from June 7 (2001) to June 8 (2003) with a high count of 70 on June 8, 2003. The fifth peaked from June 12 (1999) to June 16 (2002) with a high count of 71 on June 16, 2002. The sixth peaked from June 25 (1999) to July 1 (2001) with a high count of 92 on July 1, 2001. The post-breeding gathering followed, it was not a major event. This passage ran from June 28 (2000) to September 13 (2000, 2001), there were six "clustered" influxes. The first is indicated by a peak count of 330 on June 29, 2003. The timing of this peak count would place it in the sixth summer influx but because of the numbers I place it here. The second peaked from July 6 (2003) to July 9 (1999) with a high count of 105 on July 8, 2002. The third peaked from July 19 (2003) to July 25 (2002) with a high count of 112 on July 23, 1999. The fourth peaked from July 29 (2001) to August 5 (2003) with a high count of 389 on July 30, 2000. The fifth peaked from August 18 (1999, 2002) to August 20 (2000) with a high count of 466 on August 18, 1999. The sixth is indicated by a peak count of 63 on September 9, 2001. Next came the fall passage from September 15 (2002) to December 3 (1998), there were seven "clustered" influxes. The first peaked on September 23 (1999, 2001) with a high count of 164 on September 23, 1999. The second peaked from September 27 (2000) to September 29 (2002) with a high count of 146 on September 29, 2002. The third peaked from October 14 (2001) to October 20 (2002) with a high count of 148 on October 14, 2001. The fourth is indicated by a peak count of 76 on October 25, 2000. The fifth peaked from November 2 (1998) to November 7 (2001) with a high count of 190 on November 7, 2001. The sixth is indicated by a peak count of 44 on November 12, 1999. The seventh peaked from November 17 (2002) to November 19 (2000) with high counts of 850 on November 19, 2000 and 960 on November 17, 2002. The latter was the highest count during the first five years of the survey. The winter passage ran from November 25 (2001) to January 11 (1999), there were six "clustered" influxes. The first peaked from November 25 (2001) to November 26 (1999) with a high count of 436 on November 25, 2001. The second peaked from December 2 (2001) to December 7 (1999) with a high count of 274 on December 3, 2000. The third peaked from December 11 (1998) to December 15 (2000) with high counts of 364 on December 15, 2000 and 930 on December 14, 2002. The fourth is indicated by a peak count of 225 on December 19, 2001. The fifth peaked from December 28 (2002) to December 30 (1999) with a high count of 178 on December 28, 2002. The sixth peaked on January 7 (1999, 2002) with a high count of 159 on January 7, 2002. The early spring passage followed from January 5 (2003) to March 14 (2002), there were four "clustered" influxes. The first peaked from January 11 (2003) to January 16 (2002) with a high count of 147 on January 16, 2002. The second peaked from January 29 (1999) to February 4 (2001) with high counts of 278 on February 3, 2002 and 450 on February 4, 2001. The third peaked from February 11 (2000) to February 15 (2003) with a high count of 40 on February 15, 2003. The fourth peaked from February 27 (2002) to February 29 (2000) with a high count of 48 on

February 27, 2002. Finally there was the late spring passage, this ran from February 25 (2001) to May 7 (2000), there were five "clustered" influxes. The first two were indicated by isolated peak counts of 27 on March 5, 2003 and 32 on March 11, 2001. The third peaked from March 14 (2000) to March 19 (2002) with a high count of nine on March 19, 2002. The fourth peaked from March 25, 2000) to March 27 (2001) with a high count of 54 on March 27, 2001. The fifth peaked from April 6 (1999, 2001, 2003) to April 11 (2000) with a high count of 20 on April 6, 1999. These low counts in the late spring were most unexpected.

Boat-tailed Grackle (*Quiscalus major)*

This is a common resident and winter visitor. It is also a passage migrant. There is a growing post-breeding gathering. During the breeding season this species nests in colonies in willows or cattails. During the Breeding Bird Survey a total of 225 pairs located in 1999 with 134 pairs in 2000, 152 pairs in 2001, 111 pairs in 2002 and 164 pairs in 2003. Flocks of fledged young noted from June 11 (2003), this species nests very early. Outside of the breeding season this species occurs through the fields and along the edge of Lake Apopka. The summer is treated as running from February 28 (2001) to June 2 (2002) with a high count of 505 on May 27, 2000. To detail the 2000 influxes, there were 160 on February 29 with 220 on March 7 and 370 on March 10, then 250 seen on March 18 with 95 on March 21. There were 98 on March 25 with 185 on March 27 and 345 on March 30, then 180 seen on April 6 with 132 on April 11. There were 135 on April 15 with 140 on April 19, 265 on April 26, 270 on April 30 and 280 on May 2, then 130 seen on May 4 with 90 on May 7. There were 310 on May 13 with 235 on May 16 and 155 on May 21. There were 300 on May 23 with 505 on May 27, then 180 seen on May 30. This is followed by the post-breeding gathering, this ran from May 21 (2003) to August 28 (2002) with a high count of 5,510 on August 13, 2003. To detail the 2003 influxes, there were 55 on May 21 with 70 on May 26, 80 on June 1, 85 on June 4, 120 on June 8, 380 on June 11 (this included the first fledged young of the year and 1,040 on June 18 then 785 seen on June 23 with 460 on June 29, 350 on July 2 and 150 on July 4. There were 275 on July 6 with 395 on July 9, 1,000 on July 19, 1,650 on July 21, 2,430 on July 23, 4,500 on July 25, 5,100 on August 5, 5,360 on August 8, 5,410 on August 10 and 5,510 on August 13, *then 4,020 seen on August 20. There were 5,140 on August 24 with 5,300 on September 1, 5,410 on September 3, 6,700 on September 14, 7,300 on September 16 and September 19, then 5,280 seen on September 21 with 1,850 on September 24, 1,650 on September 29, 265 on October 2 and 20 on October 5.* The five years of this analysis ended on August 14, 2003 but I felt it important to show the complete post-breeding gathering for that year. With the exception of 2003 this event ended in mid-August. These gatherings reached their peak in 2005 before the cattail march was decimated by three hurricanes. After this species I am including a special section that will deal

with these events for the two grackles and the Red-winged Blackbird. The pattern of occurrence from August 20 (1999) to October 13 (2002) is far from clear, the highest count was that of 2,420 on September 19, 2001. There just may have been an early fall passage but there were not the expected number of influxes. To detail the 1999 influxes, there were 550 on August 20 with 565 on August 25, then 335 seen on August 27. There were 480 on August 31 with 530 on September 3 and 885 on September 8, then 770 seen on September 17 with 440 on September 23 and 300 on September 25. During the five years there were only four isolated peaks counts and two of them are detailed above. There may have been passage in 1999 but for the other years? There was a fall passage from September 21 (2000) to December 8 (2002) with a high count of 1,465 on November 19, 1999. To detail the 1999 influxes, there were 460 on September 30 with 195 on October 2. There were 250 on October 6 with 275 on October 8, then 95 seen on October 12 with 93 on October 19 and 28 on October 23. There were 870 on October 26 but only 36 on October 29. There were 60 on November 3 with 110 on November 6, 340 on November 9, 370 on November 12, 490 on November 16 and 1,465 on November 19, then 1,425 seen on November 22 with 910 on November 30, 560 on December 4 and 295 on December 7. The winter passage ran from December 3 (1998, 2000) to January 28 (2000). Very exceptionally this event started late and over-ran by two to three weeks. The highest count was that of 3,700 on December 14, 2002. To continue detailing the 1999/2000 influxes, there were 715 on December 11 with 200 on December 14. There were 510 on December 19 with 810 on December 22, then 70 seen on December 27. There were 100 on December 30 with 580 on January 1, then 230 seen on January 7 with 192 on January 14, 165 on January 18, 143 on January 21, 67 on January 25 and 37 on January 28. The early spring passage ran from January 19 (1999, 2003) to March 10 (2002) with a high count of 1,160 on January 27, 1999. To detail the 2000 influxes, there were 286 on February 2 with 125 on February 6. There were 174 on February 8 with 470 on February 11, then 135 seen on February 16 with 85 on February 23 and 65 on February 25. There is no main spring passage as the summer started on February 28 (2001).

This species nests so early that the summer is treated as running from February 28 (2001) to June 2 (2002), there were seven “clustered” influxes. The first peaked from March 10 (2000) to March 11 (2001) with a high count of 487 on March 11, 2001. The second peaked from March 27 (2001) to March 31 (2002) with a high count of 345 on March 30, 2000. The third peaked from April 10 (2002) to April 13 (2003) with high counts of 225 on April 10, 2002 and 1,075 on April 13, 2003. The fourth is indicated by a peak count of 160 on April 20, 1999. The fifth peaked from April 28 (2002) to May 4 (2001) with a high count of 415 on May 1, 1999. The sixth peaked from May 13 (2000) to May 20 (2001) with a high count of 465 on May 20, 2001. The seventh peaked from May 27 (2000) to June 2 (2002) with a high count of 505 on May 27, 2000. This was followed by the post-breeding gathering, this ran from May 21 (2003) to August 28 (2002), there were eight “clustered” influxes. As with the Red-winged Blackbird

these gatherings were in their infancy, hence the large number of “clustered” influxes. The first is indicated by a peak count of 2,605 on June 12, 2002. The second peaked from June 17 (2001) to June 18 (2003) with a high count of 1,040 on June 18, 2003. The third peaked from June 23 (2002) to June 25 (1999) with a high count of 2,690 on June 23, 2002. The fourth peaked from June 30 (2000) to July 4 (2001) with a high count of 1,475 on July 4, 2001. The fifth peaked from July 8 (2002) to July 12 (1999) with a high count of 3,680 on July 8, 2002. The sixth peaked from July 21 (2002) to July 25 (2001) with a high count of 4,050 on July 21, 2002. The seventh peaked from July 30 (2000) to July 31 (2002) with a high count of 1,375 on July 30, 2000. The final influx peaked from August 11 (2002) to August 16 (2001) with a high count of 840 on August 11, 2002. The next influx in 2003 started on July 6 to reach its peak on August 13 with a count of 5,510. This was the highest count during the first five years of the survey. This influx ended on August 20 which is outside the scope of this analysis. However I am including the rest of this extended passage. In 2003 the last post-breeding influx started on August 24 and ran to October 5 with a peak count of 7,300 on September 16 and September 19. I detailed all the 2003 influxes in segment one. The pattern of occurrence from August 20 (1999) to October 13 (2002) is far from clear. There did appear to be passage in 1999 but I am not sure about the other years. In all there were four isolated peak counts of 565 on August 25, 1999, 214 on September 2, 2002, 885 on September 8, 1999 and 2,420 on September 19, 2001. The peak count of 7,300 on September 16, 2003 would link with the fourth of these peak counts. There was a fall passage from September 21 (2000) to December 8 (2002), there were six “clustered” influxes. The first peaked on September 30 (1999, 2001) with a high count of 670 on September 30, 2001. The second peaked from October 8 (1999) to October 9 (2000) with a high count of 560 on October 9, 2000. The third peaked from October 21 (2001) to October 26 (1999) with a high count of 870 on October 26, 1999. The fourth is indicated by a peak count of 525 on November 2, 1998. The fifth peaked from November 11 (2001) to November 13 (1998) with a high count of 675 on November 11, 2001. The sixth peaked from November 19 (1999) to November 25 (1998) with a high count of 1,465 on November 19, 1999. There was clearly a winter passage from December 3 (1998, 2000) to January 28 (2000), there were five “clustered” influxes. Very exceptionally this event started late and over-ran by two to three weeks. The first influx is indicated by a peak count of 2,100 on December 4, 1998. The second peaked from December 11 (1999) to December 14 (2002) with a high count of 3,700 on December 14, 2002. The third peaked from December 19 (2001) to December 22 (1999) with a high count of 810 on December 22, 1999. The fourth peaked from January 1 (2000) to January 2 (2003) with a high count of 1,700 on January 2, 2003. The fifth peaked from January 10 (2001) to January 12 (1999) with a high count of 1,145 on January 12, 1999. Finally there was an early spring passage from January 19 (1999, 2003) to March 10 (2002), there were four “clustered” influxes. The first is indicated by a peak count of 530 on January 21, 2001. The second peaked from January 27 (1999, 2002) to February 2 (2000, 2003) with a high count of 1,160 on January 27, 1999. The third peaked from February

11 (2000) to February 14 (2001) with a high count of 470 on February 11, 2000. The last influx peaked from February 17 (1999, 2002) to February 23 (2003) with a high count of 690 on February 17, 1999. There was no main spring passage as the summer passage started on February 28 (2001).

The Icterid post-breeding gatherings

This text will attempt to show the, for Florida, staggering numbers that eventually joined the roost at the Sand Farm Cattail Marsh. These events started in the summer of 2002 after the cattail marsh was established. Initially numbers were "low" so for the first two years I am only going to summarize the records.

Red-winged Blackbird

From July 25, 2002 to October 6, 2002 Peak count of 10,375 on September 15, 2002.
From July 23, 2003 to October 5, 2003 Peak count of 115,000 on September 16, 2003.

Common Grackle

No post-breeding gatherings for these two years.

Boat-tailed Grackle

From June 10, 2002 to July 28, 2002 Peak count of 4,050 on July 21, 2002
From July 21, 2003 to October 5, 2003 Peak count of 7,300 on September 16, 2003

The closeness of the dates for both of the Red-winged Blackbird years is remarkable. The Boat-tailed Grackle is just as interesting with a minor event in the first year with dates that were totally different but with the second year the dates were as for the Red-winged Blackbird.

The following is a table detailing the records for 2004.

Date	Red-winged Blackbird	Common Grackle	Boat-tailed Grackle	Totals
5.30.2004			1,660	1,660
6,2,2004			2,800	2,800
6.6.2004	810		6,040	6,850
6.9.2004	980		6,430	9,410
6.13.2004	2,300		12,100	14,400
6.16.2004	3,400		20,400	23,800

6.20.2004	8,300		32,400	40,700
6.23.2004	11,850		40,750	52,600
6.28.2004	11,350		44,500	55,850
7.2.2004	47,000		51,000	98,000
7.4.2004	67,000		58,000	125,000
7.7.2004	82,000		63,000	145,000
7.11.2004	133,000		81,000	214,000
7.14.2004	129,000		90,400	219,400
7.18.2004	85,000		97,000	182,000
7.21.2004	90,000	8,200	No count - fog	98,200 +
7.24.2004	144,000	17,200	80,400	241,600
7.29.2004	182,000	19,100	78,500	279,600
8.1.2004	134,500	23,000	27,100	184,600
8.4.2004	64,000	3,000	9,000	76,000
8.9.2004	208,000	750	1,000	209,750
8.16.2004	85,000			85,000
8.19.2004	44,000			44,000
8.22.2004	5300		2,500	7,800

Unlike the first two years the pattern is now very different, both the Red-winged Blackbird and the Boat-tailed Grackle started much earlier although the Common Grackle did share the start date for the first two years. There may be some unknown significance to the July 21-25 start dates. In 2004 there is no correlation between the three peak counts dates. One other item of interest is the number of influxes. Both the Common Grackle and the Boat-tailed Grackle had a single influx covering their respective "gatherings" whereas the Red-winged Blackbird had a total of three influxes. Finally there is one other very clear change with 2004 these gatherings are no longer running through September. Each of these species left the roost separately, Boat-tailed Grackles first, and then the Common Grackles followed by the Red-winged Blackbird. Hence on July 21 only the Boat-tailed Grackle was affected by the fog.

The following is a table detailing the records for 2005.

Date	Red-winged Blackbird	Common Grackle	Boat-tailed Grackle	Totals
6.5.2005	1,550	26	530	2,106
6.12.2005	4,500	9	3,350	7,859
6.19.2005	6,300	4,000	6,050	16,350
6.26.2005	17,500	32,800	20,700	71,000
7.1.2005	26,000	67,000	51,000	144,000
7.3.2005	32,000	75,000	73,000	180,000
7.6.2005	86,000	102,000	113,000	301,000

7.11.2005	137,000	105,000	16,000	405,000
7.14.2005	245,000	110,000	167,000	522,000
7.17.2005	303,000	117,000	107,000	527,000
7.20.2005	285,000	37,000	35,000	357,000
7.23.2005	52,000	17,000	28,000	97,000
7.28.2005	3,700	700	1,200	5,600
7.31.2005	134,000	1,200	120	135,320
8.3.2005	58,000	400	40	58,440
8.7.2005	26,000	25	10	26,035
8.10.2005	18,500	400	2,560	21,460

This time all three species started this event in early June which agrees with 2004. Both the Common Grackle and the Boat-tailed Grackles continued to have just one influx. This time the Red-winged Blackbird had two. The peak counts for the Red-winged Blackbird and the Common Grackle were on the same date and the Boat-tailed Grackle's peak count was only three days earlier.

This analysis is only meant to cover the first five years but here I am dealing with the first seven years. I have done this because the events in 2002 and 2003 needed to be put into perspective. I cannot imagine what is actually happening here, the sheer numbers involved and the speed with which they come and go. Just what kind of catchment area do you have to collect 303,000 Red-winged Blackbirds, 117,000 Common Grackles and 167,000 Boat-tailed Grackles? The total of 167,000 Boat-tailed Grackles has to mean a breeding population of some 50,000 pairs. I did see parties of this species flying in high from the west, but the numbers were not great. Between July 28 and July 31 in 2005 a total of 130,000 Red-winged Blackbirds arrived. Between July 20 and July 23 in 2005 a total of 233,000 Red-winged Blackbirds left, they had not just changed their roost site they had gone. None of these events are described in the Florida literature.

Shiny Cowbird (*Molothrus bonariensis*)

This is a very rare fall visitor, the majority of the sightings fall between June 8 (2003) and July 25 (2001). There was a male on July 12, 1999, then a female seen from July 8, 2001 to July 25, 2001 with a male from July 15, 2001 to July 22, 2001. There was also a male from June 8, 2003 to June 16, 2003, what may be the same bird was later seen from June 29, 2003 to July 21, 2003. There were two males from July 2, 2003 to July 13, 2003. All these 2003 sightings were along Lust Road. One of these two males was watched displaying to a female Brown-headed Cowbird, she later flew off. All these records probably relate to birds returning south after the breeding season. Later there was a female on October 10, 2001 with a male on November 1,

2000 and November 19, 2000. No winter or spring records. The counts of two were the highest counts during the first five years of the survey.

Bronzed Cowbird (*Molothrus aeneus)*

This is a vagrant. For the fall there was an adult male by Roach Road on November 23, 1998. There was also an adult male by the Hooper Farms Road gate on December 21, 2002, a winter record.

Brown-headed Cowbird (*Molothrus ater*)

This is a summer resident, a passage migrant and a winter visitor. Unfortunately the breeding population has been growing, albeit slowly. During the Breeding Bird Survey single pairs located in 1999 and 2000 with three pairs in 2001, four pairs in 2002 and five pairs in 2003. There were eight pairs in 2004. The adults could often be seen sitting very still on the top of a utility pole watching the activity below. The host species appear to be Northern Mockingbirds and Red-winged Blackbirds. One juvenile was watched being fed by a Northern Mockingbird at Hooper Farms Road gate on July 13, 2003, this was a site where a pair of cowbirds had taken up residence. The summer ran from March 11 (2001) to June 8 (2003) with a high count of 60 on March 22, 2001. To detail the 2001 influxes, there were 42 on March 11 with 60 on March 22, then 31 seen on April 4 with five in April 6, three on April 11 and one on April 19. There were two on April 22 with 20 on April 26, then three seen on April 29 with one on May 2. There were three on May 4 and May 8 with singles to May 20. Most had left by mid-May with stragglers to early June. Juveniles noted from June 5 (1999) to July 13 (2003). As the breeding population has grown so did the number of juveniles i.e. from two in 1999 to three in 2000, four in 2002 and five in 2003. The highest count of juveniles on one day being that of four on June 16, 2002 and July 13, 2003, I believe that all of these juveniles were raised on the property. Adults did reappear from June 12 (2002) to July 4 (2003) but in minimal numbers. The highest counts were of three on June 20, 2001, two on June 22, 1999 and five on June 23, 2003. In contrast there was a noticeable early fall passage from June 30 (2002) to September 2 (1998, 2001, 2002) with a high count of 1,005 on July 16, 1999. From the fall to the spring at times large flocks could be seen out in the fields, they are exceedingly social being in very dense flocks, calling continually whilst they fed in the sparser vegetated fields. At the approach of a predator they would all dash to the nearest trees. To detail the 1999 influxes, there were 46 on July 4 with 148 on July 9, 455 on July 12, 550 on July 14 and 1,005 on July 16, then 510 seen on July 20 with 330 on July 27, 95 on August 3, seven on August 6, three on August 10, two on August 13 and singles to August 25. The main fall passage ran from September 8 (1999) to

November 30 (1998, 2000) with a high count of 585 on November 19, 2000. To detail the 2000 influxes, there was one on September 27 with 15 on October 1 and 36 on October 9, then 12 seen on October 15 with one on October 18. There were 60 on October 22 with two on October 25. There were ten on October 29 with 67 on November 5 and 361 on November 8, then 60 seen on November 12. There were 148 on November 15 with 585 on November 19, then 270 seen on November 28 with 36 on November 30. The winter passage followed from November 29 (2001, 2002) to January 14 (2000) with a high count of 1,170 on December 20, 1998. To detail the 1998/1999 influxes, there were 34 on December 3 with 475 on December 8, then 456 seen on December 11 with 400 on December 16. There were 420 on December 18 with 1,170 on December 20, then 720 seen on December 31 with 430 on January 1, 95 on January 7 and one on January 8. Now to the main event of the year, the early spring passage. This ran from January 11 (1999) to April 1 (1999) with a high count of 3,150 on February 5, 1999. To detail the 1999 influxes, there were 135 on January 11 with 240 on January 12, 980 on January 15, 1,025 on January 19, 1,900 on January 27, 2,880 on January 29 and 3,150 on February 5, then 1,600 seen on February 9 with 1,250 on February 17. After that date the area was closed. Later there were 100 on March 7 with 410 on March 11 and 1,545 on March 16, then 1,300 seen on March 19 with 900 on March 23, 31 on March 30 and four on April 1. This last influx also occurred in 2002. It is exceptional to have such a heavy movement at the end of the passage. There was no main spring passage as the summer passage ran from March 11 (2001).

The summer passage ran from March 11 (2001) to June 8 (2003), there were six “clustered” influxes. The first peaked from March 22 (2001) to March 26 (2003) with a high count of 60 on March 22, 2001. The second peaked on March 30 (1999, 2000) with a high count of 31 on March 30, 1999. The third peaked from April 9 (1999) to April 11 (2003) with a high count of 20 on April 9, 1999. The fourth is indicated by a peak count of nine on April 17, 2002. The fifth peaked from April 23 (1999) to April 26 (2001) with a high count of 20 on April 26, 2001. The sixth peaked from May 2 (2000) to May 4 (2003) with a high count of four on May 4, 2003. Numbers now lower with peak counts of ten on May 9, 2002, three on May 18, 2003 and four on May 27, 2002. Most had left by mid-May with stragglers to early June. Juveniles noted from June 5 (1999) to July 13 (2003). Adults did reappear from June 12 (2002) to July 4 (2003) but in minimal numbers. The highest counts were those of three on June 20, 2001, two on June 22, 1999 and five on June 23, 2003. There was a noticeable early fall passage from June 30 (2002) to September 2 (1998, 2001, 2002), there were six “clustered” influxes. The first peaked from July 3 (2002) to July 4 (2000) with a high count of 29 on July 4, 2000. The second peaked from July 11 (2001) to July 16 (1999) with high counts of 24 on July 11, 2001 and 1,005 on July 16, 1999. The third peaked on July 19 (2000, 2003) with a high count of 30 on July 19, 2000. The fourth peaked from July 22 (2001) to July 25 (2002) with high counts of 20 on July 25, 2002 and 245 on July 22, 2001. The fifth is indicated by a peak count of 195 on August 2, 2001. The sixth peaked from August 15 (1998) to August 20 (2000) with a high count of 50 on August 15, 1998.

The main fall passage followed from September 8 (1999) to November 30 (1998, 2000), there were six "clustered" influxes. The first peaked from September 11 (1998) to September 15 (2002) with a high count of 140 on September 11, 1998. The second is indicated by a peak count of 61 on September 23, 1999. The third peaked from October 7 (2001) to October 9 (2000) with a high count of 200 on October 7, 2001. The fourth peaked from October 22 (2000) to October 26 (1999) with a high count of 485 on October 23, 2002. The fifth peaked from November 4 (2001) to November 9 (1999) with a high count of 361 on November 8, 2000. The sixth peaked from November 18 (1998) to November 19 (1999, 2000) with a high count of 585 on November 19, 2000. Next came the winter passage from November 29 (2001, 2002) to January 14 (2000), again there were six "clustered" influxes. The first peaked from November 29 (2002) to November 30 (1999) with a high count of 1,030 on November 30, 1999. The second peaked from December 6 (2000) to December 8 (1998) with a high count of 625 on December 6, 2000. The third peaked on December 11 (1999, 2002) with a high count of 520 on December 11, 1999. The fourth peaked from December 20 (1998) to December 26 (2002) with a high count of 1,170 on December 20, 1998. The fifth peaked from December 30 (2001) to December 31 (2000) with a high count of 43 on December 30, 2001. The sixth peaked from January 4 (2000) to January 10 (2002) with a high count of 750 on January 7, 2003. Now to the main event of the year, the early spring passage. This ran from January 11 (1999) to April 1 (1999), there were six "clustered" influxes. As with the Boat-tailed Grackle this is the only spring passage as the summer passage followed. The first peaked from January 15 (2003) to January 18 (2000) with a high count of 350 on January 15, 2003. The second peaked from February 4 (2001) to February 8 (2000) with high counts of 450 on February 5, 2003 and 3,150 on February 5, 1999. The latter was the highest count during the first five years of the survey. The third peaked from February 10 (2002) to February 15 (2003) with high counts of 745 on February 10, 2002 and 2,050 on February 15, 2003. Passage now came to an abrupt halt with minor isolated peak counts of four on February 25, 2001 and 78 on March 3, 2000. Very surprisingly there is one last major influx, this peaked from March 10 (2002) to March 16 (1999) with high counts of 975 on March 10, 2002 and 1,545 on March 16, 1999. Why there this late passage I do not know. This is another species that does not obey the "rules".

Orchard Oriole (*Icterus spurius*)

This is a passage migrant and an increasing summer visitor. Most pairs choose the trees that are scattered along the shore of Lake Apopka, but there are pairs elsewhere in the area where there are trees that are set apart from the more general woodland. During the Breeding Bird Survey single pairs located in 1999 and 2000 with ten pairs in 2001, 15 pairs in 2002 and 26 pairs in 2003. Some of the pairs have been formed with males in first-summer plumage. Nests

have been found and fledged young seen. Orange County is right at the southern edge of the breeding range of this species. It is therefore very exceptional to have such a large population so far south. Seen in the spring from April 13 (2003) to May 20 (2002) with a high count of seven on April 24, 2003. To detail the 2003 influxes, there were three on April 13 and April 16 with seven on April 24, then four seen to May 4 with two on May 7 and one on May 12. The summer appears to run from May 15 (2003) to July 29 (2001) with a high count of 14 on June 26, 2003. To again detail the 2003 influxes, there were two on May 15 with four on May 18, six on May 26 and 11 on May 29, then eight seen on June 1 with four on June 4. There were five on June 8 with seven on June 11, ten on June 18 and 14 on June 26, then nine seen on June 29 with eight on July 2, three on July 4 and two on July 6. There were five on July 9 with two on July 13 and singles on three dates to July 27. There appears to be a minor fall passage from July 30 (2000) to September 9 (2001) with a high counts of two on July 30, 2000, August 14, 2001 and September 5, 2001. Finally there is an exceptional winter or early spring record. An immature male was present north of the McDonald Canal being seen on January 7, January 11 and February 6.

Seen in the spring from April 13 (2003) to May 20 (2002), there is one discernible "clustered" influx. This peaked from April 17 (1999) to April 21 (2002) with high counts of five on April 19, 2001 and April 21, 2002. There were also isolated peak counts of three on April 13, 2003, seven on April 24, 2003, four on May 4, 2001 and four on May 15, 2002. It is possible that only the April records relate to the spring passage. The summer passage appears to run from May 15 (2003) to July 29 (2001), there were four "clustered" influxes. The first peaked from May 20 (2001) to May 21 (2000) with a high count of five on May 20, 2001. The second is more fiction than fact as it fits in with the work on the Breeding Bird Survey. This influx peaked from May 29 (2003) to June 3 (2001) with high counts of seven on June 3, 2001, nine on May 30, 2002 and 11 on May 29, 2003. The last two influxes probably reflect the presence of the recently fledged young. The third peaked from June 19 (2000) to June 26 (2003) with a high count of 14 on June 26, 2003. This was the highest count during the first five years of the survey. The fourth peaked from July 8 (2001, 2002) to July 9 (2003) with high counts of five on July 8, 2002 and July 9, 2003. There appears to be a minor fall passage from July 30 (2000) to September 9 (2001), there is one identifiable "clustered" influx. This peaked from July 30 (2000) to August 3 (1999) with a high count of two on July 30, 2000. Later there were isolated peak counts of two on August 14, 2001, one on August 20, 2000 and two on September 5, 2001. Finally there is an exceptional winter and/or early spring record. There was an immature male north of the McDonald Canal. It was seen on January 7, 2000, January 11, 2000 and February 6, 2000.

[Hooded Oriole (*Icterus cucullatus)*]

This would be a vagrant. There was a female near the Laughlin Road gate on February 24, 2002 and March 4, 2002. Lack of experience with this species and lack of a camera were the problems. It was a very bright yellow with a very sharply curved beak. It was the beak that got my attention. I have looked at every Orchard Oriole since and I have seen none like this bird.

Baltimore Oriole (*Icterus galbula)*

This is an uncommon passage migrant and an irregular winter visitor. Seen in the fall from September 6 (1999) to October 8 (1999), a surprisingly short season. There were three "clustered" influxes. The first peaked from September 18 (2002) to September 23 (1999) with a high count of four on September 21, 2000. The second peaked from September 26 (2002) to September 27 (2000) with a high count of two on September 27, 2000. The third peaked from October 7 (2001) to October 8 (1999) with one on both dates. During the five years only 17 individuals seen. Only seen in two winters, there was one on December 31, 1998. In 1999 there was one on December 7 with five on December 11 and one again on December 19 making a total of six birds for the winter passage. Very unexpectedly the spring passage was very early and as with the fall it only lasted for one month. The records span the period January 5 (2003) to February 6 (2000), there were three "clustered" influxes. The first is indicated by a peak count one on January 16, 2002. The second peaked from January 20 (1999) to January 22 (2003) with a high count of three on January 22, 2003. The third peaked from January 28 (2000) to January 31 (2001) with a high count of five on January 28, 2000. There were 12 birds in all for the spring making a grand total of 35 birds for the five years. The counts of five on December 11, 1999 and January 28, 2000 were the highest counts during the first five years of the survey. There were no later spring records.

Bullock's Oriole (*Icterus bullockii*)

This is another vagrant. There was a female with three Baltimore Orioles in trees near the Hooper Farms Road gate on January 22, 2003. There is a citrus grove immediately behind that line of trees. This species is a vagrant anywhere in Florida.

Pine Siskin *(Spinus pinus)*

This is also a vagrant. There was one with a flock of 16 American Goldfinches on the utility wires at Interceptor Road on April 30, 2003. The date is very late but not without precedent.

American Goldfinch (*Spinus tristis)*

This is a passage migrant and winter visitor. With the exception of 2002 there was a very limited fall passage, this passage ran from November 17 (2002) to December 8 (2002) with a high count of 62 on November 24, 2002. To detail the 2002 influx, there was one on November 17 with 27 on November 21 and 62 on November 24, then 47 seen on November 30 with 20 on December 2 and seven on December 8. The winter passage ran from November 25 (2001) to January 9 (2003) with a high count of 43 on December 14, 1999. That peak count was a one day event so I am continuing with the 2002/2003 influxes, there were 14 on December 11 with six on December 14 and four on December 16. There were 16 on December 21 with 13 on December 26. There were 14 on December 28 with 21 on December 30, then nine seen on January 5 with three on January 7 and two on January 9. Next came the early spring passage, this ran from January 7 (2000, 2002) to March 6 (2002) with a high count of 35 on February 21, 2000. To detail the 2000 influxes, there were 12 on January 7 with 16 on January 11, then four seen on January 14 with three on with five on February 8 and two on February 11. There were 32 on February 16 with 35 on February 21, then five seen on February 23 with three on February 29 and two on March 3. The late spring passage followed from February 29 (2000) to May 4 (2003) with a high count of 23 on March 10, 2002. To detail the 2003 influxes, there was one on March 2 with four on March 5, then three seen on March 9 with two on March 12. There was one on March 19 with three on March 24 and four on March 29, then singles seen to April 6. There were six on April 13 with one on April 21 although the two counts may not be connected. Finally there were 16 on April 30 with four on May 4. These are some of the latest spring records for Florida.

There was a very limited fall passage, this passage ran from November 17 (2002) to December 8 (2002), there were two “clustered” influxes. The first peaked on November 18 (1998, 2001) with a high count of six on November 18, 1998. The second peaked from November 24 (2002) to November 26 (2000) with high counts of eight on November 26, 2000 and 62 on November 18, 1998. The latter was the highest count during the first five years of the survey. The winter passage ran from November 25 (2001) to January 9 (2003), there were four “clustered” influxes. The first peaked from November 29 (2001) to December 3 (2000) with a high count of 24 on December 3, 2000. The second peaked from December 11 (2002) to December 14 (1999) with a high count of 43 on December 14, 1999. The third peaked from December 19 (2001) to December 21 (2002) with a high count of 42 on December 20, 2000. The

fourth peaked on December 30 (2001, 2002) with a high count of 21 on December 30, 2001. Next came the early spring passage from January 7 (2000, 2002) to March 6 (2002), there were five "clustered" influxes. The first peaked from January 10 (2001) to January 12 (1999) with a high count of 16 on January 11, 2000. The second peaked from January 21 (2000) to January 22 (2003) with a high count of seven on January 22, 2003. The third peaked on January 27 (1999, 2002) with a high count of 17 on January 27, 2002. The fourth peaked from February 2 (2000) to February 4 (2001) with a high count of 15 on February 2, 2000. The fifth peaked from February 18 (2001) to February 21 (2000) with high counts of 28 on February 20, 2002 and 35 on February 21, 2000. The late spring passage followed from February 29 (2000) to May 4 (2003), there were six "clustered" influxes. The first peaked from March 5 (2003) to March 7 (2000) with a high count of 11 on March 7, 2000. The second peaked from March 10 (2002) to March 11 (1999) with a high count of 23 on March 10, 2002. The third peaked from March 27 (2002) to March 29 (2003) with a high count of eight on March 27, 2002. The fourth peaked from April 1 (1999) to April 3 (2000) with a high count of three on April 1, 1999. The fifth peaked from April 8 (2001) to April 13 (2003) with a high count of six on April 13 (2003). The sixth is indicated by a peak count of 16 on April 30, 2003 (see Pine Siskin). There were still four present on May 4, 2003. These are some of the latest spring records for Florida.

House Sparrow (*Passer domesticus*)

This is a minor summer resident, it may also be a passage migrant. There were only records for one of the five winters. During the Breeding Bird Survey one pair located in 1999 with two pairs in 2000, one pair in 2001, two pairs in 2002 and one pair again in 2003. The nest sites were all in buildings on the northern border. The summer is treated as running from May 20 (2001) to August 2 (2000), guess what there were three "clustered" influxes. The first peaked from May 20 (2001) to May 22 (1999) with a high count of three on May 21, 2000. The second peaked from June 7 (1999) to June 11 (2003) with two on both dates. The third peaked from June 30 (2002) to July 2 (2003) with a high count of two on June 30, 2002. There were also isolated peak counts of two on July 6, 1999, July 16, 2000 and July 30, 2000. The fall records basically fit into two periods, from August 26 (2001) to September 10 (2000) with a high count of two on September 10, 2000. Also from November 3 (1999) to November 21 (2002), singles only. The only other late fall records relate to one on October 1, 2000 and to five on October 9, 2000. The only winter records came from 1998/1999 when seven seen on December 8 with six on December 20 and three on January 1, the count of seven is still the highest count for Zellwood. This flock was in a field by the Laughlin Road gate. In contrast there is an early spring event from January 7 (1999) to February 29 (2000), there were two "clustered" influxes. The first peaked from January 7 (1999) to January 10 (2001) with a high count of four on January 7, 1999. The second peaked from February 17 (1999) to February 23 (2000) with a high count of two on February 17, 1999. Whilst only two peak counts involved in the January influx there

were influxes for four of the five years for the February influx. Does that have meaning? Between these influxes there were peak counts of one on January 22, 2003, two on January 29, 1999 and February 6, 2000. The situation with the late spring passage is far from clear, there were records for every year from March 5 (2003) to May 16 (2000), there appear to be three "clustered" influxes. The first peaked from March 31 (2002) to April 3 (2000) with a high count of two on April 3, 2000. The second peaked from April 24 (2002) to April 27 (2003) also with a high count of two on April 27, 2003. The third peaked from May 2 (2000) to May 4 (2001) again with a high count of two on May 4, 2001, The jury is still out nationally on whether or not this is now a partial migrant. I have not told any stories during the writing of this text but as I am at the end…. At one time I used to do all my birding at a headland in southern England known as Selsey Bill. This headland jutted out into the English Channel towards France. Every October many flocks of finches would fly up circling around until they had the "courage" to head out to sea. The House Sparrows did exactly that, often in flocks of 20 to 30. I never saw any actually depart but this activity showed that they had at least the desire to migrate.

Exotic Passerines.

Orange Bishop (*Euplectes franciscanus)*

There was an adult male in mostly winter plumage at Hooper Farms Road on April 6, 2003.

Bronze Mannikin (*Lonchura cucullata)*

There was an adult on the northern border at Canal Road on November 18, 2001. It later flew off to the east calling. This is probably the first record for Florida.

Table A

Summary of the days that the site was visited, the hours spent surveying and the number of species seen.

Year	Days	Totals	Hours	Totals	# species
1998/1999	88	88	1,000	1,000	252
1999/2000	104	192	1,207	2,207	259
2000/2001	104	296	1,328	3,535	252
2001/2002	104	400	1,345	4,880	260
2002/2003	105	505	1,367	6,247	258

The total of 1,000 hours for the 1998/1999 year is an estimate as I did not record the hours during that first year.

Please note the year runs from August 15 to August 14. Most birders record the number of species seen using the calendar year. I have therefore recalculated the totals to put them into a calendar year format.

1998 (part year)	202
1999	261
2000	261
2001	255
2002	256
2003	265

TABLE B

The Spreadsheet

All the sightings day by day have been entered onto a spreadsheet, this is ongoing. For some twelve years the spreadsheet was kept by Bill Pranty and his work is much appreciated. The spreadsheet is now held by the author and copies can be obtained by contacting me at <sirharrydeland@gmail.com>.

For the first two survey years the information from the spreadsheet was reworked to identify as far as possible the numbers of birds using the different types of habitat on a daily basis. This information is now included in **Table C.**

TABLE C

Habitat usage on a daily basis – August 15, 1998 to August 14, 2000

This table is a daily summary of the number of birds using the different described habitats. The breakdown of shallow water users into three categories helps to show what effect different depths of water would have. For instance if there was no mud and the fields were shallow flooded to the banks the shorebirds in category 4 would be absent, a significant loss.

Habitat Descriptions

1) Aquatic - Deep water

A field that is flooded to its banks or the deeper areas of shallow flooded fields. The species included in this category would use the area if the fields were deep flooded, this includes the grebes, the diving ducks and the American Coot.

2) Aquatic - Shallow water (surface feeding ducks)

A field that is only partially flooded, there may be deeper areas but there will often be extensive areas of mud either at the edge or in the form of ridges out in the middle. This category covers the surface feeding ducks.

3) Aquatic - Shallow water (large wading birds)

This is the same habitat but it is for those that wade rather than those that swim. This category has been used to cover species such as the Wood Stork, Great Blue Heron and Great Egret.

4) Aquatic - Shallow water (shorebirds)

This time it relates to the often very short legged shorebirds that tend to feed on the mud. The larger shorebirds do wade out to a degree but the distance is minimal.

5A) Over water

This category relates to those that hunt over water but do not need to use the areas of mud for loafing or roosting. Typical species are the Osprey and the Belted Kingfisher. The species in this category would be present even if the fields deep flooded.

5B) Over water

This category relates to those species that hunt over the water but need to rest on the ground. The preferred location being exposed mud ridges in the middle of shallow flooded fields, especially if these ridges are in the form of islands. Typical species are the gulls and the terns that loaf and/or roost (or even nest) on such locations.

6) Short grass

This is a much more specialized habitat. During the period covered by this analysis the Sod Farm was the only area of short grassland. Most species that use the short turf (excluding the Eastern Meadowlark) would use any dried mud areas of the shallow flooded fields.

7) Weedy fields

Initially this was the habitat at Zellwood with the exception of Unit Two that was flooded. After that area drained it too had the weedy fields. Gradually woody vegetation took over (elderberry, saltbush and ludwigia sp.). Then the regime of mowing and roller-chopping started creating a habitat of weeds and grasses. Although the changes are significant I have treated this as one habitat type.

8) Woods and scrub

Most of this is on slightly higher ground around the edge of the property. Deep or shallow flooding is unlikely to affect this habitat to a great extent but some trees may suffer if a field is deep flooded right up to the edge of the woodland.

Date	1	2	3	4	5A	5B	6	7	8
8.15.98	20	50	1000	800	5	365	90	500	35
9.2.98	40	46	3000	600	15	1055	55	3000	1
9.11.98	175	75	1500	1290	10	505	23	500	1
9.17.98	216	135	2800	685	31	181	12	2200	1
9.30.98	100	1250	840	230	17	87	16	1020	1
10.6.98	190	60	495	815	21	29	6	70	2
10.16.98	3620	5000	2050	1340	28	14	14	250	5
10.21.98	3620	5000	860	1890	27	42	52	260	5
10.29.98	4250	7500	975	1530	22	152	97	250	2
11.2.98	7450	10500	1080	1850	31	124	155	525	2
11.6.98	6250	8100	1950	1850	12	221	183	500	5
11.11.98	12750	4250	1220	1450	11	406	217	550	6
11.13.98	11690	730	1420	2400	17	524	246	1020	8
11.18.98	16720	1300	1240	1400	14	805	320	1150	12
11.20.98	840	50	350	70	0	481	370	720	6
11.23.98	1	29	0	0	0	8	80	3	0
11.25.98	6630	351	1335	1275	15	27	355	715	10
11.30.98	7845	2100	1540	755	11	550	311	550	13
12.3.98	11900	3050	705	1150	8	698	430	1140	23
12.4.98	3	180	1100	59	0	635	60	2100	2
12.8.98	6750	7700	1950	2400	6	732	570	860	22
12.11.98	3800	7350	1160	1230	5	500	176	760	1185
12.16.98	6050	6580	525	2050	5	866	480	700	205
1218.98	3750	12565	780	56	8	392	14	420	50
12.20.98	3750	8550	700	1800	3	535	570	1170	72
12.28.98	3550	5695	490	1485	1	522	385	1750	265
12.31.98	2210	5640	890	2450	4	618	566	840	91
1.1.99	3050	4250	558	1855	6	745	756	935	177
1.7.99	2320	4600	790	1200	3	1185	525	405	41
1.8.99	3055	2950	1010	1595	4	1175	290	420	165
1.11.99	3000	2250	11	75	4	800	50	310	230
1.12.99	3310	4700	710	1890	3	1175	236	1145	530
1.15.99	2960	5970	970	1760	6	1340	275	1005	860
1.19.99	2665	6950	806	1725	6	1308	270	1025	70
1.27.99	2150	7120	830	1270	3	848	484	1900	68
1.29.99	4370	6200	815	1250	5	1936	335	2880	140
2.3.99	2365	3230	720	1450	8	921	1270	2700	99
2.5.99	2610	4650	810	1150	6	723	2475	3150	575
2.9.99	2370	3800	670	1450	5	423	875	1600	878

2.10.99	2050	2400	730	1610	8	465	378	870	543
2.17.99	2190	450	620	184	11	362	494	1250	110
3.7.99	35	0	60	20	1	97	25	300	80
3.11.99	30	0	130	40	18	20	150	2570	51
3.13.99	38	8	40	40	14	13	47	350	67
3.16.99	21	4	70	130	12	42	75	1910	95
3.18.99	34	2	73	1	8	12	43	1340	113
3.19.99	66	0	155	70	9	13	137	1300	110
3.23.99	40	2	305	70	9	11	115	900	150
3.25.99	49	0	36	1	7	55	49	350	100
3.30.99	38	0	445	30	7	27	29	4500	55
4.1.99	51	2	123	15	11	401	850	1760	55
4.6.99	99	0	220	30	9	16	220	615	105
4.9.99	88	3	200	70	12	17	28	640	42
4.14.99	43	5	204	0	8	15	210	350	42
4.17.99	16	0	302	0	10	8	105	2200	56
4.20.99	260	41	450	245	11	190	32	2340	42
4.23.99	34	4	135	0	12	13	14	178	35
4.26.99	230	18	560	90	5	271	44	1600	50
5.1.99	260	14	930	450	18	190	65	3120	201
5.4.99	252	10	880	130	7	149	30	1920	42
5.7.99	205	10	930	103	7	108	56	1000	29
5.10.99	210	22	1420	70	14	89	33	267	54
5.14.99	165	28	1470	130	15	41	18	175	36
5.18.99	120	17	555	75	7	27	54	555	50
5.22.99	119	28	595	105	10	11	20	1035	36
5.25.99	99	18	1145	150	11	18	14	1025	31
5.29.99	123	29	765	145	12	16	12	1405	56
5.31.99	98	35	975	128	19	17	24	1015	77
6.5.99	133	29	650	260	5	22	66	1760	37
6.7.99	89	39	550	135	13	21	24	855	80
6.12.99	94	40	1070	123	8	12	88	1145	86
6.14.99	87	38	2140	138	13	7	68	965	47
6.19.99	71	72	1310	109	12	9	44	1935	44
6.22.99	25	50	2450	90	9	15	44	2015	96
6.25.99	18	44	2410	80	14	8	142	2140	106
6.29.99	23	8	650	61	9	5	97	1190	32
7.20.99	11	85	2030	75	6	0	74	1090	53
7.23.99	15	40	2345	70	4	5	57	615	31
7.27.99	26	82	2490	145	5	3	36	1070	29
8.3.99	29	119	2500	225	3	6	36	2170	22
8.6.99	46	302	2570	190	7	4	23	1260	18

8.10.99	29	366	3120	645	1	5	49	670	22
8.13.99	48	224	2580	787	5	5	27	550	22
8.18.99	185	523	249	810	3	3	16	2561	123
8.20.99	158	679	232	1049	3	3	2	3882	105
8.25.99	130	578	170	1107	3	1	2	2910	109
8.27.99	145	1142	166	893	2	0	1	1988	108
8.31.99	147	950	159	782	10	30	4	4198	276
9.3.99	144	583	139	966	6	7	7	2872	215
9.6.99	201	618	246	1139	9	2	15	2225	295
9.8.99	237	1353	140	1077	2	5	10	2832	91
9.10.99	200	1739	161	1291	3	3	7	2328	108
9.17.99	266	2354	185	1338	4	2	7	2687	309
9.23.99	162	244	79	537	7	3	5	2011	454
9.25.99	208	227	63	700	5	11	4	2273	251
9.30.99	172	162	88	553	2	1	21	1755	227
10.2.99	165	179	131	386	8	6	19	1328	1700
10.6.99	273	93	114	440	6	1	19	1206	389
10.8.99	236	50	90	340	7	3	14	3184	242
10.12.99	310	96	65	291	8	2	43	1333	644
10.14.99	507	71	66	272	8	7	126	1368	690
10.19.99	1555	53	88	307	7	3	142	2036	335
10.23.99	1627	114	91	188	10	8	90	1909	247
10.26.99	3047	137	656	173	4	10	84	2980	211
10.29.99	2778	4997	115	278	8	12	104	2010	188
11.3.99	3007	5674	263	195	10	12	166	1539	96
11.5.99	104	10646	58	246	0	8	185	87	2
11.6.99	1870	10657	233	353	4	11	352	1237	110
11.9.99	1977	10978	178	670	9	25	553	1997	135
11.12.99	1527	6441	95	679	9	64	554	2265	123
11.14.99	1016	4755	132	567	0	68	273	170	0
11.18.99	1249	3611	147	678	12	19	400	2122	396
11.19.99	1016	2919	80	879	8	83	227	3295	126
11.22.99	963	2314	113	738	8	99	251	3373	105
11.26.99	994	2275	149	647	11	116	283	2547	164
11.30.99	933	1396	74	801	6	118	284	3065	89
12.4.99	1115	1009	142	924	5	121	120	2253	156
12.7.99	897	1315	99	1078	6	79	258	2399	182
12.11.99	741	1017	135	991	7	165	154	3386	149
12.14.99	789	1712	132	843	7	54	179	2093	161
12.19.99	574	3365	93	261	6	119	263	2546	144
12.22.99	426	1800	85	204	6	208	294	3574	162
12.27.99	516	1032	68	132	7	76	241	1763	85

12.30.99	753	1070	98	179	8	52	176	2248	167
1.1.00	820	877	125	240	11	135	318	2704	201
1.4.00	956	859	89	299	6	76	198	3191	141
1.7.00	787	146	122	268	8	121	303	2262	213
1.11.00	778	120	93	518	9	82	500	2525	162
1.14.00	761	470	93	385	3	80	225	1774	222
1.18.00	838	864	92	566	6	92	329	3297	159
1.21.00	855	929	71	483	6	42	136	1736	466
1.25.00	893	627	66	235	5	108	197	1344	185
1.28.00	773	497	71	214	21	98	192	1467	1991
2.2.00	811	1053	92	222	13	256	220	2451	598
2.6.00	579	408	121	148	11	171	973	2473	1006
2.8.00	766	329	88	234	16	136	569	2349	410
2.11.00	821	371	86	388	9	59	436	2091	365
2.16.00	705	580	94	448	11	141	359	1993	375
2.21.00	711	550	87	597	9	239	2556	1386	209
2.23.00	610	770	69	493	12	165	369	1567	258
2.25.00	651	613	71	574	8	83	278	2066	241
2.29.00	449	579	73	592	8	87	107	1439	422
3.3.00	476	717	81	695	6	245	2296	1864	173
3.7.00	387	569	91	807	7	57	2037	1185	171
3.10.00	419	511	121	544	10	208	84	1658	197
3.14.00	495	439	109	814	6	36	80	2690	114
3.18.00	404	265	55	202	9	35	63	1896	128
3.21.00	357	250	61	435	8	30	134	1315	146
3.25.00	378	222	85	436	9	70	46	1364	158
3.27.00	492	185	160	291	9	97	35	1928	81
3.30.00	328	89	199	423	15	199	25	2578	92
4.3.00	348	58	59	442	8	172	19	1458	153
4.6.00	314	58	104	487	10	207	31	969	134
4.11.00	271	24	72	640	15	190	34	1290	182
4.15.00	293	34	63	585	13	100	28	1755	206
4.19.00	355	69	102	573	14	242	95	1764	235
4.26.00	351	45	140	714	18	90	19	2520	216
4.30.00	175	29	131	291	11	89	102	5172	222
5.2.00	235	25	151	287	7	72	36	2659	217
5.4.00	162	22	114	365	14	46	30	2010	154
5.7.00	142	21	85	383	3	26	21	1303	72
5.13.00	141	27	151	405	5	26	43	1439	154
5.16.00	145	21	97	310	4	32	24	1322	142
5.21.00	150	27	115	148	4	18	28	1624	205
5.23.00	121	29	97	153	5	7	23	1476	156

5.27.00	117	41	117	123	2	2	25	1884	143
5.30.00	114	38	186	133	13	2	22	1595	165
6.3.00	94	31	138	139	5	4	33	1758	149
6.6.00	80	89	175	183	12	24	26	1517	206
6.9.00	90	61	166	197	11	11	32	1739	162
6.14.00	101	82	235	130	7	5	26	2231	162
6.19.00	96	108	246	190	7	4	49	2375	169
6.26.oo	78	104	307	189	8	8	20	2143	149
6.28.00	92	102	381	203	6	8	53	2797	174
6.30.00	107	136	349	169	10	16	29	3396	218
7.4.00	82	55	421	232	17	14	216	2762	191
7.8.00	70	120	202	222	12	38	198	3076	191
7.12.00	74	100	183	304	12	31	265	2847	183
7.16.00	73	107	236	293	18	51	103	2881	164
7.19.00	67	60	214	354	13	82	294	2835	174
7.23.00	169	61	219	523	17	68	54	3531	153
7.26.00	214	37	195	176	11	26	163	1797	130
7.30.00	202	29	222	192	13	17	166	4172	215
8.2.00	87	33	159	118	10	5	31	1241	165
8.6.00	74	53	195	174	10	5	55	3265	138
8.9.00	48	49	173	107	10	4	31	2083	248
8.13.00	77	44	161	81	14	7	21	2269	160

There is one situation that is well illustrated by these figures and that is the considerable drop in numbers when the fields drained in February, 1999. Even if you look at the totals for January and February 2000 there is no comparison to the shallow flooded fields of 1998/1999.

Table D

This table looks at the effects of deep flooding versus shallow flooding of the fields.

During the fall of 1998 and the winter of 1998/1999 whilst some 5,000 acres of Unit Two were flooded I was able to observe the habitat preferences of the waders, wildfowl, shorebirds, gulls and terns. Most of the fields were shallow flooded initially with the exception of two fields down Roach Road extension. Later when the water was moved to the south and then out into Lake Apopka I was able to see the effect that action had on the various populations. In Table C I broke down the habitat preferences for all the species, not just the ones I mentioned above.

The following is an attempt to calculate just what would happen to the bird life if the fields had been deep flooded instead of shallow flooded. By deep flooding I mean a field that is flooded to its banks with a water depth of say four feet. On the other hand a shallow flooded field would have some deeper water (two plus feet) but consist mainly of shallow water with areas of mud either at the edge or in ridges out in the middle of a field complex.

I tried to estimate the numbers of birds that would choose a shallow flooded field but that would remain if the fields were deep flooded. I believe that some 10% of the surface feeding ducks and 5% of the herons and egrets would remain. I would expect all the shorebirds to leave if the water levels rose to the banks. Unless the gulls and terns could find an alternative loafing/roosting area they would also depart.

To represent the potential impact of deep flooding I have taken a selection of dates during the period October 1998 to January 1999 and tried to estimate the numbers that would have used the fields under these two scenarios.

Date	Deep Water	Shallow Water	% remaining if the fields deep flooded
	Estimated # of birds	Actual # of birds	
10.16.1998	4,243	12,295	34%
11.2.1998	8,554	21,577	39%
11.18.1998	16,912	22,137	76%
12.3.1998	12,240	18,381	66%
12.18.1998	5,045	17,590	28%
1.1.1999	3,503	11,408	30%
1.19.1999	3,400	13,445	25%
1.29.1999	5,031	15,853	31%

Note: The peak on November 18 relates to the passage of American Coots and the December 3 peak relates to the passage of the Ring-necked Ducks.

Summary

Apart from those two peaks caused by the arrival of large numbers of migrant ducks and coots that preferred deeper water it is clear that deep water would not be as beneficial to birds as the shallow flooding actually was.

I cannot say how many how many more diving ducks, coots and grebes would have been attracted to the area if it had been deep flooded but it is unlikely to adjust the figures much. The figures for shallow flooding are also lower than they might have been because of the frequently shifting areas under water.

There are two problems that I cannot address. If the area was deep flooded the question of plant growth comes up, for example water hyacinth or cattails. Both of the plants would change the bird populations dramatically. If there was no significant areas of open water the ducks, coots and grebes would for the most part leave. Cattails would increase the populations of Least Bitterns and Red-winged Blackbirds. The hyacinth would attract Little Blue Herons and Purple Gallinules. The other problem relates to shallow water, I believe that in order to keep an optimal habitat the water levels would need to be managed to a high degree in order to keep areas of mud. Plants would otherwise take over.

TABLE E

This is a Systematic List of all species seen from August 15, 1998 to August 14, 2003 together with details of the highest daily count during the five years.

Where the same high count or counts of single individuals occur on more than one day then only the first date is given.

SPECIES	HIGHEST DAILY COUNT	DATE OF THAT COUNT
Common Loon	1	11.18.2001
Pied-billed Grebe	750	11.18.1998
Horned Grebe	3	11.11.1998
Eared Grebe	4	1.1.1999
American White Pelican	4,370	1.29.1999
Brown Pelican	3	3.24.2003
Double-crested Cormorant	828	3.25.2001
Anhinga	68	9.3.2000
American Bittern	17	3.26.2003
Least Bittern	17	5.12.2003
Great Blue Heron	395	12.3.1998
Great White Heron	1	6.1.2003
Great Egret	1,950	11.6.1998
Snowy Egret	322	6.12.2002
Little Blue Heron	163	10.24.2001
Tricolored Heron	93	7.19.2003
Reddish Egret	1	3.21.2000
Cattle Egret	5,375	10.13.2002
Green Heron	109	6.29.2003
Black-crowned Night-Heron	89	1.27.1999
Yellow-crowned Night-Heron	16	6.12.2002
White Ibis	1,370	6.23.2003
Glossy Ibis	1,380	7.19.2003
White-faced Ibis	2	11.11.2001
Roseate Spoonbill	30	6.26.2002
Wood Stork	1,130	11.18.1998
Black Vulture	127	7.10.2002
Turkey Vulture	511	10.29.1999
White-faced Whistling-Duck	1	5.7.2000
Black-bellied Whistling -Duck	6	7.19.2003
Fulvous Whistling-Duck	366	8.10.1999

Greater White-fronted Goose	3	10.28.2001
Snow Goose	90	12.18.1998
Ross's Goose	2	12.7.1998
Canada Goose	3	10.29.1998
Black Swan	1	6.10.2002
Muscovy Duck	1	6.5.1999
Wood Duck	53	9.10.1999
Gadwall	222	11.22.1999
American Wigeon	186	12.18.1998
American Black Duck	3	12.7.1998
Mallard	40	11.19.1999
Mottled Duck	197	8.20.1999
Blue-winged Teal	10,500	11.2.1998
Cinnamon Teal	3	1.19.1999
Northern Shoveler	770	1.27.1999
Northern Pintail	420	12.16.1998
Green-winged Teal	12,565	12.18.1998
Canvasback	5	12.7.1998
Redhead	18	1.3.2002
Ring-necked Duck	11,900	12.3.1998
Greater Scaup	5	12.8.1998
Lesser Scaup	279	1.12.1999
Bufflehead	9	12.30.1999
Common Goldeneye	1	12.30.2002
Hooded Merganser	100	1.12.1999
Red-breasted Merganser	6	1.7.1999
Ruddy Duck	3,650	3.12.2003
Osprey	57	4.24.2003
Swallow-tailed Kite	556	7.25.2003
White-tailed Kite	1	6.30.2000
Snail Kite	1	7.16.1999
Bald Eagle	20	4.3.2002
Northern Harrier	223	1.14.2000
Sharp-shinned Hawk	6	8.6.1999
Cooper's Hawk	21	8.7.2002
Red-shouldered Hawk	28	1.7.2000
Broad-winged Hawk	1	10.6.1998
Short-tailed Hawk	1	9.30.1999
Swainson's Hawk	1	12.27.1999
Red-tailed Hawk	94	3.14.2000
Rough-legged Hawk	3	2.23.2000
Golden Eagle	1	1.8.1999

Crested Caracara	1	7.27.1999
Eurasian Kestrel	1	2.26.2003
American Kestrel	28	10.26.1999
Merlin	3	10.8.1999
Peregrine Falcon	4	10.12.1999
Ring-necked Pheasant	1	5.6.2002
Wild Turkey	1	6.6.2000
Northern Bobwhite	69	7.4.2003
Yellow Rail	1	3.9.2003
Black Rail	1	6.4.2003
King Rail	14	1.9.2003
Virginia Rail	3	1.5.2003
Sora	109	12.30.2002
Purple Gallinule	58	4.21.2003
Common Moorhen	1,890	10.21.1998
American Coot	16,720	11.18.1998
Limpkin	5	5.14.2001
Sandhill Crane	104	11.25.2001
Whooping Crane	8	3.21.2000
Black-bellied Plover	346	12.3.1998
American Golden Plover	6	10.26.1999
Semipalmated Plover	134	5.15.2002
Piping Plover	1	5.20.2002
Killdeer	1,935	2.9.2003
Black-necked Stilt	368	9.17.1998
American Avocet	75	1.11.1999
Greater Yellowlegs	415	12.16.1998
Lesser Yellowlegs	1,195	12.16.1998
Solitary Sandpiper	8	4.20.2001
Willet	8	7.27.1999
Spotted Sandpiper	13	5.15.2002
Upland Sandpiper	6	4.20.1999
Whimbrel	1	5.1.1999
Long-billed Curlew	1	6.25.1999
Marbled Godwit	2	11.25.1998
Ruddy Turnstone	8	5.6.2002
Red Knot	12	5.14.2001
Sanderling	5	5.20.2002
Semipalmated Sandpiper	1,540	5.23.2002
Western Sandpiper	965	9.11.1998
Least Sandpiper	2,450	12.31.1998
White-rumped Sandpiper	37	5.23.2002

Baird's Sandpiper	2	8.6.2000
Pectoral Sandpiper	690	9.16.2001
Sharp-tailed Sandpiper	1	9.26.2002
Dunlin	210	11.13.1998
Curlew Sandpiper	1	9.2.1998
Stilt Sandpiper	490	10.21.1998
Buff-breasted Sandpiper	23	9.11.1998
Ruff	2	11.25.1998
Short-billed Dowitcher	670	10.29.1998
Long-billed Dowitcher	1,890	1.12.1999
Wilson's Snipe	898	12.28.1998
American Woodcock	7	1.13.2002
Wilson's Phalarope	21	9.2.1998
Red-necked Phalarope	1	9.23.1999
Red Phalarope	1	9.16.2001
Pomarine Jaeger	2	5.6.2001
Laughing Gull	114	4.11.2001
Franklin's Gull	21	12.4.1998
Little Gull	1	1.7.2001
Bonaparte's Gull	404	1.10.2002
Ring-billed Gull	4,600	12.21.2002
Herring Gull	88	2.3.1999
Lesser Black-backed Gull	2	12.11.1998
Gull-billed Tern	4	4.20.1999
Caspian Tern	208	2.10.1999
Royal Tern	1	12.16.1998
Sandwich Tern	1	7.1.2001
Common Tern	5	4.7.2002
Arctic Tern	2	5.23.2002
Forster's Tern	500	9.2.1998
Least Tern	54	7.19.2000
Black Tern	500	9.2.1998
Black Skimmer	120	2.3.1999
Rock Dove	106	6.25.1999
Eurasian Collared-Dove	36	6.7.1999
White-winged Dove	24	9.19.2001
Mourning Dove	2,120	7.8.2001
Common Ground-Dove	111	5.21.2003
Budgerigar	1	7.23.1999
Cockatiel	1	9.2.2002
Black-billed Cuckoo	1	5.10.1999
Yellow-billed Cuckoo	23	5.4.2003

Smooth-billed Ani	1	6.26.2003
Groove-billed Ani	2	10.20.2002
Barn Owl	10	2.7.2001
Eastern Screech-Owl	2	12.20.1998
Great Horned Owl	4	8.27.2000
Burrowing Owl	1	6.18.2003
Barred Owl	4	12.14.2002
Short-eared Owl	3	12.7.1999
Northern Saw-whet Owl	1	11.5.2002
Lesser Nighthawk	1	12.16.1998
Common Nighthawk	1,233	9.11.2002
Chuck-will's-widow	13	6.4.2003
Whip-poor-will	3	9.13.2000
Chimney Swift	1,510	10.2.1999
Ruby-throated Hummingbird	2	10.13.2002
Black-chinned Hummingbird	1	12.19.1999
Belted Kingfisher	19	11.9.2002
Red-headed Woodpecker	1	12.16.1998
Red-bellied Woodpecker	48	4.27.2003
Yellow-bellied Sapsucker	4	10.23.1999
Downy Woodpecker	19	9.19.2000
Hairy Woodpecker	1	3.13.1999
Red-cockaded Woodpecker	1	6.23.2003
Northern Flicker	8	10.19.1999
Pileated Woodpecker	8	1.14.2001
Eastern Wood-Pewee	6	9.24.2000
Acadian Flycatcher	2	9.11.2002
Willow Flycatcher	1	7.27.1999
Least Flycatcher	8	12.2.2002
Eastern Phoebe	257	11.5.2000
Vermillion Flycatcher	2	3.4.2002
Ash-throated Flycatcher	9	1.20 2002
Brown-crested Flycatcher	1	1.14.2001
Great Crested Flycatcher	18	7.3.2002
Tropical Kingbird	1	12.9.2001
Cassin's Kingbird	1	12.4.1999
Western Kingbird	72	1.27.2002
Eastern Kingbird	347	8.31.1999
Gray Kingbird	2	10.21.1998
Scissor-tailed Flycatcher	5	3.31.2002
Fork-tailed Flycatcher	1	7.23.2000
Loggerhead Shrike	18	2.3.2002

White-eyed Vireo	37	10.5.2000
Bell's Vireo	1	2.6.2000
Yellow-throated Vireo	2	4.3.2002
Blue-headed Vireo	4	12.2.2002
Philadelphia Vireo	1	10.14.1999
Red-eyed Vireo	17	9.21.2000
Blue Jay	46	10.5.2000
Florida Scrub-Jay	2	4.17.2002
American Crow	6	7.4.2003
Fish Crow	4,400	1.27.2002
Purple Martin	1,935	6.19.1999
Tree Swallow	7,120	3.9.2003
Northern Rough-winged Swallow	7	4.17.1999
Bank Swallow	145	9.2.2001
Cliff Swallow	68	9.25.1999
Cave Swallow	1	3.18.2001
Barn Swallow	2,200	4.17.1999
Carolina Chickadee	1	11.9.1999
Tufted Titmouse	6	7.2.2003
Carolina Wren	103	4.24.2003
Bewick's Wren	1	2.25.2000
House Wren	674	11.5.2000
Winter Wren	1	1.19.2003
Sedge Wren	108	11.26.2000
Marsh Wren	126	11.5.2000
Golden-crowned Kinglet	1	12.7.1999
Ruby-crowned Kinglet	23	11.24.2002
Blue-gray Gnatcatcher	96	10.5.2000
Eastern Bluebird	6	12.21.2002
Veery	12	10.2.2002
Gray-cheeked Thrush	1	10.6.1999
Bicknell's Thrush	1	5.27.2000
Swainson's Thrush	36	9.26.2001
Hermit Thrush	2	11.17.2002
Wood Thrush	1	10.19.1999
American Robin	3,100	3.2.2003
Gray Catbird	270	10.13.2002
Northern Mockingbird	102	7.6.2003
Brown Thrasher	23	10.7.2001
European Starling	860	7.8.2003
American Pipit	570	12.8.1998
Cedar Waxwing	615	4.6.1999

Blue-winged Warbler	2	9.3.2000
Tennessee Warbler	7	9.19.2000
Orange-crowned Warbler	36	12.15.2000
Nashville Warbler	1	1.11.1999
Northern Parula	15	3.5.2003
Yellow Warbler	119	8.28.2002
Chestnut-sided Warbler	6	9.21.2000
Magnolia Warbler	2	10.5.2000
Cape May Warbler	13	4.17.1999
Black-throated Blue Warbler	5	5.1.1999
Yellow-rumped Warbler	8,470	3.5.2003
Black-throated Green Warbler	2	12.20.1998
Blackburnian Warbler	4	9.19.2000
Yellow-throated Warbler	2	9.19.2000
Pine Warbler	6	10.29.1999
Prairie Warbler	39	9.9.2001
Palm Warbler	3,120	2.26.2003
Bay-breasted Warbler	1	10.19.1999
Blackpoll Warbler	18	5.1.2002
Cerulean Warbler	2	9.21.2000
Black-and-white Warbler	6	4.17.1999
American Redstart	48	5.14.2001
Prothonotary Warbler	2	4.14.2002
Worm-eating Warbler	1	4.17.1999
Swainson’s Warbler	1	8.16.2000
Ovenbird	22	10.2.2002
Northern Waterthrush	102	9.26.2002
Louisiana Waterthrush	34	8.16.2000
Kentucky Warbler	1	4.14.1999
Common Yellowthroat	321	10.2.2002
Hooded Warbler	2	4.17.1999
Wilson’s Warbler	1	2.8.2000
Yellow-breasted Chat	30	6.11.2003
Summer Tanager	2	10.19.1999
Scarlet Tanager	1	10.2.1999
Eastern Towhee	228	7.30.2003
Chipping Sparrow	4	4.14.2002
Clay-colored Sparrow	46	2.3.1999
Field Sparrow	12	3.14.2002
Vesper Sparrow	19	1.7.2003
Lark Sparrow	1	2.9.1999
Savannah Sparrow	860	12.8.1998

Grasshopper Sparrow	12	2.17.1999
Henslow's Sparrow	1	11.20.1998
Le Conte's Sparrow	1	12.16.1998
Nelson's Sharp-tailed Sparrow	1	11.5.2000
Fox Sparrow	1	2.17.1999
Song Sparrow	16	12.16.2002
Lincoln's Sparrow	5	11.17.2002
Swamp Sparrow	725	12.2.2002
White-throated Sparrow	4	2.25.2001
White-crowned Sparrow	51	2.3.1999
Lapland Longspur	1	10.16.1998
Northern Cardinal	273	5.4.2003
Rose-breasted Grosbeak	1	4.30.2000
Blue Grosbeak	39	7.4.2000
Lazuli Bunting	1	1.7.2002
Indigo Bunting	281	10.16.2002
Painted Bunting	9	5.9.2002
Dickcissel	11	6.29.1999
Bobolink	7,060	5.1.2002
Red-winged Blackbird	27,000	8.13.2003
Eastern Meadowlark	62	1.24.2002
Yellow-headed Blackbird	5	12.31.1998
Rusty Blackbird	13	12.3.1998
Brewer's Blackbird	1	12.11.2001
Common Grackle	960	11.17.2002
Boat-tailed Grackle	5,510	8.13.2003
Shiny Cowbird	2	7.15.2001
Bronzed Cowbird	1	11.23.1998
Brown-headed Cowbird	3,150	2.5.1999
Orchard Oriole	14	6.26.2003
Baltimore Oriole	5	12.11.1999
Bullock's Oriole	1	1.22.2003
Pine Siskin	1	4.30.2003
American Goldfinch	47	11.30 2002
House Sparrow	7	12.8.1998
Orange Bishop	1	4.6.2003
Bronze Mannikin	1	11.18.2001

The following species were recorded by others at Zellwood prior to the start of the survey on August 15, 1998 and none of these were located during the first five years of the survey. The only one that has been seen since is the Wilson's Plover. There was one on September 10, 2008.

Brant	1	10.24.1981
White-cheeked Pintail	1	8.18.1973
Ferruginous Hawk	2	12.19.1983
Southern Lapwing	1	7.23.1961
Wilson's Plover	1	8.3.1974
Hudsonian Godwit	32	9.3.1986
Brown Noddy	1	9.10.1965
Golden-winged Warbler	1	8.17.1974

There were 320 species in the main list with a further eight species from the historical records. Of the 328 species a total of eight were exotics so the more acceptable total stands at 320.

In Appendix D I provide an abbreviated systematic list giving details of the pre-survey records that have been traced to date.

Appendix A

The Breeding Birds of Zellwood

I carried out a survey of the breeding birds in each of the five years. This survey was conducted in late May and early June. The area covered being the Sand Farm together with Units One and Unit Two.

During the five surveys I followed the same routine each summer. I walked the boundary of the property together with every road and track. Every year I walked some 75 miles averaging eight miles a day. For the most part I recorded singing males but for the majority of the species I saw adults carrying food or the recently fledged young. To avoid disturbance I did not look for nests or use recordings.

At the end of this appendix there is a table showing the species and the number of pairs for each year.

The Species

Pied-billed Grebe

There was a 300 acre lake at the Sand Farm up to November 2000 when it was drained. This same area was allowed to flood naturally during the winter of 2001/2002 and by July 2002 a significant cattail marsh had formed with areas of open water. This is the only breeding site for this species, there were five pairs in 1999 with one pair in 2003.

Anhinga

There were five pairs on two small islands near the western end of Lust Road in 2000. Breeding was successful with the pairs raising one to two young a pair. It is possible that this species also nested regularly on the lake side of larger islands but those areas could not be seen from the shore of the lake.

Least Bittern

Numbers varied each year depending on the water level in Lake Apopka. With high water levels pairs nested in the various small cattail beds along the shore of the lake. Nesting

also now occurs at the Sand Farm cattail marsh. Population has been edging higher with 15 pairs in 2003.

Little Blue Heron

Two pairs nested on an island near the end of Lust Road in 2000. Young almost certainly raised but the vegetation grew too thick to see what was going on.

Cattle Egret

Nesting depended on the depth of water in Lake Apopka, when the water level in the lake high there are a series of islands that might be used for nesting. There were 413 pairs in 1999 with 103 pairs in 2000 on a series of islands near the end of Lust Road, many young raised.

Night-herons

Both species are present and have to be nesting locally, perhaps at Duda.

Green Heron

With the District's purchase of the property the ditches and canals gradually developed an extensive growth of vegetation. Then in 2003 the District took back control and started to clean out and clear the ditches and canals. The breeding population reflects this situation. There were only nine pairs in 1999 but the population had grown to 54 pairs in 2002. Numbers then lower with 43 pairs in 2003 and 38 pairs in 2004. Pairs will continue to nest by Lake Apopka, the Lake Level Canal and at the Sand Farm cattail marsh.

Fulvous Whistling-Duck

In 1999 there were 25 pairs, many broods of young seen. This population probably stemmed from birds that had stayed locally after the fields of Unit Two drained in February, 1999. One pair located in 2000, none in the other three years.

Wood Duck

This species probably nests every year in the survey area. Normally just one pair but there was two pairs in 2002. Perhaps only one to two young survive. The known nesting sites are the wood at the southern end of the Lake Level Canal, the island to the south of Hooper Farms Road extension and the southern border.

Mallard

There were three pairs in 1999 with one pair in 2000. They nested in the major canals. No nesting in the later years.

Mottled Duck

There were 12 pairs in 1999 and 2002 with 13 pairs in 2000. They nested in the hyacinth filled canals. The District has been working at clearing the waterways so only four pairs found in 2003 with none in 2004.

Bald Eagle

A pair nests every year in the pine wood at the Sand Farm, often raising one young. There is another pair immediately to the south of the survey area.

Cooper's Hawk

Population often in the range of three to four pairs in the wooded borders. Adults hunt over the fields and there is a growing post-breeding gathering.

Red-shouldered Hawk

Population ranges from four to six pairs with a high count of nine pairs in 2001. The nesting sites are all in the wooded borders. There is unlikely to be much change in the numbers.

Red-tailed Hawk

There are slightly higher numbers of this species as six to eight pairs located annually with a high count of 11 pairs in 2000. Most of the pairs were in the more isolated stretches of woodland along the eastern border.

Northern Bobwhite

This species is very habitat dependent. Initially the breeding population was along the eastern border and throughout the Sand Farm fields, as the vegetation grew it moved out into the fields of Units One and Unit Two. With increased mowing and roller-chopping the population will return to its original size. Initially there were 38 to 40 pairs with 89 pairs in 2002 and 125 pairs in 2003. Only 87 pairs located in 2004. With plenty of cover many young raised.

King Rail

With the formation of the Sand Farm cattail marsh and the continuing extension of these marshes at Duda the overall breeding population is likely to rise. At Zellwood there were two pairs in 2002 with 14 pairs in 2003, young seen each year.

Purple Gallinule

Both this and the next species have gained from the clearance of the thick vegetation from the canals. In the nutrient rich waters of the canals vegetation grows very fast providing nesting and feeding habitats for these two species. There were only 21 pairs in 1999 with 40 pairs in 2002 and 51 pairs in 2003.

Common Gallinule

As the ditches and canals were neglected the population grew slowly from 104 pairs in 1999 to 146 pairs in 2002. With the clearance of the vegetation there were 214 pairs in 2003 with 305 pairs in 2004.

American Coot

This species has similar needs to the Pied-billed Grebe. It has not nested at Lake Apopka, the only nesting took place in 1999 at the Sand Farm Lake, and there were five pairs.

Limpkin

It is likely that this species nests in the Sand Farm/Duda area and at the southern border, the only pair was found in 2001.

Killdeer

Habitat is the deciding factor for this species. Initially there was the Sod Farm with its very short grass but this ceased operation in the summer of 2002. At that time they removed all the turf creating many shallow, mud lined ponds. With the Sod Farm in use up to six pairs a year seen through to 2001 after operations ceased in 2002 there were 11 pairs but none could be found in 2003.

Black-necked Stilt

The water levels in Lake Apopka and the Lake Level Canal are the deciding factor for this species. In normal years with average water levels there were six pairs in 1999 with seven pairs in 2000. Then the water level dropped and the number of pairs rose, there were 18 pairs in 2001 with 30 pairs in 2002. Lake Apopka then became too full and only one pair could be found in 2003.

Eurasian Collared-Dove

This immigrant is really a suburban dweller rather than a bird of the woods or the fields. There was a single pair on the northern border from 2001 to 2003.

White-winged Dove

This is a new arrival with three pairs in 2003. They were in an area south of Hogshead Road where thick stands of willows lined a ditch. I had seen birds in that area in the previous two summers.

Mourning Dove

The population is probably static in the wooded borders, averaging 24 pairs a year.

The following describes the woodland edge breeding bird territories and the changes that occurred to these territories over the five to six years of this survey.

Many of the species that follow show a similar pattern in that the breeding population has risen in "steps". I believe that these species had territories along the edge of the wood whilst the fields were being cultivated. This pattern did not change in the first two years after the farming stopped. Step 1 therefore deals with that basic situation for the years 1999 and 2000. In 2001 and 2002 many species changed their territory shape from linear to one which included a portion of a field. This meant that many more pairs could fit into a given stretch of the eastern border, this I call Step 2. In 2003 and 2004 numbers jumped again, this time many species were now also nesting out in the fields. A few species did not make this move out into the fields or perhaps they delayed the move for a year. Whilst this analysis deals with the first five years I am including the figures from 2004 to give a clearer picture. This last move I call Step 3.

Common Ground-Dove

This is a woodland edge species that was later nesting out in the fields. In 1999 there were 40 pairs with 59 pairs in 2000 (step 1). In 2001 there were 116 pairs with 98 pairs in 2002 (step 2). Finally there were 236 pairs in 2003 with 191 pairs in 2004 (step 3). That is a major change in a very short period of time.

Yellow-billed Cuckoo

This is another species that moved from the woods out into the fields. There were seven pairs in 1999 with ten pairs in 2000 (step 1). There were 16 pairs in 2001 with 26 pairs in 2002 (step 2). There were 48 pairs in 2003 with 49 pairs in 2004 (step 3).

Barn Owl

This species nested in derelict buildings that were scattered through the property. Normally four pairs a year located with up to three young per pair.

Eastern Screech-Owl

It will be present but as I do not use recordings I have no idea as to the size of the population.

Great Horned Owl

The population has been growing as only two pairs in 1999 with seven pairs in 2001, nine pairs in 2002 and 13 pairs in 2004. The increase will be due to the change in the shape of their territories, they are now hunting out over the fields so they need a smaller woodland range.

Barred Owl

This species has remained in the woods so there is a stable population of two to four pairs.

Common Nighthawk

This is another species that has taken advantage of the changing habitat. It still nests in the borders but it is now also nesting out in the fields, especially those that have been roller-chopped. There were just five pairs in 1999 with four pairs in 2000. Since then the population has been in the range of eight to 13 pairs with 16 pairs in 2004.

Chuck-will's-widow

Up to five pairs a year seen from 1999 to 2002. In this species the change was delayed but step 2 occurred in 2003 and 2004 as 20 pairs located in both years. This species is not breeding out in the fields.

Red-bellied Woodpecker

This is another "pattern" species as step 1 involved 27 pairs in 1999 and 39 pairs in 2000 with for step 2 a total of 58 pairs in 2001 and 56 pairs in 2002. With step 3 the population climbed to 76 pairs in 2003 with 94 pairs in 2004. The count in 2004 is so much higher perhaps there is yet another element encouraging a larger population.

Downy Woodpecker

This is yet another pattern species but one with a variation. Step 1 involved 12 pairs in 1999 and 14 pairs in 2000, and then step 2 involved 31 pairs in 2001. This species made the move to step 3 after one year as there were from 37 to 39 pairs from 2002 to 2004.

Northern Flicker

This is also a pattern species with five pairs in 1999 and 2000 (step 1) with ten to 12 pairs from 2001 to 2003 (step 2). In 2004 there were 18 pairs which indicate a move to step 3. I have seen nest holes for both this and the following species in utility poles out in the fields.

Pileated Woodpecker

The same pattern as for the Northern Flicker, there were three pairs in 1999 and 2000 with eight to ten pairs from 2001 to 2003. In 2004 there were 13 pairs, it seems strange but I have regularly seen a Pileated Woodpecker drumming on a utility pole at least half a mile from any woodland.

Great Crested Flycatcher

The summer visitors appear to have more variable breeding populations but the "pattern" appears to be at work here. There were 17 pairs in 1999 with only ten pairs in 2000 and 13 pairs in 2001. Step 2 appears to have happened in 2002 when 25 pairs located. The switch to step 3 appears to be complete in 2003 (30 pairs) and 2004 (33 pairs). I regularly saw birds out in the fields near stands of trees.

Eastern Kingbird

This is puzzlement in that I have not been able to prove breeding even by the sight of fledged young. There appeared to be two pairs in 2000 with three pairs in 2003 and two again in 2004.

Loggerhead Shrike

There was a stable population of five to six pairs along the border, most pairs were located near buildings with barbed wire fencing.

White-eyed Vireo

This is not really a step species as it appears to have gone straight from step 1 to step 3! There were five pairs in 2000 with three pairs in 2001 (step 1) then with step 3 there were 13 pairs seen in 2002 with 14 pairs in 2003 and 16 pairs in 2004. This species is nesting out in the fields.

Blue Jay

This is another pattern species. Step 1 involved 26 pairs in 1999 and 25 pairs in 2000. For step 2 there were 42 pairs in 2001 with 49 pairs in 2002. Then with step 3 there were 62 pairs in 2003 with 70 pairs in 2004. This species can now be found year round out in the fields.

Fish Crow

Isolated pairs nested by water with a population of between four and 11 pairs. After breeding they and the fledged young leave the area.

Barn Swallow

The breeding population is dependent on there being suitable nesting sites i.e. bridges. The District had to replace some of the bridges and the new bridges are not suitable nesting sites. The breeding population has therefore fallen from 44 to 52 pairs down to 34 to 36 pairs in 2003 and 2004. The count of 52 pairs was in 2001. The first swallows to arrive each year tend to be the locally breeding birds. They nest early and leave the area with the fledged young in June.

Tufted Titmouse

This is a pattern species with step 1 involving three pairs in 1999 and 2000. Step 2 involved seven pairs in 2001 and nine pairs in 2002. Finally step 3 had 16 pairs in both 2003 and 2004. There is a problem here as I did not see this species out in the fields, so again there has to be another unknown trigger.

Carolina Wren

This is yet another pattern species, a real one. Step 1 involved 79 pairs in 1999 with 69 pairs in 2000. Step 2 involved 153 pairs on 2001 and 162 pairs in 2002. Step 3 involved 185 pairs in 2003 and 171 pairs in 2004. This species is nesting out in the fields.

Northern Mockingbird

There had to be a problem species and this is it. This should be a “pattern” species but it is not. There were 55 pairs in 1999 with 59 pairs in 2001, 62 pairs in 2002, 61 pairs in 2003 and 60 pairs in 2004. This species has to have gone through these steps as it is now breeding out in the fields. It would appear that the population in the border habitats is dropping and that the extra pairs out in the fields are not even compensating for that loss.

Brown Thrasher

This is a pattern species, initially with step 1 there were seven pairs in 1999 with 12 pairs in 2000. Step 2 lasted for three years not the usual two with 20 pairs in 2001 and 2002 then 22 pairs in 2003. The reluctance to move out into the fields shown by this and a few other species is interesting. It did eventually move out, there were 38 pairs in 2004.

European Starling

There were 16 pairs in 1999 otherwise seven to 11 pairs recorded. This species nests in buildings or old trees.

Northern Parula

As a summer visitor numbers vary from two pairs in 1999 and 2000 to ten pairs in 2001 and 2003. All the pairs were found in the larger pieces of woodland.

Common Yellowthroat

This is an occasional summer resident, breeding has not been proved. Singing males located but no females found. There were two in 1999 with four in 2002 and three in 2003. None seen or heard during the summers of 2000, 2001 and 2004. Most of these males were on territory in locations that I could not get close to so it is possible that they bred.

Yellow-breasted Chat

This is a species that should not be breeding in Central Florida but it is. With the clearance of so much vegetation the population is now falling but there were 19 pairs in 2000 with seven pairs in 2001, 25 pairs in 2002, 56 pairs in 2003 and an exceptional count of 103 pairs in 2004. I say pairs but this is really a count of singing males on territory. Adults have been seen carrying food and fledged young have been noted. This is such a secretive species that I have only seen the females occasionally.

Eastern Towhee

This is a pattern species with for step 1 ten pairs in 1999 with 48 pairs in 2000. Step 2 involved 72 pairs in 2001 with 91 pairs in 2002. Then there was a huge jump with step 3 as there were 206 pairs in 2003 with 207 pairs in 2004. The figures suggest that many pairs took less than two years to change their habits. There really were only ten pairs in 1999. It was a hard species to find through the first year. This species is now widespread out in the fields.

Northern Cardinal

This is another pattern species with for step 1 a total of 179 pairs in 1999 and 176 pairs in 2000. For step 2 there were 320 pairs in 2001 with 380 pairs in 2002. Step 3 involved 575 pairs in 2002 and 593 pairs in 2004. This species is now widespread out in the fields.

Blue Grosbeak

This is another pattern species with step 1 involving 41 pairs in 1999 and 59 pairs in 2000. Step 2 involved 76 pairs in 2001 and 74 pairs in 2002. Step 3 involved 87 pairs in 2003 and 81 pairs in 2004. Unlike some of the other species the numbers never took off. It is breeding out in the fields.

Indigo Bunting

In reality this is a pattern species but the population has been growing so fast that there are no steps! Its rate of growth was so fast that even though it started off with 30 less pairs than the Blue Grosbeak in 2004 there were 76 more pairs of Indigo Buntings. There were 11 pairs in 1999 with 32 pairs in 2000, 54 pairs in 2001, 65 pairs in 2002, 96 pairs in 2003 and a staggering 157 pairs in 2004. This species is now widespread out in the fields.

Painted Bunting

This is another pattern species but it has not progressed to step 3 (not even by 2010 when this is being written). I have not knowingly seen females, just adult or immature males on territory. For step 1 there were eight in 1999 with nine in 2000. Step 2 involved 19 in 2001 with 20 in 2002, 19 in 2003 and 22 in 2004. I have not found one out in the fields. This is not a breeding species but it is included because its behavior is the same.

Dickcissel

Whilst the Yellow-breasted Chat was not known to nest in Central Florida this species is not meant to nest in Florida. Females are hard to locate so counts are of males on territory. Nests have been found, females and fledged young also noted. There were 13 males on territory in 1999 with eight in 2000, four in 2003 and four in 2004. With this exceptional species I am including even later records. In 2005 there were at least 143 males on territory with 11 females and later two fledged young. When not singing this species it is very hard to locate making it difficult to locate any adults or their young. Later in 2006 there were 14 males. In 2010 I am beginning to think of it as a resident, what more can I say. Zellwood always surprises and this is certainly an unexpected series of events.

Red-winged Blackbird

The number of pairs appears to be totally dependent on the height and type of vegetation. If it grass there are no pairs in contrast if the fields are full of woody plants with taller plants interspersed then there will be many pairs of Red-winged Blackbirds. The worst year was 1999 with 545 pairs and the best year was 2003 with 2582 pairs. Some, if not many, of the nests may be destroyed by mowing. It is likely that in 2003 some 1200 of the 2582 nests were destroyed. The adults then congregate at the Sand Farm Cattail Marsh for a few days before starting again at a new location.

Eastern Meadowlark

This species prefers the shorter grassed fields. So with more mowing the population grew. There were up to 26 pairs a year through to 2003 with 43 pairs in 2004.

Common Grackle

This species nests in small colonies in the wetter woodlands. The population is small, in the range of 25 to 32 pairs in four years with higher counts of 45 pairs in 2001 and 2004. Why the two higher years? I have no idea.

Boat-tailed Grackle

There are so many locations in the whole North Shore area for this species to nest that the number of colonies and their size is probably not significant. The colonies are either in cattails or in willows. The lowest count was that of 111 pairs in 2002 and the highest was that of 225 pairs in 1999. This species is an early nester.

Brown-headed Cowbird

This is an increasing but unwelcome addition to the breeding birds of Zellwood. There were single pairs seen in 1999 and 2000 with three in 2001, four in 2002, five in 2003 and eight pairs in 2004. To date the known “parents” are Northern Mockingbirds and Red-winged Blackbirds. Could this be the reason for the decline in the numbers of Northern Mockingbirds in the border habitats? Fledged young seen each year in early June.

Orchard Oriole

This is the last pattern species with step 1 involving single pairs in 1999 and 2000. Step 2 involved ten pairs in 2001 and 15 pairs in 2002. Step 3 involved 26 pairs in 2003 and 22 pairs in 2004. Zellwood is right at the southern limit of this species’ breeding range, to have so many pairs here is really exceptional. Nests have been found (by others) and fledged young seen with their parents. Pairs are now breeding out in the fields where there are isolated mature trees.

House Sparrow

Up to two pairs bred on the northern border in man-made structures. No pairs located in 2004 or since.

CAUTION

Whilst this text was written in 2010 it is written as in the fall of 2004. There have been major changes to the habitat during the last few years with increased mowing and roller-chopping. Even these activities have now ceased. Most of the fields have had their surface soil buried four to five feet down. Two large tracts, Phases One and Two have been re-flooded.

There are now more not less breeding species. The only species lost are the Loggerhead Shrike and the House Sparrow.

What this appendix does show is just how adaptable most species are if they are given the opportunity to expand. Even species of concern like the Northern Bobwhite and the Eastern Meadowlark have done well.

The following is a list of the species known to have bred (excepting the Painted Bunting) in all or any of the years 1999 to 2004 together with the number of pairs located in each year.

SPECIES	1999	2000	2001	2002	2003	2004
Pied-billed Grebe	5				1	7
Anhinga		5				
American Bittern						1
Least Bittern	3	4	8	6	15	7
Great Blue Heron						5
Little Blue Heron		2				
Cattle Egret	413	103				
Green Heron	9	20	25	54	43	38
Fulvous Whistling-Duck	25	1				1
Wood Duck	1		1	2	1	1
Mallard	3	1				
Mottled Duck	12	13	7	12	4	
Bald Eagle	1	1	1	1	1	1
Cooper’s Hawk		4	1	3	2	3
Red-shouldered Hawk	4	6	9	6	4	5

Red-tailed Hawk	6	11	6	6	8	6
Northern Bobwhite	40	38	65	89	125	87
King Rail				2	14	18
Purple Gallinule	21	23	17	40	51	54
Common Moorhen	104	129	126	146	214	305
American Coot	5					2
Limpkin			1			2
Killdeer	6	1	6	11		
Black-necked Stilt	6	7	18	30	1	1
Eurasian Collared-Dove			1	1	1	3
White-winged Dove					3	
Mourning Dove	32	14	29	23	22	26
Common Ground-Dove	40	59	116	98	236	191
Yellow-billed Cuckoo	7	10	16	26	48	49
Barn Owl	1	4		4	4	6
Great Horned Owl	2	5	7	9	8	13
Barred Owl	3	2	4	2	4	3
Common Nighthawk	5	4	13	8	12	16
Chuck-will’s-widow	5	2	1	5	20	20
Red-bellied Woodpecker	27	39	58	56	76	94
Downy Woodpecker	12	14	31	37	39	38
Northern Flicker	5	5	10	12	10	18
Pileated Woodpecker	3	3	8	10	8	13
Great Crested Flycatcher	17	10	13	25	30	33
Eastern Kingbird		2			3	2
Loggerhead Shrike	6	5	5	6	6	5
White-eyed Vireo		5	3	13	14	16
Blue Jay	26	25	42	49	62	70
Fish Crow	6	11	6	4	6	10
Barn Swallow	25	48	52	44	34	36
Tufted Titmouse	3	3	7	9	16	16
Carolina Wren	79	69	153	162	185	171
Northern Mockingbird	55	51	59	62	61	60
Brown Thrasher	7	12	20	20	22	38
European Starling	16	11	8	11	9	7
Northern Parula	2	2	10	6	10	7
Common Yellowthroat	2			4	3	
Yellow-breasted Chat		19	7	25	56	103
Eastern Towhee	10	48	72	91	206	207
Northern Cardinal	179	176	320	380	575	593
Blue Grosbeak	41	59	76	74	87	81
Indigo Bunting	11	32	54	65	96	157

[Painted Bunting]	8	9	19	20	19	22
Dickcissel	13	8			4	4
Red-winged Blackbird	545	1109	932	826	2,582	1,537
Eastern Meadowlark	9	22	12	15	26	43
Common Grackle	25	26	45	32	26	45
Boat-tailed Grackle	225	134	152	111	164	154
Brown-headed Cowbird	1	1	3	4	5	8
Orchard Oriole	1	1	10	15	26	22
House Sparrow	1	12	1	2	1	
Totals	**2,119**	**2,430**	**2,666**	**2,774**	**5,199**	**4,481**
Less Painted Bunting males	8	9	19	20	19	22
Total breeding population	**2,110**	**2,421**	**2,647**	**2,754**	**5,180**	**4,459**
Less the Red-winged Blackbirds	545	1,109	932	826	2,582	1,537
Trend totals	1,565	1,312	1,715	1,928	2,598	2,922
Less the Cattle Egrets	413	103				
Totals that are comparable	**1,152**	**1,209**	**1,715**	**1,928**	**2,598**	**2,922**

Whilst I have shown the total breeding population those figures do not show the basic trend for the majority of the species. By removing the unpredictable Red-winged Blackbirds and the temporary Cattle Egrets figures the underlying trend is clearly visible as is the step process.

Excluding the Painted Bunting but including the Eastern Screech-Owl gives a total of 66 species that bred or probably bred over the six years.

I basically only included the sixth year, 2004, in order to show clearly the step process. However this does mean that I need to cover the additional species for that year together with other significant events not mentioned earlier in this text.

American Bittern

Very exceptionally a pair raised one young at the Sand Farm Cattail Marsh in 2004.

Great Blue Heron

This species has probably bred for many years on the Duda property but with the death and collapse of the trees there pairs started to nest in the survey area in 2004. There were five pairs in all, each pair raising at least one young.

Fulvous Whistling-Duck

There was a pair at the Sand Farm Cattail Marsh in 2004, the young were seen.

King Rail

The population grew to 18 pairs

Purple Gallinule

The population increased to 54 pairs in 2004.

Limpkin

There were two pairs in 2004. There was one pair at the Sand Farm/Duda Canal and the other was on the southern border.

Eurasian Collared-Dove

There were three pairs in 2004.

APPENDIX B

An estimate of the total numbers of waterfowl, shorebirds and allies using the flooded fields of Unit Two in the fall of 1998 and the winter of 1998/1999.

There have been many attempts to estimate the numbers of water birds, shorebirds and their allies using a particular site. I do not know of any system that has been developed for wildfowl but there is one for shorebirds.

Attempts have been made to establish how long individuals stop off passage. Most systems have their problems. The best system for shorebirds appears to be combination of weekly counts together with the netting of as many birds as possible. These birds are then color dyed and banded with a different color for each week of trapping.

A study of the shorebirds on the Atlantic coast of Morocco in March 1981 by M.Kersten and C.J.Smit gives some help. They trapped over 600 shorebirds and color dyed them on the under-parts using a different color for each week. They also counted the total population and counted separately all the color banded birds each week.

The results indicated that the Ringed Plover *Charadrius hiaticula* stopped off passage for 6.3 days. The Redshank *Tringa totanus* stopped off passage for 8.5 days. The Dunlin *Calidris alpina* stopped off passage for 12.2 days giving an overall average of nine days for the three species. The first two species are the European equivalents of the Semipalmated Plover and the Lesser Yellowlegs, the Dunlin occurs on both continents.

It is extremely rough but I treat those species that did not have a separate peak in the fall as being winter visitors only. For these species I am only using the highest count, this will not be totally true as some will certainly leave and others will arrive to take their place. I do not know how to identify and quantify those individuals. This means that more birds will have used the area than I have allowed for, the totals will be under-estimates.

For those species that only occurred on passage and those that had a separate peak or peaks in the fall it is possible to get an idea of the numbers passing through the area. I have treated all these migrant shorebirds as being off passage for ten days which is a longer period than that found above. It is likely that the waterfowl follow a similar pattern but it is probably with longer stopovers. I have therefore had to estimate numbers much more on the rise and fall irrespective of the interval.

TABLE A. The estimated waterfowl numbers during the fall and the winter.

Species	Estimated total fall passage	Peak winter count	Totals
Pied-billed Grebe		620	620
Horned Grebe		3	3
Eared Grebe		4	4
American White Pelican	5,376	4,370	9,746
Double-crested Cormorant	549	70	619
Fulvous Whistling-Duck		189	189
Snow Goose		90	90
Gadwall	46	89	135
American Wigeon	290	113	403
American Black Duck		3	3
Mallard		15	15
Mottled Duck	143	82	226
Blue-winged Teal	18,330	4,300	22,630
Northern Shoveler	500	770	1,270
Northern Pintail	400	260	660
Green-winged Teal	12,015	7,120	19,135
Canvasback		5	5
Redhead		8	8
Ring-necked Duck	11,910	103	12,013
Greater Scaup		5	5
Lesser Scaup	128	279	407
Bufflehead		5	5
Hooded Merganser		100	100
Red-breasted Merganser		6	6
Ruddy Duck	883	377	1,260
Common Moorhen	2,945	137	3,082
American Coot	19,635	3,055	22,690
Totals	**73,150**	**22,178**	**95,328**

TABLE B Estimated shorebird passage during the fall and the winter.

Species	Estimated fall passage	Peak winter count	Totals
Black-bellied Plover	1,180	262	1,442
American Golden Plover	7		7
Semipalmated Plover	140		140
Killdeer	1,275	615	1,890
Black-necked Stilt	738	10	748
American Avocet		75	75
Greater Yellowlegs	1,544	295	1,839
Lesser Yellowlegs	5,267	720	5,987
Solitary Sandpiper	1		1
Willet	5		5
Spotted Sandpiper	3		3
Upland Sandpiper	2		2
Marbled Godwit		2	2
Ruddy Turnstone	3		3
Red Knot	2		2
Sanderling	3		3
Semipalmated Sandpiper	414		414
Western Sandpiper	1,462	95	1,557
Least Sandpiper	12,710	1,500	14,210
Pectoral Sandpiper	781	1	782
Dunlin	857	175	1,032
Stilt Sandpiper	1,572	156	1,728
Buff-breasted Sandpiper	23		23
Ruff		2	2
Short-billed Dowitcher	2,995		2,995
Long-billed Dowitcher		1,890	1,890
Wilson's Snipe	1,712	40	1,752
Wilson's Phalarope	48		48
Shorebird totals	**32,744**	**5,838**	**38,582**

TABLE C

This is a summary of the numbers of waterfowl and shorebirds using the area in the fall of 1998 and the winter of 1998/1999.

Species groups	Estimated passage	Peak winter count	Totals
Wildfowl etc	73,150	22,178	95,328
Shorebirds	32,744	5,838	38,582
	105,894	**28,016**	**133,910**

Different breeding populations of a species may migrate at different times and for different distances. Adults also can migrate at different times from the juveniles. No attempt was made by me to age the birds. Some groups will leapfrog over others, for example more northerly populations may travel further and earlier than the more southerly breeding populations.

It is a complicated subject. The above totals are NOT FACTS, just my best estimates as to the number of birds using Zellwood during the fall of 1998 and the winter of 1998/1999.

References:

P.R.Evans, J.D.Goss-Custard, W.G.Hale. Coastal Waders and Wildfowl in winter. 1984 Cambridge

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APPENDIX C

Banded or tagged American White Pelicans

In the summer of 2001 American White Pelicans summered at Lake Apopka for the first time. The high count was that of 2,400 on June 27, 2001. On June 24 whilst counting the flock of pelicans loafing on the mud at the end of Lust Road I noticed that some of them bore pink, numbered tags on their wings. I later found out that they had been banded by Eric Nelson in Minnesota. On June 27 I saw birds with green numbered leg bands and these had been banded by Tommy King at Chase Lake in North Dakota.

Eric Nelson has kindly provided the following information. All banding took place at Marsh Lake, Lac Qui Parle County in Minnesota. Bands 1 to 200 were used on June 19, 1999. Bands 201 to 450 were used on June 17, 2000. There were thousands of young pelicans on the island of varying ages but they only banded those that were seven or more weeks old. Apparently the young of about the same age moved around the island in a group or pod. A group of ten banders would surround a pod and slowly move in to tighten the pod. When the birds were calm they would grab the birds which would set off a commotion. However within 15 minutes between 100 and 200 young are banded.

Tommy King has also kindly provided information. Birds with D and E bands were banded in July 2000. Birds with C, G or H bands were banded on July 12, 2001. All his banding took place at Chase Lake in North Dakota.

Table A Tommy King Banded American White Pelicans

6.27.01	E ?33	E 566	E 914							
7.4.01				E 587	E 604					
7.11.01				E 587		E 897	D 174			
10.10.01								E 271		
4.14.02			E 914						H 313	
4.17.02									H 313	G 417

Table B Eric Nelson Tagged American White Pelicans

6.24.01	160	206	230	248	316	318	351	356	427	446				
6.27.01			230	248		318					225			
7.1.01	160	206		248		318		356			225	408		
7.4.01				248		318								
7.8.01	160	206	230	248			351	356	427	446	225			
7.11.01	160	206	230	248	316	318	351	356	427				383	431
7.18.01									427					
7.22.01		206	230					356						
7.23.01													383	
7.27.01		206												
5.9.02		206												
6.19.02		206												

Single individuals from each location were seen again in the second year (E 914 and 206). The April 2002 sightings of E 914 might just relate to it passing through on passage but it would be too late for it to be traveling that far north. Young birds tend not to go as far north as the breeding areas. The October record adds another dimension.

The table detailing the wing tagged birds is much more extensive than the table of banded birds. The tags were large, quite visible and easy to read. The birds did manage to hide a few in their feathers. The bands were smaller with black on green numbers. These were harder to read and as the pelicans were often standing in shallow water they were often out of sight. All in all the wing tags were far superior to the bands.

This species needs areas of mud for loafing. In recent years Lake Apopka has been too high so no tagged or banded pelicans have been seen.

APPENDIX D

The historical bird sightings at Zellwood – a partial systematic list

Most people visited Zellwood in the fall for the shorebirds, this means that there is a serious bias towards wetland species. The following is a selection of the more interesting records.

Pied-billed Grebe (*Podilymbus podiceps)*

Up to 30 a day recorded with 150 on July 31, 1983. A pair bred in 1976 as an adult and four chicks were seen on July 22, 1976.

American White Pelican (*Pelecanus erythrorhynchos)*

The highest count for the flooded fields was that of 25 on July 16, 1988.

Double-crested Cormorant (*Phalacrocorax auritus)*

Counts of up to 30 noted regularly with higher counts of 40 on March 20, 1992 and 52 on November 13, 1991.

Anhinga (*Anhinga anhinga)*

There were normally from one to five in the area with a high count of ten on August 17, 1991.

Least Bittern (*Ixobrychus exilis)*

There were only two sightings over the years, there being singles on July 30, 1987 and August 8, 1995.

Great Blue Heron (*Ardea herodias)*

There were normally up to 30 a day with 40 on August 23, 1970 and 33 on November 13, 1991.

Great Egret (*Ardea alba)*

The counts were very variable; however in August counts of 250 were probably regular. The highest count was that of 500 on August 8, 1970.

Snowy Egret (*Egretta thula)*

There were up to 70 a day seen with higher counts of 120 on August 13, 1989, 200 on September 2, 1990 and 225 on August 5, 1995.

Little Blue Heron (*Egretta caerulea)*

There were up to 75 seen regularly with 100 on August 23, 1970 and 562 on August 20, 1995.

Tricolored Heron (*Egretta tricolor)*

Numbers were lower for this species, normally up to 35 a day seen but there were 52 on August 20, 1995.

Cattle Egret (*Bubulcus ibis)*

This has been a common species for a long time with counts of up to 600 a day not uncommon. The highest counts were those of 1,000 on September 10, 1989 and 1,500 on July 29, 1972.

Green Heron (*Butorides virescens)*

In the fall there were up to 50 a day with higher counts of 75 on August 8, 1970 and 100 on August 16, 1970.

Black-crowned Night-Heron (*Nycticorax nycticorax)*

There were fewer records for this species but up to ten a day were seen with 13 on August 1, 1971 and 20 on August 8, 1970.

Yellow-crowned Night-Heron (*Nyctanassa violacea*)

Very surprisingly there is only one record, there being one on July 30, 1977.

White Ibis (*Eudocimus albus)*

In the fall there were up to 400 a day seen regularly in July and August with a high count of 416 on July 22, 1976.

White Ibis/Scarlet Ibis

There was a hybrid on July 25, 1980.

Glossy Ibis (*Plegadis falcinellus)*

In the fall there were up to 150 a day from July to September with a high count of 175 on September 15, 1973.

Roseate Spoonbill (*Platalea ajaja)*

A total of 12 records traced spanning the period July 1st to September 3rd, normally only one to three seen with six present on two dates. The highest count was that of 14 on September 3, 1988. The highest count for the survey is that of 30 on June 26, 2002.

Wood Stork (*Mycteria americana*)

Up to 350 seen through the year with in the fall a high count of 600 on August 7, 1986.

Black Vulture (*Coragyps atratus)*

There were only four records for a species that is now recorded on nearly every visit. The highest count was that of six on September 9, 1972.

Turkey Vulture (*Cathartes aura)*

Up to 40 seen regularly with a high count of 62 on November 13, 1991, as with the last species these numbers are very low.

Black-bellied Whistling-Duck (*Dendrocygna autumnalis)*

To detail all the records, there were two on August 15, 1974 with one on July 1, 1975 and two from July 2 into September. There were singles on August 7, 1978 and July 20, 1980. Finally there were counts of three on July 30, 1988 and August 25, 1997. We have come so far from these early years the high count now stands at a staggering 1,660 on February 5, 2010.

Fulvous Whistling-Duck (*Dendrocygna bicolor)*

This was a common fall resident with high counts of 350 on August 19, 1996 and 474 on August 5, 1995. There are records of it nesting in 1983, 1984, 1988 and 1991. For a long time the survey high count stood at 366 but the highest count is now that of 840 which were seen on October 22, 2003.

Snow Goose (*Chen caerulescens)*

This species was probably a more frequent visitor than the records suggest, it and most of the other wildfowl species will pass through the area after the fall birding was over. The only records are of 21 on October 30, 1981, 13 on November 6, 1991 and three on November 13, 1991.

BRANT (*Branta bernicla*)

This is a true vagrant it is a coastal species that is not seen in Florida every year, it is all the more remarkable for there to be an inland record. There was one present from October 24, 1981 to October 31, 1981.

Wood Duck (*Aix sponsa)*

There was a very high count of 100 on August 23, 1970 otherwise no more than ten a day recorded.

Gadwall (*Anas strepera*)

Exceptionally there were five on August 20, 1995, more normal were two on November 6, 1991 and November 13, 1991.

American Wigeon (*Anas americana)*

The only sightings came from 1991 with ten on November 6 and five on November 13.

Mallard (*Anas platyrhynchos*)

There were only seven records, the highest count being that of eight on October 21, 1990.

Mottled Duck (*Anas fulvigula)*

This species was always present with counts of up to 60 a day. There were high counts of 80 on August 20, 1995 and 100 on August 29, 1970. The highest counts are still in the early fall but they are in September now. The highest is that of 217 on September 14, 2008.

Blue-winged Teal (*Anas discors)*

This species was also always present in the fall, the earliest date being July 1, 1976. The counts were very variable with 600 on September 9, 1972, 750 on August 25, 1973 and 1,000 on September 15, 1973. A pair bred in 1990 as a female was seen with three ducklings on August 18.

Northern Shoveler (*Anas clypeata)*

Seen in the fall from September 1 (1974) to November 6 (1991), normally only one to six seen but there were 20 on November 6, 1991.

WHITE-CHEEKED PINTAIL (*Anas bahamensis)*

The status of this individual is uncertain, it could be a naturally occurring vagrant or possibly an escape from captivity, regardless there was one on August 18, 1973 and August 19, 1973. This is the only Zellwood record.

Northern Pintail (*Anas acuta)*

This is another of the late arriving ducks. The only record is of one on November 6, 1991.

Green-winged Teal (*Anas crecca)*

There were just two records over the years. There was one on September 18, 1970 with a party of 15 on November 6, 1991.

Canvasback (*Aythya valisineria)*

This species is still an irregular visitor. The only records here are of singles on August 17, 1975 and August 17, 1981. Note that both sightings were on the same date.

Redhead (*Aythya americana)*

There is just one record for this uncommon species, there being one on September 23, 1983.

Ring-necked Duck (*Aythya collaris)*

This species migrates too late for it to be seen in numbers, the only sightings were of one on August 19, 1973 and a party of five on November 6, 1991

Greater Scaup (*Aythya marila)*

There is just one record for this always scarce visitor, there being one from January 7, 1978 to January 15, 1978.

Lesser Scaup (*Aythya affinis)*

This species is common on Lake Apopka during the winter but the birders did not go to Zellwood then. The only record is that of a party eight on November 6, 1991.

Hooded Merganser (*Lophodytes cucullatus)*

This is another winter visitor. The only record is that of two on November 13, 1991.

Ruddy Duck (*Oxyura jamaicensis)*

This species winters in numbers in excess of 10,000 on Lake Apopka however the only records here are of singles on August 7, 1986 and from September 1, 1973 to September 15, 1973. There is one early spring record there were 450 on February 11, 1928.

Osprey (*Pandion haliaetus)*

This is another very common species where the sightings, pre-survey are very low, only up to five a day seen.

Bald Eagle (*Haliaeetus leucocephalus)*

There were up to two seen on seven dates with eight on November 13, 1991 and 11 on November 17, 1992.

Northern Harrier (*Circus cyaneus)*

Recorded in the fall from August 17 (1969) with sightings through to April 16 (1992) in the spring. The highest count was that of 15 on November 6, 1991.

Sharp-shinned Hawk (*Accipiter striatus)*

The only records came from 1992. There were singles on February 22 and November 17

Cooper's Hawk (*Accipiter cooperii)*

This species is now resident at Zellwood. There was not a single record from the earlier years.

Red-shouldered Hawk (*Buteo lineatus)*

This is a resident in the wooded borders. The highest count was that of six on August 16, 1970.

Swainson's Hawk (*Buteo swainsoni)*

There is a single winter record. There was one on January 7, 1984.

Red-tailed Hawk (*Buteo jamaicensis)*

This is another resident species but in the early fall from one to two a day seen with a high count of five on September 15, 1973. There were nine on November 13, 1991.

FERRUGINOUS HAWK (*Buteo regalis)*

Very exceptionally two immatures were present from December 19, 1983 to March 5, 1984. This is the first record for Florida.

American Kestrel (*Falco sparverius)*

The records span the period September 10 (1989) to March 20 (1992) with a high count of five on October 16, 1990.

Merlin (*Falco columbarius)*

The only record is that of one on November 6, 1991.

Peregrine Falcon (*Falco peregrinus)*

The only records relate to singles that were seen in the fall on four dates from September 2 (1980) to November 13 (1991).

Northern Bobwhite (*Colinus virginianus)*

There were very few sightings of this resident species. There were up to two on three dates with eight on July 14, 1977. The situation has changed so much. The high count now stands at 105 on June 1, 2008.

King Rail (*Rallus elegans)*

The only records relate to two on July 28, 1976 and one on August 16, 1976.

Sora (*Porzana carolina)*

The only records relate to singles on September 9, 1972 and September 19, 1976.

Purple Gallinule (*Porphyrio martinica)*

Seen in very low numbers through the fall, no more than two a day reported with the exception of nine on August 16, 1970 and ten on July 21, 1974.

Common Gallinule (*Gallinula* galeata*)*

In the fall counts of up to 300 common but there was also a count of 2,000 on September 23, 1966. Until 2006 the survey high count was below 2,000, it now stands at 3,100 on December 12, 2008

American Coot (*Fulica americana)*

Recorded in the fall from July 28 (1973) with increasing numbers in September. The high count is that of 90 on November 13, 1991. One was seen sitting on a nest on July 22, 1976.

Limpkin (*Aramus guarauna)*

Seen in the fall from August 8 (1970) to September 9 (1972) with a high count of three on August 22, 1971.

Sandhill Crane (*Grus canadensis)*

The only records are those of two on August 22, 1971 and two on August 23, 1970. Note the closeness of these dates.

Whooping Crane (*Grus americana)*

There were two from August 1, 1994 to August 13, 1994.

SOUTHERN LAPWING (*Vanellus chilensis)*

There was one on July 23, 1961. At present this species is not on the official list of accepted species for the United States but it is possible that this situation will change.

Black-bellied Plover (*Pluvialis squatarola)*

There were up to 65 a day seen in the fall with a high count of 100 0n November 6, 1991.

.American Golden-Plover (Pluv*i*alis *dominica)*

This is a regular migrant with sightings in the fall from August 3 (1994) to November 13 (1991). The first were two on August 3, 1994. Normally only one to two seen when present but there were higher counts of eight on September 18, 1983, ten on November 13, 1991, 11 on September 1, 1986, 17 on September 20, 1990 and 24 on November 26, 1991. There were two spring records with one on March 6, 1965 and three on April 16, 1992. During the survey the highest count is only that of six on October 26, 1999.

Wilson's Plover (*Charadrius wilsonia)*

This species is exceptionally rare inland. There was a single record of one on August 3, 1974. Whilst there was no record during the five years of the analysis, there has been one since. There was one on September 10, 2008.

Semipalmated Plover (*Charadrius semipalmatus)*

Fall passage noted from July 21 (1974) to October 16 (1990) with peak passage in August. Normally up to 25 a day seen but there were 100 on August 18, 1990 and 175 on August 13, 1995. The highest count for the survey is only that of 134 on May 15, 2002.

Piping Plover (*Charadri*us *melodus)*

This will always be a vagrant inland in Florida. The only record related to one from August 18, 1974 to September 3, 1974. This was the first inland record for Florida. There is now a second record with one on May 20, 2002.

Killdeer (*Charadrius vociferus*)

This is a common bird in the fall with counts of up to 100 a day. There were higher counts of 136 on November 13, 1991 and 500 on November 17, 1992. In the spring the highest count was that of 135 on February 20, 1992. The highest counts are actually in the winter when Zellwood was not visited. The high count is that of 2,815 on January 2, 2009.

Black-necked Stilt (*Himantopus mexicanus)*

This is a common fall visitor with counts of up to 125 a day. There were higher counts as there were 128 on August 20, 1995 with 142 on August 1, 1991, 149 on August 5, 1995 and 250 on August 14, 1993. Those dates suggest two influxes.

American Avocet (*Recurvirostra americana)*

This is a regular fall visitor from July 29 (1978) to October 16 (1990) with a high count of nine on August 20, 1995.

Greater Yellowlegs (*Tringa melanoleuca)*

This is another common migrant recorded from July 1 (1975) to November 13 (1991). The highest counts were those of 400 on July 21, 1974, 500 on August 3, 1974 and 800 on August 5, 1995. The highest count for the survey is only that of 415 on December 16, 1998.

Lesser Yellowlegs (*Tringa flavipes)*

This is one of the commonest fall migrants with counts of 200 to 500 noted regularly. The highest counts were of 900 on August 5, 1995 and 1,000 on August 22, 1971. The highest count for the survey, a winter count is that of 1,195 on December 16, 1998.

Solitary Sandpiper (*Tringa solitaria)*

This is a regular migrant from July 14 (1977) to September 10 (1989) with high counts of eight on July 26, 1997 and August 12, 1973.

Willet (*Tringa semipalmata)*

There are a total of 20 records spanning the period July 30 (1977) to September 15 (1973). Normally one to eight seen when present but there were ten on September 4, 1971, 18 on August 23, 1970, 19 on August 14, 1976 and an exceptionally high count of 40 on August 16, 1978. The highest count for the survey is only that of eight on July 27, 1999.

Spotted Sandpiper (*Actitis macularius)*

This is a regular migrant from July 1 (1976) to September 15 (1973). Normally one to 11 seen but there was 15 on July 21, 1974 and 19 on July 29, 1972. The best the survey can do is a count of 13 on May 15, 2002.

Upland Sandpiper (*Bartramia longicauda)*

This is one of the searched for species and it is therefore probably the most recorded species. Even so it is still an uncommon species. The records cover the period July 31 (1998) to September 10 (1989). There were flocks of up to 20 seen regularly in the fall with higher counts of 33 on August 17, 1974 and 40 on August 21, 1993. In the spring the only counts are of 23 seen on April 16, 1992 with four on April 16, 1994. Both counts were on the same date. During the survey the highest count has only been that of six on April 20, 1999. The Sod Farm is missed.

Whimbrel (*Numenius phaeopus)*

This will probably always be a rare species inland. The only records are those of singles on July 30, 1966, August 3, 1974, August 24, 1971 and September 12, 1980.

HUDSONIAN GODWIT (*Limosa haemastica)*

This is probably the missing species from the survey. In earlier years there was one on September 7, 1980 with another from September 16, 1983 to September 18, 1983. There were also three on August 31, 1986 with 32 on September 3, 1986.

Marbled Godwit (*Limosa fedoa)*

This is an uncommon species with singles on nine dates from August 16 (1970) to September 15 (1973).

Ruddy Turnstone (*Arenaria interpres)*

This is a regular fall migrant with records from July 28 (1973, 1975) to September 20 (1990). Normally one to five seen when present but there was eight on September 20, 1990. The survey does no better there were also eight on May 6, 2002.

Red Knot (*Calidris canutus)*

This will probably always be an uncommon migrant. There were sightings from August 17 (1991) to September 10 (1989) with a high count of five on August 25, 1973. There were only seven records.

Sanderling (*Calidris alba)*

This is another uncommon migrant with up to two a day on seven dates from July 28 (1973) to September 19 (1976).

Semipalmated Sandpiper (*Calidris pusilla)*

This is a common fall migrant with the peak passage in August. There are counts of 500 with 1,000 on August 3, 1974 and 1,500 on August 19, 1973. The survey high count is that of 1,540 on May 23, 2002. One wonders what would have been seen if the fields had also been flooded in April and May.

Western Sandpiper (*Calidris mauri)*

This was a less common peep with most of the counts ranging from one to 39. There were some counts in the 100's with a very high count of 2,100 on August 5, 1995. The highest count for the survey is that of 965 on September 11, 1998. It is the habitat that we are missing.

Least Sandpiper (*Calidris minutilla)*

This is one of the commonest shorebirds with high counts of 1,000 on August 22, 1971 and August 5, 1995 with 2,500 on September 4, 1971. That count only just beat the survey's high count. That stands at 2,450 on December 31, 1998.

White-rumped Sandpiper (*Calidris fuscicollis)*

This is really a spring migrant but it does surprise me that there was only one fall sighting. There were two from August 31, 1986 to September 1, 1986.

Baird's Sandpiper (*Calidris bairdii)*

This is a rarity anywhere in Florida. There were three records with singles on August 14, 1971, September 10, 1989 and September 20, 1990. All I can think is that birders generally over-looked the White-rumped Sandpipers that had to be passing through in very small numbers.

Pectoral Sandpiper (*Calidris melanotos)*

This is another of the very common fall migrants with sightings from July 14 (1977) to November 13 (1991). Counts were often in the range of 500 to 1,000 with high counts of 2,000 on August 20, 1965 and August 23, 1970 with 3,000 on August 22, 1971. Note the closeness of the dates for the higher counts. The survey lags far behind as the highest count is only that of 965 on September 12, 2008.

Sharp-tailed Sandpiper (*Calidris acuminata)*

This is a national rarity. There was a juvenile on August 12, 1973 and August 13, 1973. There is now a second Zellwood record as there was another juvenile at the Sod Farm on September 26, 2002.

Dunlin (*Calidris alpina)*

This is for the most part a late fall migrant so it is not so unexpected that there is only one record for the early fall passage. There was one on August 1, 1991. In the late fall there were ten on November 6, 1991 with 32 on November 13, 1991.

Curlew Sandpiper (*Calidris ferruginea)*

This is another national rarity if not as rare as the Sharp-tailed Sandpiper. There were singles on September 18, 1967, from April 28, 1968 to May 1, 1968, on August 18, 1985 and from August 17, 1986 to August 19, 1986.

Stilt Sandpiper (*Calidris himantopus)*

This is a common fall migrant with sightings from July 7 (1975) to October 16 (1990). The counts are very variable with 21 counts of 25 or less and six counts of 100 or less. The highest counts were 151 on July 21, 1988, 170 on August 1, 1991, 200 on August 3, 1974, 230 on August 19, 1996, 280 on August 10, 1995 and 400 on August 18, 1990. At least the survey has a higher count for this species as there were 490 on October 21, 1998.

Buff-breasted Sandpiper (*Tryngites subruficollis)*

This is another of the searched for species with sightings in the fall from July 31 (1976) to November 17 (1992). Normally fewer than 15 a day seen when present but there were 21 on September 20, 1990, with 32 on August 19, 1972 and 45 on September 1, 1975.

Ruff (*Philomachus pugnax)*

This is an occasional visitor. There were six records in all. Singles were seen from July 13, 1966 to July 26, 1996, on September 4, 1974, on September 29, 1984, on August 16, 1986, on August 6, 1988 and from July 27, 1991 to September 7, 1991.

Short-billed Dowitcher (*Limnodromus griseus)*

This is another common fall migrant with sightings from July 21 (1974) to November 13 (1991). Counts were often in the range 25 to 75 with high counts of 130 on August 1, 1991, 200 on August 31, 1974 and 400 on August 24, 1974. The highest count for the survey is that of 670 on October 29, 1998. Perhaps the birders were no longer going to Zellwood at the time of the peak passage.

Long-billed Dowitcher (*Limnodromus scolopaceus)*

This is a late migrant so few records are to be expected. There were singles on August 17, 1991 and August 23, 1970 with two on August 29, 1970.

Wilson's Snipe (*Gallinago delicata)*

This is an uncommon early fall passage migrant, the main passage is later. The earliest date is that of August 3, 1974 when one seen. There are eight other August records of one to three birds a day.

Wilson's Phalarope (*Phalaropus tricolor)*

This is a regular fall migrant from July 22 (1976) to September 8 (1980). There are many counts of up to 50 a day with four counts in the 50 to 60 range. The higher counts were 60 on

September 1, 1973, 75 on August 18, 1974 and 93 on August 17, 1975. Two of the three dates link up. We have not done well with the survey as the high count is only that of 21 on September 2, 1998 and that date links up with the other peak count.

Red-necked Phalarope (*Phalaropus lobatus)*

This is a pelagic species so it will always be rare inland. There were singles on August 31, 1974 and September 8, 1984.

Laughing Gull (*Larus atricilla)*

Seen in the fall from July 21 (1974) to September 6 (1991), up to 25 a day seen during this period. In the spring there were 18 on April 16, 1992.

Ring-billed Gull (*Larus delawarensis)*

Seen in the fall from July 1 (1976), there were no more than ten a day. Later there were 300 on November 17, 1992. In the spring there were 255 on February 20, 2002 with 155 on March 20, 1992 and seven on April 16, 1992.

Herring Gull (*Larus argentatus)*

There were no early fall records, the only sighting is that of two on November 13, 1991.

Gull-billed Tern (*Geochelidon nilotica)*

Noted in the fall on eight dates from July 14 (1977) to September 1 (1996) with a high count of five on August 19, 1972. For the survey the highest counts have been of four a day.

Caspian Tern (*Hydroprogne caspia)*

Seen in the fall on 13 dates from July 22 (1976) to November 13 (1991) with a high count of 26 on August 20, 1995. For the early spring there were four on February 20, 1992.

Sandwich Tern (*Thalasseus sandvicensis)*

This is likely to always be a rarity inland in Florida. There were two records with one on July 16, 1975 and two on August 31, 1975.

Common Tern (*Sterna hirundo)*

This is a coastal species whose status inland is uncertain, it is probably over-looked. The only records are of two on June 30, 1981, two on July 29, 1972 and one on September 1, 1973.

Forster's Tern (*Sterna forsteri)*

There were under 30 a day seen in the fall from July 18 (1975) with a high count of 45 on September 2, 1990. In 1992 there were 46 on February 20 with two on March 20.

Least Tern (*Sternula antillarum)*

This is a very early fall migrant so most have probably gone by the time the fields flooded. There were only six records through to September 2 (1990) with a high count of 21 on July 9, 1976.

Black Tern (*Chlidonias niger)*

This is one of the most recorded species. Seen in the fall from July 1 (1976) to September 9 (1972) with most counts in the range of 45 to 50 birds. There were higher counts of 142 on August 17, 1974, 150 on August 29, 1970 and 200 on August 19, 1972. Counts have been higher during the survey. The highest were those of 500 on September 2, 1998 and 532 on August 24, 2008. Note how the peak counts link up for influxes.

BROWN NODDY (*Anous stolidus)*

This is a tropical oceanic species that had to be blown inland by a hurricane. There was one on September 10, 1965.

Black Skimmer (*Rynchops niger)*

There were a total of ten records covering the period July 1 (1976) to September 15 (1973) with a high count of ten on July 21, 1974.

Rock Pigeon (*Columba livia)*

This is normally a casual visitor to the area. The highest count was that of 18 on November 6, 1991.

Eurasian Collared-Dove (*Streptopelia decaocto)*

This is only a casual visitor to the fields. The only record relates to one on July 21, 1991.

White-winged Dove (*Zenaida asiatica)*

This is another species that does not often visit the fields. There was a single record of one on August 27, 1986.

Mourning Dove (*Zenaida macroura)*

Now this species does get out into the fields with up to 250 a day in the fall.

Common Ground-Dove (*Columbina passerina)*

There are always some out in the fields. The highest count was that of 30 on August 19, 1972.

Budgerigar (*Melopsittacus undulatus)*

This will be an escape from a collection as against a wanderer from the west Florida feral population. There was one in August 1970. The survey can add a second individual there being one on July 23, 1999.

Yellow-billed Cuckoo (*Coccyzus americanus)*

This is a summer resident, but the records here could relate to fall migrants. Seen in the fall on nine dates to September 4 (1971) with a high count of seven on September 4, 1971.

Smooth-billed Ani (*Crotophaga ani)*

This south Florida specialty has always been a vagrant in central Florida. There were singles on July 20, 1974 and September 26, 1974. To have the only historical sightings in the same year is extraordinary; perhaps this individual had summered in this area. There is one record from the survey there being one on June 26, 2003.

Barn Owl (*Tyto alba*)

This nocturnal species would be hard to locate as access to the fields was only granted during daylight hours. In all singles were seen on five dates.

Owls

These nocturnal species were not recorded at all with the exception of the Barn Owl detailed above.

Short-eared Owl (*Asio flammeus)*

There are only scattered sightings of this owl that does hunt to a degree in the early morning and the evening. Up to seven seen in the winter of 1964/1965, there were also six on November 24, 1986. In the spring there was one on April 16, 1992. With access before daylight the survey has not done much better, the highest count is that of nine on December 29, 2006.

Common Nighthawk (*Chordeiles minor)*

Whilst this is a nocturnal species it can be seen early and late. There were sightings on just four dates to September 20 (1990) with a high count of seven on September 4, 1971.

Chimney Swift (*Chaetura pelagica*)

This should have been a noticeable fall migrant but there is only one fall record. Did no one look up (me included)? The one record was of 20 on October 16, 1990.

Ruby-throated Hummingbird (*Archilochus colubris)*

In contrast to the last species this one basically avoided open areas so to have four sightings was reasonable. They were singles apart for two on August 22, 1971. That was also the latest date.

Belted Kingfisher (*Megaceryle alcyon*)

Seen in the fall from July 21 (1974) to November 17 (1992) with a high count of seven on August 31, 1989. There were also three on February 20, 1992 and two on March 20, 1992.

Woodpeckers

Red-bellied, Downy, Northern Flicker and Pileated all recorded but no more than three a day for the Red-bellied and Downy Woodpeckers. Only singles of the Northern Flicker and Pileated Woodpeckers noted.

Eastern Phoebe (*Sayornis phoebe)*

This is a late migrant so few records expected, the highest count was that of ten on November 6, 1991.

Western Kingbird (*Tyrannus verticalis)*

There was a single record of what later became a regular winter visitor. There was one on September 1, 1965.

Gray Kingbird (*Tyrannus dominicensis)*

This is another species that I would have expected to be seen more frequently, there are just two records. There were singles on September 1, 1965 and September 15, 1973.

Loggerhead Shrike (*Lanius ludovicianus)*

This species was seen through the fall with high counts of ten on September 9, 1972 and 15 on July 1, 1976. The highest count for the survey is that of 18 on February 3, 2002.

White-eyed Vireo (*Vireo griseus)*

This is a resident and the records indicate no more than three a day in the fall.

Red-eyed Vireo (*Vireo olivaceus)*

This is never a common migrant, here singles seen on three dates in the fall with two on August 1, 1971.

Purple Martin (*Progne subis)*

This is a very early fall migrant with the bulk of the passage in June. The only record relates to three on July 1, 1976.

Tree Swallow (*Tachycineta bicolor)*

The first in the fall was seen on July 26 (1997) with for the early fall a high count of 100 on August 15, 1971. Later there were 120 on November 6, 1991. The highest count was in the spring, a count of 510 on March 20, 1992.

Northern Rough-winged Swallow (*Stelgidopteryx serripennis)*

Seen in the fall from July 26 (1997) to September 20 (1990) with a high count of ten on August 19, 1972.

Bank Swallow (*Riparia riparia)*

Seen in the fall from July 26 (1997) to October 1 (1977) with over 100 present on October 1, 1977. Otherwise no more than ten a day noted. The highest count for the survey is that of 265 on August 20, 2008.

Cliff Swallow (*Petrochelidon pyrrhonota)*

Seen in the fall on four dates from July 31 (1998) to September 18 (1970) with a high count of two on August 20, 1997.

Barn Swallow (*Hirundo* rustica)

Passage noted in the fall through to November 13 (1991) with high counts of 440 on November 6, 1991, 750 on August 24, 1974 and 2,000 on August 15, 1971. The highest count for the survey is a very high 9,300 on August 22, 2008, that would link up to form an influx.

American Robin (*Turdus migratorius*)

The only record is that of one on November 13, 1991. This is such a late migrant that I would not expect earlier records.

Northern Mockingbird (*Mimus polyglottos*)

This is a common resident. The highest count was that of 50 on August 19, 1972. The highest count for the survey now stands at 126 on October 8, 2006.

Brown Thrasher (*Toxostoma rufum*)

This is a summer resident and a passage migrant but the fall passage peaks in October too late for the birders searching for shorebirds. The highest count here is that of 11 on July 29, 1972.

American Pipit (*Anthus rubescens*)

Whilst there were three on November 6, 1991 and November 13, 1991 the high count was that of 220 on November 17, 1992. In the spring there were 105 on April 16, 1992 with a very late bird on May 16, 1966. The highest count for the survey was that of 820 on January 2, 2009. It is a great pity that the fields were not checked through the winter, if they had I wonder just what the highest count would have been.

GOLDEN-WINGED WARBLER (*Vermivora chrysoptera)*

The only information that I have is that there was one on August 17, 1974. There is no survey record to date.

Orange-crowned Warbler (*Vermivora celata*)

There is a single spring record of one on March 20, 1992.

Yellow Warbler (*Dendroica petechia*)

Seen regularly in the fall through to September 15 (1973) with a late individual on November 12, 1966. The highest count was that of 25 on August 22, 1971. The highest count for the survey is that of 232 on September 15, 2006.

Yellow-throated Warbler (*Dendroica dominica*)

The only records are of five on July 29, 1972 and two on August 19, 1972. The highest count for the survey is not that much better, there were eight on September 26, 2007.

Prairie Warbler (*Dendroica discolor*)

This is a common passage migrant. The highest count was that of eight on July 29, 1972.

Palm Warbler (*Dendroica palmarum*)

There was one on August 22, 1971, this is one of the earliest fall records for Florida. There were no further sightings until October 16 (1990). The highest count is that of 205 on November 6, 1991.

Prothonotary Warbler (*Protonotaria citrea*)

Seen on a total of six dates from July 26 (1980) to August 22 (1971) with high counts of three on July 26, 1980 and August 17, 1974. No more than two a day have been seen during the survey.

Northern Waterthrush (*Seiurus noveboracensis*)

Seen in the fall from August 16 (1970) with a high count of five on August 25, 1973.

Louisiana Waterthrush (Seiurus motacilla)

The only record is of one on August 31, 1991. That surprises me as this is a common early fall passage migrant out in the fields, they can turn up along any of the ditches or canals.

Kentucky Warbler (*Oporornis formosus*)

This is at best an irregular passage migrant so a single sighting is to be expected. There was one on August 22, 1971.

Yellow-breasted Chat (*Icteria virens*)

There was one on February 21, 1984.

Field Sparrow (*Spizella pusilla*

There was one on January 7, 1978.

Lark Sparrow (*Chondestes grammacus*)

There was one on August 28, 1975, this is always a rarity.

Savannah Sparrow (*Passerculus sandwichensis*)

The highest count was that of 100 on November 6, 1991.

Fox Sparrow (*Passerella iliaca*)

There was one on February 7, 1965. There was no further sighting until one seen on February 17, 1999. This will always be a rarity at Zellwood.

White-crowned Sparrow (*Zonotrichia leucophrys*)

There were three on January 7, 1978.

Blue Grosbeak (*Guiraca caerulea*)

There was a pair on July 9, 1984 and a singing male was noted on July 9, 1985. This species has probably bred at Zellwood for many years. Finally there were five on August 4, 1990.

Indigo Bunting (*Passerina cyanea*)

Males noted singing on July 28, 1973 and July 29, 1972 so this species was also breeding many years ago, otherwise only singles seen in the fall with the six on August 4, 1990.

Bobolink (*Dolichonyx oryzivorus*)

In the fall five seen on September 9, 1972, there was also one on September 2, 1976 with in the spring 52 on April, 16, 1992.

Red-winged Blackbird (*Agelaius phoeniceus*)

The highest count was that of 1,500 on August 19, 1972.

Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*)

There was one on August 22, 1965. This is always a special species.

Common Grackle (*Quiscalus quiscula*)

The high count was that of 200 on August 19, 1972.

Boat-tailed Grackle (*Quiscalus major*)

The highest count was that of 670 on November 6, 1991.

Brown-headed Cowbird (*Molothrus ater*)

There were 21 on July 8, 1985, otherwise not reported until 400 seen on August 13, 1995. This was also the highest count.

American Goldfinch (*Spinus tristis*)

There were no fall or winter records. In the spring there was one on March 20, 1992.

Acknowledgments

This historical systematic list would not have been possible without the use of the records that Bill Pranty had collected together from various sources. Your help Bill is much appreciated. To those of you who sent in records to Bill I thank you. I would like to single out Paul Fellers for the extensive and very detailed notes that he kept of his visits to Zellwood.

Additional Records

If any reader of this report has any additional bird records for Zellwood for any period can they be sent to:

Harry Robinson at 2455 East Lake Drive, DeLand, Florida, 32724 or by email to: sirharrydeland@gmail.com.

APPENDIX E

Dragonflies and Damselflies

I have not kept a daily log of these insects. All I have recorded is the first date on which each species was seen in each calendar year. Thus the cycle is different from the bird report which runs from August 15 to August 14. Below I have listed all the species that were seen during the five years together with the earliest date for each year, that is if it was seen in that year.

Species	1999	2000	2001	2002	2003
Ebony Jewelwing (Calopteryx maculata)	6.14.99				
Common Spreadwing (Lestes australis)		4.3.00			
Variable Dancer (Argia fumipennis)		5.30.00	5.8.01	6.10.02	6.1.03
Familiar Bluet (Enallagma civile)	5.14.99	3.18.00		5.20.02	
Purple Bluet (Enallagma coecum)	4.14.99				
Atlantic Bluet (Enallagma doubledayi)	5.4.99	1.4.00			5.18.03
Florida Bluet (Enallagma pollutum)	3.23.99	3.21.00	2.25.01		529.03
Vesper Bluet (Enallagma vesperum)			3.25.01		
Citrine Forktail (Ischnura hastata)	3.23.99	2.16.00	4.16.01	2.3.02	2.23.03
Fragile Forktail (Ischnura posita)	2.10.99	1.1.00	2.11.01	1.24.02	2.19.03
Rambur's Forktail (Ischnura ramburii)	3.23.99	1.11.00	2.21.01	1.24.02	3.5.03
Southern Sprite (Nehalennia intergricollis)	5.10.99	5.2.00		4.21.02	5.29.03
Duckweed Firetail (Telebasis byersi)		4.19.00	4.8.01	5.1.02	5.7.03
Comet Darner (Anax longipes)	2.19.99				9.10.03
Common Green Darner (Anax junius)	1.1.99	1.1.00	1.17.01	1.3.02	1.2.03
Blue-faced Darner (Coryphaeschna adnexa)	7.4.99	3.7.00	5.4.01		
Regal Darner (Coryphaeschna ingens)	3.18.99	4.15.00	3.27.01	3.19.02	4.13.03
Swamp Darner (Epiaeschna heros)	5.1.99	3.7.00	3.22.01	3.24.02	3.24.03

Twilight Darner (Gynacantha nervosa)	4.1.99	1.21.00	6.10.01	1.20.02	5.4.03
Cyrano Darner (Nasiaeschna pentacantha)	4.23.99	8.6.00	7.29.01		3.29.03
Phantom Darner (Triacanthagyna trifida)		1.1.00	8.29.01	8.11.02	
Two-striped Forceptail (Aphylla williamsoni)	5.1.99	5.16.00	4.16.01	5.15.02	5.15.03
Gray-green Clubtail (Arigomphus pallidus)	3.23.99	5.2.00	3.22.01		5.2.03
Cypress Clubtail (Gomphus minutus)	4.1.99			3.10.02	
Dragonhunter (Hagenius brevistylus)			7.27.01		
Prince Baskettail (Epitheca princeps)	3.23.99	3.18.00	3.22.01	3.19.02	3.24.03
Sepia Baskettail (Epitheca sepia)	5.14.99	3.18.00	7.29.01		5.4.03
Florida Baskettail (Epitheca stella)	2.10.99	1.18.00		1.27.02	1.11.03
Four-spotted Pennant (Brachymesia gravida)	4.20.99	3.18.00	4.16.01	3.31.02	4.13.03
Amanda's Pennant (Celithemis amanda)		7.4.00			
Red-veined Pennant (Celithemis bertha)			8.12.01		
Halloween Pennant (Celithemis eponina)	4.20.99	3.21.00	5.6.01	7.3.02	3.24.03
Banded Pennant (Celithemis fasciata)		6.3.00	5.8.01		6.26.03
Faded Pennant (Celithemis ornata)		3.10.00		7.3.02	6.1.03
Scarlet Skimmer (Crocothemis servilia)	1.1.99	1.1.00	7.18.01	3.24.02	4.24.03
Pin-tailed Pondhawk (Erythemis plebeja)		3.25.00	4.19.01	5.6.02	3.12.03
Eastern Pondhawk (Erythemis simplicicollis)	1.29.99	2.29.00	1.17.01	1.24.02	3.2.03
Little Blue Dragonlet (Erythrodiplax minuscula)	6.23.99	3.18.00	5.4.01	4.28.02	4.6.03
Blue Corporal (Ladona deplanata)		3.3.00			
Golden-winged Skimmer (Libellula auripennis)	4.20.99	4.6.00	4.8.01	4.10.02	4.27.03
Bar-winged Skimmer (Libellula axilena)					4.24.03
Slaty Skimmer (Libellula incesta)	3.25.99	4.19.00	4.6.01	4.14.02	4.24.03
Needham's Skimmer (Libellula needhami)			5.20.01	4.17.02	
Great Blue Skimmer (Libellula vibrans)		8.27.00	6.7.01	6.10.02	6.11.03
Marl Pennant (Macrodiplax balteata)			5.20.01		
Hyacinth Glider (Miathyria marcella)	2.17.99	3.14.00	3.11.01	3.22.02	3.12.03
Roseate Skimmer (Orthemis ferruginea)	1.1.99	1.1.00	1.28.01	1.24.02	3.24.03
Blue Dasher (Pachydiplax longipennis)	2.10.99	2.29.00	2.25.01	2.3.02	3.5.03
Wandering Glider (Pantala flavescens)	5.1.99	1.1.00	4.2.01	3.22.02	3.9.03
Spot-winged Glider (Pantala hymenaea)	4.9.99	8.27.00	5.24.01	9.29.02	5.26.03
Eastern Amberwing (Perithemis tenera)	2.10.99	1.18.00	2.21.01	3.19.02	3.12.03
Carolina Saddlebags (Tramea carolina)	1.29.99	2.23.00	2.11.01	2.10.02	1.2.03
Black Saddlebags (Tramea lacerata)	1.11.99	3.27.00	4.2.01	3.6.02	2.26.03
Red Saddlebags (Tramea anusta)	4.9.99		5.20.01	7.17.02	4.16.03

There were a total of 13 damselflies and 41 dragonflies seen during the five years.

APPENDIX F

Butterflies

Again I have not kept a daily log of these insects. I have instead noted the first date in each calendar year on which each species seen. Below I list all the species seen during the five years together with the earliest date for each year

Species	1999	2000	2001	2002	2003
Pipevine Swallowtail (Battus philenor)	2.9.99		5.27.01		
Polydamus Swallowtail (Battus polydamus)	2.9.99	3.7.00	2.18.01	3.14.02	2.23.03
Zebra Swallowtail (Eurytides marcellus)	3.19.99		6.10.01	4.24.02	3.24.03
Black Swallowtail (Papilio polyxenes)	1.27.99	2.8.00	2.14.01	2.3.02	2.2.03
Giant Swallowtail (Papilio cresphontes)	3.13.99	3.3.00	2.21.01	2.20.02	3.2.03
Eastern Tiger Swallowtail (Papilio glaucus)	2.9.99	2.16.00	2.21.01	2.20.02	1.2.03
Spicebush Swallowtail (Papilio troilus)	3.23.99	3.7.00	2.28.01	3.6.02	3.24.03
Palamedes Swallowtail (Papilio palamedes)		9.10.00	3.11.01	3.27.02	6.16.03
Checkered White (Pontia protodice)	1.1.99	1.1.00	1.14.01	2.3.02	3.19.03
Cabbage White (Pieris rapae)	2.3.99	1.1.00	4.8.01	3.10.02	3.5.03
Great Southern White (Ascia monuste)	1.1.99	1.11.00	2.28.01	2.6.02	2.15.03
Orange Sulphur (Colias eurytheme)		9.21.00	2.21.01	5.30.02	6.16.03
Southern Dogface (Colias cesonia)	1.12.99		8.22.01	8.14.02	6.11.03
Cloudless Sulphur (Phoebis sennae)	1.9.99	1.1.00	2.7.01	1.16.02	2.15.03
Orange-barred Sulphur (Phoebis philea)	5.4.99	4.6.00			
Large Orange Sulphur (Phoebis agarithe)					5.29.03

Barred Yellow (Eurema daira)	3.19.99	1.4.00	2.25.01	1.20.02	1.22.03
Little Yellow (Eurema lisa)	2.9.99	1.11.00	5.4.01	1.24.02	2.23.03
Sleepy Orange (Eurema nicippe)	2.3.99	1.1.00	2.14.01	2.3.02	1.30.03
Dainty Sulphur (Nathalis iole)	3.18.99	1.1.00	4.6.01	2.24.02	3.5.03
Great Purple Hairstreak (Atlides halesos)				5.6.02	5.15.03
Banded Hairstreak (Satyrium calanus)				5.30.02	
White M Hairstreak (Parrhasius m-album)	2.3.99	1.18.00	12.21 01	5.1.02	
Gray Hairstreak (Strymon melinus)		4.19.00	5.20.01	1.27.02	5.15.03
Red-banded Hairstreak (Calycopis cecrops)		8.30.00	3.27.01		
Cassius Blue (Leptotes cassius	1.29.99	3.25.00			
Ceraunus Blue (Hemiargus ceraunus)			5.8.01	4.17.02	
American Snout (Libytheana carinenta)	3.16.99	3.30.00	2.18.01	3.6.02	2.19.03
Gulf Fritillary (Agraulis vanillae)	1.10.99	1.1.00	1.14.01	1.7.02	1.2.03
Zebra Heliconian (Heliconius charitonia)	1.27.99	1.1.00	9.23.01	1.16.02	1.5.03
Variegated Fritillary (Euptoieta claudia)		4.6.00	5.27.01	5.9.02	4.27.03
Phaon Crescent (Phyciodes phaon)		3.30.00	7.29.01	6.2.02	5.7.03
Pearl Crescent (Phyciodes tharos)	8.13.99	1.14.00	2.21.01	1.24.02	
Question Mark (Polygonia interrrogationis)	4.6.99	3.14.00	5.6.01	3.17.02	4.21.03
American Lady (Vanessa virginiensis)	2.9.99	1.11.00	2.25.01	2.6.02	3.5.03
Painted Lady (Vanessa cardui)	1.11.99	1.1.00	1.24.01	1.7.02	1.11.03
Red Admiral (Vanessa atalanta)	1.1.99	1.1.00	1.1.01	1.7.02	1.11.03
Common Buckeye (Junonia coenia)	1.11.99	1.1.00	2.7.01	2.3.02	1.5.03
White Peacock (Anartia jatrophae)	1.1.99	1.1.00	6.10.01	3.17.02	4.21.03
Red-spotted Purple (Limenitis arthemis)	4.14.99				
Viceroy (Limenitis archippus)	3.16.99	1.7.00	2.28.01	1.24.02	1.9.03
Hackberry Emperor (Asterocampa celtis)		5.30.00	4.4.01	4.10.02	6.11.03
Tawny Emperor (Asterocampa clyton)	4.9.99	3.27.00	4.6.01	4.7.02	4.13.03
Carolina Satyr (Hermeuptychia sosybius)	3.18.99	1.4.00	2.28.01	7.25.02	4.24.03
Monarch (Danaus plexippus)	1.11.99	1.1.00	3.11.01	1.16.02	1.2.03
Queen (Danaus gilippus)	1.12.99	1.1.00	2.28.01	2.3.02	1.5.03
Silver-spotted Skipper (Epargyreus clarus)	3.30.99	3.7.00	3.11.01	3.24.02	8.20.03
Long-tailed Skipper (Urbanus proteus)	2.9.99	1.4.00	3.22.01	4.7.02	4.24.03
Dorantes Skipper (Urbanus dorantes)	8.20.99		8.22.01	2.3.02	5.26.03
Southern Cloudywing (Thorybes bathyllus)		5.13.00			
Confused Cloudywing (Thorybes confusis)	4.14.99		2.28.01		
Juvenal's Duskywing (Erynnis juvenalis)		5.4.00			
Horace's Duskywing (Erynnis horatius)	2.9.99	4.30.00	5.4.01	4.10.02	4.24.03
Zarucco Duskywing (Erynnis zarucco)			4.22.01		
Common Checkered-Skipper (Pyrgus communis)		2.11.00	2.21.01	2.17.02	2.23.03
Tropical Checkered-Skipper (Pyrgus oileus)	4.1.99	1.1.00	2.7.01	2.3.02	1.30.03
Swarthy Skipper (Nastra iherminier)			7.11.01		
Clouded Skipper (Lerema accius)	5.1.99	1.11.00	2.28.01	6.16.02	4.27.03

Southern Skipperling (Copaeodes minimus)	5.29.99	2.23.00	5.2.01	2.3.02	4.24.03
Fiery Skipper (Hylephila phyleus)	5.1.99	1.1.00	3.22.01	1.24.02	3.26.03
Whirlabout (Polites vibex)	3.30.99	1.1.00	7.4.01	6.10.02	
Southern Broken-Dash (Wallengrenia otho)					5.21.03
Northern Broken-Dash (Wallengrenia egeremet)		6.30.00			
Sachem (Atalopedes campestris)	1.29.99	5.2.00		5.30.02	3.24.03
Dun Skipper (Euphytes vestris)				7.3.02	
Eufala Skipper (Lerodea eufala)		4.26.00		7.31.02	
Twin-spot Skipper (Oligoria maculata)	5.29.99	1.7.00	4.29.01	5.12.02	
Brazilian Skipper (Calpodes ethlius)					8.27.03

There were a total of 68 species seen over the five years.

APPENDIX G

Amphibians and Reptiles

There is no daily log of these creatures rather I noted the first date on which each species was seen in each calendar year. Below I list all the species seen during the first five years of the survey together with the earliest date for each of the five years.

Species	1999	2000	2001	2002	2003
Southern Toad (Bufo terrestris)				3.17.02	1.30.03
Greenhouse Frog (Eleutherodactylus planirostris)	5.10.99			3.24.02	2.15.03
Southern Cricket Frog (Acris gryllus)	5.10.99		8.5.01	8.11.02	5.29.03
Spring Peeper (Hyla crucifer)					1.2.03
Green Treefrog (Hyla cinerea)				3.14.02	2.23.03
Barking Treefrog (Hyla gratiosa)	4.6.99	7.23.00	4.6.01	4.24.02	3.9.03
Squirrel Treefrog (Hyla squirella)	5.10.99		2.28.01	4.28.02	2.26.03
Cope's Gray Treefrog (Hyla chrysoscelis)				3.14.02	1.2.03
Southern Chorus Frog (Pseudacris nigrita)			6.20.01		2.15.03
Ornate Chorus Frog (Pseudacris ornata)			2.11.01		2.26.03
Little Grass Frog (Pseudacris ocularis)	6.29.99	6.30.00	2.14.01	2.3.02	2.9.03
Eastern Narrow-mouthed Frog (Gastrophyne carolinensis)	4.23.99	5.2.00	5.27.01	4.28.02	4.27.03
Bull Frog (Rana catesbeina)	4.23.99	4.6.00	4.11.01	3.24.02	3.5.03
Pig Frog (Rana grylio)	3.19.99	3.21.00	2.25.01	3.10.02	1.5.03
Southern Leopard Frog (Rana utricularia)	4.23.99	1.1.00	1.17.01	1.7.02	1.2.03
American Alligator (Alligator mississippiensis)	1.1.99	1.1.00	1.4.01	1.3.02	1.2.03
Common Snapping Turtle (Chelydra serpentina)	5.7.99	4.15.00	2.18.01	2.17.02	2.15.03
Stinkpot (Sternotherus odoratus)			5.8.01		

Loggerhead Musk Turtle (Sternotherus minor)	11.3.99				
Striped Mud Turtle (Kinosternon bauri)	10.29.99	3.10.00	1.24.01	3.10.02	
Box Turtle (Terrapene carolina)	6.19.99	5.2.00			
Florida Cooter (Pseudemys floridana)	1.27.99	1.1.00	1.17.01	2.17.02	2.19.03
Florida Redbelly Turtle (Pseudemys nelsoni)	1.1.99	1.1.00	1.7.01	1.10.02	1.7.03
Chicken Turtle (Deirochelys reticularia)	1.19.99	2.25.00	1.14.01	3.22.02	3.19.03
Gopher Tortoise (Gopherus polphemus)		7.30.00	7.4.01		7.4.03
Florida Softshell (Apalone ferox)	1.1.99	1.4.00	1.14.01	1.20.02	1.2.03
Green Anole (Anolis carolinensis)	3.16.99	2.11.00	2.11.01	1.24.02	1.2.03
Brown Anole (Anolis sagrei)	3.13.99	2.11.00	2.14.01	2.3.02	1.19.03
Six-lined Racerunner (Cnemidophorus sexlineatus)	5.18.99	3.3.00	4.6.01	3.17.02	
Ground Skink (Scincella lateralis		4.15.00			
Broad-headed Skink (Eumeces laticeps)	4.26.99		2.25.01		
Southeastern Five-lined Skink (Eumeces inexpectatus)	3.30.99	6.6.00		3.17.02	4.24.03
Mole Skink (Eumeces egregius)	3.25.99	7.23.00			
Eastern Glass Lizard (Ophisaurus ventralis)			8.2.01		3.19.03
Island Glass Lizard (Ophisaurus compressus)	6.19.99				
Florida Green Water Snake (Nerodia floridana)			2.7.01	3.24.02	
Brown Water Snake (Nerodia taxispilota)	1.27.99				5.4.03
Banded Water Snake (Nerodia fasciata)	2.10.99	1.1.00	2.11.01	2.17.02	3.12.03
Brown Snake (Storeria dekayi)					4.2.03
Striped Crayfish Snake (Regina alleni)	11.12.99	7.19.00			
Garter Snake (Thamnophis sirtalis)		6.14.00	8.29.01	4.28.02	5.4.03
Ribbon Snake (Thamnophis sauritus)	10.8.99	1.14.00	8.16.01	3.24.02	4.30.03
Racer (Coluber constrictor)	5.25.99	3.30.00	3.25.01	3.17.02	2.12.03
Rough Green Snake (Opheodrys aestivus)		10.9.00	5.6.01		
Corn Snake (Elaphe guttata)	7.12.99	5.7.00	4.11.01	3.17.02	5.7.03
Rat Snake (Elaphe obsoleta)	4.23.99	3.27.00	4.11.01	3.17.02	3.12.03
Cottonmouth (Agkistrodon piscivorus)	6.22.99	3.25.00		6.2.02	9.10.03
Eastern Diamondback Rattlesnake (Crotalus adamaneus)					3.9.03

Over the five years a total of 15 Amphibians and 33 Reptiles seen.

APPENDIX H

Mammals

There is no daily log of the mammals seen rather I noted the first date on which each species seen in the calendar year. Below I list all the species seen over the five years together with the earliest date in each of the five years.

Species	1999	2000	2001	2002	2003
Virginia Opossum (Didelphis virginiana)	4.26.99	2.21.00	1.1.01	1.24.02	1.2.03
Southern Short-tailed Shrew (Blarina carolinensis)	8.27.99	2.29.00	7.15.01		1.2.03
Nine-banded Armadillo (Dasypus novemcintus)	3.18.99	12.6.00		5.30.02	4.30.03
Easter Cottontail (Sylvilagus floridanus)	4.26.99	1.14.10	1.1.01	1.24.02	1.2.03
Marsh Rabbit (Sylvilagus palustris)	5.22.99	2.29.00	1.1.01	1.7.02	1.2.03
Gray Squirrel (Scuirus carolinensis)	1.7.99	1.11.00	3.11.01	2.6.02	1.5.03
Southern Flying Squirrel (Glaucomys volans)	6.29.99	3.14.00	1.14.01	9.22.02	1.9.03
Marsh Rice Rat(Oryzomys palustris)	9.8.99	4.11.00			
Eastern Harvest Mouse (Reithrodontomys humulis)				7.3.02	
Cotton Mouse (Peromyscus gossypinus)	7.6.99	5.16.00			
Hispid Cotton Rat (Sigmodon hispidus)	2.19.99	1.1.00	2.7.01	1.20.02	1.2.03
Round-tailed Muskrat (Neofiber alleni)				9.22.02	4.27.03
Norway Rat (Rattus norvegicus)	4.17.99	5.21.00	8.22.01		
House Mouse (Mus musculus)			10.20.01		
Coyote (Canis latrans)	12.30.99	1.21.00	3.11.01		1.19.03
Red Fox (Vulpes vulpes)	3.18.99	1.7.00	1.21.01	1.13.02	2.26.03
Gray Fox (Urocyon cinereoargenteus)	5.18.99	2.11.00	3.18.01		4.27.03
Raccoon (Procyon lotor)	1.29.99	1.1.00	1.4.01	1.7.02	1.5.03
Long-tailed Weasel (Mustela frenta)				5.23.02	
Spotted Skunk (Spilogale putorius)	3.18.99				
River Otter (Lutra canadensis)	1.1.99	1.7.00	1.1.01	1.10.02	1.2.03
Bobcat (Lynx rufus)	3.16.99	5.21.00	1.1.01	1.3.02	1.11.03
Florida Panther (Felis concolor coryi)					5.15.03

Over the five years a total of 23 species identified.

The Florida Panthers

These were at the Sand Farm on the road that ran to the west from the Sand Farm Bridge. I arrived at the Sand Farm Bridge in the dark and as I turned onto the track with the high beams still on I saw some very intense, very bright golden luminescent eye-shine, there were two animals. I am used to seeing eye-shine form a range of mammals but I had never seen anything like this. They were probably half a mile down the track. One stayed back but the other walked towards me. When it reached the edge of the main high beams range it turned and walked into the scrub. I suspect that it walked a short distance back before rejoining the track and returning to the west. This was a very large pale brown (not black, not white but what I would expect a pale brown animal to look like) unmarked cat with a long curving tail. Size was hard to judge but when it turned sideways from head to rear it covered more than half of the width of the track. The track was a bit wider than just car tracks as it was at that time being used by dirt hauling trucks. This was an exceptional record.

REFERENCES

With the exception of Appendix B the only two works consulted were:

Stevenson, Henry M and Anderson Bruce H their work “The Bird Life of Florida”1994 University Press of Florida.

This work was consulted frequently when preparing the main text.

Pranty, Bill A Birder’s Guide to Florida 5th edition 2005. American Birding Association.

This work was used for species order, species names and appropriate scientific names for the life forms detailed in appendices E to H.