

CHAIN O' LAKES STATE PARK

AVIAN ECOLOGICAL INVESTIGATION – 2008

FINAL REPORT

Margo Milde

November 24, 2009

INTRODUCTION

The avian ecological investigation I conducted at Chain O' Lakes in 2008 was modeled on that performed by Scott Hickman and James Neal in 1982. As much as was possible, similar methodology for both collection and tabulation of data was used (exceptions noted below.) The 1982 report followed the outline suggested by the IDOC (now IDNR) proposal request for a Chain O' Lakes State Park (CLSP) avian ecological investigation. Similar to the report prepared in 1982, this report will:

- A. Tabulate results
 - 1. Bird species presence and breeding abundance
 - 2. Vegetation record of census stops
- B. Summarize results
 - 1. Species summaries – population number (estimate), habitat association, and distribution within CLSP
 - 2. Species distribution maps
 - 3. Habitat summaries – habitat distribution, bird species utilization, and dependency
- C. Management recommendations for single species, groups of species, and habitats
- D. Analysis of IDNR Avian Investigation Procedures and Recommendations for future avian investigations

VARIANCES FROM 1982 DATA COLLECTION METHODOLOGY AND TABULATION

There were several major variances from data collection methodology from that used in 1982:

- A. Census stops: Transects A, B, and C census stop points 1 – 4 were essentially unchanged, as were the Qualitative Study Points 1, 2, 4, and 6. With the approval of Brad Semel, Natural Heritage Biologist overseeing the project, the following points were changed:
 - 1. Census points for E 1 – E 5 and C points 5 and 6 were modified so that these seven points could be performed as water route through Grass Lake, leaving from and returning to the main boat launch. Natural Heritage Biologist Brad Semel and I used the park's motor boat for this route, and although I was the recorder for all data collected at this point, both Mr. Semel and I both made bird observations along this route. Points C1 – C4 were unchanged, and performed by me using a canoe, starting at Oak Point, and terminating at the Boat Launch.
 - 2. Due to the deepness of the marsh, and a very deep moat at the eastern end of the marsh which would be completely impassible for any human, Transect D was changed to include four points: one located at an former farmer's pond, a second at a marsh

overlook, and two points in the marsh itself, each approximately 100 m from the marsh's edge (the marsh at these two points was about 1 m in depth in mid-June.) Since June 2008 was exceptionally rainy, with major flooding along the nearby Fox River, it is possible in future years that census data could be taken closer to the original two interior marsh census points for the D transect used in 1982.

3. Mr. Semel requested additional avian data be collected in the upland woods and savanna located west of the manager's residence. Through a combination of herbiciding, brush removal, and controlled burns, a great deal of restoration work has been completed in that area, returning much of it to a true savanna habitat. Mr. Semel assigned me a short transect, consisting of points F1 and F2. Since I wanted to keep the tabulation protocol as close as possible to what was done in 1982, I am including the "F" transect as a "Qualitative Study Point."
4. Qualitative Study Point 3 was towards the eastern interior of Hackberry Island, accessible by canoe from the Fox River on the island's western end. I included this point in my canoe route (C1 – C4.) However, since that island was surveyed in 1982, a thick and nearly impenetrable growth of Japanese barberry (*Berberis thunbergii*) had grown up in the interior of the island. While I did succeed in reaching the center of the island the first two times that I did the canoe route (June 12, 2008 and July 18, 2008), I decided to forego that challenge the second two times (July 25, 2008 and August 3, 2008), and collected avian data from the western edge of the island only.
5. Qualitative Study Point 5 was added, at the easternmost point of the Goldfinch Trail, where it passes closest to the Fox River; the starting point for the study point was approximately 200 m west of this point, including the portion of the Goldfinch Trail that ran along a small channel flowing into the river, an exceptionally rich area for birds.
6. Qualitative Study Point 6 was added, towards the north central portion of the westernmost hayfield located north of James Road. This hayfield, along with one located southwest of the manager's residence, has been managed by mowing, as performed by a local farmer in exchange for forage obtained from the mowing.
7. Due to the flooding which occurred in mid-June through early July, which closed the Fox River to all boat traffic for several weeks during this period, I was unable to census points 1 – 4 by canoe during this period. I had only completed one of the canoe routes (C-1 – C-4) in early June before the flooding began, and could not resume until the level of the river was again normal, on July 18, 2008. Not wanting to miss important bird data, however, I decided to include an additional "Oak Point" Qualitative Study Point, which I could do on foot as soon as the waters which covered the picnic area had receded. This was critical, since I was able to locate Cerulean Warblers at this location, where they have been known to breed historically.
8. Mr. Semel wished to survey Grass Island (a.k.a. "Geotube Island") on a more intensive level, since this island was the location had been enhanced by land stabilization (use of the "Goetubes"), and protection from both human-caused disturbance, with the goal of providing a suitable location for a Forster's Tern colony, as well as suitable habitat for other shorebirds. Although point E3 is located at Grass Island, I included as a "Qualitative Study Point" additional avian data that we collected here as we spent additional time moving around the island's perimeter by boat in search of birds.

9. I established a “miscellaneous” category, included in the Qualitative Study Points, for significant data obtained at locations not along transect or near an established Qualitative Study point. This category also includes night birding results for owls and rails, obtained during the overnight hours of June 27, 2008 – June 28, 2008, and June 28, 2008 – June 29, 2008.
- B. Other changes relate to updated technology used in data collection and analysis.
1. I used Microsoft Excel spreadsheeting software to tabulate, analyze, and summarize data. This tool was not available to the 1982 researchers.
 2. I used a hand-held GPS to record coordinates for each of the transects and Qualitative Study points, and used these to relocate these points for each survey each day I was in the field. I have included coordinates for these points in **Appendix A**. This GPS was an additional tool not available to Mr. Hickman and Mr. Neal during their 1982 survey, and will make replication of this work in future years even more precise.
- C. Other changes relate to timing of the data collection
1. Due to major flooding in mid-June, and new minor flooding in mid-July, which prevented access to much of this study area and closed most of the park itself for over a week, the dates of this study were extended to August 3, 2008, with permission of Ms. Maggie Cole. The project had June 30, 2008 as the original avian data collection date. (The starting date of May 25 was unchanged, although my first day in the field was May 28.) Since several early Fall migrants were included in this count due to the later ending date, especially along the C and E transects, this produced a slight increase in the total species numbers recorded. However, since these migrants do not breed at this location, the number of breeding species remained unchanged. I did, however, confirm Black Terns as a breeding species, observing adults and fledgling family groups, on 7/25/08, which I would have not have been able to do had the study ended in June 30, as well as collection of breeding data for several other species. Extension of the survey beyond the June 30 ending date had been one of the recommendations which the Hickman/Neal team had made in 1982.
 2. I recorded an additional species on August 14, 2008, American Woodcock, while collecting plant data for the “stratum ranking form” which I had not seen previously but which would be expected to have been found in suitable habitat in the park.
 3. One major difference between the 1982 count and the 2008 count was that Mr. Hickman and Mr. Scott worked on this count together in 1982, whereas I took on the 2008 count by myself. Except for the E1-E5-C5-C6 boating route, where I was accompanied by Mr. Brad Semel, I birded alone at all other times, except for two days, the D transect on June 25 2008, and Transect A points 4-7 on August 2, 2008, where I was accompanied on each day by Mr. Joel Greenberg .

I have attached a map prepared by Mr. Semel showing the updated points used in 2008, which is correct for what is shown except for Transect D, and for the additional Qualitative Study points #5 and 6, which are not mapped.

TABULATION OF RESULTS

A. Bird species presence and breeding abundance

Data was collected along the four major established transects (A – D), and nine qualitative study areas (#s 1 – 5, plus Oak Point, “F” transect, and Grass Island.) Data collection took place between the hours of 5:00 am and 10:00 am. The original dates for collecting avian field data were May 25, 2008 – June 30, 2008. As mentioned above, the study extended approximately one month later beyond the intended date of completion, due to major flooding occurring in the region from mid-June through early July. Two owl/rail night studies were done, the first between the hours of 11:30 pm May 27, 2008 through 4:00 am May 28, 2008; the second from 10:00 pm to 4 :00 am on May 28, 2008 –May 29, 2008; during these two evenings only, taped calls of owls (Eastern Screech Owl), and Rails (Virginia Rail, King Rail, Sora, Black Rail, and Yellow Rail) were used to attempt to call in these night birds.

Data is summarized in “AVIAN ECOLOGICAL INVESTIGATIONS TABULATION SHEET” as was done originally in 1982. (I chose to convert this to an Excel spreadsheet but it is otherwise unchanged). I also prepared a similar sheet, “AVIAN ECOLOGICAL INVESTIGATIONS TABULATION SHEET WITH COMPARISON TO 1982”, documenting the changes that have taken place since 1982 in both species inhabiting the park and their populations and nesting status. During this complete period, May 28, 2008 – August 14, 2008, I recorded 134 species, of which 126 were recorded in the original count period, ending June 30, 2008.

110 species had been recorded in the 1982 count. Of these species recorded by me in 2008, I believe 96 are probable nesters (many of these were confirmed by me during this season.) The Hickman/Neal team in 1982 thought that 88 species were probable nesters.

Significant birds that were observed by Mr. Hickman and Mr. Neal in 1982, which they believed were breeding in the park, but which I did not observe in 2008 include the following species:

- Broad-winged Hawk
- King Rail
- Common Snipe
- Whip-poor-will
- Blue-winged Warbler
- Western Meadowlark

Significant and probable or confirmed breeding species that I observed during the “official” count period May 25, 2008 through June 30, 2008 which were not seen nor heard in 1982 include the following:

- Hooded Merganser
- Cooper’s Hawk
- Wild Turkey
- Eastern Bluebird
- Lark Sparrow
- Grasshopper Sparrow
- Blue Grosbeak
- Dickcissel
- Orchard Oriole

Using the most current listing (October 30 2009), I noted five Illinois State Endangered Species, and two State Threatened species (**Appendix B**), of which one, Black Tern, was confirmed by me as a breeding bird, and three others, Black-billed Cuckoo, Least Bittern, and Cerulean Warbler, were probable nesters. A fifth listed species, Forster's Tern, attempted to nest but was largely unsuccessful due to egg predation and fluctuating water levels.

Most of the species I recorded as present in the park during the 2008 census period, but not breeding, were late spring and/or early fall migrants. The spring late migrant count was increased slightly in 2008 due to unusually cool late spring weather which continued into early June. Additionally, since the count period extended into early August during 2008 due to the flooding, at least several early fall migrants were recorded which would not have been seen if the count had ended on the intended date of June 30. It is possible that one of these species I classified as a late migrant, Alder Flycatcher, is a nesting species, since suitable habitat abounds in the park; however, I did not hear this species from mid-June on. Of the remaining non-breeding birds which I observed, most are birds which breed outside the park but forage inside the park. These include Caspian Terns, Ring-billed and Herring Gulls, Double-crested Cormorants, Great Blue Herons, Great Egrets, and the Black-crowned Night Heron. Two species, Osprey and Hooded Warbler, were seen (Osprey) or heard (Hooded Warbler) on one day only. The Hooded Warbler was most likely a vagrant male. (Interestingly, a single vagrant male Hooded Warbler had also been noted in the 1982 avian census in similar habitat.) There had been several other reports of an Osprey seen in the area of the Boat Launch during the summer of 2008; however, there is no evidence that this was a nesting bird from inside the park. Nesting status of several others, including Mute Swan, Turkey Vulture, and Northern Shoveler, is unknown; however, there is no evidence that any of these nested in the park in 2008. Finally, one notable bird which I did not see, but which were seen by others from inside the park at least several times during Spring 2008, were the pair of Bald Eagles which attempted to nest at Grass Lake Road Bridge south of the Park (outside of the Park boundaries) during late Winter through mid-Spring in that year. Since the Bald Eagles were not observed by me, I did not include them in my count; however, I believe their presence was still significant.

I have attached the following tabulation sheets which show complete results:

1. Excel spreadsheet for all Transect Points, and a similar one for Qualitative Data points
2. Spreadsheet compilation of the all of the above spreadsheets, by species
3. Avian ecological investigations tabulation sheet, in the format used by Scott/Hickman in 1982, with the exception that I used Excel while they used a word processor
4. A similar tabulation sheet, but including comparisons to what had been recorded in 1982.

Habitats frequented by birds at Chain O' Lakes included floodplain forest, upland forest, prairie, savanna, successional field, marsh, fen, sedge meadow, stream (river), and natural lake. An additional significant avian habitat category found at Chain O' Lakes, shrubland, was not included in the original habitat categories. Believing this is an important omission, I have included a separate listing of shrubland birds observed by me in 2008 at Chain O'Lakes in **Appendix C**.

B. Vegetation record of census stops

The location of census points for transects A – D, and Qualitative Data points can be found on the attached map prepared by Mr. Brad Semel, and the GPS coordinates of all transect count points and all qualitative study points are found in **Appendix A**. I prepared Stratum Ranking Forms for each of these census stops.

C. Species Summaries

As was done in 1982, the following is a summary of the bird species encountered during the 2008 avian survey, including the species name, estimated population, habitat association, and distribution within CLSP:

Canada Goose: This species was frequently seen near areas of open water at CLSP; there are probably 6 – 15 breeding pairs.

Mute Swan: This species was seen infrequently, and only at transect census points associated with Grass Lake. Nesting status of this invasive species is unknown; however, I saw no evidence that it nested in the park in 2008.

Wood Duck: This species was seen frequently in open water marsh areas throughout the park, as well as along the Fox River. There are an estimated 6 – 15 pairs found at the park, and they probably nest in nearby forested areas and savanna adjacent to marshes or to the river.

Mallard: This species was frequently seen through the park in marshes, and along the Fox River and on Grass Lake. There are an estimated 6 – 15 nesting pairs. On July 31, 2008, at point E-1 on Grass Lake, I (with Mr. Brad Semel) observed one adult Mallard with seven juveniles, confirming it as a nester.

Blue-winged Teal: This species was infrequently observed in small numbers at several marshes located in the interior of the park, as well as along the Fox River. There are an estimated 1 – 5 nesting pairs at the park.

Northern Shoveler: This species was observed only at two census stops, both in Grass Lake and close to Grass Island (“Geotube Island”). There is no evidence of nesting within the park.

Hooded Merganser: On June 10, 2008, I observed three Hooded Mergansers, including one on a nest, at the large open water marsh just north of Deer Path Trail. While it is therefore a confirmed nester, this is the only observation I recorded for this species during the survey, and I believe it to be infrequent in the park’s marshes. I estimate 1 – 5 pairs throughout the park.

Northern Bobwhite: I recorded this species on only one occasion with one individual, on June 6, 2008, near the Park office. Most likely this bird is a captive release from one of the several nearby hunting preserves that had made its way to the Park.

Wild turkeys: Wild turkeys are occasionally found in savanna and upland forest habitat throughout the park. On June 8, 2008, I observed a female turkey with a large number of juveniles foraging in brushy habitat along “Transect F”, confirming this species as a nester in the park. I estimate 1 – 5 nesting pairs.

Double-crested Cormorant: Although this species was frequently observed on a number of census days, mostly foraging on Grass Lake, there is no evidence that it nests at the park. Its numbers have increased markedly since 1982, where it was only seen twice during the entire period.

Least Bittern: This species was heard repeatedly calling on June 25, 2008, by myself and Mr. Joel Greenberg, who had accompanied me on that day, near point D-4 in the east marsh (we were standing in 1 meter deep water at the time). On June 12, 2008, at the marsh near point C-1, Mr. Brad Semel briefly saw a Least Bittern hop out of the marsh (I was looking the other way and did not see it.) There are an estimated 1 – 5 pairs at the park, where it inhabits marshes.

Great Blue Heron: This species was frequently seen in small numbers in marshes, along the Fox River, and the shores of Grass Lake during the census period, however, there is no evidence that it nests at the park. It is most common in marshes along the Fox River.

Great Egret: This species was occasionally seen in small numbers in marshes, along the Fox River, and the shores of Grass Lake, however, there is no evidence that it nests at the park.

Green Heron: This species was regularly found in small numbers in marshes and along the Fox River; there are probably 6 – 15 pairs that nest at the park.

Black-crowned Night Heron: Two individuals were seen flying low along the Fox River near stop C-4 on July 25, 2008. That is the only date they were observed at the park, and there is no evidence that they use the park for nesting.

Turkey Vulture: One or two individuals were infrequently observed flying over upland forest, savanna, and prairie habitat during the count period. There is no evidence that these birds nest at the park, although there would be extensive suitable habitat (upland forest) for them to do so.

Osprey: On July 25, 2008, I observed an adult Osprey flying low over the water near Hackberry Island, and I again saw an Osprey diving for fish (probably the same bird) near the main boat launch later that morning. There is no evidence of nesting in the park. A bird of this species (most likely this individual that I saw) was seen by others regularly throughout the summer in the vicinity of the boat launch.

Cooper’s Hawk: One or two individuals were regularly observed in the areas of the Deer Path Trail trailhead parking; near the park entrance station; and along bridle trails passing through savanna and upland forest north of the park entrance station and south of James Road. There are an estimated 1 – 5 nesting pairs at the park, in upland forest habitat. This species was not seen in 1982.

Merlin: One individual, an early fall migrant, was observed at Grass Island on July 31, 2008.

Red-tailed Hawk: Individuals birds and pairs of birds were frequently observed throughout the census period. They were especially likely to be observed soaring over the open area along the main Park Road near the marsh overlook, as well as near census stop point B1, flying over open areas southeast of the quarry, and occasionally perched in large tall snags anywhere in the park. There are an estimated 1 – 5 pairs nesting at the park.

Virginia Rail: This species was heard once calling from a marsh near stop E-2 along Grass Lake on June 12, 2008. One “rail sp.” most likely a Virginia Rail, gave an abbreviated call in response to a Black Rail tape played at the Deer Path Trail Marsh during night birding in the early morning hours of July 28, 2008, but since I could not identify the call, I did not officially count it. I found no other Virginia Rails during the night rail/owl counts. There are an estimated 1 – 5 pairs at the park, where it nests in marshes. This species decreased significantly since 1982, where an estimated 16 – 50 pairs were estimated to nest at the park. However, it is possible that the high water levels in June 2008 caused dispersion of these birds, making them difficult to locate during the weeks of my survey.

Sora: This species was occasionally heard calling from several marshes during the count period, and there is an estimated 16 – 50 pairs nesting in marshes in the park.

American coot: Small numbers of this species was infrequently observed in suitable marsh habitat along the Fox River. There are an estimated 1 – 5 pairs nesting in marshes at the park.

Sandhill Crane: This species was regularly seen in small numbers feeding in marshes, sedge meadows, and along the Fox River during the count period. On June 8, 2008, I observed two adults with a juvenile crane on the edge of a marsh near point B4, and on June 24, 2008 at Deer Path Trail marsh, I observed two adults with a “knee-high” juvenile; I and many others had seen this particular pair on the nest for over a week prior to the hatching. These sightings confirm nesting at the park; however, it is believed that mortality for the juveniles is very high, with coyotes being a major predator. I estimate 6 – 15 pairs which nest at the park.

Semipalmated plover: This species was seen as a late spring migrant on May 31, 2008 at point E-2 along Grass Lake, and as an early fall migrant on August 3, 2008, near Hackberry Island along the Fox River.

Killdeer: Small numbers of this species was regularly seen through suitable habitat in the park, particularly along the Fox River and the shores of Grass Lake, but it could also be observed in developed areas of the park, as well. There are an estimated 6 – 15 pairs at the park.

Spotted Sandpiper: This species was frequently observed along the Fox River and the shores of Grass Lake in small numbers throughout the census period. There are an estimated 6 – 15 pairs at the park.

Greater Yellowlegs: Several individuals of this species were observed/heard as a late spring migrant, on May 29, 2008, in the vicinity of point E-3 (Grass Island.)

Lesser Yellowlegs: Several individuals of this species were observed/heard as an early fall migrant on July 31, 2008, also on Grass Island.

Ruddy Turnstone: One individual of this species was seen at point E-3 (Grass Island) as a late spring migrant on May 29, 2008.

Semipalmated Sandpiper: A number of individuals of this species were observed as a late spring migrant near Grass Island on May 29, 2008, and June 4, 2008. It was again observed as an early fall migrant on July 31, 2008.

Least sandpiper: Several individuals were seen on May 31, 2008, near stop E-3 (Grass Island), making it a late spring migrant.

Pectoral Sandpiper: One individual of this early fall migrant was observed on July 31, 2008, on Grass Island, and two more were seen along the Fox River near C-4 on August 3, 2008.

Dunlin: A large number of this late spring migrant (> 100) were observed at point E-3 (Grass Island) on May 29, 2008, and a smaller number (>30) remained through the following week, and were observed at the same location on June 4, 2008.

Stilt Sandpiper: Two individuals of this species were observed on Grass Island on July 31, 2008, making it an early fall migrant.

Lesser Dowitcher: One individual of this early fall migrant was observed on Grass Island on July 31, 2008.

American Woodcock: Although no individuals were observed during any of the official census days, I flushed one while conducting the related plant survey work on August 14, 2008 in brushy habitat at the juncture of upland woods and prairie near point B-1. There are an estimated 1 – 6 pairs at the park.

Ring-billed Gull: This species was frequently seen in small numbers throughout the park, but is especially common foraging near Grass Island and the shores of Grass Lake. It does not nest at the park.

Herring Gull: This species was infrequently seen in small numbers around Grass Lake, especially Grass Island. It does not nest at the park.

Caspian Tern: Small numbers of this species were regularly observed along the Fox River and, more commonly, around Grass Lake. While it frequently forages in the park, it does not nest there.

Black Tern: This species could be regularly observed in small groups flying over the Fox River and Grass Lake near the boat launch as well as near Grass Island. On July 25, 2008, I observed two adult plus one juvenile Black Terns flying low over the Fox River between points C-3 – C-4, and, on the same date, I observed at least 3 juvenile Black Terns flying in a small group of about 10 Black Terns near point C-4. (Juvenile terns in mid-late summer are easily identified by their “patchy” mottled grayish /white appearance, making them quite distinctive from adults.) These sightings confirm this species as a nesting species at that park. An individual adult Black Tern was observed by me at Deer Path Trail Marsh on June

11, 2008, and again on June 24, 2008, but no nesting activity was noted at that location. This species prefers to nest in marshes. There are an estimated 1 – 5 nesting pairs at the park.

Forster's Tern: This species had attempted to nest in 2007 and 2008 on Grass Island, and possibly other areas around Grass Lake such as on top of the hunting blinds, but did not meet with much success, due to predation of eggs and young by other bird species, fluctuating water levels, competition from other avian species for these nesting areas, and, infrequently, human trespass on the island. They were regularly observed in small numbers throughout the census period along the Fox River, and on Grass Lake.

Mourning Dove: Small numbers of this upland species were regularly observed through the census period in savanna, successional fields, prairie, and occasionally near buildings on developed land, as well. There are an estimated 16 – 50 pairs at the park. Near point C-1, on July 14, 2008, I watched a Mourning Dove carrying nesting material, confirming nesting of this species at the park.

Yellow-billed Cuckoo: This species was only occasionally seen, but regularly heard, in small numbers throughout upland areas of the park, including savanna and upland forest. There are an estimated 6 – 15 pairs at the park.

Black-billed Cuckoo: One individual was heard calling from brushy habitat just west of Qualitative Study point #5 on May 28, 2008, and another heard (possibly the same bird) in brushy habitat south of B-1 on June 16, 2008 (not far from where the first bird was heard). An additional individual was heard calling on June 20, 2008, near point A-5. Finally, a pair of Black-billed Cuckoos were observed in a large crack willow (*Salix x rubens*) near the junction of Deer Path Trail and the main Bridle Trail on June 11, 2008. There are an estimated 1 – 5 pairs in the park. This species prefers brushy borders of upland forest, floodplain forest and sedge meadows as habitat.

Eastern Screech Owl: During night owling, from June 27 – June 29, 2008, I found 4 Screech owls: 1 each at Deerpath Parking, along Sunset Trail, along the north edge of Pike Marsh loop, and along the nature trail east of the campground (all called in with a tape). This cavity nester prefers savanna and upland forest. There are an estimated 16 – 50 pairs in the park.

Great Horned Owl: One individual was heard calling on June 18, 2008, along the “F” transect, a second was heard at the campground during the overnight hours of June 27 – 28, and a final Great Horned Owl was seen along the Fox River just south of the canoe launch on July 25, 2008, being speedily chased by two very angry American Robins. This species builds nests in large trees in upland forest habitat, and there are an estimated 1 – 5 pairs at the park.

Chimney Swifts: Small numbers of this species were occasionally seen overhead throughout the park, especially near human habitations, such as near point E-1 on Grass Lake. There are likely 1 – 5 pairs nesting in chimneys in buildings inside the park, with many more nesting outside the park but foraging inside the park's boundaries.

Ruby-throated Hummingbird: Small numbers of individuals are frequently seen at or near the hummingbird feeder located on the back of the Park Office. Individuals were also infrequently noted

throughout areas of savanna and upland forest in the park, such as near B-4 (upland forest) on June 29, 2008, and A-6 (upland forest/marsh edge) on July 9, 2008. There are an estimated 1 – 5 pairs nesting at the park.

Belted Kingfisher: Small numbers are frequently observed anywhere along the Fox River, and occasionally Grass Lake and open marshes, where they are very conspicuous with their loud rattle call. There are an estimated 1 – 5 pairs nesting at the park.

Red-headed Woodpecker: One individual was observed May 29, 2008, near point E-1, and again at the same location on June 12, 2008. A pair was located on swampy land near the boat launch on June 4, 2008. One additional individual was seen on June 20, 2008, along the bridle trail to Qualitative Study Point 2. There are an estimated 1 – 5 pairs nesting in upland forest, floodplain forest, and savanna at the park. This species has declined significantly in numbers at CLSP as well as many other locations in northeastern Illinois where it formerly was relatively common.

Red-bellied Woodpecker: This species is relatively frequent in upland and floodplain forest and savanna habitats at CLSP, where there are an estimated 16 – 50 pairs.

Downy Woodpecker: This species is common at CLSP, and is a cavity nester in savanna, upland forest, and floodplain forest habitat; it is occasionally seen near buildings on developed land, as well. There are an estimated 16 – 50 pairs at the park.

Hairy Woodpecker: This species is occasional in upland forest habitat, and is estimated at 6 – 15 pairs at the park.

Northern Flicker: This relatively common species can be found in a variety of habitats, but appears to prefer savanna and upland forest. On June 17, 2008, I observed, near Transect Point C-1, a juvenile Northern Flicker, confirming this species as a nester at the park. I estimate 16 – 50 pairs at CLSP.

Eastern Wood Peewee: This species is common in the upland forest areas of the park, as well as floodplain forest, and there are an estimated 16 – 50 pairs nesting at the park. It has significantly increased in population at the park since the 1982 survey was conducted.

Acadian Flycatcher: At least one calling Acadian Flycatcher was heard several times (June 6, June 16, and June 29, 2008) calling in the upland forest west of the concession stand. An additional bird was heard near the “F” transect on June 2, 2008. There are an estimated 1 – 5 pairs at the park, where they nest in upland and floodplain forest.

Alder Flycatcher: Although this species was regularly heard during suitable habitat (brushy marsh edges) at various locations in the park in late May and early June, no Alder Flycatchers were heard singing after June 12, 2008, where a bird was heard singing from the marsh edge near point E-1. While they are most likely a late spring migrant, nesting cannot be completely ruled out, since abundant suitable habitat exists and many such locations in the park are difficult to access by humans, making nesting verification difficult.

Willow Flycatcher: This species is relatively frequent along brushy patches and edges bordering successional field, prairie, fen, and sedge meadow. There are an estimated 16 – 50 pairs at the park.

Least Flycatcher: This species is infrequent at the Park, most often found on Hackberry Island (2 heard calling on June 11, 2008), Oak Point (several birds heard on June 11, 2008), brushy woods edge near point B-1 (1 bird heard on May 28, 2008), and at Qualitative Study point #5 (June 6, 2008 and again on June 29, 2008). There are an estimated 1 – 5 pairs at the park, where they prefer tall brushy edges of floodplain forest and savanna.

Eastern Phoebe: This species is occasionally found on the edges of upland and floodplain forest in the park, especially near the Fox River, such as at Oak Point and Qualitative Study point #5. There are an estimated 6 – 15 pairs at the park.

Great-crested Flycatcher: This species is occasionally found in suitable habitat (upland and floodplain forest and savanna) throughout the park, such as at “Transect F” and Qualitative Study point #2, where they were regularly seen and heard throughout the census period. There are an estimated 6 – 15 pairs at the park.

Eastern Kingbird: This species is occasional in the more open upland areas of the park, particularly prairie, savanna, and successional land, where they are often seen perching on small snags, “kiting” for insects, and chasing away other intruding birds, making themselves quite conspicuous in the process. There is an estimated 6 – 15 pairs at the park.

Yellow-throated Vireo: This species is frequently found in floodplain forest near the Fox River, and less frequently in savanna and upland forest. There are an estimated 16 – 50 pairs at the park.

Warbling Vireo: This species is frequently heard singing from forested areas bordering marshes and sedge meadows, as well as dense forested areas bordering the Fox River and Grass Lake; there are an estimated 16 – 50 pairs at the park.

Red-eyed Vireo: This species is relatively common in upland forest and savanna habitat in the park, and there are an estimated 16 – 50 pairs. On July 14, 2008, an adult Red-eyed Vireo was seen feeding a Brown-headed Cowbird fledgling near point C-1, confirming nesting for both species.

Blue Jay: This relatively frequent species is found foraging in a variety of habitats at the park, although they would most often nest in small trees or brush in forested areas and savanna. There are an estimated 16 – 50 pairs in the park.

American Crow: This relatively common species is seen foraging in a variety of habitats, including on developed land and close to human habitation. They nest in upland forests, and are estimated at 16 – 50 pairs.

Purple Martins: This species is occasionally seen in small numbers over the Fox River and Grass Lake, and there are an estimated 6 – 15 pairs nesting in communal houses at the park.

Tree Swallows: This species frequently seen at the park, and while is most common near the Fox River and Grass Lake, as well as the open prairie areas along the Goldfinch and Badger Trails, it can be found almost anywhere in a variety of habitats while aerially in pursuit of insects. 16 – 50 pairs are estimated to nest at the park, most commonly in hollow trees bordering Grass Lake and the Fox River, as well as appropriated bluebird boxes.

Northern Rough-winged Swallow: This species is infrequently found over the Fox River and Grass Lake, and are regularly seen at the State Rte. 173 Bridge over the Fox River. They are estimated at 6 – 16 pairs nesting at the park.

Bank Swallow: This species is seen occasionally in the park, over both water and open land areas. Most likely, it nests outside the park, at the quarry to the north.

Cliff Swallow: One Cliff Swallow was seen over Grass Lake near point E-4 on June 4, 2008. They do not nest in the park, but instead nest outside the park at the Route 12 Bridge in Fox Lake.

Barn Swallow: This common species is often found near human habitation, and nests at both the stable as well as the park office. There are approximately 16 – 50 pairs nesting at the park.

Black-capped Chickadee: This species is relatively common in upland forest and savanna areas of the park, and are estimated at 16 – 50 pairs.

White-breasted Nuthatch: This species is occasional in upland forested areas of the park, and is estimated at 16 – 50 pairs.

House Wren: This species is relatively common in a variety of habitats, but is especially common in brushy borders of marshes, prairies, and sedge meadows, as well as in savanna. There are an estimated 16 – 50 pairs.

Sedge Wren: This species is relatively common in suitable habitat (sedge meadow, and moister prairie areas), and was most frequently found in the sedge meadows north of Qualitative Study point #2, as well as the drier portions of Turner Lake Fen. There are an estimated 6 – 15 pairs at the park.

Marsh Wren: This species is relatively common in marshes and wetter sedge meadows, and at Turner Lake Fen, as well as marshes along the Fox River and bordering Grass Lake. There are probably 16 -50 pairs that nest at the park.

Blue-gray Gnatcatcher: This species is relatively common on the edges of forested and savanna habitat bordering marshes and sedge meadows, as well as along the Fox River. There are an estimated 16 – 50 pairs at the park.

Eastern Bluebird: This species is occasional in savanna, prairie, and successional field habitat. One adult was observed carrying food on the edge of savanna near the “F” transect on June 8, 2008, and one adult

with one juvenile were observed in a tree near the prairie along the Goldfinch Trail on June 28, 2008, confirming the nesting status of this species. There are approximately 6 – 16 pairs in the park. Interestingly, this is a species not recorded in the 1982 survey.

Veery: This uncommon species was heard three times in the park: at Point B-4 (upland forest) on May 28, 2008; along “Transect F” (savanna) on June 2, 2008; and at Point A-6 (heard singing in upland forest) July 7, 2008. There are an estimated 1 – 5 pairs at the park. This species has markedly declined in numbers since 1982, when there were an estimated 16 – 50 pairs at the park.

Swainson’s Thrush: This late migrant was heard twice, in upland woods near point B5 on May 28, 2008, and at the Deer Path Trail parking area on the same date.

Wood Thrush: This species was regularly heard at two sites of floodplain forest along the Fox River (Oak Point and the Archery Range), as well as several points in upland forest along Transect B. There are an estimated 6 – 16 pairs at the park.

American Robin: This species is abundant in a variety of forested and semi-open areas of the park, including near buildings and developed land. There are more than 50 pairs estimated at the park.

Gray Catbird: This species is common in brushy edges and semi-open habitat, such as savanna and successional field. There are more than 50 pairs estimated at the park.

Brown Thrasher: This species is uncommon in the park, only regularly seen or heard along the “F” transect as well as bridle trails in brushy forested edges north of the entrance station. There are an estimated 1 – 5 pairs at the park. On June 8, 2008, along the “F Transect”, I observed a Brown Thrasher carrying food, confirming this as a nesting species. This species has significantly declined since 1982, when there were an estimated 16 – 50 pairs that nested at the park.

European Starling: This species is common in areas of human habitation and buildings, as well as floodplain forest having an abundance of dead snags for use as nesting sites, but can be seen foraging in a variety of places in the park. They often compete with Red-headed Woodpeckers for available nesting trees. There are an estimated 16 – 50 pairs at the park.

Cedar Waxwing: This species is frequently seen in small numbers foraging in trees in upland forest and savanna. There are an estimated 16 – 50 pairs at the park.

Tennessee Warbler: Several individuals of this late migrant were heard on May 28, 2008, in upland forest near point B4.

Nashville Warbler: One individual, a late migrant, was heard singing at the Deer Path Trail Parking area on May 28, 2008.

Northern Parula Warbler: One individual was seen and heard near B4, in upland forest, on May 28, 2008.

Yellow Warbler: This common species is frequent in brushy borders of marshes, sedge meadows, fens, and prairies in the park, and is estimated 16 - 50 pairs.

Chestnut-sided Warbler: Although Hickman/Neal recorded this as an infrequent nester in the park in 1982, I only recorded it as a late migrant, when I heard one singing in upland forest on May 30, 2008.

Magnolia Warbler: Two individuals of this late migrant were heard in late May in forested areas of the park, one near B7 on May 28, 2008, and the second along the “F” transect on May 30, 2008.

Black-throated Green Warbler: I heard and saw this late migrant in upland forest on May 28, 2008, near point B3.

Blackburnian Warbler: I heard and saw this late migrant on May 28, 2008, near point B1, in upland forest.

Blackpoll Warbler: I heard this late migrant on May 28, 2008, near point B3, in upland forest.

Cerulean Warbler: I heard a Cerulean Warbler singing at the Deer Path Trail Parking area early on May 28, 2008, but did not relocate that bird; it may have been a late migrant. I heard two individuals singing in floodplain forest near Oak Point on June 17, 2008, and therefore estimate this species as 1 – 5 pairs of birds. This was the only time I recorded it in the park during the month of June. This species has decreased greatly in number greatly since 1982, where Hickman/Neal estimated this species at 6 - 16 pairs, and found it at several other locations in addition to Oak Point.

American Redstart Warbler: This species was especially frequent in the floodplain forest just west of the concession stand, where I regularly heard up to five males singing throughout the count period. I also found it at Oak Point, as well as E-1 (with Brad Semel) along Grass Lake. There are approximately 1– 5 pairs at the park.

Prothonotary Warbler: This species is infrequently found along the Fox River just south of the canoe launch, where it nests in small dead snags along the river. There are approximately 1 – 5 pairs nesting at the park. This conservative species was not recorded in 1982.

Ovenbird: I only found this species at Oak Point, where at least three males were heard singing on June 12, 2008, and one male on June 24, 2008 in upland forest north of the picnic area. There are an estimated 1 – 5 pairs in the park.

Mourning Warbler: One singing male was heard on three occasions (May 28, June 5, and June 8, 2008) from the field brush edge just northeast of the intersection of the eastern branch of the bridle trail and James Road. There are an estimated 1 – 5 pairs in the park.

Common Yellowthroat: This species is frequent in brushy borders of marshes, sedge meadows, savannas, and fens, as well as along marshy areas of the Fox River. There are estimated to be more than 50 pairs in the park.

Hooded Warbler: One likely itinerant male was heard repeatedly singing on June 28, 2008, just west of the road to the boat launch, and just north of the turn to the east in the road. Curiously, Hickman/Neal likewise had one vagrant male, on June 30, 1982, in similar habitat (upland forest.)

Wilson's Warbler: This late migrant was heard near Qualitative Study point #5 on May 28, 2008, in a brushy marsh border.

Canada Warbler: Six individuals of this late migrant species were heard singing from brushy borders at various places along Transect B on May 28, 2008.

Yellow-breasted Chat: This species was most frequently encountered around brushy borders of Turner Lake Fen, and brushy edges of marsh and sedge meadows to the north of the fen. Three singing males were heard during night birding on the overnight hours of June 27 – June 28, 2008 from the area of Turner Lake Fen and brushy habitat around Turner Lake. There are an estimated 1 – 5 pairs nesting in the park. On June 10, 2008, a male Yellow-breasted Chat was repeatedly seen making display flights between A6 and A7.

Scarlet Tanager: This species is regularly found in upland forested and savanna areas of the park, such as at Qualitative Study point #2 and along the “F” transect, as well as near point A7 north of the Youth Group camping area. On June 12, 2008, I observed one male with one female scarlet tanager, the female with nesting material, at start of trail to QPt.2, confirming this as a nesting species. There are approximately 6 – 15 pairs at the park.

Eastern Towhee: This species is regularly uncommon at the park, and can be most readily found along brushy borders of upland forests and savannas located along the bridle trails between the park entrance station and James Road, as well as along the “F” transect. There are an estimated 6 – 15 pairs nesting at the park.

Chipping Sparrow: This species could be regularly found in successional field at points A-1 and A-3, as well as prairie areas along the Goldfinch Loop trail, and is estimated at 6 – 15 pairs in the park.

Clay-colored Sparrow: One singing male was regularly heard (and seen) singing near point A1 throughout the entire census period, in successional field across from the manager's residence. The population in the park is estimated at 1 – 5 pairs. This species was not found in the 1982 count.

Field Sparrow: This species was fairly common in prairie, successional field, and savanna habitat, and is estimated at between 16 – 50 pairs. On June 12, 2008, I observed two adult field sparrows with two fledglings perched in a small tree in successional field at the start of the bridle trail to Qualitative Study point #2, and on June 27, 2008, near the previous location, I watched one adult Field Sparrow feeding two juveniles in the field along James Rd. across from manager house, confirming nesting for this species.

Lark Sparrow: One singing male was regularly heard and seen singing from low branches among the oaks bordering the bike trail on the hill south of the park office throughout the month of June 2008. On June 29, 2008, at the corner of the intersection of the road towards the Park Office with the main Park Road, I observed 2 adult Lark Sparrows with two fledgling Lark Sparrows feeding in the gravel along the side of the road, confirming this species as a nesting species in the park. I also heard this species on several occasions singing at “Transect F”, and am not sure if this is the same bird confirmed nesting in the savanna south of the park office, or a different individual. This species was not found in the 1982 count. There are approximately 1- 5 pairs at the park.

Savanna Sparrow: This species was found in low numbers in prairie around Qualitative Study point #4, and in forageland near Qualitative Study Point #6. There are an estimated 1- 5 pairs at the park.

Grasshopper Sparrow: This species is found in low numbers in prairies around Qualitative Study point #4, in forageland around Qualitative Study point #6, and along the western branch of the Blue Loop bridle trail where it passes near prairie. It is estimated at 1- 5 pairs. This species was not found in the 1982 count.

Henslow’s Sparrow: This species is found in low numbers in prairie around Qualitative Study point #4, in forage land near Qualitative Study point #6, and along the western branch of the Blue Loop bridle trail where it passes near prairie. They are estimated at 1 – 5 pairs.

Song Sparrow: This species is common in a number of habitats of the park, especially in brushy borders of prairies, sedge meadow, fen, and marshes, as well as along the Fox River. There are estimated to be more than 50 pairs in the park.

Swamp Sparrow: As its name suggests, this species is most common in marshes, particularly along Transect D, and marshes bordering the Fox River and Grass Lake. There are estimated to be 16 – 80 nesting pairs in the park.

Northern Cardinal: This species is frequent in a variety of habitats, including upland forest and savanna, and brushy borders of prairies and successional land, and are occasionally found in the vicinity of buildings and developed land. They are estimated at 16 – 50 pairs in the park.

Rose-breasted Grosbeak: This species is occasionally found in upland forest and savanna habitat, and less commonly in floodplain forest along the Fox River. It is estimated at 16 – 50 pairs. On June 29, 2008, an adult Rose-breasted Grosbeak was seen feeding a juvenile in upland forest near point B-6, confirming this as a nesting species in the park.

Blue Grosbeak: One singing male of this unusual species was heard repeatedly singing from the dense brushy border between savanna and a hayfield (forageland) located to the west of the manager’s residence on June 18, 2008, and again on June 20, 2008. This species is estimated at between 1 – 5 pairs in the park. This species was not recorded in 1982.

Indigo Bunting: This species is common in a variety of habitats, particularly brush borders of savannas, successional fields, prairies, and sedge meadows, as well as upland and floodplain forest, and is estimated at between 16 and 50 pairs. On June 12, 2008, I observed, along the trail to Qualitative Point #2, a female Indigo Bunting with food, confirming this as a nesting species.

Dickcissel: This prairie species was seen and heard in low numbers in the prairie located east and south of the Park Office on June 20, July 5, and July 29, 2008, and is estimated at 1 – 5 pairs. It was not observed in 1982.

Bobolink: This species was observed regularly throughout June at Qualitative Study point # 4 (Prairie) and Qualitative Study Point # 6 (Forageland/Hayfield), and was frequently seen displaying, as they were on June 8 2008 near Qualitative Point #6. The largest number observed at one point was June 29, 2008 at Point #6, when I counted five male and two female Bobolinks flying over the hayfield. There are an estimated 6 – 15 pairs at the park.

Red-winged Blackbird: This abundant species is found in large numbers in various wetland habitats throughout the park, and is estimated at more than 50 pairs.

Eastern Meadowlark: Only a few Eastern Meadowlarks were seen and/or heard, one singing near a successional field near point A-4 on June 10, 2008, and another sighting on June 20, 2008 near the western branch of the Blue Loop bridle trail in prairie. However, most sightings during this period were at Qualitative Study point #6 (forageland), and Qualitative Study point # 4 (prairie.) There are an estimated 1 – 5 pairs in the park.

Common Grackle: This species is occasional in brushy area adjacent to wetlands, such as marsh borders, and in marshes and floodplain forest along the Fox River. It is estimated at 16 – 50 pairs in the park. This species is especially common at Oak Point, where I observed 22 individuals on July 14.

Brown-headed Cowbird: This species is relatively common in upland forest, savanna, and successional land throughout the park, and parasitizes other species' nests in these areas. It is estimated at more than 50 pairs in the park. As mentioned previously, on July 14, 2008, an adult Red-eyed Vireo was seen feeding a Brown-headed Cowbird fledgling near transect point C-1, confirming nesting for both species.

Orchard Oriole: Several pairs of this species was regularly seen in oak savanna bordering prairie located along the Badger Trail southeast of the park office, and is estimated at between 1 – 5 pairs. It was not recorded during 1982.

Baltimore Oriole: This species is occasionally found in upland forest and savanna, but more frequently in floodplain forest along the Fox River and Grass Lake. It is estimated at between 16 – 50 pairs.

House Finch: This species was observed in the vicinity of the manager's residence south of James Road, north of the stable along the bridle trails, and around the houses located near point E-1. It is estimated at 1 – 5 pairs which nest in the park.

American Goldfinch: This species is frequent in a variety of open and relatively dry habitat, such as prairie, successional field, forageland, savanna, and sedge meadow; it is estimated at 15 - 50 pairs of birds in the park.

House Sparrow: This species is frequent around buildings located at the park, such as the stable, manager's residence, Park office, and concession areas, but is infrequent elsewhere. It is estimated at between 6 – 15 pairs.

MANAGEMENT RECOMMENDATIONS

There are several recommendations that I have relating to conservation of native species found at CLSP:

- A. Postpone mowing of the hayfields (forageland) until at least July 15. In 2008, CLSP hayfields were mowed on July 5, which is too early for many of our grassland species to effectively get a first brood raised and off the nest. Postponing an additional month, until August 15, would give certain species that have two broods during a season, such as Field Sparrows and Eastern Meadowlarks, the additional opportunity to raise and fledge a second brood.
- B. Maintain existing quality brushland in the park, such as shrub-carr bordering wetlands, and shrubby borders of savanna and prairie, for use of birds using these habitats to nest (see Appendix B). A number of shrubland species are among the Midwest's most imperiled birds, and it is important that they have the opportunity to nest in suitable habitat in the park.
- C. It is essential to being to start controlling the large vegetative colonies of Leafy Spurge (*Euphorbia esula*) that is starting to rapidly spread away from bridle trails into the prairie between the entrance station and James Road. A number of large colonies in this area will have to be herbicided to be able to control this invasive species, and if nothing is done soon, there is a risk that much or most of the prairie will be overrun by this noxious plant within the not-too-distant future. Since it appears to have been spread from the bridle trails, as a result of horses eating forage contaminated with seeds of this species, one additional idea would be to require that the livery horses used at CLSP only be fed certified weed-free forage; this regulation is in effect in a number of public areas in the United States where this invasive weed is a problem.
- D. An additional invasive species of concern to me was the large amounts of Japanese Hedge Parsley (*Torilis japonica*), which is becoming increasingly common along trails in the northern and central areas of the park, in particular along Goldfinch Trail and "Transect F." I saw a big increase in this species in the ten years since I performed a botanical inventory of the park in 1999.
- E. Implement management for the Red Loop, similar to the savanna restoration that is taking place along "Transect F", since the upland forest along the Red Loop is badly overgrown with buckthorn and other invasives. Habitat along the Red Trail, being partially on a high wooded slope, would be very amenable to savanna restoration.
- F. While conducting the surveys along Route E 1-4, C-5 - C-6, Mr. Brad Semel and I both noted an obvious paucity of Marsh Wrens in marsh areas which had been recently burned, as compared to unburned marshland. While controlled burns in marshland is an effective management tool for controlling cattails and other less desirable plant species, it should not be done in excess, and the effects on birds should be noted.

FUTURE RECOMMENDATIONS FOR IDNR AVIAN INVESTIGATION SURVEYS

Recommendations I have for future surveys include the following:

- A. In future years, should a similar study be performed at CLSP or other rich habitats, evening birding in search of American Woodcocks should be performed during late March through early May, when these birds are easiest to locate and census.
- B. Although Wilson's Snipe would be unusual breeders in the CLSP area, much suitable habitat abounds at CLSP; visiting the park earlier in the season in search of "winnowing" snipe should be considered in planning future such surveys.
- C. Although the extension of the survey for an additional month was done from necessity rather than planning, I believe it proved very useful in confirmation of several key breeding species, as well as gathering additional information on other species inhabiting the park. Therefore, I suggest that while the bulk of the survey should ideally be performed in June, an extension through July 15 or even July 31 should be considered.

Respectfully submitted,
Margo Milde
1206 Raleigh Rd
Glenview IL 60025
November 24, 2009

Chain O' Lakes State Park

Avian Survey 2008

Observer: Margo Milde

* from Transects and Q Points Excel spreadsheets

Notes:

5-28-08

Stop at 5:15 am at Deer Run

Cerulean Warbler

Swainson's Thrush

Yellow-billed Cuckoo

Red-eyed Vireo

American Robin

Nashville Warbler

6-6-08

3 Sandhill Cranes near B4 = two adults + one colt

6-8-08

F transect:

Brown Thrasher carrying food

Eastern Bluebird carrying food

Wild Turkeys- hen with many, many young

6-8-08 QP 6

2 male Bobolinks displaying

6-4-08

Cooper's Hawk by Deerpath picnic area, in tree, sunning

6-5-08

Northern Bobwhite by Visitor Center

2 Wild Turkeys by entrance gate (M and F)

2 Red-tailed Hawk in snag to road turn U

6-10-08

At Pt. A6-7 Yellow-breasted Chat displaying in flight

6-10-08

"Misc" list on spreadsheet includes walk back from pt A4 along Deerpath Bike Trail, detour to Pike Marsh trail, and back to car at boat launch

3 Hooded Mergansers included one on nest at Deer Path trail north marsh

6-10-08

Pair Black-billed Cuckoos observed in large crack willow near park road near W terminus of Deerpath Trail

6-12-08

QPt2 route

2 adults + 2 fledglings Field Sparrows near field opposite manager's residence

1 male + 1 female Scarlet Tanager, female with nesting material, at start of trail to 2

Indigo Bunting – along trail to QPt2 – female with food

6-17-08

C1A – juvenile Northern Flicker

6-18-08

C1A

Pair White-breasted Nuthatches at hole

F2

Eastern Bluebird female carrying food

6-20-08

Family group Blue Jays near F1

One pair of Scarlet Tanagers at F1

6-24-08

Deerpath Trail marsh:

1 pair adults + one juvenile “knee high” Sandhill Cranes

6-27-08

To Pt 4: 1 adult feeding two juvenile Field Sparrows, field along James Rd across from manager house

P6 6: Total of 5 male and 2 female Bobolinks observed in hayfield

6-27-08 – 6-28-08 Night birding

11:30 pm – 4:00 am

Marsh Wrens and Sedge Wrens common night singers in many areas

Yellow-breasted Chat heard S of Deerpath Trail

When Black Rail tape played on marsh on W side Deerpath Pond, 1 Sora + one possible Virginia Rail heard (two notes only of latter) (not a Black Rail)

Swamp Sparrow and Eastern Kingbird also heard along Deerpath

Screech Owls: 1 each at Deerpath Parking, Sunset Trail, and north edge of Pike Marsh loop (called in with tape)

1 Great-horned Owl at Turner Lake campground (not called in)

6-28-08

Hooded Warbler heard on W side Boat Launch Road

Ruby-throated Hummingbird at office feeder

Goldfinch trail: One adult Eastern Bluebird with one juvenile

Night birding: Sora heard marsh outlet along Fox River, Goldfinch Trail, and Screech Owl heard near Nature Trail.

6-29-08

Dickcissel heard NE corner Park Rd-Office Rd

Two adult + two fledgling Lark Sparrows feeding in gravel by corner of main road and road to office

Walk back from B6 – Adult female Rose-breasted Grosbeak feeding juvenile

7-5-08

Mowing hayfield W of manager's residence

Adult Field Sparrow feeding juvenile near A3

Juvenile Eastern Bluebird near Prairie Hill parking

2 Orchard Oriole pairs near Prairie Hill parking

7-14-08

Near C1: Mourning Dove carrying nesting material

Near C1: Red-eyed Vireo feeding Brown-headed Cowbird fledgling

7-22-08

Juvenile N Flicker near A3

7-25-08

Near C2: Great-horned Owl flew by chased by two American Robins

Between C3 – C4: Two adults + one juvenile Black Tern observed

Between C4 and dock: at least 3 juvenile Black Terns seen with a small flock of 10 Black terns.

Osprey diving for fish near boat dock

7-31-08

Point E1 includes 1 adult Mallard with 7 juveniles

Pt E3 includes 1 adult Mallard with 5 juveniles

8-14-08

1 American Woodcock flushed from near point B1 while taking plant data for transect

APPENDIX A
Chain O Lakes 2008 Avian Survey Points
Margo Milde

Quality Survey Points

COLF1	N42.46328 W088.19734
COLF2	N42.46332 W088.20105
COL1	N42.45558 W088.19021
COL2	N42.47137 W088.19274
COL3	N42.46239 W088.17048
COL4	N42.46103 W088.20799
COL5	N42.47122 W088.17832
COL6	N42.46517 W088.20797
Oak Pt.	N42.37495 W088.17188
Grass Island (GeoTube Island) (same as E3)	N42.45262 W088.15744

Transect Points

COLA1	N42.46671 W088.19382
COLA2	N42.45977 W088.19332
COLA3	N42.45972 W088.20365
COLA4	N42.45290 W088.20334
COLA5	N42.45268 W088.19369
COLA6	N42.44560 W088.19363
COLA7	N42.43980 W088.19314
COLB1	N42.47412 W088.18395
COLB2	N42.46689 W088.18407
COLB3	N42.45949 W088.18419
COLB4	N42.45275 W088.18381
COLB5	N42.44576 W088.18368
COLB6	N42.44076 W088.18396
COLC1	N42.47385 W088.17388
COLC2	N42.46695 W088.17398
COLC3	N42.45960 W088.17431
COLC4	N42.45322 W088.17293
COLC5	N42.44729 W088.17353
COLC6	N42.44019 W088.17400
COLD1	N42.47513 W088.16722
COLD2	N42.47397 W088.16561
COLD3	N42.47515 W088.16304
COLD4	N42.47397 W088.15561
COLE1	N42.46003 W088.14523
COLE2	N42.45959 W088.15679
COLE3	N42.45262 W088.15744
COLE4	N42.46005 W088.16388
COLE5	N42.45330 W088.16561

Appendix B

Chain O' Lakes State Park – 2008 Avian Survey
State Endangered/Threatened Bird Species Found during Survey
Using Endangered/Threatened List Illinois State Endangered/Threatened Birds as of Oct 30 2009
Observer: Margo Milde

Endangered

Chlidonias niger

Black Tern

(confirmed nester)

- 6-11-08 and 6-24-08: an individual adult Black Tern was observed at Deer Path Trail Marsh
Deer Path Marsh: N42.45718 W088.19141
- 7-25-08: two adults plus one juvenile Black Terns were observed flying low over the Fox River between points C3 – C4
Point C3: N42.45960 W088.17431
Point C4: N42.45322 W088.17293
- 7-25-08: (same date): three juvenile Black Terns flying in a small group of about 10 Black Terns near point C4.
Point C4: N42.45322 W088.17293

+Coccyzus erythrophthalmus

Black-billed Cuckoo

(probable nester)

- 5-28-08: One individual was heard calling from brushy habitat just west of Qualitative Study point #5 on 5-28-08
Qualitative Study point #5: N42.47122 W088.17832
- 6-16-08: One individual was heard calling from brushy habitat between point B1 and B2:
N42.47006 W088.18398
- 6-20-08: One individual was heard calling from brushy habitat near point A5:
Point A5: N42.45268 W088.19369
- A pair of Black-billed Cuckoos was observed in a large willow at the junction of the Deer Path Trail and the main Bridle trail – Park Rd:
N42.45718 W088.19661

Nycticorax nycticorax

Black-crowned Night-Heron

- July 25 2008: Two individuals were seen flying low over the Fox River near point C4 (no evidence of nesting in the park)
Point C4: N42.45322 W088.17293

Pandion haliaetus

Osprey

- July 25 2008: One individual seen flying overhead along the Fox River between Point C3 and Hackberry Island, and again seen later that morning diving for fish in the Fox River between Point C4 and the main boat launch of the Park. There is no evidence of nesting in the Park.
Hackberry Island: N42.46226 W088.17410
Point C3: N42.45960 W088.17431
Point C4: N42.45322 W088.17293
Boat launch: N42.44740 W088.18120

Sterna forsteri

Forster's Tern

(attempted nesting, prob. unsuccessfully in 2008)

- May 29 2008: 6 seen flying over Grass Lake near Point E3
Point E3: N42.45262 W088.15744:
- May 29 2008: 2 seen flying over Grass Lake near Point E4
Point E4: N42.46005 W088.16388
- June 4 2008: 2 seen over Grass Lake near Point C5

- Point C5: N42.44729 W088.17353
- June 4 2008: 4 seen over Grass Lake near Point C6
Point C6: N42.44019 W088.17400
- June 4 2008: 1 seen over Point E3 (Grass Island) on Grass Lake, and (same bird?) observed several hours later at same location
Point E3: N42.45262 W088.15744
- June 4 2008: 2 seen flying near point E4 (Grass Lake)
Point E4: N42.46005 W088.16388
- June 4 2008: 1 seen flying near point E5 (Grass Lake inlet)
Point E5: N42.45330 W088.16561
- June 1 2008: 1 individual seen flying over the Fox River at Point C1
Point C1: N42.47385 W088.17388
- June 1 2008: 9 were seen flying in a group over the Fox River near Point C4
Point C4: N42.45322 W088.17293
- June 12 2008: 1 seen flying over Grass Lake near Point C5
Point C5: N42.44729 W088.17353
- June 12 2008: 1 seen flying over Grass Lake near Point C6
Point C6: N42.44019 W088.17400
- June 12 2008: 3 seen flying over Grass Lake near Point E5
Point E5: N42.45330 W088.16561
- June 12 2008: 3 seen flying near Grass Island (point E3)
Point E3: N42.45262 W088.15744
- July 18 2008: 2 seen flying over the Fox River near point C3
Point C3: N42.45960 W088.17431
- July 18 2008: 3 seen flying over the Fox River near point C4
Point C4: N42.45322 W088.17293
- July 31 2008: 2 seen flying near Point C6
Point C6: N42.44019 W088.17400
- July 31 2008: 1 seen flying near Point E3
Point E3: N42.45262 W088.15744

Threatened

Dendroica cerulea

Cerulean Warbler

(probable nester)

- May 28 2008: 1 Cerulean Warbler heard singing near Deer Path Trailhead parking (note: this bird was not heard again during the period and was possibly a late migrant)
Deer Path Trailhead Parking: N42.45740 W088.1850
- June 12 2008: 2 Cerulean Warblers heard singing at Oak Point:
Oak Point: N42.37495 W088.17188

Ixobrychus exilis

Least Bittern

(probable nester)

- June 123 2008: One Least Bittern seen briefly jumping up out of marsh in response to taped call played near point C5, marsh bordering on Grass Lake
Point C5: N42.44729 W088.17353
- June 25 2008: One Least Bittern heard repeatedly calling in marsh near point D4:
Point D4: N42.47397 W088.15561

+ *Note on this listing per the IL Endangered Species Protection Board: - "The Board recommended this species for listing as threatened. Board staff incorrectly listed the species as endangered in amendment to 17 Ill. Adm. Code 1010 (2009). It will remain listed as endangered until the Administrative Rule is corrected. At that time, this publication will also be corrected."*

Appendix C

Partial listing of avian species utilizing shrubland at Chain O' Lake State Park 2008 avian census

Observer: Margo Milde

American Woodcock
Mourning Dove
Ruby-throated Hummingbird
Northern Flicker
Alder Flycatcher
Least Flycatcher
Brown Thrasher
Blue-winged Warbler
Yellow warbler
Common Yellowthroat
Eastern Towhee
Song Sparrow
Swamp Sparrow
Northern Cardinal
Indigo Bunting

Chain O'Lakes State Park
2008 Compilation-Observer: Margo Milde

Species	In	FO	A1				A2				A3				At
			At	Out	AtFO	OutFO	At	Out	AtFO	OutFO	At	Out	AtFO	OutFO	
Acadian flycatcher															
Acadian flycatcher															
Acadian flycatcher															
Acadian flycatcher															
Acadian flycatcher															
Acadian flycatcher															
Acadian flycatcher															
Transect legs where found															
Transect points where found															
Qualitative study areas where found															
Total Transect Legs where found:	2														
Total Transect Points where found:	0														
Total Qualitative Study Areas were found:	1														
Alder flycatcher															
Alder flycatcher															
Alder flycatcher															
Alder flycatcher															
Alder flycatcher															
Alder flycatcher															
Alder flycatcher															
Alder flycatcher															
Transect legs where found															
Transect points where found															
Qualitative study areas where found															
Total Transect Legs where found:	4														
Total Transect Points where found:	4														
Total Qualitative Study Areas were found:	2														
American coot															
American coot															
American coot															
American coot															
American coot															
American coot															
American coot															
American coot															
Transect legs where found															
Transect points where found															
Qualitative study areas where found															
Total Transect Legs where found:	0														
Total Transect Points where found:	1														
Total Qualitative Study Areas were found:	1														
American crow	2	1										2			
American crow	1				3	1						1			
American crow															
American crow					1				1						
American crow															1
American crow															
American crow															
Transect legs where found	1			1					1						

Black-crowned night heron				
Black-crowned night heron				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	0			
Total Transect Points where found:	1			
Total Qualitative Study Areas were found:	0			
Blackpoll warbler				
Blackpoll warbler				
Blackpoll warbler				
Blackpoll warbler				
Blackpoll warbler				
Blackpoll warbler				
Blackpoll warbler				
Blackpoll warbler				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	1			
Total Transect Points where found:	0			
Total Qualitative Study Areas were found:	1			
Black-throated green warbler				
Black-throated green warbler				
Black-throated green warbler				
Black-throated green warbler				
Black-throated green warbler				
Black-throated green warbler				
Black-throated green warbler				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	0			
Total Transect Points where found:	1			
Total Qualitative Study Areas were found:	0			
Blue grosbeak				
Blue grosbeak				
Blue grosbeak				
Blue grosbeak				
Blue grosbeak				
Blue grosbeak				
Blue grosbeak				
Blue grosbeak				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	0			
Total Transect Points where found:	0			
Total Qualitative Study Areas were found:	2			
Blue jay				
Blue jay			1	1
Blue jay	1	2		
Blue jay			2	
Blue jay				1

Blue jay						
Blue jay	3	1	2	1		1
Blue jay						3
Transect legs where found	1		1		1	
Transect points where found		1				1
Qualitative study areas where found						
Total Transect Legs where found:	23					
Total Transect Points where found:	19					
Total Qualitative Study Areas were found:	8					
Blue-gray gnatcatcher						
Blue-gray gnatcatcher			2		1	1
Blue-gray gnatcatcher				1	2	
Blue-gray gnatcatcher				1	1	
Blue-gray gnatcatcher						
Blue-gray gnatcatcher						
Blue-gray gnatcatcher	1	1		1	1	1
Blue-gray gnatcatcher						
Transect legs where found	1		1		1	1
Transect points where found		1		1		1
Qualitative study areas where found						
Total Transect Legs where found:	19					
Total Transect Points where found:	11					
Total Qualitative Study Areas were found:	7					
Blue-winged teal						
Blue-winged teal						
Blue-winged teal						
Blue-winged teal						
Blue-winged teal						
Blue-winged teal						
Blue-winged teal						
Blue-winged teal						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	2					
Total Transect Points where found:	1					
Total Qualitative Study Areas were found:	2					
Bobolink						
Bobolink						
Bobolink						
Bobolink						
Bobolink						
Bobolink						
Bobolink						
Bobolink						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	0					
Total Transect Points where found:	0					
Total Qualitative Study Areas were found:	2					
Brown thrasher						
Brown thrasher						
Brown thrasher						
Brown thrasher						

Brown thrasher				
Brown thrasher				
Brown thrasher				
Brown thrasher				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	0			
Total Transect Points where found:	0			
Total Qualitative Study Areas were found:	2			
Brown-headed cowbird				
Brown-headed cowbird		2	1	1
Brown-headed cowbird	2	1	3	2
Brown-headed cowbird			2	4
Brown-headed cowbird				
Brown-headed cowbird				1
Brown-headed cowbird				
Transect legs where found	1		1	1
Transect points where found		1		1
Qualitative study areas where found				
Total Transect Legs where found:	19			
Total Transect Points where found:	12			
Total Qualitative Study Areas were found:	8			
Canada goose				
Canada goose				
Canada goose				
Canada goose				
Canada goose				
Canada goose				
Canada goose				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	13			
Total Transect Points where found:	11			
Total Qualitative Study Areas were found:	5			
Canada warbler				
Canada warbler				
Canada warbler				
Canada warbler				
Canada warbler				
Canada warbler				
Canada warbler				
Canada warbler				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	5			
Total Transect Points where found:	1			
Total Qualitative Study Areas were found:	1			
Caspian tern				
Caspian tern				
Caspian tern				

Caspian tern						
Caspian tern						
Caspian tern						
Caspian tern						
Caspian tern						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	6					
Total Transect Points where found:	4					
Total Qualitative Study Areas were found:	1					
Cedar waxwing	2			1	1	
Cedar waxwing	1	2			1	
Cedar waxwing	2		2	3		
Cedar waxwing						
Cedar waxwing						
Cedar waxwing	2			2	2	
Cedar waxwing						
Cedar waxwing						2
Transect legs where found	1		1	1		1
Transect points where found		1			1	1
Qualitative study areas where found						
Total Transect Legs where found:	23					
Total Transect Points where found:	19					
Total Qualitative Study Areas were found:	8					
Cerulean warbler						
Cerulean warbler						
Cerulean warbler						
Cerulean warbler						
Cerulean warbler						
Cerulean warbler						
Cerulean warbler						
Cerulean warbler						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	0					
Total Transect Points where found:	0					
Total Qualitative Study Areas were found:	1					
Chestnut-sided warbler						
Chestnut-sided warbler						
Chestnut-sided warbler						
Chestnut-sided warbler						
Chestnut-sided warbler						
Chestnut-sided warbler						
Chestnut-sided warbler						
Chestnut-sided warbler						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	1					
Total Transect Points where found:	0					
Total Qualitative Study Areas were found:	0					
Chimney swift						

Chimney swift				2	
Chimney swift					
Chimney swift					
Chimney swift					
Chimney swift					
Chimney swift					
Chimney swift					
	Transect legs where found			1	
	Transect points where found				1
	Qualitative study areas where found				
	Total Transect Legs where found:	2			
	Total Transect Points where found:	2			
	Total Qualitative Study Areas were found:	2			
Chipping sparrow		1	1		
Chipping sparrow	3			4	
Chipping sparrow		1		1	
Chipping sparrow				1	
Chipping sparrow					
Chipping sparrow					
Chipping sparrow					
Chipping sparrow					
	Transect legs where found	1	1		1
	Transect points where found			1	
	Qualitative study areas where found				
	Total Transect Legs where found:	6			
	Total Transect Points where found:	3			
	Total Qualitative Study Areas were found:	6			
Clay-colored sparrow		1			
Clay-colored sparrow		1			
Clay-colored sparrow		1			
Clay-colored sparrow		1			
Clay-colored sparrow					
Clay-colored sparrow					
Clay-colored sparrow					
Clay-colored sparrow					
	Transect legs where found				
	Transect points where found		1		
	Qualitative study areas where found				
	Total Transect Legs where found:	0			
	Total Transect Points where found:	1			
	Total Qualitative Study Areas were found:	2			
Cliff swallow					
Cliff swallow					
Cliff swallow					
Cliff swallow					
Cliff swallow					
Cliff swallow					
Cliff swallow					
Cliff swallow					
	Transect legs where found				
	Transect points where found				
	Qualitative study areas where found				
	Total Transect Legs where found:	0			
	Total Transect Points where found:	1			
	Total Qualitative Study Areas were found:	0			

Common grackle						2		
Common grackle			1		1			
Common grackle		2	1		3	3	1	2
Common grackle								
Common grackle					1			
Common grackle								
Common grackle								
Transect legs where found			1		1			1
Transect points where found		1					1	
Qualitative study areas where found								
Total Transect Legs where found:	24							
Total Transect Points where found:	13							
Total Qualitative Study Areas were found:	9							
Common yellowthroat								1
Common yellowthroat	1	1			3	5		3
Common yellowthroat	1	2	4		2	6	2	3
Common yellowthroat	1	1	2		4	9		1
Common yellowthroat								1
Common yellowthroat	5	1	6		1	6		4
Common yellowthroat								1
Transect legs where found	1		1			1		1
Transect points where found		1			1		1	
Qualitative study areas where found								
Total Transect Legs where found:	39							
Total Transect Points where found:	26							
Total Qualitative Study Areas were found:	9							1
Cooper's hawk								
Cooper's hawk								
Cooper's hawk								
Cooper's hawk								
Cooper's hawk								
Cooper's hawk								
Cooper's hawk								
Transect legs where found								
Transect points where found								
Qualitative study areas where found								
Total Transect Legs where found:	3							
Total Transect Points where found:	0							
Total Qualitative Study Areas were found:	1							
Dickcissel								
Dickcissel								
Dickcissel								
Dickcissel								
Dickcissel								
Dickcissel								
Dickcissel								
Transect legs where found								
Transect points where found								
Qualitative study areas where found								
Total Transect Legs where found:	0							
Total Transect Points where found:	0							
Total Qualitative Study Areas were found:	3							

Double-crested cormorant					
Double-crested cormorant					
Double-crested cormorant					
Double-crested cormorant					
Double-crested cormorant					
Double-crested cormorant					
Double-crested cormorant					
Double-crested cormorant					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	14				
Total Transect Points where found:	5				
Total Qualitative Study Areas were found:	3				
Downy woodpecker					1
Downy woodpecker				1	
Downy woodpecker	2	2		1 1	
Downy woodpecker			2		
Downy woodpecker					
Downy woodpecker		1	1	1	
Downy woodpecker					1
Transect legs where found	1	1	1	1	
Transect points where found		1		1	1
Qualitative study areas where found					
Total Transect Legs where found:	26				
Total Transect Points where found:	14				
Total Qualitative Study Areas were found:	7				
Dowitcher sp.					
Dowitcher sp.					
Dowitcher sp.					
Dowitcher sp.					
Dowitcher sp.					
Dowitcher sp.					
Dowitcher sp.					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	1				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	0				
Dunlin					
Dunlin					
Dunlin					
Dunlin					
Dunlin					
Dunlin					
Dunlin					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	1				
Total Transect Points where found:	1				

Total Qualitative Study Areas were found:	0				
Eastern bluebird					2
Eastern bluebird			1		2
Eastern bluebird	2	1	1		1
Eastern bluebird					
Eastern bluebird					
Eastern bluebird					
Eastern bluebird					
Eastern bluebird					
Transect legs where found	1	1			
Transect points where found			1		1
Qualitative study areas where found					
Total Transect Legs where found:	6				
Total Transect Points where found:	4				
Total Qualitative Study Areas were found:	6				
Eastern kingbird		1			
Eastern kingbird			1		
Eastern kingbird					1
Eastern kingbird					
Eastern kingbird					
Eastern kingbird					
Eastern kingbird					
Eastern kingbird					
Transect legs where found					
Transect points where found		1	1		1
Qualitative study areas where found					
Total Transect Legs where found:	12				
Total Transect Points where found:	10				
Total Qualitative Study Areas were found:	7				
Eastern meadowlark					2
Eastern meadowlark					
Eastern meadowlark					
Eastern meadowlark					
Eastern meadowlark					
Eastern meadowlark					
Eastern meadowlark					
Eastern meadowlark					
Transect legs where found					
Transect points where found					1
Qualitative study areas where found					
Total Transect Legs where found:	0				
Total Transect Points where found:	1				
Total Qualitative Study Areas were found:	2				
Eastern phoebe					
Eastern phoebe					
Eastern phoebe					
Eastern phoebe					
Eastern phoebe					
Eastern phoebe					
Eastern phoebe					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	6				

Total Transect Points where found:	3				
Total Qualitative Study Areas were found:	6				
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	0				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	1				
Eastern towhee					1
Eastern towhee					1
Eastern towhee	2	1	1	2	
Eastern towhee					
Eastern towhee					
Eastern towhee					
Eastern towhee					
Eastern towhee					
Transect legs where found	1		1	1	
Transect points where found		1			1
Qualitative study areas where found					
Total Transect Legs where found:	4				
Total Transect Points where found:	2				
Total Qualitative Study Areas were found:	4				
Eastern wood peewee					
Eastern wood peewee			1	1	1
Eastern wood peewee		1	1		1
Eastern wood peewee				1	1
Eastern wood peewee					
Eastern wood peewee					
Eastern wood peewee	5			2	1
Eastern wood peewee					1
Transect legs where found	1		1	1	1
Transect points where found		1		1	1
Qualitative study areas where found					
Total Transect Legs where found:	21				
Total Transect Points where found:	12				
Total Qualitative Study Areas were found:	7				
Empi sp. (small flycatcher)					
Empi sp. (small flycatcher)					
Empi sp. (small flycatcher)					
Empi sp. (small flycatcher)					
Empi sp. (small flycatcher)					
Empi sp. (small flycatcher)					
Empi sp. (small flycatcher)					
Empi sp. (small flycatcher)					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					

Total Transect Legs where found:	0						
Total Transect Points where found:	0						
Total Qualitative Study Areas were found:	1						
European starling		2		3	5		
European starling						7	
European starling				1	2		
European starling							1
European starling							
European starling							
European starling							
Transect legs where found		1			1		
Transect points where found				1			1
Qualitative study areas where found							
Total Transect Legs where found:	7						
Total Transect Points where found:	4						
Total Qualitative Study Areas were found:	5						
Field sparrow							3
Field sparrow	2	2		1		5	3
Field sparrow	1	2	2	3		2	1
Field sparrow	1	3	1	1		7	3
Field sparrow							2
Field sparrow	9	4	3	2		2	3
Field sparrow						1	4
Field sparrow							
Transect legs where found	1		1		1		1
Transect points where found		1				1	
Qualitative study areas where found							1
Total Transect Legs where found:	11						
Total Transect Points where found:	5						
Total Qualitative Study Areas were found:	6						
Forster's tern							
Forster's tern							
Forster's tern							
Forster's tern							
Forster's tern							
Forster's tern							
Forster's tern							
Forster's tern							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	9						
Total Transect Points where found:	6						
Total Qualitative Study Areas were found:	1						
Grasshopper sparrow							
Grasshopper sparrow							
Grasshopper sparrow							
Grasshopper sparrow							
Grasshopper sparrow							
Grasshopper sparrow							
Grasshopper sparrow							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							

Total Transect Legs where found:	0				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	3				
Gray catbird					2
Gray catbird		1			
Gray catbird	1		4		
Gray catbird				1	
Gray catbird					
Gray catbird				1	1
Gray catbird					
Transect legs where found	1		1		1
Transect points where found		1			
Qualitative study areas where found				1	
Total Transect Legs where found:	21				
Total Transect Points where found:	14				
Total Qualitative Study Areas were found:	7				
Great blue heron				1	
Great blue heron					
Great blue heron					
Great blue heron					
Great blue heron					
Great blue heron					
Great blue heron					
Transect legs where found			1		
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	20				
Total Transect Points where found:	10				
Total Qualitative Study Areas were found:	4				
Great egret					
Great egret					
Great egret					
Great egret					
Great egret					
Great egret					
Great egret					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	11				
Total Transect Points where found:	7				
Total Qualitative Study Areas were found:	4				
Great-crested flycatcher		1			
Great-crested flycatcher					
Great-crested flycatcher					
Great-crested flycatcher			1		
Great-crested flycatcher				1	
Great-crested flycatcher					
Great-crested flycatcher					
Transect legs where found			1		1
Transect points where found		1			

Qualitative study areas where found
Total Transect Legs where found: 10
Total Transect Points where found: 10
Total Qualitative Study Areas were found: 5

Greater yellowlegs
Greater yellowlegs
Greater yellowlegs
Greater yellowlegs
Greater yellowlegs
Greater yellowlegs
Greater yellowlegs
Greater yellowlegs

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 1
Total Transect Points where found: 0
Total Qualitative Study Areas were found: 0

Green heron
Green heron
Green heron
Green heron
Green heron
Green heron
Green heron
Green heron

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 11
Total Transect Points where found: 5
Total Qualitative Study Areas were found: 4

Great horned owl
Great horned owl
Great horned owl
Great horned owl
Great horned owl
Great horned owl
Great horned owl
Great horned owl

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 1
Total Transect Points where found: 0
Total Qualitative Study Areas were found: 2

Gull sp.
Gull sp.
Gull sp.
Gull sp.
Gull sp.
Gull sp.
Gull sp.

Transect legs where found

Transect legs where found									
Transect points where found									
Qualitative study areas where found									
Total Transect Legs where found:	0								
Total Transect Points where found:	0								
Total Qualitative Study Areas were found:	1								
Hooded warbler									
Hooded warbler									
Hooded warbler									
Hooded warbler									
Hooded warbler									
Hooded warbler									
Hooded warbler									
Hooded warbler									
Transect legs where found									
Transect points where found									
Qualitative study areas where found									
Total Transect Legs where found:	0								
Total Transect Points where found:	0								
Total Qualitative Study Areas were found:	1								
House finch									
House finch							2		
House finch									
House finch									
House finch									
House finch									
House finch									
House finch									
Transect legs where found								1	
Transect points where found									
Qualitative study areas where found									
Total Transect Legs where found:	3								
Total Transect Points where found:	1								
Total Qualitative Study Areas were found:	2								
House sparrow								5	
House sparrow								4	
House sparrow			3					10	
House sparrow								8	
House sparrow									
House sparrow									
House sparrow									
House sparrow									
Transect legs where found			1					1	
Transect points where found									
Qualitative study areas where found									
Total Transect Legs where found:	2								
Total Transect Points where found:	1								
Total Qualitative Study Areas were found:	1								
House wren									3
House wren	2	2	1	3			1	1	
House wren			1	5		10	3	1	
House wren			2		1	1	3		
House wren									3
House wren									
House wren	6		2	3		2			

Least bittern

Least bittern

Transect legs where found

Transect points where found

Qualitative study areas where found

Total Transect Legs where found: 0

Total Transect Points where found: 2

Total Qualitative Study Areas were found: 0

Least flycatcher

Least flycatcher

Least flycatcher

Least flycatcher

Least flycatcher

Least flycatcher

Least flycatcher

Least flycatcher

Transect legs where found

Transect points where found

Qualitative study areas where found

Total Transect Legs where found: 3

Total Transect Points where found: 3

Total Qualitative Study Areas were found: 2

Least sandpiper

Least sandpiper

Least sandpiper

Least sandpiper

Least sandpiper

Least sandpiper

Least sandpiper

Least sandpiper

Transect legs where found

Transect points where found

Qualitative study areas where found

Total Transect Legs where found: 0

Total Transect Points where found: 1

Total Qualitative Study Areas were found: 1

Lesser yellowlegs

Lesser yellowlegs

Lesser yellowlegs

Lesser yellowlegs

Lesser yellowlegs

Lesser yellowlegs

Lesser yellowlegs

Lesser yellowlegs

Transect legs where found

Transect points where found

Qualitative study areas where found

Total Transect Legs where found: 0

Total Transect Points where found: 0

Total Qualitative Study Areas were found: 1

Magnolia warbler

Magnolia warbler

Magnolia warbler

Magnolia warbler

Magnolia warbler

Magnolia warbler
Magnolia warbler
Magnolia warbler

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 1
Total Transect Points where found: 0
Total Qualitative Study Areas were found: 1

Mallard
Mallard
Mallards
Mallards
Mallards
Mallards
Mallards
Mallards

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 18
Total Transect Points where found: 10
Total Qualitative Study Areas were found: 7

Marsh wren
Marsh wren
Marsh wren
Marsh wren
Marsh wren
Marsh wren
Marsh wren
Marsh wren

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 23
Total Transect Points where found: 12
Total Qualitative Study Areas were found: 2

Merlin
Merlin
Merlin
Merlin
Merlin
Merlin
Merlin
Merlin

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 0
Total Transect Points where found: 0
Total Qualitative Study Areas were found: 1

Mourning dove
Mourning dove
Mourning dove
Mourning dove

1 1

Mourning dove				
Mourning dove				
Mourning dove				
Mourning dove				
Transect legs where found		1		
Transect points where found	1			1
Qualitative study areas where found				
Total Transect Legs where found:	14			
Total Transect Points where found:	11			
Total Qualitative Study Areas were found:	7			
Mourning warbler				
Mourning warbler				
Mourning warbler				
Mourning warbler				
Mourning warbler				
Mourning warbler				
Mourning warbler				
Mourning warbler				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	1			
Total Transect Points where found:	0			
Total Qualitative Study Areas were found:	2			
Mute swan				
Mute swan				
Mute swan				
Mute swan				
Mute swan				
Mute swan				
Mute swan				
Mute swan				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	1			
Total Transect Points where found:	1			
Total Qualitative Study Areas were found:	0			
Nashville warbler				
Nashville warbler				
Nashville warbler				
Nashville warbler				
Nashville warbler				
Nashville warbler				
Nashville warbler				
Nashville warbler				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	0			
Total Transect Points where found:	0			
Total Qualitative Study Areas were found:	1			
Northern bobwhite				
Northern bobwhite				

Northern rough-winged swallow
 Northern rough-winged swallow
 Northern rough-winged swallow
 Northern rough-winged swallow
 Northern rough-winged swallow
 Northern rough-winged swallow
 Northern rough-winged swallow
 Transect legs where found
 Transect points where found
 Qualitative study areas where found
 Total Transect Legs where found: 8
 Total Transect Points where found: 2
 Total Qualitative Study Areas were found: 4

1

Northern shoveler
 Northern shoveler
 Northern shoveler
 Northern shoveler
 Northern shoveler
 Northern shoveler
 Northern shoveler
 Northern shoveler
 Transect legs where found
 Transect points where found
 Qualitative study areas where found
 Total Transect Legs where found: 0
 Total Transect Points where found: 2
 Total Qualitative Study Areas were found: 0

Orchard oriole
 Orchard oriole
 Orchard oriole
 Orchard oriole
 Orchard oriole
 Orchard oriole
 Orchard oriole
 Orchard oriole
 Orchard oriole
 Transect legs where found
 Transect points where found
 Qualitative study areas where found
 Total Transect Legs where found: 2
 Total Transect Points where found: 4
 Total Qualitative Study Areas were found: 6

Osprey
 Osprey
 Osprey
 Osprey
 Osprey
 Osprey
 Osprey
 Osprey
 Osprey
 Transect legs where found
 Transect points where found
 Qualitative study areas where found
 Total Transect Legs where found: 1
 Total Transect Points where found: 0
 Total Qualitative Study Areas were found: 1

Ovenbird

Ovenbird
Ovenbird
Ovenbird
Ovenbird
Ovenbird
Ovenbird
Ovenbird

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 0
Total Transect Points where found: 1
Total Qualitative Study Areas were found: 1

Pectoral sandpiper
Pectoral sandpiper
Pectoral sandpiper
Pectoral sandpiper
Pectoral sandpiper
Pectoral sandpiper
Pectoral sandpiper
Pectoral sandpiper

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 0
Total Transect Points where found: 1
Total Qualitative Study Areas were found: 1

Prothonotary warbler
Prothonotary warbler
Prothonotary warbler
Prothonotary warbler
Prothonotary warbler
Prothonotary warbler
Prothonotary warbler
Prothonotary warbler

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 1
Total Transect Points where found: 0
Total Qualitative Study Areas were found: 1

Purple martin
Purple martin
Purple martin
Purple martin
Purple martin
Purple martin
Purple martin
Purple martin

Transect legs where found
Transect points where found
Qualitative study areas where found
Total Transect Legs where found: 15
Total Transect Points where found: 11
Total Qualitative Study Areas were found: 1

2

2

1

1

Red-bellied woodpecker					1
Red-bellied woodpecker		1			
Red-bellied woodpecker	1	1	1		
Red-bellied woodpecker					
Red-bellied woodpecker	1				
Red-bellied woodpecker					
Red-bellied woodpecker					
Transect legs where found	1		1		
Transect points where found		1			1
Qualitative study areas where found					
Total Transect Legs where found:	14				
Total Transect Points where found:	15				
Total Qualitative Study Areas were found:	7				
Red-eyed vireo					1
Red-eyed vireo				1	
Red-eyed vireo					
Red-eyed vireo					
Red-eyed vireo	1		1		
Red-eyed vireo					
Red-eyed vireo					
Red-eyed vireo					
Transect legs where found	1		1		1
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	17				
Total Transect Points where found:	8				
Total Qualitative Study Areas were found:	7				
Red-headed woodpecker					
Red-headed woodpecker					
Red-headed woodpecker					
Red-headed woodpecker					
Red-headed woodpecker					
Red-headed woodpecker					
Red-headed woodpecker					
Red-headed woodpecker					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	2				
Total Transect Points where found:	1				
Total Qualitative Study Areas were found:	1				
Red-tailed hawk					
Red-tailed hawk			1		1
Red-tailed hawk				1	
Red-tailed hawk		2			1
Red-tailed hawk					
Red-tailed hawk			2		
Red-tailed hawk					1
Red-tailed hawk					
Transect legs where found		1		1	1
Transect points where found		1		1	1
Qualitative study areas where found					
Total Transect Legs where found:	7				
Total Transect Points where found:	7				
Total Qualitative Study Areas were found:	2				

Red-winged blackbird						1
Red-winged blackbird			7	14		3
Red-winged blackbird	2		5	8		2
Red-winged blackbird		5	6	5	3	
Red-winged blackbird						1
Red-winged blackbird		2	3	11		1
Red-winged blackbird						
Transect legs where found	1	1		1		1
Transect points where found		1	1		1	1
Qualitative study areas where found						
Total Transect Legs where found:	40					
Total Transect Points where found:	27					
Total Qualitative Study Areas were found:	9					
Ring-billed gull						
Ring-billed gull		1				
Ring-billed gull						
Ring-billed gull						
Ring-billed gull						
Ring-billed gull						
Ring-billed gull						
Transect legs where found						
Transect points where found		1				
Qualitative study areas where found						
Total Transect Legs where found:	12					
Total Transect Points where found:	8					
Total Qualitative Study Areas were found:	0					
Rose-breasted grosbeak						
Rose-breasted grosbeak		1				
Rose-breasted grosbeak						
Rose-breasted grosbeak						
Rose-breasted grosbeak						
Rose-breasted grosbeak						
Rose-breasted grosbeak						
Transect legs where found		1				
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	10					
Total Transect Points where found:	8					
Total Qualitative Study Areas were found:	6					
Ruby-throated hummingbird						
Ruby-throated hummingbird						
Ruby-throated hummingbird						
Ruby-throated hummingbird						
Ruby-throated hummingbird						
Ruby-throated hummingbird						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	1					
Total Transect Points where found:	2					

Total Qualitative Study Areas were found:	1				
Ruddy turnstone					
Ruddy turnstone					
Ruddy turnstone					
Ruddy turnstone					
Ruddy turnstone					
Ruddy turnstone					
Ruddy turnstone					
Ruddy turnstone					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	1				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	0				
Sandhill crane					
Sandhill crane				1	
Sandhill crane		2		3	
Sandhill crane			2		
Sandhill crane					
Sandhill crane					
Sandhill crane					
Sandhill crane					
Transect legs where found			1		
Transect points where found	1		1	1	1
Qualitative study areas where found					
Total Transect Legs where found:	14				
Total Transect Points where found:	13				
Total Qualitative Study Areas were found:	6				
Savanna sparrow					
Savanna sparrow					
Savanna sparrow					
Savanna sparrow					
Savanna sparrow					
Savanna sparrow					
Savanna sparrow					
Savanna sparrow					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	1				
Total Transect Points where found:	1				
Total Qualitative Study Areas were found:	2				
Scarlet tanager					
Scarlet tanager		1		1	
Scarlet tanager			1		
Scarlet tanager				1	
Scarlet tanager					2
Scarlet tanager	1		1	1	
Scarlet tanager					2
Scarlet tanager					
Transect legs where found	1	1	1		1
Transect points where found				1	
Qualitative study areas where found					
Total Transect Legs where found:	7				

Total Transect Points where found: 3
Total Qualitative Study Areas were found: 5

Sedge wren

Sedge wren 1

Sedge wren 1

Sedge wren

Sedge wren

Sedge wren 1

Sedge wren

Sedge wren

Transect legs where found 1

Transect points where found 1

Qualitative study areas where found 1

Total Transect Legs where found: 9

Total Transect Points where found: 6

Total Qualitative Study Areas were found: 1

Semipalmated plover

Semipalmated plover

Semipalmated plover

Semipalmated plover

Semipalmated plover

Semipalmated plover

Semipalmated plover

Semipalmated plover

Transect legs where found

Transect points where found

Qualitative study areas where found

Total Transect Legs where found: 1

Total Transect Points where found: 1

Total Qualitative Study Areas were found: 1

Semipalmated sandpiper

Semipalmated sandpiper

Semipalmated sandpiper

Semipalmated sandpiper

Semipalmated sandpiper

Semipalmated sandpiper

Semipalmated sandpiper

Semipalmated sandpiper

Transect legs where found

Transect points where found

Qualitative study areas where found

Total Transect Legs where found: 1

Total Transect Points where found: 1

Total Qualitative Study Areas were found: 1

Short-billed dowitcher

Short-billed dowitcher

Short-billed dowitcher

Short-billed dowitcher

Short-billed dowitcher

Short-billed dowitcher

Short-billed dowitcher

Short-billed dowitcher

Transect legs where found

Transect points where found

Qualitative study areas where found						
Total Transect Legs where found:	0					
Total Transect Points where found:	0					
Total Qualitative Study Areas were found:	1					
Song sparrow						4
Song sparrow	2	2	1	1	2	7
Song sparrow		3	2	2	19	1
Song sparrow	2	2		1	8	3
Song sparrow						2
Song sparrow						1
Song sparrow						1
Song sparrow	7	2	2	2	5	4
Song sparrow						4
						1
Transect legs where found	1		1		1	1
Transect points where found		1		1		1
Qualitative study areas where found						
Total Transect Legs where found:	38					
Total Transect Points where found:	27					
Total Qualitative Study Areas were found:	8					
Sora						
Sora						
Sora						
Sora						
Sora						
Sora						
Sora						
Sora						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	0					
Total Transect Points where found:	2					
Total Qualitative Study Areas were found:	2					
Spotted sandpiper						
Spotted sandpiper						
Spotted sandpiper						
Spotted sandpiper						
Spotted sandpiper						
Spotted sandpiper						
Spotted sandpiper						
Spotted sandpiper						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	10					
Total Transect Points where found:	9					
Total Qualitative Study Areas were found:	2					
Stilt sandpiper						
Stilt sandpiper						
Stilt sandpiper						
Stilt sandpiper						
Stilt sandpiper						
Stilt sandpiper						
Stilt sandpiper						
Stilt sandpiper						
Transect legs where found						

Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	0				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	1				
Swainson's thrush					
Swainson's thrush					
Swainson's thrush					
Swainson's thrush					
Swainson's thrush					
Swainson's thrush					
Swainson's thrush					
Swainson's thrush					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	2				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	0				
Swamp sparrow					
Swamp sparrow			3	1	
Swamp sparrow			2		
Swamp sparrow				2	
Swamp sparrow					
Swamp sparrow					
Swamp sparrow				1	
Swamp sparrow					
Transect legs where found				1	
Transect points where found			1		
Qualitative study areas where found					
Total Transect Legs where found:	34				
Total Transect Points where found:	21				
Total Qualitative Study Areas were found:	4				
Tennessee warbler					
Tennessee warbler					
Tennessee warbler					
Tennessee warbler					
Tennessee warbler					
Tennessee warbler					
Tennessee warbler					
Tennessee warbler					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	1				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	0				
Tree swallow					
Tree swallow			2	3	3
Tree swallow	1		2	2	1
Tree swallow			1	1	
Tree swallow					
Tree swallow					
Tree swallow					
Tree swallow					
Tree swallow	3	1	3	2	3

Tree swallow					
Transect legs where found	1	1	1	1	
Transect points where found		1	1		1
Qualitative study areas where found					
Total Transect Legs where found:	33				
Total Transect Points where found:	20				
Total Qualitative Study Areas were found:	9				
Turkey vulture					
Turkey vulture					
Turkey vulture					
Turkey vulture					
Turkey vulture					
Turkey vulture					
Turkey vulture					
Turkey vulture					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	3				
Total Transect Points where found:	1				
Total Qualitative Study Areas were found:	1				
Veery					
Veery					
Veery					
Veery					
Veery					
Veery					
Veery					
Veery					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	2				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	1				
Virginia rail					
Virginia rail					
Virginia rail					
Virginia rail					
Virginia rail					
Virginia rail					
Virginia rail					
Virginia rail					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	1				
Total Transect Points where found:	1				
Total Qualitative Study Areas were found:	0				
Warbling vireo			1		
Warbling vireo					
Warbling vireo					
Warbling vireo					
Warbling vireo					

Wilson's warbler				
Wilson's warbler				
Wilson's warbler				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	3			
Total Transect Points where found:	0			
Total Qualitative Study Areas were found:	1			
Wood duck				
Wood duck				
Wood duck				
Wood duck				
Wood duck				
Wood duck				
Wood duck				
Wood duck				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	9			
Total Transect Points where found:	6			
Total Qualitative Study Areas were found:	2			
Wood thrush				
Wood thrush				
Wood thrush				
Wood thrush				
Wood thrush				
Wood thrush				
Wood thrush				
Transect legs where found				
Transect points where found				
Qualitative study areas where found				
Total Transect Legs where found:	10			
Total Transect Points where found:	2			
Total Qualitative Study Areas were found:	1			
Yellow warbler				1
Yellow warbler		1	1	
Yellow warbler	1	1		
Yellow warbler				
Yellow warbler		1		
Yellow warbler				
Yellow warbler				
Transect legs where found		1	1	
Transect points where found	1			1
Qualitative study areas where found				
Total Transect Legs where found:	28			
Total Transect Points where found:	18			
Total Qualitative Study Areas were found:	7			
Yellow-billed cuckoo	1		2	1
Yellow-billed cuckoo				
Yellow-billed cuckoo				
Yellow-billed cuckoo				

Yellow-billed cuckoo						
Yellow-billed cuckoo						
Yellow-billed cuckoo						
Yellow-billed cuckoo						
Transect legs where found					1	
Transect points where found			1		1	
Qualitative study areas where found						
Total Transect Legs where found:	12					
Total Transect Points where found:	7					
Total Qualitative Study Areas were found:	5					
Yellow-breasted chat						
Yellow-breasted chat						
Yellow-breasted chat						
Yellow-breasted chat						
Yellow-breasted chat						
Yellow-breasted chat						
Yellow-breasted chat						
Yellow-breasted chat						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	1					
Total Transect Points where found:	2					
Total Qualitative Study Areas were found:	1					
Yellowlegs sp.						
Yellowlegs sp.						
Yellowlegs sp.						
Yellowlegs sp.						
Yellowlegs sp.						
Yellowlegs sp.						
Yellowlegs sp.						
Yellowlegs sp.						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	1					
Total Transect Points where found:	2					
Total Qualitative Study Areas were found:	1					
Yellow-throated vireo						
Yellow-throated vireo	1	1	1	1		
Yellow-throated vireo	1	1				
Yellow-throated vireo					1	
Yellow-throated vireo						1
Yellow-throated vireo				1		
Yellow-throated vireo					1	
Yellow-throated vireo						1
Transect legs where found	1		1	1	1	
Transect points where found		1		1	1	1
Qualitative study areas where found						
Total Transect Legs where found:	19					
Total Transect Points where found:	15					
Total Qualitative Study Areas were found:	8					

A4			A5				A6				A7				Walk out		B1					
Out	AtFO	OutFO	At	Out	AtFO	OutFO	At	Out	AtFO	OutFO	At	Out	AtFO	OutFO	In	FO	At	Out	AtFO	OutFO	At	
1		2			1			2		1			3		3	2						
		1				1			4	2		2	3									
1			1					1	1				2	1								
1				1				1					1			1						

7
1

1

1

1

2

1

1

2

1

1

5

1

1

2

2

1

3

9

1

1

1

1

1

2

1

1

1

1

3

1

1

1

	1	1	1	2	1	1	1	2	1
							1	4	2
							1	2	
3	2		1	2	1		1	2	1

	1				2				
2		1	2	9		3	3		
1	2	1	1		1	1	1	1	
		1				1			1
			2				3		
									1
2						1		6	
						1	1		1
							1		
1		1				1			1
						1		1	

1

1

3

1

1

2

1
1

1

1
2
2

1

1
1

2

10
2

1

1

1

1 1
1 1

1 1
1

2

1

1
2
1

1

1

1

2

1

1

1

1

2

2

1

2

1

2

4

3

1

2

1

1

2

9

5

1

1

1

2

1

1

1

3

1

1

6

2

1

1

			1		2		1		5
		1		1				2	
	1				1				
					1			1	
8	1	8	3	6	3	3	9	2	6
						16	2	14	5
						3	8	2	1
9	2	16	5	12	1	2			
1	2	9	2	17	1	6			
4		9	3		1	4			
1		1		1		1		1	
	1		1		1		1		1

1

1
1

1

1
1
2
1
1

1 3

1 2
1 1
1

1
1

1
1

1

2
1

1

1 2

1
1

1

1

3

1

1

1

1

2

1

1

1

1

1

2

1

1

1

1
1

1

1
2

1

1

2

1

1

1

1

1

1

1

1

1

5

2

3

1

1

1

3

1

1

1

1

1

1

1

1

2

11

8

1

2

3

5

1

2

5

1

2

1

1

1

1 1

2

1

2 1

1 1

1

1 2

1 1

1

7

1

1

1

2

1

1

1

1

1

2

1

1

2

1

1

1

1

1

1

1

1 1

1 1

1

1

1

1

1

1

1

2

1

1 1

1 1

1 1

1

1

1

1
1

1

1

1

1

1

1

1

1

1 2

1 1
1

1

1

1

1

1

1

1

1

2

2 1

1 1
2

1

1

2

1 4

1 2
5

3
3

1 2
2 2
1 1

1

1

1

1

1

1

1

1

1

1

2

2

2

1

2

5

1

2

5

1

10

2

1

3

1

1

1

5

2

3

1

1

1

1

3

1

1

1

1

1

5

1

1

1

1

1

1

1

1

1

1

1

3

1

3

3

1

1

1

1

3

1

1

3

1

1

1

1

1

1

1

2

1

1

1

1

1

1

1

2

1
1

1

1

4

2

1 4
1 1
1

1

1 1
1 1

1 1
1

1 2

3
3

7
1

1

1 1

1 1
1

2

2 3
2 5

3 5
1 1

1

8
5

1

1
1

1

1
1

2

1

1

2

1

1

1

1

1

1

1

1

3

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

		1		3		
		1		1		

1	1	1	1	1
2	1 2	1 1	1 1	1
2 1	1	1	2	1
1	1	1	1	1
		1	1 1	1
			1 1 1	1
1	1	1	1 2	1
1	1	1	1	1
			1	
	1			2
			1	1 2
1			1	1

1

13 11

8 6

1 6

11 3 6

2 3 2

1 6 1

1

5

9 7

8 3 3 3

1 4

5

1

1

1

1

1

1

1

1

1

1

3

1

1 1

1

2

1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

1

1

1

2
3

1

1

2

1

2

1

1

1

2

1

1

4

1

2

1

1

1

1

1

3

1 4

2 3

1

1 2

2

2

2 4
1 1

7
1 4

2 2

1

1

1

1

1

1

1

1

1

3

2 10

2 5

4

1

8 2

4

2

1 11

5

6

3 11

2 10

1 4

14

3 6

4

2

3 8

1 8

1 5

7

9

2

3

3 15

3 11

1 7

1

1

1

1

1

1

1

1

7

3 19

7

8

4 19

5 9

1 2

4

2

4

2 6

3 8

6

1

4

3 11

6

3

5

1

1

1

1

1

1

1

1

1

Tennessee warbler

3

4

2

2

3

6

3

2

7

2

6

6

1

1

1 1
1

2

1

2

1

2

1

1 1 2
1

1

1

1

1

2

1
1

2

1

2

1

1

1

1

1

2

4

1

1

1

1

1 2

1

2 2

1

1

2 2

3 4

1 1

2

1

1

1

2

1

1

1

1

1

1

3

1

1

1

1

3 1

1

1

2

1

1

2

1

1

1

1 3

3 1

1

1

2

1

1

2

1

1

2

2

9

3

1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

2

1

1 1
1

1
1

5
3
8
5

3

1 1
1
3 3

1 2
1 4
2

1

1 1
1 1
1 3

1

3
2

1

1 1
1

1 1
1

1 1
1

1

3
1

1

5
5
5

1 1
2 1
1

2

1

1

1

1 1
1

1

4
8
9
6

4

5 2
2 2
3 4
2 4

1 5
4 9
3 1
2 6

6

2 3
2 1
2 7
2 4

2

2 2
2 2

1

1 1
1

1 1
1

1 1
1

1 1
1

1
1
2

1

1 1
1

1 1
1

1 2
1 1
1

1 1
1

1

1

1

1

1

1

1

1

1

3

2

2

2

1

1

1

	1	1	2		
	1	1	1		
		1			
	1	2	5	1	1
		1			
1	3		2	1	6
1	1	1	1	1	1
		1		1	

1
1

1 2 2
2 1 3

1

1

1

1

1

2
1

1 2

2
2

1
1 2

1
1

1

1
1

1
1

1
1

1
1

2
1
1

2
3
2
4

1 4
2 7
1 3
1 3

2
3
1 1
1

1

1

1
1

1
1

4
2

2 1
1 1
4 2
1

3
1
1
3

2 4

1
1

1

1 1
1

1

1 1
1

1 1
1

2 2

9
2

1

4

3

2
11 10

1 1
1

1

1

1 1
1

2

1

2

1

1

1

1

1

1
1
4
1

1
1

1

1

			1						
	2	2	2						
			1	1			2	1	1
	1			1					
3	4	2	2	2			8		6
9			2	4					5
6	2	6	4	2			5		4
8	1	6	1	3			8		4
1		1		1			1		1
	1		1						1
	1			1					
	1			1					

1
1
1

1
1

1
1

1

1

1

1
1

1

1

1

		1	1	
1				
1	1			
	1		1	
1				
				2
				1
		1		
			1	
				1
1				
			1	

2
2
2

4
3
2
1 3

2 2
1 1
1 1

2
1 1
1 1

1
1

1

1
1

1 1
1

1 1
1

1 1
1

3

1

1

1

1

1

1

1

1 3
1 1

1 2

1 1
1

1 1

1

1 3

1 1
1

1

1

1

2 1
3
1

1 1
1

1 1

1

1 3

1

1

1

1

1

1

2
2
4

2 5
2 1
2 1

1
1 1

1 2
1
1
1 1

2

1

1 1
1

1 1
1

1 1
1

1

1
2
3
4

1 3
1 2
3 1
2

1 1
3
1 4

2
2 1
1
1

1

1

1 1
1

1 1
1

1 1
1

1

1

1

1

1

2

1

2

1

1

2

4

1

1

1

1

1

1

1

1

2

1

2
2
1
2

1
1 1
3 1

2 4
3
1 4

1 5
1 1
2 7
2

2
1 3
1
1

1

1 1
1

1 1
1

1 1
1

1 1
1

1

1

1

1 1
1

1

1

1

2
1
1
1

1
1

1

1

7 2

1

1

1

2

2 1
1

1

1 1
1

1

2 2
2
3
3

2 1
2 3
1 2
2

1

1 1
1

1 1
1

2 2
1

1 1
1

1 1
1

1 1
1

4 4
3 1
2
2

2 1
1

1 1
1

1 1
1

1

1

9
8
2
2

2

6 12 2 3
3 7
1 1
1

4
5 6
3 2
5

4

18 3 2
5
1

12 1 8
8 7
4
3

1

1
1

1 1
1

1 1
1

1 1
1

2

1

2

1
1

2 4
1

3
1 2

2 2
2

1

1 1
1

1 1
1

1 1
1

1

1

1

1

2
2

1
2

4

1

1

1

3
10
10
7

2 3
1 1
2 5
1 7

3 6
1 4
2 2
3 4

4
4
5

1
3 4
1

1

1 1
1

1 1
1

1

1 1
1

1
1
1
1
2
5
7
9

1
2
2
1
6
3
5
2

1
1
1
1
1
4
1
4

1
5
3
3
1
1
4
1

4
3
2
2
1
2
1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

1 1

1

1

1 1

1 1

1

1

1

1

1

1

1 2

1

1

			1	1	
2	1 6	1 1	1 1	1 1	1
1	1 1	1	1	1	1
1 1	1	1 1 1 2	3 1	1 1	
1	1	1 1	1	1	1
1	1 1	1 1	1		

1

1 1
1

1 1
1

1

2
1

1 1
1
1

1

1

1
1

1

1 1
1

1

1

1

	1		1		1					1
		2		2						1
8				5	5					2
20				4	2					4
19		6		4	5			5	2	
									4	
1		1			1				1	
				1				1		1
	1	3								
		1								
	1									
1	2	5		1	1	2				1
6				2	3	1	1			1
20	4			1				1		3
6		5		1				5		3
		1	3					1		
1		1			1		1			
	1					1				1
		1	3					1		1
				1						2

1

1
1

1

1
1
4
4

2 1
5

2 1
2 1

1

5
2

1

1 1
1

1 1
1

1

1

2

2
3 1
1

2
1 2

1
1

1
1 1 1

1

1

1	1	1	1	1	1	1
1	1	4	1	1	1	1
4			1			1
5		4	1		1	2
			2			
1	1	1	1		1	1
		1			3	
		1			1	

1
1

1 8

1

1 1
1

8 1 38

132

6

1 1
1

1

1

1

1
14
11
14

6
4
6

1

15

1

1

1

2

2 2

1

1

1

2

3

1

3
2
3
2

1

1

1

1			1	3	2		
1			1		1		
	1		1			1	1
1		1	1		2	1	2
4	1	1	1	1	3		1
1	1		1	1	1	1	
				1			1

2
2
4

1

2

1
2
1

2
2

2
2

1

1

1

1

1

1

1
1

2

2

1

1

1

2	3	2			1	
4		1				1
2					1	
1	1	1			1	1
	1					

1

1

1

1

1

1

2

1

9

3

1

1

7
6
3

2 2

2

1

1 1

1

8 2
7 4
2 4

1

1

1

1

1

2

1

1
2
1

1

1 2
2

1 1

1

2

2 3
5 1
4

1 1

1

3

2

1

1

1 3
1 4
1 2

1 1

1

1
1

1

4
1

1

1
1

1

2

1

1

1

1

6

1

1

1
2
1
3

1
2
1
3

1

2

4

1

1 1
1 1
2 2

1

1

1

2

1

1

2

2

1

3
1
2
1

3
1
2
1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1
17
20
4

1 13
5

2
2 2
1 2
1 1

2
1
2

3

2

1	1	1	1	1	1	1
2	1					1
1						
19						
2		2	1		2	1
1		1				
	1		1		1	1
			1		2	
				3	1	
			1			
				1		1
				1		

1

3

1

1

1

1

1

1

1

1

1

3
5
14
9

1

2

4

2 2
2 2

1

2
1

1

1
2
5

1
2
5

2

1
2
2
1
1

1
2
2
1
1

1

1

1

1

1

3

1

1

1

3

1

2

1

1

2

1

3

3

1

1
1
1

1 1

1

1 1
1

1
2
2

6 4

1

1 1
1

4

1

1
1

1

3
1

1

1
1
1

1

1

1

2	7	15	2	6	14	9	8	11	6
9	4			3	7	7	3	13	8
6				8	3	7	4	5	1
1		9		1		8		5	5
1		1		1	1	1	1	1	1
	1			1					
							2		1
								40	
							1		1
1		1		1	1				1
1		1		1	1				1

	2			2					
2	1								
	8	2	2		2	2		1	
1		1			1			1	
				1					

2

1

6	
1	
1	
1	
1	
2	12
25	
11	
11	

1	
1	
7	
1	
11	
3	

1	2
8	9
2	6
2	7
1	1
1	
6	2
1	14

2	8
3	7
4	7
2	7
1	1
1	
2	
7	
2	9

7	
3	14
1	7
1	7
1	1
1	
2	
6	
6	
	1
	3
	3

5	
1	
1	

1	
1	
3	
1	

1

1

1 1

1 1

1 1

1
1

5

1
1
2

2

2
1
1

1

1

1

1

1

3

1

1

5

1

1

1

1

1

1

2

1

2

1

1

2

1

2

2

1

1

1

1

1

2

1

1

1

1

1

1

1
2

1

1

1

1

2
2
3

1

1

1

2 10

7

1

1

1

1

1

2

1

2 1
1
1 3

1

1

3 7

1 1

2 1

1

1

1

2 2

1 1

1

1

1

1
1
1

1

1

1

2

3

1

2
1
1
2

1

1

1

1

1

1

1

1

1

1

1

1

1

3

4

1

1

1

1

1

1

1

1

1

1

1

1

1

1
16
10

1
1
11
1

1
3
1

3
7

1

1

1
1

1
1

1
1

2
4

2
1
6

1
1

1

2
2
2
1
5

1

1

1
1

1
1

1

1
1
1

1

1

2

1

1
2
2

1
1
2
1

1 1
1

1

1

1
2
5
1
1
2

4 2
1 1
2 3
2 2 2
1 1
1

6 2
1 1
1
1
1
2

3
1
1

1

2
1
3

1
1

1

1
1

2

1

1

1

1

1 1
1

1
1

1 1

1

1

1

1

4

1

1 1

1 1

1

2
1

2

1

1

1

1

1
3

1

23

1

3

1

15

1

1

1

2

1
1

11

1
2
1



3

1

1

2

3
2



1
1
1



1

1

1

1	2	2			1	1	1	18
						3		
						1		1
						63	5	
1	1				1			1
								1
2	4	3	1	3	2	2	1	4
13	2		1				2	
2	2	6	2					1
4	6		1	1		8	2	4
1		1	1	1		1	1	1
	1		1		1		1	1

2
2

1

1
1

1

1

1
1

1

1

1

1
13

1
1

1

1

1

1

1
1

1
1
1

1

5

1

1

1

1

12

1

1

3

5

1

1

8

1

1

2

2
1
2

1
1

4
1

1 3
1
2

1

1

1 1
1

1
1

2
1

1

7

2 2 2

1
1

1 1
1

2

3 12 1

1

1 1
1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2
1

2
1
1

1

1

1

1

1
1

1

1

1

1

1

1

1

1

10
2
3

1

2
3
3
3

1

2 2
3
2
3 2

1 1
1

1

2
1
3

1

2
3

1

1
3

1

1
1

5 5
3 3
1 1
2 1

1 1
1

3

1
1

6

1

1

1

1

1

1

1

1

3
1

1 1
2 1

4

2
2

1

1
2

1

1 1
1

1
1

1

1

1
1

1

1

1

1

1

1

1

1
1

2

1

1

1

1
1

1

1

1

1

1

1
27
5
16

10

8
8
4 3 8
12

6 7
6
6
10 15

9 2

5
3
15
80 2

4 8 8
9 9
8 1

6
12
5
1

1

1
1

1 1
1

1

2

1
1 1
1

1
1

2 2

1

1
1 1

2

2

1

13

1

1

1

2
17
4
5
1

2 3
1 10
1 1

2
1
1

1
1

1

1

1

1

2
1

1
1

1

1

1

1

2
15

1

3
1
2 6

1 1
1

1
1
2
2

1
1

3

1
1

4
8
3
5

1

1

4 1
3
3 4
10

1
1

2

3 2
3
2
3 3

1 1
1

1

4

1
1

1
1
7
9

1

2
2
1

3 4
3 3
3 5

1 1
1

4
2
1

2

1

1

1

1
1

1

1 1
1

1
1

1

1

1
1

1
1 1

1

1
1

1

1

1
1

1

1
1

1

1

1

1

1

1

2
3

1

2

1

1

1

1

1

2
2

1

1

1
2

1

2

1

1

1

1
1

2
10

1

3

1

1

1

1

1

1

1

1

1

1

2
1

1

1

6

1

1

1

1

1

1

1

1

1

2
2
2 5
3

1 1
1

2

1

1 1
1

1 1
1

1

2

1 2
1 1
1

4

1

1 1
1

1

2

1 3 14
1

10 15

2 9 32

2 5 13
1

3 2 7
4

1 1
1

1 1

1 1

1 1
1

1 1

3 2
4
1 5
13 4 2

1 1
4 4
1
2

1 2

1

2

1 1
1

1 1
1

1 1

1

1 1

1

1

1

1

3

1

1

2 2
2 2

1

3

1

1

1

2

1

1

1

1

1

1

1

28

4

6

4

1

2

17

1

1

12

3

50

5

30

120

4

172

25

27

1

1

1

1

1

1

1

1

1

1

1

1

2

3

10

1

1

1
1

1
1

3

1

1

2 1

1

1 1
1

1

2

1

1

1

1

1 1
2
1

1

3
2

14
19
14 1

3

6

7
19 1

1

1

1
1

1 1
1

1

1 1
1

1

1

1

1 1
1

1

1
1

1

38 70
14 24

1

1

1

1

1 2
1 1

1 1
1

2

1

1

1

1

1

1

1

2

1

2

1

4

1

1

1

1

1

2

1

2

1

3

1

1

1

1

2

1

1

2

1

1

2

2

1

1

6

1

1

1

1

3

1

2

1

1

1

1

1

1

1

1

1

1

1

1

2

1

1

1

1

1

6

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2

4 1

1 1

1

2

1

1

1

4

3

1

1

1

1

2

2

1

1

3

1

1

3

2

1

1

1

3

1 1
1

1

1

1

1

1

1

1

2

2

1

1

1

1

1

1

1

5

1

2

1
8 8

4
1 3

1 2
58 71
6

2

1 2
1

1

1 1
1

1 1
1

1 1
1

1

1

4
1

1 7
1 5
2 3

5 1
2 4

2
1 1
5

7 2
5 4
2

1

1 1
1

1 1
1

1 1
1

1 1
1

1
2
1
1

1 1

1
1

1
1

1 1
1

1 1
1

6
2

1

4

1

1
1 1

1 1
1

1

1

1

1

1
1

1

1

2

1

1 1

1 1
1

2

1

1

3

1

1

1

3

1

3

1

1

1
1

1

1
1

1

1
1

2

1
1

2
1

1
1

1

1

1
1

1
1

2

1

18	5	9	3	12	2	8	2	10	14	10	18	
6	7			36	7	12	11	5	3		7	29
	5	10		8		4		3			8	
	10	9		3				1				
1	1	1		1	1	1	1	1	1		1	1
	1			1		1		1			1	
4				1		3	220		3			
				3	1	3	181		3			
			1	3	1		85			3		
										2		
1		1		1	1	1	1	1		1		1
				1		1		1		1		

1

1

2

2

2

1

11

1

4

4

3

1

1

1

1

1

1

2

1

1
3 36

1

1

3

3 6
3
2 5
6 9

2
2 1
2 1

2 1

1
1 1 1

1
5
3 1

1

1 1
1

1 1
1

1 1
1

1 1
1

1 1
1

5 2

1

1

3
7 7
9
2

2

1

1
1

1 1
1

1 1
1

1
1

1
1

10 1
12
4
3

4
3 1
8 11

5 1

2
5 3
1
3 3

1

4 5
3 1
4

3

2
1 2
3

1

1 1
1

1 1
1

1 1
1

1 1
1

20

1

3

5

1
11 7

3
2 14

4

1

1 1

4 12
3 1

3

4

2 3

1

1

1 1
1

1 1
1

1 1
1

1 1
1

1

1
1

1 5
1 1
1 3

1

2

1

1 1
1

1

1

1

1

4

1

1

1

2

2
1 1

1 1
1

1

1

1

1

1

3
2

3

1

1

1

3

2

1

1
1

4
1

5 11
3 3
2 7

1
6

1

1
1

4

1

1 1
1

1

1

1
1

1

1

1

2

1

1

1

1

1

1

1

OutFO	Transect F	Q Pt 1	Q Pt 2	Hackberry Is-Pt3	Q Pt 4	Q Pt 5	Q P6 6	Oak Pt	Geotube Is
	1								
	1								
	4			1					
	1			1					
					1				
					1				
	1	1		1	1	1	3	1	1
	2	2		3	3	2	2	1	
	6			1	2				
	2				1				

1	1	1	1	1	1	1	1	1
4	5	3	1	2	3	3	1	1
9	5	5	5	5	5	6	2	
8	6	5		6	19	3	2	
	8	5		5		5	2	
				4		2		
1	1	1	1	1	1	1	1	1
2	1		1		1		1	
					1		1	
1	1		1		1		1	
4	10	6	2	2	13	1	19	
3	5	17	1	3	11	17	12	
12	9	9		5	11	3	6	
24	2	13		1	13	4	10	
4				1		4		
				3				
				6				
1	1	1	1	1	1	1	1	1
5	1	2		1	3	1	1	
2	1	1		2	1	1	3	
2		1			1		1	
4								

2

1
5
4
8

1

1

1

1
3
1
3
2

1

1

1

1
3
3
7
1

1

1

1

1

3

1
1
1

1

1

1

1

1
1
2
2

1

1

1

1
2
1

2
2
4
1

1

1
3
3
2

1

2
1

1

7
2

3
2

1

1

2
1

2

	4	1	2	2	2	3	1	3		1
	5	2	8		1	2	6	2		
	10	3	4		3	1	4	3		
	7					8		8		
	1	1	1	1	1	1	1	1		
								2		
								1		
1			2							



1

1
5

1

1
1
1
1

1

1
4
1
2

1

1

3
1
1

1

1
1
1

1



6

1

1
1

1

4

1





3
1



1
3
6

1
2
1

1

2

1

1
4

1

1

1

3
1
1

7

1



	3	1	1		2	6	1	
	1	2	1				1	
	6	1						
	1	1	1		1	1	1	
	1		5	1	2	1	1	2
	1		1	3	2	2	1	
	1		1	1	3		1	
	1							
	1		1	1	1	1	1	1
					4		2	
					2		5	
					5		2	
							4	
					1		1	
	1	2	1		1	3		1
	1				1			1
								1
	1	1			1	1		



2
1
1
1
1
1

1

11
7
7
7
7
2

1

2
1

1

1

7
8
4
8

1



1
1

1

1
2

1

1

1

1

1

1

1

1

1

1
1

1

3
2
1

1



1

2

1

7
5
11
6
1
4

1

5
2

1

1
2
1

1

2
9
10
6
2

1

1

1

6

1

3
6
10
4
12

1

3
4
6

1

3

1

5

1

2
3
15
3

1

3
11
8
1

1

2
2

1

1

1

2

1
6
3
2

1

8
5
6

4
4
3
2

1

1

1

2
1

1

1

3
2
2
2

1

1

1

4
1
1
2

1
18
1

1

15
1

1

2
1

2

1

5
1
2

1

1
1

1

2
1

1

1
2

1

5
6
2
1

1

3
1
1

2
1

1



1

1

1

1



1



1



1

1

1

3

1

1

1

1

1

1

6

1

2
2
1

1

1

3
1

1

1

1

1

1

1
3
3
3
1
4

1

1
1

1

1

3

1

2
1
1

1

1

1

1



1

1

10
14
13
10
3
1

6
4

10
8
7
5
6
6

2
1

1
1

1

2
2

1

1
1
1
1
4

4
2
3
7
6

4
3
1

2
1
1
5



1

1

1

1

2

1

1

1

1

3

1

1

5

1



1

2

1

1
3
3
2

3

1

1

1

2
3

1

1

1
1
1
2

1
4
8

1

6
2
1

1

1
1

1

1

2
1

1
2

4
2

1

1
1
1
1

1
9
1

1

1

1



1

1

1

1

1

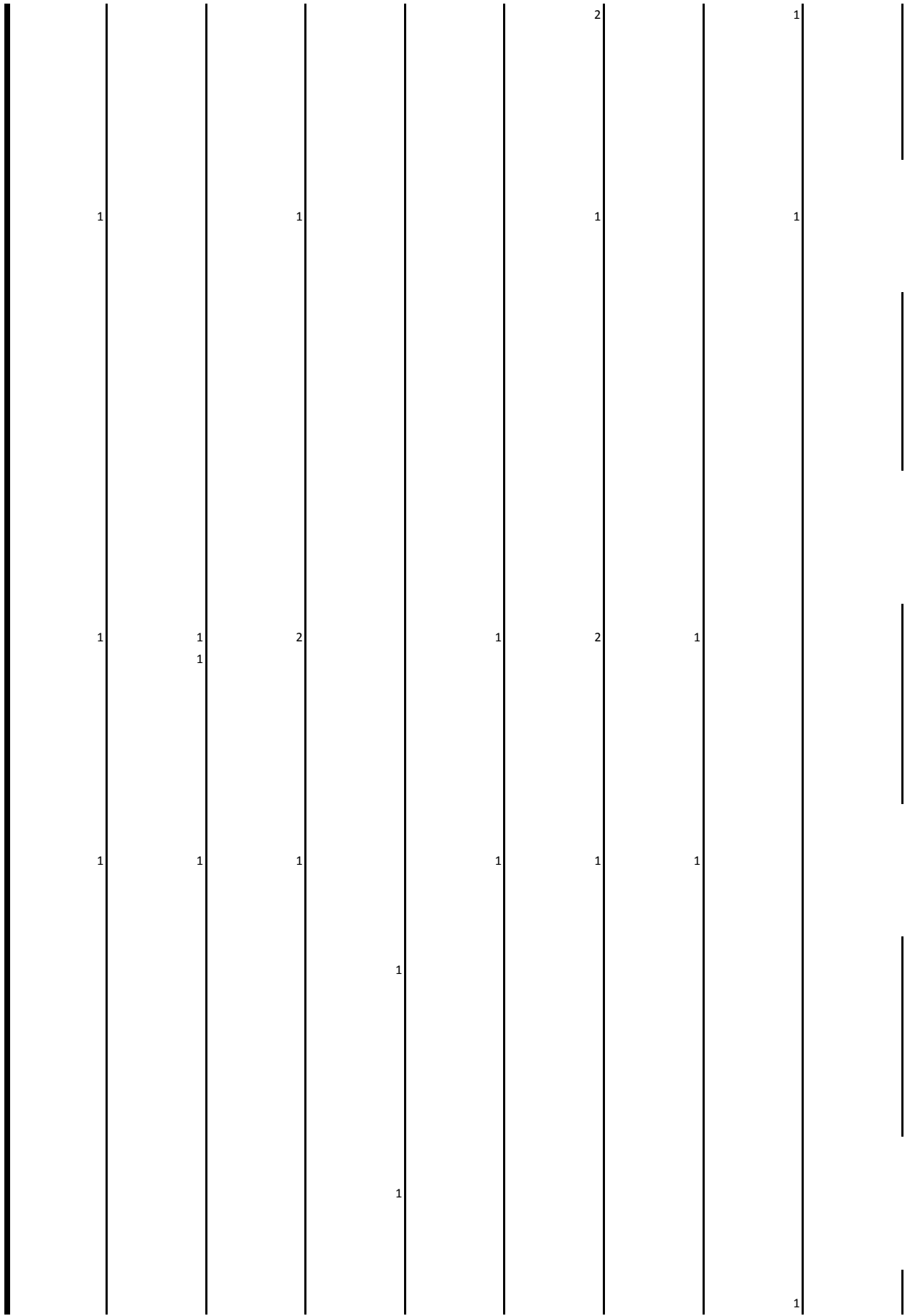
1

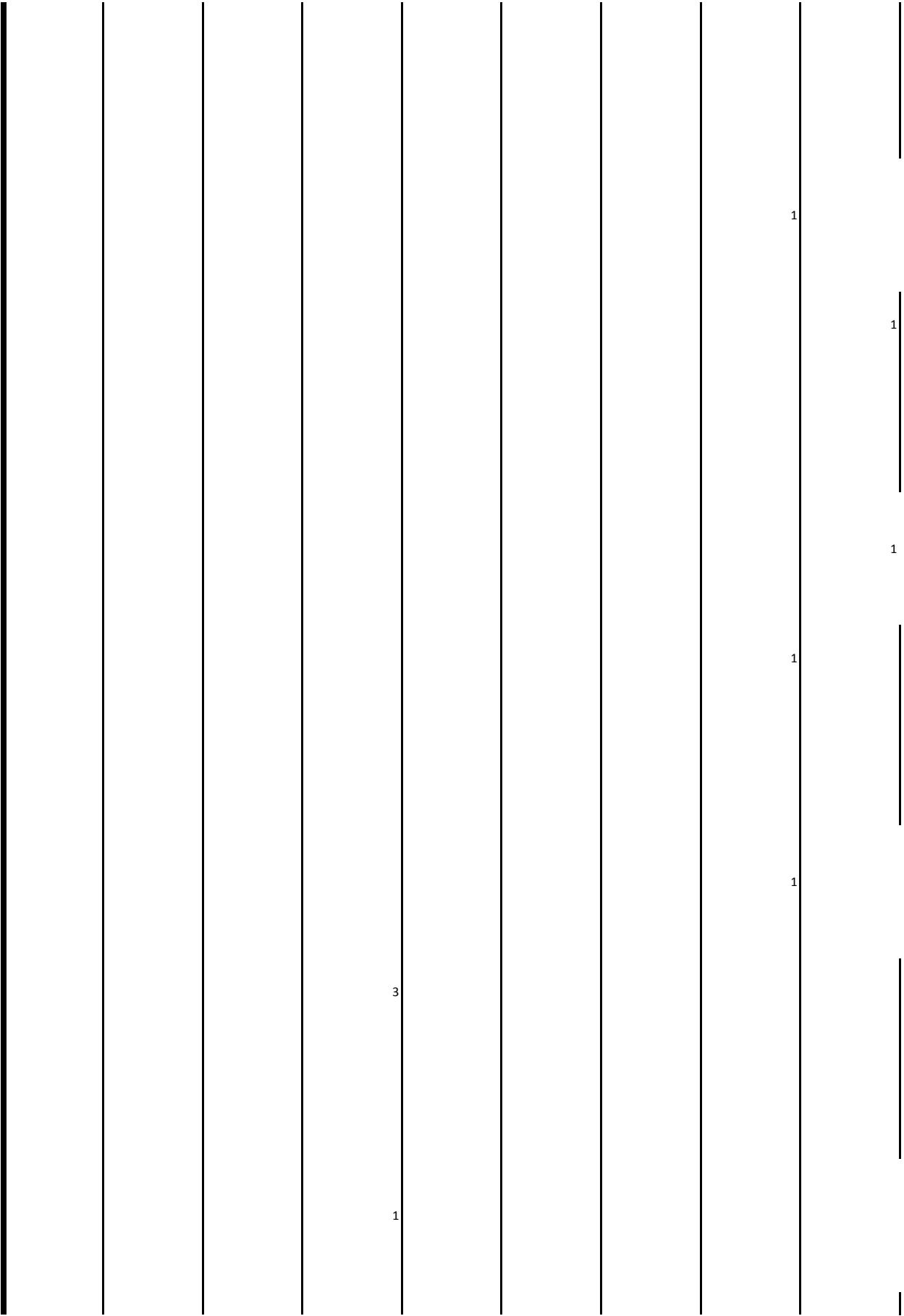
1

1

1

	7	3	10	1	1	2	2	7
	4	2	8	3	1	1	5	2
	7	2	8	2	4	5	6	2
	5		6			6		5
	1							
	1	1	1	1	1	1	1	1
	1	2	1		1	1	3	3
	3					1	1	1
	2							1
	2							
	1							
	1							
	1	1	1			1	1	1
			1					
			1					
	2		1			2		1





	8	2	4	1	1		3	2	
	6	1	1					1	
	4	4	1					1	
	4							1	
	1								
	1	1	1	1	1		1	1	
	8	3	2	1	2		1	5	
	4	1	7		2		2	2	
	3		8		1			1	
	2		9		2			1	
	8		7						
	2								
	1	1	1	1	1		1	1	
			1						
	1		2						
	2								
	1								
	1		1						

3

8	19	10	22	4	27	10	13	7
6	32	22	11	3	10	17	9	8
14	24	1		6	4	16	1	3
4	31			1	13	9	8	18
				15			12	
1	1	1	1	1	1	1	1	1
5	1	1	1		1	1		
1	1	1				1		
1		1						
1		2						
1	1	1	1		1	1		
					1			
					1			

5
8
16
5

1

3

1

5

1

1



1
10

7
10
5

1

14
3
10

2
2
4

15
1
1
6

1
8
2
1

3
1
1
2

2
1

6
21
12
10

1

6
7
5

1

2
1
6
9

1

4
3
1
1

1

1





1

1

1

1

1
1
1
1

1

1

1

2

1

1

1

3
1
4
4

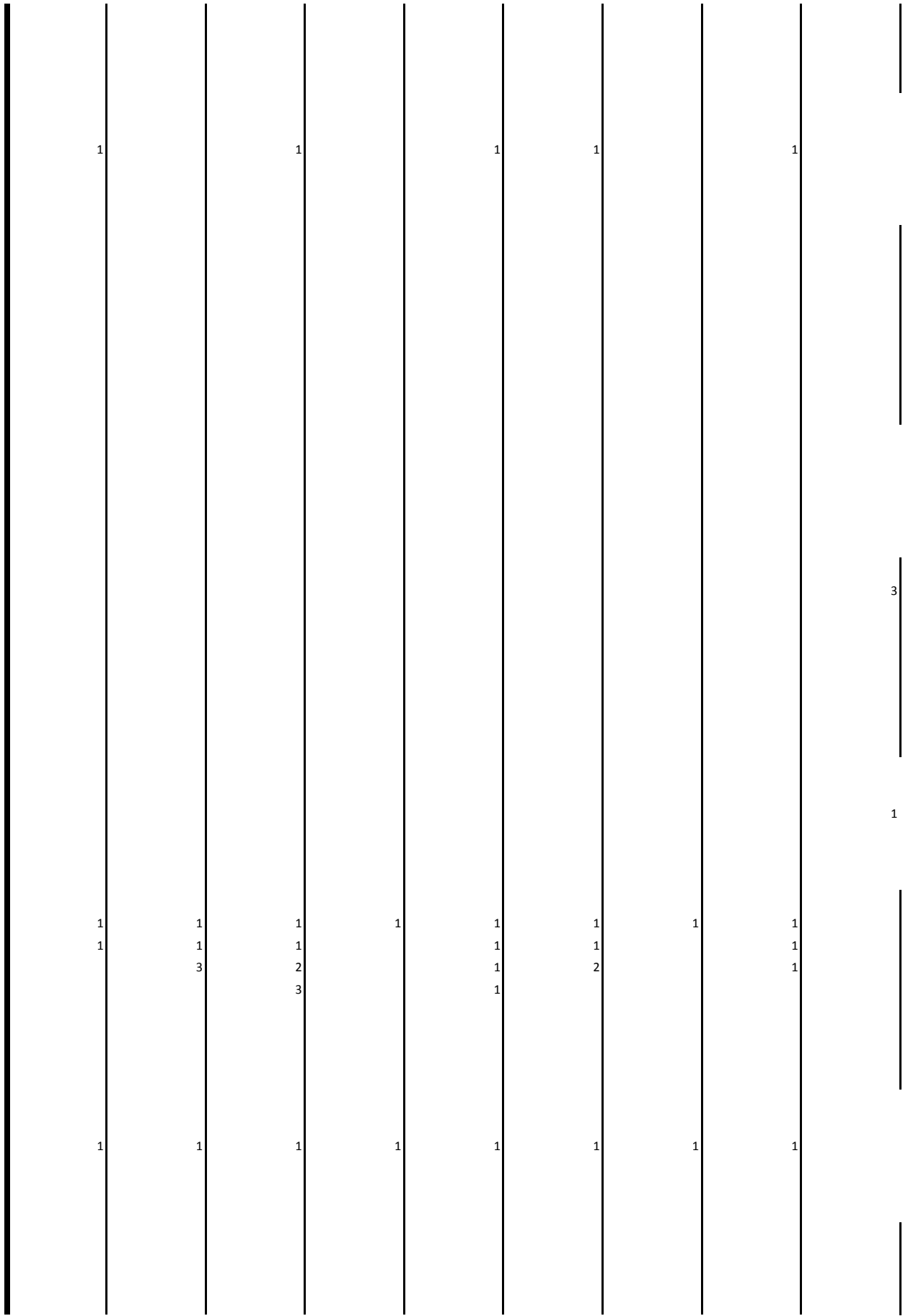
1

1

1

1





Night birding	Misc.	

1
1
1
1

1

3
1

1

3
1

1

1

1

1
2
1

1

1

1

4

1

		1
		1
		1

1
1
2

1

3

1

AVIAN ECOLOGICAL INVESTIGATIONS
TABULATION SHEET

Observer: Margo Milde Site: Chain O Lakes SP
Address: 1206 Raleigh Rd Year 2008
Glenview IL 60025
mrm1206@yahoo.com 845.724.4716

- * A. O. U. = American Ornithologists' Union
 ** Indicate the total number of different Transect Legs and Census Stops the Species was recorded; five transect Sets would have about 50 Census Stops and 55 T
 @ If the species occurred in 7 of the "Additional" Census Stops established by the observer for qualitative sampling, enter the number 7 in this column.
 # Use one of the following categories for this column: 1 - 5 pairs; 6 - 15 pairs, 16 - 50 pairs, or > 50 pairs

Species (In A.O.U.* order)	Total Number of Different Species Recorded **		Species present in addl habitats @	Estimated Number #	Habitat Preferences and comments
	Transect Legs	Stops			
Canada Goose	13	11	2, Gtubels	6 - 15 pairs	Stream, Natural lake, Marsh
Mute Swan	1	1	0	0 (?)	Natural lake
Wood Duck	9	6	3, OakPt	6 - 15 pairs	Marsh, Stream
Mallard	18	10	1,2,3,5,OkPt,GT	6 - 15 pairs	Stream, Natural lake, Marsh
Blue-winged Teal	2	1	1,3	1 - 5 pairs	Stream, Marsh
Northern Shoveler	0	2	0	0 (?)	Nat. Lake
Hooded Merganser	0	0	Misc (Deer Path Trail marsh)	1 - 5 pairs	Marsh
Northern Bobwhite	0	0	Misc (office)	0 (prob. release from reserve)	Bird sighted most likely captive release from nearby private reserve
Wild Turkey	2	0	F,4,6	1 - 5 pairs	Upland forest, Savanna
Double-crested Cormorant	14	5	Gtubels	0 (forager only)	Natural lake
Least Bittern	0	2	0	1 - 5 pairs	Marsh
Great Blue Heron	20	10	1,3,5,Gtubels	0 (forager only)	Marsh, Stream, Natural lake
Great Egret	11	7	1,2,3,5	0 (forager only)	Marsh, Stream, Natural lake
Green Heron	11	5	1,3,5,OkPt	6 - 15 pairs	Marsh, Stream
Black-crowned Night-Heron	0	1	0	0 (forager only)	Stream
Turkey Vulture	3	1	5	0 (?)	Prairie, Savanna, Upland forest

Osprey	1	0	OakPt	0 (foraging only)	Stream, Natural Lake
Cooper's Hawk	3	0	Misc (Park entrance)	1 - 5 pairs	Upland forest, Savanna
Red-tailed Hawk	7	7	2	1 - 5 pairs	Savanna, Prairie, Upland forest, Suc. field
Merlin	0	0	Gtubels	0 (late migrant)	Natural lake
Virginia Rail	1	1	0	6 - 15 prs	Marsh
Sora	0	2	5, Misc (campground rd.marsh)	6 - 15 pairs	Marsh
American Coot	0	1	C	1 - 5 pairs	Marsh, stream
Sandhill Crane	14	13	6	6 - 15 pairs	Marsh, Sedge meadow, Stream, Fen
Semipalmated Plover	1	1	Gtubels	0 (early fall migrant)	Natural lake
Killdeer	8	7	F,1,3,6,OkPt,Gtubels	6 - 15 pairs	Dev. land, Stream, Natural lake
Spotted Sandpiper	10	9	3, Gtubels	6 - 15 pairs	Stream, Natural lake
Greater Yellowlegs	1	0	0	0 (late spring migrant)	Natural lake
Lesser Yellowlegs	0	0	Gtubels	0 (early fall migrant)	Natural lake
Ruddy Turnstone	1	0	0	0 (late spring migrant)	Natural lake
Semipalmated Sandpiper	1	1	Gtubels	0 (late spring/early fall migrant)	Natural lake
Least Sandpiper	0	1	3	0 (early fall migrant)	Natural lake
Pectoral Sandpiper	0	1	Gtubels	0 (early Fall migrant)	Stream, Natural Lake
Dunlin	1	1	0	0 (late migrant)	Natural lake
Stilt Sandpiper	0	0	Gtubels	0 (early fall migrant)	Natural lake
Short-billed Dowitcher	0	0	Gtubels	0 (early fall migrant)	Natural lake
American Woodcock	0	0	Misc (near B1, 8/14/08)	6 - 15 pairs	Suc. field, Savanna
Ring-billed Gull	12	8	0	0 (forager only)	Upland lake, Stream, Dev. Land
Herring Gull	2	1	0	0 (forager)	Natural lake
Caspian Tern	6	5	Gtubels	0 (forager)	Stream, Natural lake
Black Tern	12	4	3, Gtubels	1 - 5 pairs	Stream, Natural lake
Forster's Tern	9	6	Gtubels	1 - 5 (mostly unsuccessful in 2008)	Stream, Natural Lake

Mourning Dove	14	11	F,1,2,4,5,6,OkPt	16 - 50 pairs	Savanna, Suc. field, Prairie
Yellow-billed Cuckoo	12	7	F,2,5	6 - 15pairs	Upland forest, Savanna
Black-billed Cuckoo	2	0	5	1 - 5 pairs	Upland forest, Sedge meadow, Floodplain forest
Eastern Screech-Owl	0	0	Misc (various-night birding)	6 - 15 pairs	Upland forest, Floodplain forest
Great Horned Owl	1	0	F, Misc(cpgmd)	1 - 5 pairs	Upland forest, Floodplain forest
Chimney Swift	2	2	F	1 - 5 pairs, building	Forage aerially in a variety of habitats (nest in building chimneys)
Ruby-throated Hummingbird	1	2	5	1 - 5 pairs	Dev. Land(office feeder), Upland forest
Belted Kingfisher	5	5	5, OakPt	1 - 5 pairs	Stream
Red-headed Woodpecker	2	1	2	1 - 5 pairs	Savanna, Upland forest, Floodplain forest
Red-bellied Woodpecker	14	15	F,1,2,3,4,6,OkPt	16 - 50 pairs	Upland forest, Savanna, Floodplain forest
Downy Woodpecker	24	13	F,2,3,4,5,6,OkPt	16 - 50 pairs	Upland forest, Savanna, Floodplain forest
Hairy Woodpecker	12	7	F,2,3,4,5,OkPt	6 - 15 pairs	Upland forest
Northern Flicker	18	12	F,1,2,4,5,OkPt	16 - 50 pairs	Upland forest, Savanna, Floodplain forest
Eastern Wood Peewee	21	12	F,1,2,4,5,6,OkPt	16 - 50 pairs	Upland forest, Floodplain forest
Acadian Flycatcher	2	0	F	1-5 pairs	Upland forest
Alder Flycatcher	4	4	F,2	0 (?) (probably late migrant)	Marsh, Sedge meadow
Willow Flycatcher	17	9	F,1,4,5,6,OkPt	16 - 50 pairs	Sedge meadow, Prairie, Suc. field, Fen
Least Flycatcher	3	3	3,5	1 - 5 pairs	Upland forest, Floodplain forest
Eastern Phoebe	6	3	F,1,2,4,5,OkPt	6 - 15 pairs	Upland forest, Floodplain forest, Stream
Great Crested Flycatcher	10	10	F,1,2,3,OkPt	6 - 15 pairs	Upland forest, Floodplain forest, Savanna
Eastern Kingbird	12	10	F,2,3,4,5,6,OkPt	6 - 15 pairs	Savanna, Prairie, Sedge meadow, Suc. field
Yellow-throated Vireo	19	15	F,1,2,3,4,5,6,OkPt	16 - 50 pairs	Stream, Floodplain forest
Warbling Vireo	17	7	F,1,4,5,6	16 - 50 pairs	Upland forest, Stream, Floodplain forest
Red-eyed Vireo	17	8	F,1,2,3,4,6,OkPt	16 - 50 pairs	Upland forest, Savanna
Blue Jay	23	19	F,1,2,3,4,5,6,OkPt	16 - 50 pairs	Upland forest, Savanna, Floodplain forest, Suc. field

American Crow	20	16	F,1,2,3,4,5	16 - 50 pairs	Upland forest, Savanna, Floodplain forest
Purple Martin	15	11	3	6 - 15 pairs	Dev. Land, Stream, Natural lake
Tree Swallow	33	20	F,1,2,3,4,5,6,OkPt,Gtubels	16 - 50 pairs	Marsh, Stream, Sedge meadow, Prairie, Natural lake, Savanna
Northern Rough-winged Swallow	8	2	5, OakPt	6 - 15 pairs	Stream, Natural lake, Sedge meadow, Prairie, Marsh
Bank Swallow	17	13	F,2,3,4,5,6,OkPt,Gtubels	0? (prob. forager only)	Stream, Natural lake, prairie (prob. nest at nearby quarries)
Cliff Swallow	0	1	0	0 (forager)	Natural lake
Barn Swallow	19	15	F,1,2,3,5,6,Gtubels	16 - 50 pairs	Dev. Land (buildings - nests at barn & office)
Black-capped Chickadee	25	17	F,1,2,3,4,5,6,OkPt	16 - 50 pairs	Upland forest, Floodplain forest, Savanna
White-breasted Nuthatch	16	9	F,2,4,5,OkPt	16 - 50 pairs	Upland forest, Floodplain forest
House Wren	24	16	F,1,2,3,4,5,6,OkPt	16 - 50 pairs	Upland Forest, Savanna, Prairie, Sedge Meadow, Marsh, Stream
Sedge Wren	9	6	1	6 - 15 pairs	Sedge meadow, Prairie
Marsh Wren	23	12	1,3	16 - 50 pairs	Marsh
Blue-gray Gnatcatcher	19	11	F,1,2,4,5,6,OkPt	16 - 50 pairs	Upland forest, Floodplain forest
Eastern Bluebird	6	4	F,1,2,4,5,6	6 - 15 pairs	Savanna, prairie
Veery	2	0	F	1 - 5 pairs	Upland forest
Swainson's Thrush	2	0	0	0 (late migrant)	Upland forest
Wood Thrush	10	2	OakPt, Misc (Archery range)	6 - 15 pairs	Upland forest, Floodplain forest
American Robin	33	24	F,1,2,3,4,5,6,OkPt	> 50 pairs	Dev. Land, Suc. field, Upland forest, Savanna, Floodplain forest
Gray Catbird	21	14	F,1,2,4,5,6,OkPt	> 50 pairs	Upland Forest, Floodplain forest, Savanna, Suc. field
Brown Thrasher	0	0	F, 6	1 - 5 pairs	Savanna, Prairie, Forageland, Suc. field
European Starling	7	4	F,1,4,5,6	16 - 50 pairs	Dev. land, Upland forest, Floodplain forest, Savanna
Cedar Waxwing	23	19	F,1,2,3,4,5,6,OkPt	16 - 50 pairs	Upland forest, Floodplain forest, Savanna
Tennessee Warbler	1	0	0	0 (late migrant)	Upland forest, Savanna
Nashville Warbler	0	0	Misc.	0 (late migrant)	Upland forest
Northern Parula Warbler	1	0	2	0 (late migrant)	Upland forest
Yellow Warbler	28	18	F,1,3,4,5,6,OkPt	16 - 50 pairs	Marsh, Sedge meadow, Prairie, Fen

Chestnut-sided Warbler	1	0	0	0 (late migrant)	Upland forest
Magnolia Warbler	1	0	F	0 (late migrant)	Upland forest
Black-throated Green Warbler	1	0	0	0 (late migrant)	Upland forest
Blackburnian Warbler	3	1	2	0 (late migrant)	Upland forest
Blackpoll Warbler	1	0	2	0 (late migrant)	Upland forest
Cerulean Warbler	0	0	OakPt	1 - 5 pairs	Upland forest
American Redstart	7	4	F,1,3,5,OakPt	1 - 5 pairs	Upland forest
Prothonotary Warbler	1	0	OakPt	1 - 5 pairs	Stream
Ovenbird	0	1	OakPt	1 - 5 prs	Upland forest
Mourning Warbler	1	0	F, 2	1 -5 pairs	Savanna, Upland forest
Common Yellowthroat	39	26	F,1,2,3,4,5,6,OP	> 50 pairs	Marsh, Sedge meadow, Fen
Hooded Warbler	0	0	Misc(Boat Launch Rd)	0 (summer vagrant)	Upland forest
Wilson's Warbler	2	3	5	0 (late migrant)	Stream, Upland forest
Canada Warbler	5	1	F	0 (late migrant)	Upland forest, Sedge meadow, Marsh
Yellow-breasted Chat	4	4	0	1 - 5 pairs	Sedge meadow, Savanna
Eastern Towhee	4	2	F,2,4,6	6 - 15 pairs	Savanna, Upland forest
Chipping Sparrow	6	3	F,2,3,5,6,OkPt	6 - 15 pairs	Dev. Land (picnic area), Prairie, Savanna
Clay-colored Sparrow	0	1	F,2	1 - 5 pairs	Suc. field, Savanna
Field Sparrow	11	5	F,1,2,4,5,6	16 - 50 pairs	Forageland, Suc. field, Prairie
Lark Sparrow	1	1	F, 6,Misc (near Park Office)	1 - 5 pairs	Savanna, Prairie
Savannah Sparrow	1	1	4, 6	1 - 5 pairs	Prairie, Suc. field, Forageland
Grasshopper Sparrow	0	0	4,6	1 - 5 pairs	Prairie, Forageland
Henslow's Sparrow	0	0	4,6	1 - 5 pairs	Prairie, Forageland
Song Sparrow	31	27	F,1,2,3,4,5,6,OkPt	> 50 pairs	Prairie, Sedge meadow, Marsh, Stream, Fen, Suc. field
Swamp Sparrow	27	22	1,3,5,OkPt	16 - 50 pairs	Sedge meadow, Marsh, Stream

Scarlet Tanager	7	3	F,2,4,5,6	6 - 15 pairs	Upland forest, Floodplain forest
Northern Cardinal	28	21	F,1,2,3,4,5,6,OkPt	16 - 50 pairs	Upland forest, Floodplain forest, Savanna, Suc. field, Dev. land
Rose-breasted Grosbeak	10	8	F,1,2,3,5,6	16 - 50 pairs	Upland forest, Floodplain forest, Savanna
Blue Grosbeak	0	0	F, 2	1 - 5 pairs	Upland forest, savanna
Indigo Bunting	22	16	F,1,2,4,5,6,OkPt	16 - 50 pairs	Upland forest, Floodplain forest, Savanna, Prairie
Dickcissel	0	0	1, Misc (park roads intersection)	1 - 5 pairs	Prairie
Bobolink	0	0	4, 6	6 - 15 pairs	Forageland, Prairie
Red-winged Blackbird	32	27	F,1,2,3,4,5,6,OkPt,Gtubels	> 50 pairs	Marsh, Sedge meadow, Stream, Fen
Eastern Meadowlark	0	1	4,6	1 - 5 pairs	Prairie, Forageland
Common Grackle	29	15	F,1,2,3,4,5,OP,GT	16 - 50 pairs	Upland Forest, Floodplain forest, Savanna, Stream
Brown-headed Cowbird	17	14	F,1,2,3,4,5,6,OkPt	> 50 pairs	Upland Forest, Floodplain forest, Savanna, Suc. field
Orchard Oriole	2	4	F,1,2,4,5,6	1 - 5 pairs	Savanna
Baltimore Oriole	18 (12)	16 (8)	F,1,2,4,5,6,OkPt (3)	16 - 50 pairs (16 - 50 prs)	Upland Forest, Floodplain forest, Savanna
House Finch	3	1	1,4	1 - 5 pairs	Dev. Land (Park Office, Mgr residences)
American Goldfinch	26 (19)	19 (24)	F,1,2,3,4,5,6,OakPt (1)	16 - 50 pairs (> 50 prs)	Prairie, Sedge meadow, Suc. field, Savanna, Fen, Marsh
House Sparrow	2	1	4	16 - 50 pairs	Dev Land (Park Office, Stable, residences)

Total Number of Species Seen in 2008: 134
 Species seen in both 2008 and 1982: 98
 Species seen in 2008 but not seen in 1982: 36
 Species seen in 1982 but not 2008: 12
 Total Number of species seen in 1982: 110

ransect Legs

COL-mrm/bs	05/29/2008 G-tubels	5:20	10:00 41 F	61 F	NNE 6 mph	ESE 8 mph	clear	20% clear
COL-mrm/bs	05/29/2008 G-tubels	5:20	10:00 41 F	61 F	NNE 6 mph	ESE 8 mph	clear	20% clear

for use in recording birds detected

Geotube Island

Species	*	At	Out	At	Out
American goldfinch			3		
American robin			2		
Baltimore oriole			4		
Bank swallow		7			
Black-capped chickadee			2		
Brown-headed cowbird			1		
Common grackle			2		
Common yellowthroat			2		
Common yellowthroat			1		
Downy woodpecker			1		
Eastern kingbird			2		
Eastern phoebe			1		
Forster's tern		1			1
Great egret					2
House wren			3		
Mallard		1			
Marsh wren			7		
Northern cardinal			2		
Northern flicker			1	1	
Red-winged blackbird		7	29		
Song sparrow			5		
Swamp sparrow			3		
Warbling vireo			2		
Willow flycatcher			2		
Yellow warbler			4		
Bank swallow				4	
Barn swallow					2
Double-crested cormorant			1		
Forster's tern			3		
Great blue heron		2			
Marsh wren			4		
Red-winged blackbird		8			
Ring-billed gull					3
Spotted sandpiper		1			
American crow				1	
American goldfinch			1		
Barn swallow		3			
Caspian tern					2
Common grackle		2			
Killdeer		15			
Least sandpiper		3			
Lesser yellowlegs		5			
Mallard	*	9			
Merlin		1			
Pectoral sandpiper		1			
Red-winged blackbird		3			
Semipalmated plover		3			
Semipalmated sandpiper		5			
Short-billed dowitcher		1			
Song sparrow			4		
Stilt sandpiper		2			
Tree swallow		2			
Yellowlegs sp.		3			
Bank swallow		2			
Barn swallow		2			
Black tern		2			
Canada goose		25		27	
Common yellowthroat			3		
Double-crested cormorant		7			
Great blue heron		1			
Killdeer		1			
Mallard		1		2	
Marsh wren			7		
Mourning dove			1		
Northern shoveler				1	
Red-winged blackbird		18			
Song sparrow			1		

Swamp sparrow
Tree swallow

1 2

Cooper's Hawk	3	0	Misc (Park entrance)	1 - 5 pairs	Upland forest, Savanna
Red-tailed Hawk (1982)	7 (6)	7 (6)	2 (3)	1 - 5 pairs (1 - 5 prs)	Savanna, Prairie, Upland forest, Suc. field
Merlin	0	0	Gtubels	0 (late migrant)	Natural lake
Virginia Rail (1982)	1 (3)	1 (1)	0 (4)	6 - 15 prs (16 - 50 prs)	Marsh
Sora (1982)	0(6)	2 (1)	5, Misc (campground rd.marsh) (2)	6 - 15 pairs (16 - 50 prs)	Marsh
American Coot	0	1	C	1 - 5 pairs	Marsh, stream
Sandhill Crane (1982)	14 (9)	13 (10)	6 (4)	6 - 15 pairs (1 - 5 prs)	Marsh, Sedge meadow, Stream, Fen
Semipalmated Plover	1	1	Gtubels	0 (early fall migrant)	Natural lake
Killdeer (1982)	8 (3)	7 (3)	F,1,3,6,OkPt,Gtubels (1)	6 - 15 pairs (1 - 5 prs)	Dev. land, Stream, Natural lake
Spotted Sandpiper (1982)	10 (0)	9 (0)	3, Gtubels (1)	6 - 15 pairs (1 - 5 prs)	Stream, Natural lake
Greater Yellowlegs	1	0	0	0 (late spring migrant)	Natural lake
Lesser Yellowlegs	0	0	Gtubels	0 (early fall migrant)	Natural lake
Ruddy Turnstone	1	0	0	0 (late spring migrant)	Natural lake
Semipalmated Sandpiper	1	1	Gtubels	0 (late spring/early fall migrant)	Natural lake
Least Sandpiper	0	1	3	0 (early fall migrant)	Natural lake
Pectoral Sandpiper	0	1	Gtubels	0 (early Fall migrant)	Stream, Natural Lake
Dunlin	1	1	0	0 (late migrant)	Natural lake
Stilt Sandpiper	0	0	Gtubels	0 (early fall migrant)	Natural lake
Short-billed Dowitcher	0	0	Gtubels	0 (early fall migrant)	Natural lake
American Woodcock (1982)	0 (0)	0 (1)	Misc (near B1, 8/14/08) (1)	6 - 15 pairs (16 - 50 prs)	Suc. field, Savanna
Ring-billed Gull (1982)	12 (1)	8 (3)	0 (0)	0 (forager only) (0 prs)	Upland lake, Stream, Dev. land
Herring Gull	2	1	0	0 (forager)	Natural lake
Caspian Tern	6	5	Gtubels	0 (forager)	Stream, Natural lake
Black Tern (1982)	12 (3)	4 (3)	3, Gtubels (0)	1 - 5 pairs (0 prs)	Stream, Natural lake
Forster's Tern (1982)	9 (7)	6 (8)	Gtubels (1)	1 - 5 (mostly unsuccessful in 2008) (16-50 prs)	Stream, Natural Lake
Mourning Dove (1982)	14 (11)	11 (10)	F,1,2,4,5,6,OkPt (1)	16 - 50 pairs (16 - 50 prs)	Savanna, Suc. field, Prairie

Yellow-billed Cuckoo (1982)	12 (7)	7 (3)	F,2,5 (1)	6 - 15pairs (16 - 50 prs)	Upland forest, Savanna
Black-billed Cuckoo (1982)	2 (6)	0 (1)	5 (1)	1 - 5 pairs (6 - 15 prs)	Upland forest, Sedge meadow, Floodplain forest
Eastern Screech-Owl (1982)	0	0	Misc (various-night birding) (1)	6 - 15 pairs (16 - 50 pairs)	Upland forest, Floodplain forest
Great Horned Owl (1982)	1 (2)	0 (1)	F, Misc(cpgrnd) (1)	1 - 5 pairs (1 - 5 prs)	Upland forest, Floodplain forest
Chimney Swift (1982)	2 (3)	2 (1)	F (1)	1 - 5 pairs, buildings (1 - 5 prs)	Forage aerially in a variety of habitats (nest in building chimneys)
Ruby-throated Hummingbird (1982)	1 (1)	2 (0)	5 (0)	1 - 5 pairs (0 prs)	Dev. Land(office feeder), Upland forest
Belted Kingfisher (1982)	5 (3)	5 (4)	5, OakPt (0)	1 - 5 pairs (1 - 5 prs)	Stream
Red-headed Woodpecker (1982)	2(7)	1 (5)	2 (2)	1 - 5 pairs (16 - 50 prs)	Savanna, Upland forest, Floodplain forest
Red-bellied Woodpecker (1982)	14 (5)	15 (5)	F, 1,2,3,4,6,OkPt (2)	16 - 50 pairs (16 - 50 prs)	Upland forest, Savanna, Floodplain forest
Downy Woodpecker (1982)	24 (5)	13 (4)	F,2,3,4,5,6,OkPt (1)	16 - 50 pairs (16 - 50 prs)	Upland forest, Savanna, Floodplain forest
Hairy Woodpecker (1982)	12 (6)	7 (1)	F,2,3,4,5,OkPt (1)	6 - 15 pairs (16 - 50 prs)	Upland forest
Northern Flicker (1982)	18 (11)	12 (18)	F,1,2,4,5,OkPt (5)	16 - 50 pairs (16 - 50 pairs)	Upland forest, Savanna, Floodplain forest
Eastern Wood Peewee (1982)	21 (8)	12 (10)	F,1,2,4,5,6,OkPt (5)	16 - 50 pairs (6 - 15 prs)	Upland forest, Floodplain forest
Acadian Flycatcher (1982)	2 (2)	0 (2)	F (1)	1-5 pairs (6 - 15 prs)	Upland forest
Alder Flycatcher (1982)	4(0)	4 (1)	F,2 (0)	0 (?) (probably late migrant) (0)	Marsh, Sedge meadow
Willow Flycatcher (1982)	17 (20)	9 (21)	F,1,4,5,6,OkPt (6)	16 - 50 pairs (> 50)	Sedge meadow, Prairie, Suc. field, Fen
Least Flycatcher (1982)	3 (4)	3 (4)	3,5 (0)	1 - 5 pairs (6 - 15 prs)	Upland forest, Floodplain forest
Eastern Phoebe (1982)	6 (2)	3 (1)	F,1,2,4,5,OkPt (1)	6 - 15 pairs (1 - 5 prs)	Upland forest, Floodplain forest, Stream
Great Crested Flycatcher (1982)	10 (14)	10 (14)	F,1,2,3,OkPt (5)	6 - 15 pairs (16 - 50 prs)	Upland forest, Floodplain forest, Savanna
Eastern Kingbird (1982)	12 (16)	10 (12)	F,2,3,4,5,6,OkPt (4)	6 - 15 pairs (16 - 50 prs)	Savanna, Prairie, Sedge meadow, Suc. field
Yellow-throated Vireo (1982)	19 (5)	15 (1)	F,1,2,3,4,5,6,OkPt (1)	16 - 50 pairs (6 - 15 prs)	Stream, Floodplain forest
Warbling Vireo (1982)	17 (8)	7 (4)	F,1,4,5,6 (1)	16 - 50 pairs (6 - 15 prs)	Upland forest, Stream, Floodplain forest
Red-eyed Vireo (1982)	17 (8)	8 (8)	F,1,2,3,4,6,OkPt (6)	16 - 50 pairs (16 - 50 prs)	Upland forest, Savanna
Blue Jay (1982)	23 (15)	19 (18)	F,1,2,3,4,5,6,OkPt (3)	16 - 50 pairs (16-50 prs)	Upland forest, Savanna, Floodplain forest, Suc. field
American Crow (1982)	20 (13)	16 (18)	F,1,2,3,4,5 (2)	16 - 50 pairs (16 - 50 prs)	Upland forest, Savanna, Floodplain forest
Purple Martin (1982)	15(6)	11 (9)	3 (1)	6 - 15 pairs (16 - 50 prs)	Dev. Land, Stream, Natural lake

Tree Swallow (1982)	33 (15)	20 (14)	F, 1,2,3,4,5,6,OkPt,Gtubels (2)	16 - 50 pairs (6 - 15 prs)	Marsh, Stream, Sedge meadow, Prairie, Natural lake, Savanna
Northern Rough-winged Swallow (1982)	8 (4)	2 (2)	5, OakPt (1)	6 - 15 pairs (6 -15 prs)	Stream, Natural lake, Sedge meadow, Prairie, Marsh
Bank Swallow (1982)	17 (6)	13 (4)	F,2,3,4,5,6,OkPt,GtubeIs (0)	0? (prob. forager only) (0 prs)	Stream, Natural lake, prairie (prob. nest at nearby quarries)
Cliff Swallow (1982)	0 (1)	1 (0)	0 (0)	0 (forager) (0 prs)	Natural lake
Barn Swallow (1982)	19 (20)	15 (21)	F,1,2,3,5,6,GtubeIs (1)	16 - 50 pairs (16-50 prs)	Dev. Land (buildings - nests at barn & office)
Black-capped Chickadee (1982)	25 (17)	17 (11)	F,1,2,3,4,5,6,OkPt (3)	16 - 50 pairs (16 - 50 prs)	Upland forest, Floodplain forest, Savanna
White-breasted Nuthatch (1982)	16 (5)	9 (4)	F,2,4,5,OkPt (3)	16 - 50 pairs (16 - 50 prs)	Upland forest, Floodplain forest
House Wren (1982)	24 (19)	16 (12)	F,1,2,3,4,5,6,OkPt (5)	16 - 50 pairs (16-50 prs)	Upland Forest, Savanna, Prairie, Sedge Meadow, Marsh, Stream
Sedge Wren (1982)	9 (8)	6 (6)	1 (8)	6 - 15 pairs (16 - 50 prs)	Sedge meadow, Prairie
Marsh Wren (1982)	23 (8)	12 (10)	1,3 (5)	16 - 50 pairs (>50 prs)	Marsh
Blue-gray Gnatcatcher (1982)	19 (8)	11 (4)	F,1,2,4,5,6,OkPt (2)	16 - 50 pairs (6 - 15 prs)	Upland forest, Floodplain forest
Eastern Bluebird	6	4	F,1,2,4,5,6	6 -15 pairs	Savanna, prairie
Veery (1982)	2 (10)	0 (8)	F (3)	1 - 5 pairs (16 - 50 prs)	Upland forest
Swainson's Thrush (1982)	2 (0)	0 (0)	0 (1)	0 (late migrant) (0)	Upland forest
Wood Thrush (1982)	10 (10)	2 (13)	OakPt, Misc (Archery range) (2)	6 - 15 pairs (16 - 50 prs)	Upland forest, Floodplain forest
American Robin (1982)	33 (19)	24 (19)	F,1,2,3,4,5,6,OkPt (5)	> 50 pairs (> 50 prs)	Dev. Land, Suc. field, Upland forest, Savanna, Floodplain forest
Gray Catbird (1982)	21 (18)	14 (21)	F,1,2,4,5,6,OkPt (3)	> 50 pairs (> 50 prs)	Upland Forest, Floodplain forest, Savanna, Suc. field
Brown Thrasher (1982)	0 (4)	0 (7)	F, 6 (2)	1 - 5 pairs (16 -50 prs)	Savanna, Prairie, Forageland, Suc. field
European Starling (1982)	7 (12)	4 (8)	F,1,4,5,6 (1)	16 - 50 pairs (16 - 50 prs)	Dev. land, Upland forest, Floodplain forest, Savanna
Cedar Waxwing (1982)	23 (18)	19 (15)	F,1,2,3,4,5,6,OkPt (6)	16 -50 pairs (16-50 prs)	Upland forest, Floodplain forest, Savanna
Tennessee Warbler (1982)	1 (1)	0(0)	0 (0)	0 (late migrant) (0)	Upland forest, Savanna
Nashville Warbler	0	0	Misc.	0 (late migrant)	Upland forest
Northern Parula Warbler	1	0	2	0 (late migrant)	Upland forest
Yellow Warbler (1982)	28(20)	18 (19)	F, 1,3,4,5,6,OkPt (2)	16 - 50 pairs (> 50 prs)	Marsh, Sedge meadow, Prairie, Fen
Chestnut-sided Warbler (1982)	1 (1)	0 (0)	0 (2)	0 (late migrant) (1-5 prs)	Upland forest
Magnolia Warbler	1	0	F	0 (late migrant)	Upland forest

Black-throated Green Warbler (1982)	1 (1)	0 (0)	0 (0)	0 (late migrant) (0)	Upland forest
Blackburnian Warbler (1982)	3 (1)	1 (0)	2 (0)	0 (late migrant) (0)	Upland forest
Blackpoll Warbler (1982)	1 (1)	0 (1)	2 (1)	0 (late migrant) (0)	Upland forest
Cerulean Warbler (1982)	0 (4)	0 (2)	OakPt (3)	1 - 5 pairs (6-15 prs)	Upland forest
American Redstart (1982)	7(6)	4 (4)	F,1,3,5,OakPt (3)	1 - 5 pairs (1 - 5 prs)	Upland forest
Prothonotary Warbler	1	0	OakPt	1 - 5 pairs	Stream
Ovenbird (1982)	0 (0)	1 (1)	OakPt (1)	1 - 5 prs (1-5 prs)	Upland forest
Mourning Warbler (1982)	1 (0)	0 (0)	F, 2 (2)	1 - 5 pairs (1-5 prs)	Savanna, Upland forest
Common Yellowthroat (1982)	39 (25)	26 (28)	F,1,2,3,4,5,6,OP (6)	> 50 pairs (> 50 prs)	Marsh, Sedge meadow, Fen
Hooded Warbler (1982)	0 (0)	0 (1)	Misc(Boat Launch Rd) (0)	0 (summer vagrant) (0)	Upland forest
Wilson's Warbler (1982)	2 (2)	3 (1)	5 (0)	0 (late migrant) (0)	Stream, Upland forest
Canada Warbler	5	1	F	0 (late migrant)	Upland forest, Sedge meadow, Marsh
Yellow-breasted Chat (1982)	4 (2)	4 (2)	0 (1)	1 - 5 pairs (1 - 5 prs)	Sedge meadow, Savanna
Eastern Towhee (1982)	4 (9)	2 (5)	F,2,4,6 (2)	6 - 15 pairs (16-50 prs)	Savanna, Upland forest
Chipping Sparrow (1982)	6 (1)	3 (1)	F,2,3,5,6,OkPt (1)	6 - 15 pairs (6-15 prs)	Dev. Land (picnic area), Prairie, Savanna
Clay-colored Sparrow	0	1	F,2	1 - 5 pairs	Suc. field, Savanna
Field Sparrow (1982)	11 (8)	5 (0)	F,1,2,4,5,6 (3)	16 - 50 pairs (16 - 50 prs)	Forageland, Suc. field, Prairie
Lark Sparrow	1	1	F, 6,Misc(near Park Office)	1 - 5 pairs	Savanna, Prairie
Savannah Sparrow (1982)	1 (0)	1 (0)	4, 6 (1)	1 - 5 pairs (1 - 5 prs)	Prairie, Suc. field, Forageland
Grasshopper Sparrow	0	0	4,6	1 - 5 pairs	Prairie, Forageland
Henslow's Sparrow (1982)	0 (0)	0 (0)	4,6 (1)	1 - 5 pairs (1 - 5 prs)	Prairie, Forageland
Song Sparrow (1982)	31 (13)	27 (14)	F,1,2,3,4,5,6,OkPt (7)	> 50 pairs (>50 prs)	Prairie, Sedge meadow, Marsh, Stream, Fen, Suc. field
Swamp Sparrow (1982)	27 (24)	22 (21)	1,3,5,OkPt (4)	16 - 50 pairs (> 50 prs)	Sedge meadow, Marsh, Stream
Scarlet Tanager (1982)	7 (6)	3 (4)	F,2,4,5,6 (3)	6 - 15 pairs (6 - 15 prs)	Upland forest, Floodplain forest
Northern Cardinal (1982)	28 (14)	21 (12)	F,1,2,3,4,5,6,OkPt (3)	16 - 50 pairs (16 - 50 prs)	Upland forest, Floodplain forest, Savanna, Suc. field, Dev. land
Rose-breasted Grosbeak (1982)	10 (11)	8 (6)	F,1,2,3,5,6 (4)	16 - 50 pairs (16 - 50 prs)	Upland forest, Floodplain forest, Savanna

Blue Grosbeak	0	0	F, 2	1 - 5 pairs	Upland forest, savanna
Indigo Bunting (1982)	22 (15)	16 (10)	F,1,2,4,5,6,OkPt (2)	16 - 50 pairs (16 - 50 prs)	Upland forest, Floodplain forest, Savanna, Prairie
Dickcissel	0	0	1, Misc (park roads corner)	1 - 5 pairs	Prairie
Bobolink (1982)	0 (4)	0 (5)	4, 6 (3)	6 - 15 pairs (16 - 50 prs)	Forageland, Prairie
Red-winged Blackbird (1982)	32 (24)	27 (27)	F,1,2,3,4,5,6,OkPt,Gtubels (8)	> 50 pairs (> 50 prs)	Marsh, Sedge meadow, Stream, Fen
Eastern Meadowlark (1982)	0 (1)	1 (2)	4,6 (3)	1 - 5 pairs (6-15 prs)	Prairie, Forageland
Common Grackle (1982)	29 (17)	15 (9)	F,1,2,3,4,5,OP,GT (3)	16 - 50 pairs (> 50 prs)	Upland Forest, Floodplain forest, Savanna, Stream
Brown-headed Cowbird (1982)	17 (16)	14 (15)	F,1,2,3,4,5,6,OkPt (2)	> 50 pairs (> 50 prs)	Upland Forest, Floodplain forest, Savanna, Suc. field
Orchard Oriole	2	4	F,1,2,4,5,6	1 - 5 pairs	Savanna
Baltimore Oriole (1982)	18 (12)	16 (8)	F,1,2,4,5,6,OkPt (3)	16 - 50 pairs (16 - 50 prs)	Upland Forest, Floodplain forest, Savanna
House Finch	3	1	1,4	1 - 5 pairs	Dev. Land (Park Office, Mgr residences)
American Goldfinch (1982)	26 (19)	19 (24)	F,1,2,3,4,5,6,OakPt (1)	16 - 50 pairs (> 50 prs)	Prairie, Sedge meadow, Suc. field, Savanna, Fen, Marsh
House Sparrow	2	1	4	6 - 15 pairs	Dev Land (Park Office, Stable, residences)

Total Number of Species Seen in 2008: 134
 Species seen in both 2008 and 1982: 98
 Species seen in 2008 but not seen in 1982: 36
 Species seen in 1982 but not 2008: 12
 Total Number of species seen in 1982: 110

Species seen in 1982 but not in 2008

Broad-winged Hawk	2	0	0	1 - 5 pairs	Upland forest
Ring-necked Pheasant	2	5	1	6 - 15 pairs	Prairie, Savanna
King Rail	0	0	1	1 - 5 pairs	Marsh, Sedge Meadow, Fen
Common Snipe	0	0	1	0	Late migrant
Rock Dove	1	0	0	6-15 pairs	Buildings and bridges
Whip-poor-will	0	0	1	6 - 15 pairs	Savanna, Upland forest
Blue-winged Warbler	7	4	3	6 - 15 pairs	Savanna
"Lawrence's Warbler"	1	0	0	hybrid	Savanna

Northern Waterthrush	0	1	0	0	Late migrant
Connecticut Warbler	1	0	0	0	Late migrant
Western Meadowlark	0	0	1	1 - 5 pairs	Successional field
Lincoln's Sparrow	1	0	3	0	Late migrant

Species seen in 2008 but not in 1982

Mute Swan	1	1	0	0 (?)	Natural lake
Northern Shoveler	0	2	0	0 (?)	Nat. Lake
Hooded Merganser	0	0	Misc (Deer Path Trail marsh)	1 - 5 pairs	Marsh
Northern Bobwhite	0	0	Misc (office)	0 (prob. release from reserve)	Bird sighted most likely captive release from nearby private reserve
Wild Turkey	2	0	F,4,6	1 - 5 pairs	Upland forest, Savanna
Great Egret	6	6	1,2,3,5	0 (forager only)	Marsh, Stream, Natural lake
Turkey Vulture	2	1	5	0 (?)	Prairie, Savanna, Upland forest
American Coot	0	1	C	1 - 5 pairs	Marsh, stream
Merlin	0	0	Geotubels	0 (late migrant)	Natural lake
American Coot	0	1	C	1-5 pairs	Marsh, stream
Semipalmated Plover	1	1	Geotubels	0 (early fall migrant)	Natural lake
Greater Yellowlegs	1	0	0	0 (late spring migrant)	Natural lake
Lesser Yellowlegs	0	0	Geotubels	0 (early fall migrant)	Natural lake
Ruddy Turnstone	1	0	0	0 (late spring migrant)	Natural lake
Semipalmated Sandpiper	1	1	Geotubels	0 (late spring/early fall migrant)	Natural lake
Least Sandpiper	0	1	3	0 (early fall migrant)	Natural lake
Pectoral Sandpiper	0	1	Geotubels	0 (early Fall migrant)	Stream, Natural Lake
Dunlin	1	1	0	0 (late migrant)	Natural lake
Stilt Sandpiper	0	0	Geotubels	0 (early fall migrant)	Natural lake
Short-billed Dowitcher	0	0	Geotubels	0 (early fall migrant)	Natural lake

Herring Gull	2	1	0	0 (forager)	Natural lake
Caspian Tern	6	5	Geotubels	0 (forager)	Stream, Natural lake
Eastern Bluebird	6	4	F,1,2,4,5,6	6 -15 pairs	Savanna, prairie
Nashville Warbler	0	0	Misc.	0 (late migrant)	Upland forest
Northern Parula Warbler	1	0	2	0 (late migrant)	Upland forest
Magnolia Warbler	1	0	F	0 (late migrant)	Upland forest
Prothonotary Warbler	1	0	OakPt	1 - 5 pairs	Stream
Canada Warbler	5	1	F	0 (late migrant)	Upland forest, Sedge meadow, Marsh
Clay-colored Sparrow	0	1	F,2	1 - 5 pairs	Suc. field, Savanna
Lark Sparrow	1	1	F, 6,Misc(near Park Office)	1 - 5 pairs	Savanna, Prairie
Grasshopper Sparrow	0	0	4,6	1 - 5 pairs	Prairie, Forageland
Blue Grosbeak	0	0	F, 2	1 -5 pairs	Upland forest, savanna
Dickcissel	0	0	1, Misc (corner)	1 - 5 pairs	Prairie
Orchard Oriole	2	4	F, 1,2,4,5,6	1 - 5 pairs	Savanna
House Finch	3	1	1,4	1 - 5 pairs	Dev. Land (Park Office, Mgr residences)
House Sparrow	2	1	4	1 - 5 pairs	Dev Land (Park Office, Stable, residences)

55 Transect Leg:

Bird Survey Chain O' Lakes State Park - 2008

Observer: Margo Milde

The Left Columns: the right space in the column is for use in recording birds detected during the transect between points; the left space for us during the 10-minute stop

The Right Columns: the right space in the column is for use in recording birds detected Flying Over during the 10-minute stop; the right space 1

* = see footnote

Loc-obs	Date	T or Q	Start time	End time	Temp start	Temp end	Wind start	Wind end
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/12/2008	G-tubels	01/00/1900	01/00/1900	64 F	71 F	SE 4 mph	SE 9 mph
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/12/2008	G-tubels	01/00/1900	01/00/1900	64 F	71 F	SE 4 mph	SE 9 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/12/2008	G-tubels	01/00/1900	01/00/1900	64 F	71 F	SE 4 mph	SE 9 mph
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/12/2008	G-tubels	01/00/1900	01/00/1900	64 F	71 F	SE 4 mph	SE 9 mph
COL-mrm/bs	06/12/2008	G-tubels	01/00/1900	01/00/1900	64 F	71 F	SE 4 mph	SE 9 mph
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/12/2008	G-tubels	01/00/1900	01/00/1900	64 F	71 F	SE 4 mph	SE 9 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/12/2008	G-tubels	01/00/1900	01/00/1900	64 F	71 F	SE 4 mph	SE 9 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/12/2008	G-tubels	01/00/1900	01/00/1900	64 F	71 F	SE 4 mph	SE 9 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	07/31/2008	G-tubels	01/00/1900	01/00/1900	69 F	80 F	W 5 mph	calm
COL-mrm/bs	05/29/2008	G-tubels	01/00/1900	01/00/1900	41 F	61 F	NNE 6 mph	ESE 8 mph
COL-mrm/bs	06/04/2008	G-tubels	01/00/1900	01/00/1900	53 F	55 F	NNE 5	NNE 3 mph

COL-mrm/bs	06/04/2008 G-tubels	01/00/1900	01/00/1900 53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	06/04/2008 G-tubels	01/00/1900	01/00/1900 53 F	55 F	NNE 5	NNE 3 mph
COL-mrm/bs	07/31/2008 G-tubels	01/00/1900	01/00/1900 69 F	80 F	W 5 mph	calm

e in recording birds detected

for use in recording birds detected Flying Over between stop

Sky start	Sky end	Species	*	Geotube Island				Sum	On Island only	
				At	Out	At FO	Out			
100 % clear	50% oc	American crow				1		1	1	
fog	100% oc	American goldfinch			3			3	0	
100 % clear	50% oc	American goldfinch		1				1	1	
fog	100% oc	American robin			2			2	0	
fog	100% oc	Baltimore oriole			4			4	0	
fog	100% oc	Bank swallow		7				7	7	
80% oc	85% oc	Bank swallow				4		4	0	
clear	20% clear	Bank swallow		2				2	2	
80% oc	85% oc	Barn swallow					2	2	0	
100 % clear	50% oc	Barn swallow		3				3	3	
clear	20% clear	Barn swallow		2				2	2	
clear	20% clear	Black tern		2				2	2	
fog	100% oc	Black-capped chickadee			2			2	0	
fog	100% oc	Brown-headed cowbird			1			1	0	
clear	20% clear	Canada goose		25		27		52	25	
100 % clear	50% oc	Caspian tern		2				2	2	
fog	100% oc	Common grackle			2			2	0	
100 % clear	50% oc	Common grackle		2				2	2	
fog	100% oc	Common yellowthroat				2		2	0	
fog	100% oc	Common yellowthroat			1			1	0	
clear	20% clear	Common yellowthroat				3		3	0	
80% oc	85% oc	Double-crested cormorant			1			1	0	
clear	20% clear	Double-crested cormorant		7				7	7	
fog	100% oc	Downy woodpecker			1			1	0	
fog	100% oc	Eastern kingbird			2			2	0	
fog	100% oc	Eastern wood phoebe			1			1	0	
fog	100% oc	Forster's tern		1			1	2	1	
80% oc	85% oc	Forster's tern			3			3	0	
80% oc	85% oc	Great blue heron		2				2	2	
clear	20% clear	Great blue heron		1				1	1	
fog	100% oc	Great egret					2	2	0	
fog	100% oc	House wren			3			3	0	
100 % clear	50% oc	Killdeer		15				15	15	
clear	20% clear	Killdeer		1				1	1	
100 % clear	50% oc	Least sandpiper		3				3	3	
100 % clear	50% oc	Lesser yellowlegs		5				5	5	
fog	100% oc	Mallard		1				1	1	
100 % clear	50% oc	Mallard	*	9				9	9	
clear	20% clear	Mallard		1		2		3	1	
fog	100% oc	Marsh wren			7			7	0	
80% oc	85% oc	Marsh wren			4			4	0	
clear	20% clear	Marsh wren			7			7	0	
100 % clear	50% oc	Merlin		1				1	1	
clear	20% clear	Mourning dove			1			1	0	
fog	100% oc	Northern cardinal			2			2	0	
fog	100% oc	Northern flicker			1	1		2	0	
clear	20% clear	Northern shoveler				1		1	0	
100 % clear	50% oc	Pectoral sandpiper		1				1	1	
fog	100% oc	Red-headed woodpecker			2			2	0	
fog	100% oc	Red-winged blackbird		7	29			36	7	
80% oc	85% oc	Red-winged blackbird		8				8	8	
100 % clear	50% oc	Red-winged blackbird		3				3	3	
clear	20% clear	Red-winged blackbird		18				18	18	
80% oc	85% oc	Ring-billed gull					3	3	0	
100 % clear	50% oc	Semipalmated plover		3				3	3	
100 % clear	50% oc	Semipalmated sandpiper		5				5	5	
100 % clear	50% oc	Short-billed dowitcher		1				1	1	
fog	100% oc	Song sparrow			5			5	0	
100 % clear	50% oc	Song sparrow				4		4	0	
clear	20% clear	Song sparrow				1		1	0	
80% oc	85% oc	Spotted sandpiper		1				1	1	
100 % clear	50% oc	Stilt sandpiper		2				2	2	
fog	100% oc	Swamp sparrow			3			3	0	
clear	20% clear	Swamp sparrow			2			2	0	
100 % clear	50% oc	Tree swallow		2				2	2	
clear	20% clear	Tree swallow		1				1	1	
fog	100% oc	Warbling vireo			2			2	0	

fog	100% oc	Willow flycatcher		2		2	0
fog	100% oc	Yellow warbler		4		4	0
100 % clear	50% oc	Yellowlegs sp.		3		3	3

Bird Survey Chain O' Lakes State Park - 2008

Observer: Margo Milde

The Left Columns: the right space in the column is for use in recording birds detected during the transect between points; the left space for us birds detected during the 10-minute stop

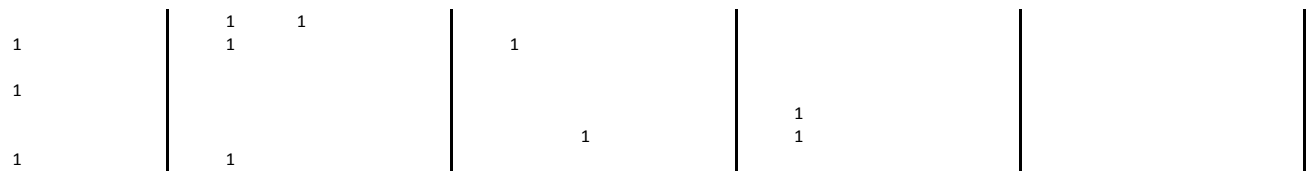
The Right Columns: the right space in the column is for use in recording birds detected Flying Over during the 10-minute stop; the right space f detected Flying Over between stops

* = see footnote

Location	Date	T or Q	Start time	End time	Temp start	Temp end	Wind start	Wind end
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008	Tr B	6:30	10:00	59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008	TrB	5:45	9:50	58 F	66 F	W 3 mph	NW 3 mph

COL	06/16/2008 TrB	5:45	9:50 58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008 Tr B	6:30	10:00 59 F	69 F	3 mph NW	6 mph NW
COL	06/29/2008 Tr B	6:30	10:00 59 F	69 F	3 mph NW	6 mph NW
COL	05/28/2008 Tr B	5:25	9:30 43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008 Tr B	5:30	9:30 77 F	81 F	S 15 mph	SSW 28 mph
COL	06/16/2008 TrB	5:45	9:50 58 F	66 F	W 3 mph	NW 3 mph
COL	06/29/2008 Tr B	6:30	10:00 59 F	69 F	3 mph NW	6 mph NW

50% clear	100% clear	Northern flicker	1		2		1		1
clear	clear	Northern parula warbler							
clear	clear	Orchard oriole					2		1
100%oc	100%oc	Orchard oriole				1	1		
25% oc	90% oc	Orchard oriole	1				1		1
50% clear	100% clear	Orchard oriole	1	1	1		1	1	
25% oc	90% oc	Purple martin							
50% clear	100% clear	Purple martin							
clear	clear	Red-bellied woodpecker			1				2
100%oc	100%oc	Red-bellied woodpecker					2		
25% oc	90% oc	Red-bellied woodpecker							
50% clear	100% clear	Red-bellied woodpecker					1		
clear	clear	Red-eyed vireo	1		1				2
100%oc	100%oc	Red-eyed vireo					1		
25% oc	90% oc	Red-eyed vireo	1						
50% clear	100% clear	Red-eyed vireo	1						
clear	clear	Red-tailed hawk		2					
100%oc	100%oc	Red-tailed hawk			1				
25% oc	90% oc	Red-tailed hawk			2				
50% clear	100% clear	Red-tailed hawk							
clear	clear	Red-winged blackbird			11	3	6	9	2
100%oc	100%oc	Red-winged blackbird			2		3	8	
25% oc	90% oc	Red-winged blackbird	1				2	2	
50% clear	100% clear	Red-winged blackbird	6	1	1			2	
100%oc	100%oc	Ring-billed gull							
clear	clear	Rose-breasted grosbeak							
100%oc	100%oc	Rose-breasted grosbeak							
25% oc	90% oc	Rose-breasted grosbeak	2		1				
50% clear	100% clear	Rose-breasted grosbeak *					1	2	
100%oc	100%oc	Northern rough-winged swallow		1					
50% clear	100% clear	Northern rough-winged swallow			1				
50% clear	100% clear	Ruby-throated hummingbird							
clear	clear	Sandhill crane			2				
100%oc	100%oc	Sandhill crane *					1		
25% oc	90% oc	Sandhill crane							
50% clear	100% clear	Sandhill crane							
clear	clear	Scarlet tanager							
25% oc	90% oc	Scarlet tanager		1					
50% clear	100% clear	Scarlet tanager							
25% oc	90% oc	Sedge wren						2	1
50% clear	100% clear	Sedge wren	1	2	2		2	2	2
clear	clear	Song sparrow	1		8	2	4	3	2
100%oc	100%oc	Song sparrow	2	1	11		5	10	1
25% oc	90% oc	Song sparrow	14		3	6	4	10	2
50% clear	100% clear	Song sparrow	7			9	2	7	1
clear	clear	Swainson's thrush							
clear	clear	Swamp sparrow							1
100%oc	100%oc	Swamp sparrow							
25% oc	90% oc	Swamp sparrow	4				2		
50% clear	100% clear	Swamp sparrow					1		1
clear	clear	Tennessee warbler							
clear	clear	Tree swallow				2		2	2
100%oc	100%oc	Tree swallow			3		6	5	3
25% oc	90% oc	Tree swallow	6		2		6	7	2
50% clear	100% clear	Tree swallow			7	2	1	9	2
clear	clear	Turkey vulture							1
100%oc	100%oc	Turkey vulture						1	
clear	clear	Veery							
clear	clear	Warbling vireo							
100%oc	100%oc	Warbling vireo			1				1
25% oc	90% oc	Warbling vireo	2		1				
50% clear	100% clear	Warbling vireo	2						
clear	clear	White-breasted nuthatch							
25% oc	90% oc	White-breasted nuthatch	1						
50% clear	100% clear	White-breasted nuthatch	3		3	1		2	
100%oc	100%oc	Willow flycatcher				2			
25% oc	90% oc	Willow flycatcher					1		
clear	clear	Wilson's warbler					2		
clear	clear	Wood thrush			1	1		2	1
100%oc	100%oc	Wood thrush		1					
25% oc	90% oc	Wood thrush		1					
50% clear	100% clear	Wood thrush							
clear	clear	Yellow warbler	1		2		1	1	1
100%oc	100%oc	Yellow warbler			3		1	1	
25% oc	90% oc	Yellow warbler	9		1		1		
50% clear	100% clear	Yellow warbler							
clear	clear	Yellow-billed cuckoo	1						
100%oc	100%oc	Yellow-billed cuckoo						1	



Bird Survey Chain O' Lakes State Park - 2008

Observer: Margo Milde

The Left Columns: the right space in the column is for use in recording birds detected during the transect between points; the left space for us birds detected during the 10-minute stop

The Right Columns: the right space in the column is for use in recording birds detected Flying Over during the 10-minute stop; the right space f detected Flying Over between stops

* = see footnote

Location	Date	T or Q	Start time	End time	Temp start	Temp end	Wind start	Wind end
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	05/28/2008	Tr B	5:25	9:30	43 F	51 F	NNE 6 mph	ESE 8 mph
COL	06/06/2008	Tr B	5:30	9:30	77 F	81 F	S 15 mph	SSW 28 mph

100%oc	100%oc	Alder flycatcher							
100%oc	100%oc	American crow							
100%oc	100%oc	American goldfinch				3	3		
100%oc	100%oc	American redstart							
100%oc	100%oc	American robin	2		1	1	8		2
100%oc	100%oc	Baltimore oriole		1	1	1	1		
100%oc	100%oc	Bank swallow		4		4			
100%oc	100%oc	Barn swallow					2		
100%oc	100%oc	Belted kingfisher						1	
100%oc	100%oc	Black-capped chickadee		1					
100%oc	100%oc	Blue jay	1					1	1
100%oc	100%oc	Blue-gray gnatcatcher						1	
100%oc	100%oc	Brown-headed cowbird				2	2		1
100%oc	100%oc	Canada goose							
100%oc	100%oc	Canada warbler					2		
100%oc	100%oc	Cedar waxwing			2				
100%oc	100%oc	Chipping sparrow							1
100%oc	100%oc	Common grackle							
100%oc	100%oc	Common yellowthroat		2	14		5	9	
100%oc	100%oc	Downy woodpecker						1	
100%oc	100%oc	Eastern bluebird			1				1
100%oc	100%oc	Eastern phoebe							
100%oc	100%oc	Eastern wood peewee			1			2	
100%oc	100%oc	Field sparrow			2				
100%oc	100%oc	Gray catbird			2				
100%oc	100%oc	Great blue heron							
100%oc	100%oc	Great-crested flycatcher		1					
100%oc	100%oc	Hairy woodpecker		1					
100%oc	100%oc	House wren		1	2			2	2
100%oc	100%oc	Indigo bunting		2	5		1	2	1
100%oc	100%oc	Marsh wren							
100%oc	100%oc	Mourning dove						2	
100%oc	100%oc	Northern cardinal			1			2	
100%oc	100%oc	Northern flicker		1					
100%oc	100%oc	Orchard oriole					1	1	
100%oc	100%oc	Red-bellied woodpecker						2	
100%oc	100%oc	Red-eyed vireo						1	
100%oc	100%oc	Red-tailed hawk							1
100%oc	100%oc	Red-winged blackbird			2		3	8	3
100%oc	100%oc	Ring-billed gull							
100%oc	100%oc	Rose-breasted grosbeak							
100%oc	100%oc	Northern rough-winged swallow		1					
100%oc	100%oc	Sandhill crane	*				1		
100%oc	100%oc	Song sparrow	2	1	11		5	10	1
100%oc	100%oc	Swamp sparrow							
100%oc	100%oc	Tree swallow			3		6	5	3
100%oc	100%oc	Turkey vulture							1
100%oc	100%oc	Warbling vireo			1				
100%oc	100%oc	Willow flycatcher			2		1		
100%oc	100%oc	Wood thrush		1					
100%oc	100%oc	Yellow warbler			3		1	1	
100%oc	100%oc	Yellow-billed cuckoo						1	
100%oc	100%oc	Yellow-throated vireo						1	1
25% oc	90% oc	Acadian flycatcher							
25% oc	90% oc	American crow	2						
25% oc	90% oc	American goldfinch	22		2		1	8	1
25% oc	90% oc	American redstart	2					1	
25% oc	90% oc	American robin	9		2			9	3
25% oc	90% oc	Baltimore oriole	8		1	1	1		
25% oc	90% oc	Bank swallow		7	3				
25% oc	90% oc	Belted kingfisher	1						
25% oc	90% oc	Black-billed cuckoo	1						
25% oc	90% oc	Black-capped chickadee	1		3				
25% oc	90% oc	Blue jay	1	4	2				2
25% oc	90% oc	Blue-gray gnatcatcher	6		1			1	
25% oc	90% oc	Brown-headed cowbird	10		1	1	1		4
25% oc	90% oc	Cedar waxwing	9						4
25% oc	90% oc	Chipping sparrow	2						4
25% oc	90% oc	Common grackle	1						
25% oc	90% oc	Common yellowthroat	*	16	8	2	1	6	2
25% oc	90% oc	Cooper's hawk							
25% oc	90% oc	Downy woodpecker	2					1	1
25% oc	90% oc	Eastern bluebird			1		1		
25% oc	90% oc	Eastern kingbird			2		2		1
25% oc	90% oc	Eastern phoebe							
25% oc	90% oc	Eastern wood peewee	5				1		
25% oc	90% oc	Field sparrow	11		2	3	2		
25% oc	90% oc	Gray catbird	7		1				
25% oc	90% oc	Great blue heron							

1
1

4

1

3

1

1

1

5

3

4

3

4

1

6

1

1

3

1

1

2

1

3

1

1

7

2

1

3

3

1

2

3

2

4

2

1

2

5

1

1

1

1

2

2

6

2

1

3

1

3

3

1

3

1

1

1

2

1

1

1

4

1

4

2

5

1

3

4

1

1

1

1

2

7

2

2

1

5

2

4

3

2

1

1

1

3

1

2

3

2

4

6

1

2

1

1

2

1

1

8

1

1

1

1

2

7

1

2

1

1

5

3

1

1

1

1

4

2

2

1

1

2

2

2

1

1

4

1

1

3

2

1

2

1
1
1

|

1
1
1

1
2

|

1
1

|

1

|

VOLO BOG STATE NATURAL AREA

AVIAN ECOLOGICAL INVESTIGATION – 2009

FINAL REPORT

Margo Milde

November 28, 2009

INTRODUCTION

The avian ecological investigation I conducted at Volo Bog in 2009 was modeled on that performed by Scott Hickman and James Neal in 1983. As much as was possible, similar methodology for both collection and tabulation of data was used (exceptions noted below.) The 1983 report followed the outline suggested by the IDOC (now IDNR) proposal request for a Volo Bog State Natural Area (VBSNA) avian ecological investigation, then called “Volo Bog and Wilson Bog Nature Preserve” in the 1983 report. Similar to the report prepared in 1983, this report will:

- A. Tabulate results
 - 1. Bird species presence and breeding abundance
 - 2. Vegetation record of census stops
- B. Summarize results
 - 1. Species summaries – population number (estimate), habitat association, and distribution within VBSNA
 - 2. Species distribution maps
 - 3. Habitat summaries – habitat distribution, bird species utilization, and dependency
- C. Management recommendations for single species, groups of species, and habitats
- D. Analysis of IDNR Avian Investigation Procedures and Recommendations for future avian investigations

VARIANCES FROM 1983 DATA COLLECTION METHODOLOGY AND TABULATION

There were several major variances from data collection methodology from that used in 1983:

- A. Changes in locations of Transect and Qualitative Study points
 - 1. As much as was possible, the Transect and Qualitative Study points remained unchanged from the original 1983 survey. One major exception was that Point T1-2 was eliminated, in favor of use of the Volo Bog Platform, Point Q2A, as a substitute. Additional survey points were added as follows: Point Q1-3 (observation blind); Point Q1-4 (southeast marsh overlook); Point Q1-5 (observation tower overlooking marsh); Point Q6-1 (mesic prairie southwest of maintenance garage); and Point Q6-2 (mesic prairie and pond overlook west of farm property north of Brandenburg Road.) These are detailed in **Appendix A**.
 - 2. Instead of the straight-line transects walked by Mr. Hickman and Mr. Neal in 1983, I established routes for the most part which were easily walkable. I therefore had five major routes and three minor qualitative study points as follows:

- a. Southeast hill prairie, quarry perimeter, and marshes
- b. Tamarack View Loop trail (with several deviations)
- c. Hill prairie, pine tract, and Brandenburg Bog north edge south of Big Hollow Road
- d. Northwest hayfields, prairies, woods, sedge meadows, and bogs
- e. Loop trails , pond overlooks, and hayfields north of Brandenburg Road
- f. Volo Bog boardwalk trail (Qualitative Study area)
- g. Brandenburg Lake, by kayak (Qualitative Study area)
- h. South prairie and pond overlook (Qualitative Study area)

These are detailed in **Appendix A**.

- 3. I established a “miscellaneous” category, included in the Qualitative Study Points, for significant data obtained at locations not along transect or near an established Qualitative Study point. This category also includes night birding results for owls and rails, obtained during the overnight hours of 6/17/09 - 6/18/09, and the late evening hours of 6/26/09.
- B. Updated technology and software to gather and analyze data
 - 1. I used Microsoft Excel spreadsheeting software to tabulate, analyze, and summarize data. This tool was not available to the 1983 researchers.
 - 2. I used a hand-held GPS to record coordinate for each of the Transect and Qualitative Study points, and used these to relocate these points for each survey each day I was in the field. I have included coordinates for these points in **Appendix A**. This GPS was an additional tool not available to Mr. Hickman and Mr. Neal during their 1983 survey, and will make replication of this work in future years even more precise.
 - C. Timing of the 2009 survey was extended: Due to several rainy weeks in mid-June 2009, the dates of this study were extended to July 31, with permission of Maggie Cole. The project had June 30, 2009 as the original avian data collection date. (Starting date of June 1 was unchanged, although my first day in the field was June 2.)
 - D. Procedural difference in data collection: One major difference between the 1983 count and the 2009 count was that Mr. Hickman and Mr. Scott worked on this count together in 1983, whereas I took on the 2009 count by myself.

I have attached a map prepared by Mr. Semel showing the updated points used in 2009, which is mostly correct for what is shown except exceptions as noted above.

TABULATION OF RESULTS

A. Bird species presence and breeding abundance

Data was collected along the five major established transects as noted above, and three qualitative study areas. Data collection took place between the hours of 5:00 am and 10:00 am. The original dates for collecting avian field data were 6/1/09 – 6/30/09. As mentioned above, the study extended approximately one month later the intended date of completion, due to heavy continual rains in early and mid-June, and subsequent minor flooding during that period. I finished the last land survey route on 7/18/09, and the last kayak route (Brandenburg Lake) on 7/27/09. Two owl/rail night studies were done, the first between the hours of 11:00 p.m. and 3:15 a.m., 6/17/09 through 6/18/09, and again from 10:00 pm through 11:30 pm

on the evening of 6/26/09. During these two evenings only, taped calls of owls (Eastern Screech Owl), and Rails (Virginia Rail, King Rail, Sora, Black Rail, and Yellow Rail) were used to attempt to call in these night birds.

Data is summarized in “AVIAN ECOLOGICAL INVESTIGATIONS TABULATION SHEET” as was done originally in 1983. (I chose to convert this to an Excel spreadsheet but it is otherwise unchanged). I also prepared a similar sheet, “AVIAN ECOLOGICAL INVESTIGATIONS TABULATION SHEET WITH COMPARISON TO 1983”, documenting the changes that have taken place since 1983 in both species inhabiting the park and their populations and nesting status. During this complete period, 6/1/09 – 7/27/09, I recorded 96 species, of which 95 were recorded in the original count period, ending 6/30/09.

83 species had been recorded in the 1983 Hickman/Neal count. Of these 96 species recorded by me in 2009, I believe 81 are probable nesters (many of these were confirmed by me during this season as is noted in the comments section on the “WITH COMPARISON TO 1983” report.) The Hickman/Neal team in 1983 thought that 72 species were probable nesters.

Significant birds that were observed by Mr. Hickman and Mr. Neal in 1983, which they believed were breeding in the park, but which I did not observe in 2009 include the following species:

- Least Bittern
- Red-shouldered Hawk
- Black-billed Cuckoo
- Acadian Flycatcher
- White-eyed Vireo
- Mourning Warbler
- Yellow-breasted Chat

Significant and probable or confirmed breeding species that I observed during the “official” count period 5/25/09 through 7/27/09 which were not seen nor heard in 1983 include the following:

- Pied-billed Grebe
- Northern Harrier
- Cooper’s Hawk
- Common Moorhen
- Sandhill Crane
- Ruby-throated Hummingbird
- Eastern Phoebe
- Blue-gray Gnatcatcher
- Eastern Bluebird
- Blue-winged Warbler
- Henslow’s Sparrow
- Dickcissel
- Orchard Oriole

Of the above, all were probably or confirmed breeders in 2009, with the exception of the Northern Harrier, which was probably an itinerant male.

Using the most current listing (October 30 2009), I noted two Illinois State Endangered Species (**Appendix B**), of which one, Common Moorhen, was a probable nester in 2009.

While these observations were not made by me, and predated the count period beginning June 2 2009, I wish to note two species for which at least several reliable sightings were made at VBSNA, although I did not include them in my survey tabulations:

1. A pair of adult Bald Eagles were spotted, during the early and mid Spring months of 2009; most likely these are the pair from the Grass Lake Bridge area northeast of VBSNA.
2. An adult Osprey was observed diving for fish in the western portion of Brandenburg Lake, just offshore from the northeast corner of VMSNA, several dates during the Spring, the last time seen in late May 2009.

Additionally, on May 30, 2009, I led a group from the Evanston North Shore Bird Club through the loop trails north of Brandenburg Road, as well as the boardwalk trail and a quick excursion to the prairie across from the maintenance building. Among the 67 species we tallied that day were included the following significant birds:

1. Several Ovenbirds calling from the mesic woodland in the vicinity of point T2-7. This species was not heard or seen again during the count period.
2. A Virginia Rail was heard calling from the marsh along the Volo Bog boardwalk.
3. A Henslow's Sparrow was repeatedly heard calling in prairie just across from the maintenance garage driveway. (This bird was heard calling again from the exact same location on June 15 2009)
4. A pair of adult Sandhill Cranes with a colt was seen just off the trail in the marsh between T2-2 and the trail intersection with the trail leading to the north loop trails. This family grouping was seen in the same approximate location several times during June.
5. Several Bobolinks were seen displaying in the fields northwest of point Q6-2; these were regularly seen throughout the month of June.
6. A male Blue-winged Warbler was seen and heard, singing repeatedly from a small tree northwest of point T2-5 in successional field.

Finally, I walked the northwest fields and bog edges in search of birds on May 31, one day before the count officially began. Birds that I encountered on that date that I did not find at these locations during the count included several singing Henslow's Sparrows between points Q5-1 and Q5-2, and several Sedge Wrens in the sedge meadows near point T3-3.

I have attached the following tabulation sheets which show complete results:

1. Excel spreadsheet for all Transect Points, and a similar one for Qualitative Data points
2. Spreadsheet compilation of the all of the above spreadsheets, by species
3. Avian ecological investigations tabulation sheet, in the format used by Scott/Hickman in 1983, with the exception that I used Excel while they used a word processor
4. A similar tabulation sheet, but including comparisons to what had been recorded in 1983.

Habitats frequented by birds at Volo Bog included floodplain forest, upland forest, prairie, savanna, successional field, marsh, sedge meadow, cropland, and natural lake. An additional significant avian habitat category found at Volo Bog, shrubland, was not included in the original habitat categories. Believing this is an important omission, I have included a separate listing of shrubland birds observed by me in 2009 at Volo Bog in **Appendix C**.

B. Vegetation record of census stops

The location of census points for the five transects and three Qualitative Data points can be mostly found on the attached map prepared by Brad Semel, and the GPS coordinates of all transect count points and all qualitative study points are found in **Appendix A**. I prepared Stratum Ranking Forms for each of these census stops, which were included with this report.

C. Species Summaries

As was done in 1983, the following is a summary of the bird species encountered during the 2009 avian survey, including the species name, estimated population, habitat association, and distribution within VBSNA:

Canada Goose: This species was occasionally seen near areas of open water at VBSNA; there are probably 6 – 15 breeding pairs. I watched one adult Canada Goose with three goslings in the marsh at point T1-3 on June 3, 2009. On June 28, 2009, I observed one adult with three juvenile Canada geese in marsh between transect points Q1-4 and Q1-5.

Mute Swan: This species was frequently seen in small numbers in the marshes east and south of Volo Bog proper, as well as in the large marshy pond across the road from the Volo Bog Visitor Center. There are approximately 1 – 5 pairs of this invasive species nesting at the park. I observed a Mute Swan on a nest in the marsh west of point Q1-4 on June 2, 2009. On June 20, 2009, I saw two adults with three juvenile Mute Swans at the marsh overlook transect point Q6-2.

Wood Duck: This species was seen occasionally in open water marsh areas throughout the park, as well as on Brandenburg Lake. There are an estimated 1 – 5 pairs found at the park. They nest in nearby forested areas and savanna adjacent to the marshes and ponds. On June 25, 2009, I observed from transect point Q6-2 three adult Wood ducks with two juveniles in the marsh across road from visitor center, and on I saw this family grouping in the same location on July 8, 2009.

Mallard: This species was occasionally seen through the park in marshes and ponds, as well as on Brandenburg Lake. There are an estimated 6 – 15 nesting pairs at VBSNA. On June 28, 2009, I saw one adult female with three juvenile Mallards at transect point Q1-3.

Blue-winged Teal: This species was infrequently observed in small numbers at several marshes located at VBSNA. One pair of birds could reliably be viewed in the marsh north of transect point T1-3, and a male was observed several times in June in a swampy wetland north of point Q1-1, although I did not observe any juveniles at either location. There are an estimated 1 – 5 nesting pairs at the park.

Ring-necked Pheasant: Only encountered one time during the census, on July 14, 2009, when I heard it call from a brushy field border near point Q5-1. This is probably not a breeding bird at VBSNA.

Pied-billed Grebe: Frequently observed in the marshes east and south of Volo Bog proper, as well as in the marshy pond across the road from the Volo Bog Visitor Center, with an estimated 1 – 5 pairs of birds at VBSNA. On June 12, 2009, in this marsh opposite the Visitor Center, I saw one adult with three juveniles north of transect point T2-1. On June 21, 2009, I watched one adult Pied-billed Grebe carrying one juvenile on its back, with two additional juveniles swimming nearby, in the marsh near transect point Q1-4 (southeast marsh overlook). Finally, on June 28, 2009, I observed three juvenile Pied-billed Grebes (no adult closely nearby) in the marsh west of point Q1-3 (observation blind).

Double-crested Cormorant: Although this species was frequently observed on a number of census days, especially on or near Brandenburg Lake, there is no evidence that it nests at the park. Its numbers have increased markedly since 1983, when it was not observed at all during the count.

Great Blue Heron: Although this species was frequently seen in small numbers in marshes at VBSNA in 2009, there is no evidence that this species now nests at the park.

Great Egret: This species was occasionally seen in small numbers in marshes in 2009, however, there is no evidence that it nests at the park. This species was not observed here in the 1983 survey.

Green Heron: This species was regularly found in small numbers in marshes throughout VBSNA; at least one pair could be reliably viewed in the marsh near the marsh outlet (beaver dam area) near Sullivan Lake Road. There are probably 6 – 15 pairs that nest at the park.

Turkey Vulture: One individual were infrequently observed flying over upland forest, savanna, and prairie habitat during the count period. There is no evidence that these birds nest at the park. This species was not observed in 1983.

Northern Harrier: On July 18, 2009, one adult male was seen north of point T1-6 flying low and hunting over the marsh. This was the only time during the survey that this species was encountered, and it was most likely a vagrant summering bird. This species was not observed in 1983 at the park.

Cooper's Hawk: Cooper's Hawks, either lone individuals or pairs, were regularly seen during the survey period. There was a very reliable pair observed several times over the successional fields and pine tract between transect points T2-8 and T3-7. There are an estimated 1 – 5 nesting pairs at the park. This species was not observed here in 1983.

Red-tailed Hawk: Individuals birds and pairs of birds were frequently observed throughout the census period, especially over the degraded hill prairie around point T2-8. There are an estimated 1 – 5 pairs of nesting birds at the park.

Virginia Rail: On June 2, June 18, and July 15, 2009, I heard one Virginia Rail calling from the marshes northwest of the Observation Tower at point Q1-5. On the evening of June 17, 2009, I used a tape to call in two Virginia Rails along the Volo Bog boardwalk; they approached to within two meters of me! I also heard another one later that evening (early morning of June 18) not far from the north marsh outlet along Tamarack View Trail. Also on June 26, 2000, around 9:00 pm, I heard a Virginia Rail calling from the large marsh across the road from the Visitor Center. I estimate 1 – 5 pairs nest at the site.

Sora: This species was regularly heard at various marshy locations throughout the park, with an estimated number of 6 – 15 pairs of birds.

Common Moorhen: One or two individuals of this species was regularly observed from points Q1-3, Q1-4, and Q1-5 in the marshes east and south of Volo Bog proper; there are probably an estimated 1 – 5 breeding pairs at VBSNA. (See **Appendix B** for additional details on this species.) This species was not observed during the 1983 census.

American Coot: There are an estimated 1 – 5 pairs nesting in marshes at the park. On June 21, 2009, I observed one American Coot with 1 juvenile at the marsh corner between transect points Q1-4 and Q1-5.

Sandhill Crane: This species was regularly seen in small numbers feeding in marshes, sedge meadows, cropland, and forageland through VBSNA during the 2009 count, and is estimated at 6 – 15 pairs. This species was not found in 1983, so its population increase is remarkable. On June 9, 2009, I observed two adult Sandhill Cranes with one juvenile in the marsh near transect point T2-2; this was probably the same family grouping observed by our bird club outing on May 30, 2009.

Killdeer: Small numbers of this species was regularly seen through suitable habitat in the park, especially flying overhead near the southeast hill prairie. There are an estimated 1 – 5 pairs at the park.

Spotted Sandpiper: One pair of this species was frequently observed several times between points Q1-1 and Q1-2, in the vicinity of the Quarry, where it probably nests. (It does not nest in the park.)

American Woodcock: One individual was flushed in brushy habitat in the pine tract east of transect point T3-7 on June 12 2009. There are an estimated 1-5 nesting pairs at the park.

Ring-billed Gull: This species was infrequently seen overhead in small numbers throughout the park. It does not nest at the park.

Rock Pigeon: Small numbers of this species seen several times in the vicinity of T1-7; they nest in the residential areas across Sullivan Lake Road and forage in the park.

Mourning Dove: Small numbers of this upland species were regularly observed through the census period in savanna, successional land, prairie, and occasionally near buildings on developed land. There are an estimated 6 – 15 pairs nesting at the park.

Yellow-billed Cuckoo: This species was heard only one time, on June 12, 2009, calling from the woods southwest of transect point T3-5; there are an estimated 1 – 5 pairs nesting in the park.

Eastern Screech Owl: During night owling, from June 17 – June 18, 2009, using taped calls, I found 4 Eastern Screech owls: 1 along the Tamarack View trail in upland woods southeast of the observation blind (transect point Q1-3), and a family grouping of three (one adult with two juveniles) who came to perch in a white oak just overhead from me at a spot along the Tamarack View trail in upland woods north of Transect point T1-7, just after I played a screech owl tape. The juveniles were most upset with me, hissing and bill-snapping as they hopped from branch to branch, so I didn't linger at that spot. Approximately one week later, on the late evening of June 26, 2009, I used a tape to call in two separate screech owls in upland woods, one near point T2-7, and the second near point T2-6. No doubt I would have found additional birds in other suitable habitat at the park. There are an estimated 1 – 5 pairs nesting at the park.

Great Horned Owl: I saw one Great Horned Owl fly away from me from the low woods north of Point Q101 not long after dawn on June 18, 2009. There are an estimated 1 – 5 pairs nesting at the park.

Chimney Swifts: Small numbers of this species were occasionally seen overhead throughout the park, most frequently in the residential area between points Q4-2 and Q4-1. They probably do not nest in the park.

Ruby-throated Hummingbird: Although there are hummingbird feeders at the Visitor Center, I did not see any at that specific location. However, I saw a very territorial Ruby-throated Hummingbird perched in the same small dead snag in successional field north of transect point T3-1 on two separate occasions: June 17 and July 14, 2009; it eyed me closely both times as I walked by but did not fly off. I also observed a second Ruby-throated Hummingbird in low woods south of transect point T1-4 on July 18, 2009. There are an estimated 1 – 5 nesting pairs at the park.

Belted Kingfisher: Small numbers are frequently flying over and foraging in the open water marshes throughout the park, however, they are not thought to nest in the park itself.

Red-headed Woodpecker: On July 18, 2009, I watched one adult Red-headed Woodpecker fly repeatedly away from and then back to a nesting hole in a dead snag next to the marsh near the beaver dam outlet (along the Tamarack View Trail between points T1-1 and T1-7), at one point chasing away several would-be usurping European Starlings from that tree. Several Volo Bog volunteers had spent a great deal of time watching this particular pair and nest in the nesting hole in that snag over the summer, and report that they nested successfully. There are an estimated 1 – 5 pairs at the park.

Red-bellied Woodpecker: This species is relatively frequent in upland forest and savanna habitats at VBSNA, where there are an estimated 6 – 15 pairs.

Downy Woodpecker: This species is common at VBSNA, and is a cavity nester in savanna, upland forest, and floodplain forest habitat; it is occasionally seen near buildings on developed land, as well. There are an estimated 16 – 50 pairs at the park.

Hairy Woodpecker: This species is occasional in upland forest habitat, and is estimated at 6 – 15 pairs at the park.

Northern Flicker: This relatively common species can be found in a variety of habitats, but appears to prefer savanna and upland forest. There are an estimated 6 – 15 pairs at the park.

Olive-sided Flycatcher: One individual was seen and repeatedly heard calling from a dead snag near point T1-1 on June 3, 2009; it was a late migrant. Hickman/Neal also had late migrant representatives of this species in their 1983 census.

Eastern Wood Peewee: This species is common in the upland forest areas of the park, as well as floodplain forest and savanna, and there are an estimated 6 – 15 pairs nesting at the park.

Alder Flycatcher: Although this species was heard several times singing in suitable habitat (brushy marsh edges) at various locations in early June, no Alder Flycatchers were heard singing after June 4, 2009, where a bird was heard singing from the Volo Bog platform near Q2A. This species was known to nest at VBSNA previously; Hickman/Neal recorded it as a nester (1-5 pairs) in 1983. While conducting botanical surveys of Pistakee and Brandenburg Bogs, I heard Alder Flycatchers sing through mid-July in 1994 and again in 2003-2004 in the interiors of these two bogs. It is possible that they still nest in the interiors of bogs on the site, however, deep water in 2009 made a search for them impossible at these locations. While they possibly were only a late spring migrant in 2009, nesting cannot be completely ruled out, since abundant suitable habitat exists and many such locations in the park are difficult to access by humans, making nesting verification challenging.

Willow Flycatcher: This species is relatively frequent along brushy patches and edges bordering successional field, prairie, fen, and sedge meadow. There are an estimated 16 – 50 pairs at the park.

Least Flycatcher: This species is infrequent at the Park, with an estimated 1 – 5 nesting pairs. One Least Flycatcher was heard repeatedly calling from the low woods northeast of T1-4 on June 2, June 9, June 21, and June 25, 2009. Hickman/Neal reported 6 – 15 pairs from bogs, however, I did not have any in Volo Bog proper, and since I did not get into the interiors of Pistakee and Brandenburg Bogs, it is quite possible that I missed hearing them there as well.

Eastern Phoebe: This species is occasionally found on the edges of upland and floodplain forest in the park. On June 21, 2009, I found an active Eastern Phoebe nest just above the outside of the door to the bird blind on the marsh edge, at point Q1-3; an adult was observed frequently bringing insects to the nestlings, who appeared to number about three. There are an estimated 1 – 5 pairs that nest at the park. This species was not found on the 1983 avian survey at this site.

Great-crested Flycatcher: This species is occasionally found in suitable habitat (floodplain forest, upland forest and savanna) throughout the park, and are estimated at between 6 – 15 pairs. They are especially conspicuous in the low woods southwest of Brandenburg Lake, near point T2-7, where they are also observed from the lake.

Eastern Kingbird: This species is occasional in the more open upland areas of the park, particularly prairie, savanna, and successional land. One reliable location for them is the successional field east of the old quarry lake and east of point Q4-2 and west of point T3-2. One pair was repeatedly seen perched on dead snags in the southwest corner of Brandenburg Lake, near point Q3-2, where they repeatedly chased away other birds. There are an estimated 6 – 15 pairs at the park.

Yellow-throated Vireo: This species is infrequently heard throughout the park. The most reliable place for it is the marsh island (Oak Island) southeast of the Volo Bog platform, where it could be heard singing from the platform on quiet mornings. There are an estimated 1 – 5 pairs nesting in the park.

Warbling Vireo: This species is occasionally heard singing in floodplain and mesic woods near marshes throughout the park, and there are an estimated 6 – 15 pairs of birds.

Red-eyed Vireo: This species is relatively common in upland forest habitat throughout the park, and there are an estimated 6 – 15 pairs.

Blue Jay: This relatively frequent species is found foraging in a variety of habitats at the park, although they probably would most often nest in small trees or brush in forested areas and savanna. There are an estimated 16 – 50 pairs in the park, where they travel in small family groups in mid-and late-summer. On July 27, 2009, while on the Brandenburg Lake kayak route, I saw an adult Blue Jay carrying food while it was flying over the marsh near point Q3-1, confirming nesting.

American Crow: This relatively common species is seen foraging in a variety of habitats, especially upland forest. They nest in upland forests, and are estimated at 16 – 50 pairs. On July 7, 2009, I heard several juvenile crows calling near Point Q-1, and also between Point Q4-3 and Point Q4-4, confirming nesting status at the park.

Purple Martin: This species is occasionally seen in small numbers flying over the open water marshes; they are not known to nest at the park at this time, but instead nest at colonial martin houses in residential areas outside the park.

Tree Swallow: This species is common at the park, and occasionally take over bluebird boxes as nesting sites. There are an estimated 16 – 50 nesting pairs at the park, aided by the bluebird boxes; this is a great increase over the 1 – 5 pairs that Hickman/Neal estimated in 1983. On June 2, 2009, I watched an Adult tree swallow carrying nest material to bluebird box # 23 near point Q1-3, confirming nesting here at VBSNA.

Northern Rough-winged Swallow: This swallow species is occasionally seen in small numbers over open water marshes, however they are not known to nest at the park.

Bank Swallow: This species is seen occasionally in the park, over both water and open land areas. This species does not nest in the park, but instead nests at the quarry northeast of the park. There is a sizable colony of bank swallow nests in the quarry's clay banks that can be seen from the quarry overlooks between points Q1-2 and Q1-2.

Barn Swallow: This common species is often found near human habitation, as well as over open water marshes and on Brandenburg Lake. There are several (estimated 6 – 15) active nests below the eaves of the Volo Bog Visitor Center.

Black-capped Chickadee: This species is relatively common in upland forest and savanna areas of the park, and are estimated at 16 – 50 pairs. This species is now more numerous at the park since 1983, when 6 – 15 pairs were estimated to nest at the park.

White-breasted Nuthatch: This species is occasional in upland forested areas of the park, and is estimated at 16 – 50 pairs. This species has increased greatly since 1983, when Hickman/Neal estimated only 1 – 5 pairs at the park.

House Wren: This species is common in a variety of habitats, but is especially common in brushy borders of marshes, prairies, and sedge meadows, and savanna. They occasionally nest in bluebird houses; on June 3, 2009, I watched a pair of adult House Wrens tending next box #30 near point T2-3. There are an estimated 16 – 50 pairs at the park. They have increased greatly since 1983, when there were only an estimated 6 – 15 pairs.

Sedge Wren: This species is infrequent in several areas of the park, but are most reliable in the unmowed hayfields around and southeast of point T3-4. They are not found in recently mowed fields. There are an estimated 6 – 15 pairs at VBSNA.

Marsh Wren: This species is relatively common in marshes and wetter sedge meadows throughout the park, and are estimated at 16 – 50 pairs.

Blue-gray Gnatcatcher: This species is relatively common on the edges of upland and floodplain forests, and savanna habitat bordering marshes and sedge meadows, with an estimated 16 – 50 pairs at the park. This species was not recorded during 1983.

Eastern Bluebird: This species is frequent in savanna, prairie, and successional field habitat, and prefers nesting boxes where available. This species was not recorded in the 1983 count. There are an estimated 16 – 50 pairs at the park, which has a volunteer-monitored bluebird trail. On June 2, 2009, I observed a fledgling bluebird south of point Q1-1 close to Sullivan Lake Road (in an area where several bluebird boxes are located), confirming nesting for this species. In addition to other fledgling sightings, I also saw one adult Eastern Bluebird in close proximity to a fledgling near point Q4-3 on July 14, 2009.

Veery: This uncommon species can be heard singing from mesic woodland between points T3-5 and T3-4; in the bog between points T3-6 and T2-6; and from the Volo Bog boardwalk platform. There are an estimated 1 – 5 pairs of birds at the park.

Wood Thrush: This species was most frequently heard in the upland woods west of point T2-3, and is estimated at between 1 – 5 pairs.

American Robin: This species is abundant in a variety of forested and semi-open areas of the park, including near buildings and developed land. There are more than 50 pairs estimated at the park. On June 3, 2009, I watched an adult American Robin carrying food near point T2-3. Several weeks later, on June 29, I saw a number of recently fledged Robins along the first ½ mile of the Tamarack View trail.

Gray Catbird: This species is common in brushy edges and semi-open habitat, such as savanna and successional field. There are between 16 – 50 pairs at the park.

Brown Thrasher: This is relatively frequent in brushy habitat at the park. There was a pair nesting in the woods edge north of maintenance garage near point Q2 which I observed on several occasions, and on June 24, 2009, I observed an adult Brown Thrasher carrying food at this location, confirming nesting. There are an estimated 6 – 15 pairs nesting at the park.

European Starling: This species is common in areas of human habitation and buildings, as well as floodplain forest having an abundance of dead snags for use as nesting sites. It nests in the ventilation fans at the maintenance garage, as well as in a group of dead snags in the marsh just east of the garage, and I saw a number of European starling fledglings in the dead snags to the northeast of the garage on the edge on the marsh on June 29, 2009. There are an estimated 6 – 15 pairs that nest in the park.

Cedar Waxwing: This species is frequently seen in small numbers foraging in trees in upland forest and savanna. There are an estimated 6 – 15 pairs at the park.

Blue-winged Warbler: This species was regularly seen and/or heard in small numbers, particularly in the successional field northwest of T2-5, and also in successional field southwest of T2-4. There are probably 1 – 5 pairs nesting at VBSNA. This species was not observed in 1983.

Yellow Warbler: This common species is frequent in brushy borders of marshes, sedge meadows, bogs, and prairies in the park, and is estimated at between 16 and 50 pairs.

Black-and-white Warbler: A late migrant of this species was seen June 5, 2009, in upland woods just east of point T3-5.

Common Yellowthroat: This species is frequent in brushy borders of marshes, sedge meadows, savannas, and bogs, and is estimated at between 16 and 50 pairs.

Eastern Towhee: This species is relatively frequent at the park, and is most common in successional field near point T2-5, in succession field located about ¼ miles northeast of the Visitor Center along the Tamarack View trail, as well as along brushy borders of upland forests in other areas of the park. There are an estimated 6 – 15 pairs nesting at the park.

Chipping Sparrow: This species is regularly found in the picnic area and manager's residence near the Visitor Center, but is uncommon elsewhere. It is estimated at between 1 – 5 pairs.

Field Sparrow: This species was fairly common in prairie, successional field, and savanna habitat, and is estimated at between 16 – 50 pairs. On June 4, 2009, an adult Field Sparrow was seen carrying a large insect near point Q6-1, confirming nesting.

Savanna Sparrow: This species was found in low numbers in prairie, and is most likely to be heard and/or seen in the prairie around point Q6-1; in the prairie south of point T3-6; and in the hayfield/prairie around point T5-1. There are an estimated 1 – 5 pairs of this species nesting at the park.

Grasshopper Sparrow: This species is found in moderate numbers in prairies in the hayfields south and east of point T3-4, as well as in the hayfield/prairie around points T5-1 and T5-2, with an estimated 6 – 15 pairs in the park. It appears to tolerate mowing better than other grassland species in the park.

Henslow's Sparrow: One singing male was heard on June 15, 2009, in the prairie across the road from the maintenance garage driveway; it is most likely the same individual heard singing on our group's Volo Bog bird walk on May 30, 2009. There are an estimated 1 – 5 pairs nesting in the park. This species was not found in 1983.

Song Sparrow: This species is common in a number of habitats of the park, especially in brushy borders of prairies, sedge meadow, bog and marshes. There are estimated to be 16 - 50 pairs in the park. I saw an adult song sparrow carrying food near point T2-1 on June 12, 2009, and on July 7, 2009, I observed a juvenile Song Sparrow in sedge meadow near Point Q3-3, both confirming nesting at this species.

Swamp Sparrow: This species is most frequent in marshes, and is estimated to be 16 – 50 nesting pairs in the park. On June 30, 2009, I saw an adult swamp sparrow carrying food in the sedge meadow near point Q3-1, confirming nesting.

Scarlet Tanager: This species is regularly found in small numbers in upland forested and savanna areas of the park, and is estimated at between 6 -15 pairs. There are most likely to be found in the mesic woodland in the vicinity of point T3-5.

Northern Cardinal: This species is frequent in a variety of habitats, including upland forest and savanna, and brushy borders of prairies and successional fields; they are estimated at 16 – 50 pairs in the park.

Rose-breasted Grosbeak: This species is occasionally found in upland forest, floodplain forest, and savanna habitat, and are estimated at between 6 – 15 pairs in the park.

Indigo Bunting: This species is common in a variety of habitats, particularly brush borders of savannas, successional land, prairies, and sedge meadows, as well as upland and floodplain forest, and is estimated at between 16 and 50 pairs.

Dickcissel: On June 17, 2009, I heard and saw more than 20 individuals of this species throughout the hayfields/prairie in the vicinity of points Q5-1 and Q5-2. However, when the field was mowed in the third week of June, they disappeared. They were estimated at 6 – 16 pairs in mid-June, but they are late nesters and were probably unsuccessful due to the mowing.

Bobolink: This species was observed regularly throughout June at several locations: the hill prairie around Q1-1; mesic around point Q6-2; forageland south and east of point T3-4; and the hayfields/prairie around points Q5-1 and Q5-2; they displayed frequently in early June at all of these locations. However, they diminished greatly in numbers once the field is mowed. There are an estimated 6 – 15 pairs which nest at the park.

Red-winged Blackbird: This abundant species is found in large numbers in various wetland habitats throughout the park, and is estimated at more than 50 pairs. On June 3, 2009, I saw a female Red-winged Blackbird carrying nesting materials in a marsh near point T1-4, and the following day, June 4, I watched a female redwing feeding two nestlings in a nest in the marsh along the boardwalk between Points Q2 and Q2A, both sightings confirming nesting.

Eastern Meadowlark: Only a few Eastern Meadowlarks were seen and/or heard, one of the most reliable of which was heard singing several times in early June just southwest of point Q6-1, in the prairie southwest of the maintenance garage. There are an estimated 1 – 6 pairs of birds at the park.

Common Grackle: This species is occasional in brushy area adjacent to wetlands, such as marsh borders. It is estimated at 16 – 50 pairs in the park. On June 3, 2009, I observed two adult Common Grackles feeding a fledgling grackle near point T1-6 in shrubs on the edge of the marsh, confirming nesting for this species.

Brown-headed Cowbird: This species is relatively common in upland forest, savanna, and successional land throughout the park, and parasitizes other species' nests in these areas. It is estimated at between 16 to 50 pairs in the park, and has increased greatly in abundance since 1983.

Orchard Oriole: Orchard orioles were seen in the savanna areas around point Q1-4, and in successional field around point Q4-2. There are an estimated 1 – 5 pairs in the park. It was not recorded here in 1983.

Baltimore Oriole: This species is occasionally found in upland forest, savanna, and floodplain forest, and is estimated at between 6 – 15 pairs.

House Finch: Small numbers of this species were regularly observed around the site manager's residence and near the Visitor Center; there are an estimated 1 – 5 pairs nesting in the park.

American Goldfinch: This species is frequent in a variety of open and relatively dry habitat, such as prairie, successional field, forageland, savanna, sedge meadow, and is estimated between 16 and 50 pairs of birds in the park.

House Sparrow: This species is occasional around buildings located at the park, especially the site manager's residence and the Visitor Center; it is estimated at between 6 – 15 pairs of birds.

MANAGEMENT RECOMMENDATIONS

There are several recommendations that I have relating to conservation of native species found at VBSNA:

- A. Postpone mowing of the hayfields (forageland) until at least July 15. In 2009, VBSNA hayfields in the vicinity of Q5-1 and Q5-2 were mowed during the third week of June, which is much too early for many of our grassland species to effectively get a first brood raised and off the nest. Postponing an additional month, until August 15, would give certain species that have two broods during a season the additional opportunity to raise and fledge a second brood.
- B. Maintain existing quality brushland in the park, such as shrub-carr bordering wetlands, and shrubby borders of savanna and prairie, for use of birds using these habitats to nest (see **Appendix C**). A number of shrubland species are among the Midwest's most imperiled birds, and it is important that they have the opportunity to nest in suitable habitat in the park.
- C. It is essential to being to start controlling the large vegetative colonies of Leafy Spurge (*Euphorbia esula*) that is starting rapidly spread in the prairie east of point Q6-1 as well as north of point T1-7.

FUTURE RECOMMENDATIONS FOR IDNR AVIAN INVESTIGATION SURVEYS

Recommendations I have for future surveys include the following:

- A. In future years, should a similar study be performed at VBSNA or other rich habitats, evening birding in search of American Woodcocks should be performed during late March through early May, when these birds are easiest to locate and census.
- B. Although Wilson's Snipe would be unusual breeders in the VBSNA area, much suitable habitat abounds at VBSNA; visiting the park earlier in the season in search of "winnowing" snipe should be considered in planning future such surveys.
- C. I suggest that while the bulk of the survey should ideally be performed in June, an extension through July 15 or even July 31 should be considered, which would allow additional breeding bird species confirmation to be obtained as the fledglings become more visible.

Respectfully submitted,
Margo Milde
1206 Raleigh Rd
Glenview IL 60025
November 28, 2009

Volo Bog State Natural Area

Notes 2009

Observer: Margo Milde

5/30/09 (before official count)

Two adult Sandhill cranes with colt in marsh just past pine grove on TV trail

6/2/09

Juvenile bluebird seen before Q1-1

Q1-3: Adult tree swallow carrying nest material to bluebird box # 23

2 Mute swans on nest near pt Q1-4

6/3/09

Two adult Common grackles feeding fledgling grackle near pt T1-6

A pair of Tree swallows going into hole at bluebird box #15 near pt T2-2

Adult Eastern bluebird tending box # 11

Two adult Canada geese with 3 goslings at pt T1-3

House wrens tending next box #30 near pt T2-3

Robin carrying food near pt T2-3

Female Red-winged blackbird with nesting material at pt T1-4

6/4/09

Starlings nesting in ventilation fan on maintenance bldg

At Q6-1, 1 female and 2 male E Meadowlarks observed

At Q6-1, a field sparrow was seen carrying a huge bug (confirmed nester)

Red-winged blackbird female feeding young on nest along entrance boardwalk (to Q2A)

Tree swallow in bluebird box north of visitor center pond (exit from Q2A)

Robin carrying food near employee parking lot (Q2)

6-9-09

Tree swallows nesting in Bluebird Box # 3 between T1-1 and T1-7

Two adult cranes with one juvenile crane in marsh near T2-2

Pair of Brown Thrashers observed SW of employee parking lot

6-12-09

Adult Pied-billed grebe observed with 3 juveniles near pt T2-1

Song sparrow carrying food (confirmed nester) near pt T2-1

6-15-09

Henslow's sparrow heard singing in prairie directly across from driveway leading to maintenance garage

6-17-09

Ruby-throated hummingbird perched in small dead snag in successional field north of point T3-1

6-17-09

Night birding, 11:00 pm – 3:15 am

Tamarack View Trail and Boardwalk

2 Virginia Rails came in to tape along Boardwalk

1 Virginia Rail responded to tape near north spur trail

1 Sora Rail heard near N marsh outlet

1 Sora Rail heard near long S platform walk

1 Screech Owl responded to tape NE woods

1 adult Screech Owl responded to tape, and nearby two juveniles seen hopping from branch to branch in large oak tree, juveniles were hissing/bill snapping at "1/2 mile woods"

Also – 2 Great blue herons, 24+ marsh wrens, and several swamp sparrows heard along trail

6-20-09

2 adult + 3 juvenile Mute Swans observed from marsh overlook pt Q6-2

6-21-09

Eastern phoebe nest above outside of door to bird blind on marsh edge, Q1-3

1 adult Pied-billed grebe carrying one juvenile on its back, and two additional juveniles swimming nearby at Q1-4

1 American coot with 1 juvenile at marsh corner between Q1-4 and Q1-5

6-24-09

Brown thrasher carrying food (confirmed nester) near maintenance garage

6-25-09

Wood ducks – 3 adults + 2 juveniles in marsh across road from visitor center (seen from Q6-2)

Canada Geese – 1 adult + 7 juveniles in marsh across road from visitor center (seen from Q6-2)

6-26-09

1 Virginia Rail heard from NW overlook over pond across road from visitor center

2 Eastern Screech Owls called in with tapes on evening birding along north loop trail, 1 each near pts T2-7 and T2-6.

6-28-09

1 adult + 3 juvenile Mallards at QPt 1-3

3 juvenile Pied-billed grebes at QPt 1-3

1 adult + 3 juvenile Canada geese in marsh between pt Q1-4 and Q1-5

6-29-09

One adult American robin with two fledgling robins on way to Q2-2A

Red-headed woodpecker going into hole at nest tree near south marsh outlet (towards ½ mile marker)

Family group House wrens along TV trail ¼ mile from VC counterclockwise

Many fledgling robins seen today along this trail

Fledgling starlings in snags in ¼ mile marsh

6-30-09

>>>Field appeared mowed at least one week before; bobolinks were almost all gone

Point T3-1 in sedge meadow: Swamp sparrow seen carrying big bug (nester)

7-2-09

Eastern portion of hayfield was mowed about 6/30, NE portion mowed about 3rd week in June (?). The portion of the field that was NOT mowed had sedge wrens; the one grasshopper sparrow was in the mowed field

Point T3-4 in the north field was NOT mowed yet

Bobolinks no longer there (but they still were in prairie S and W of pond)

3 Scarlet tanagers (pairs?) on N side of B. Road:

1. Woods NW of pond which is opposite side of road from the Visitor Center
2. Woods between T2-5 and T3-5
3. Woods SW of T2-4

7-7-09

American robin carrying food Pt Q3-3

Juvenile song sparrow near Pt Q3-3

Juvenile crows heard calling near Pt Q-1 and between Pt Q4-3 and PtQ4-4

7-8-09

Sedge wrens near pt T3-4 in unmowed areas of field only

Wood ducks in pond between T2-1 and T3-4 include several juveniles

7-09-09

Fledgling song sparrow seen at point T3-6

7-14-09

Ruby-throated hummingbird perched on same snag in successional field N of T3-1 as 6-17

10 female and/or juvenile bobolinks at point Q5-1

1 adult Bluebird with 1 fledgling bluebird at pt Q4-3

7-17-09

Leafy spurge (*Euphorbia esula*) noted W of pt. Q6-1

7-18-09

One adult male Northern Harrier observed low hunting over marsh between T1-6 and T1-5

7-27-09

Adult Blue jay carrying food near pt Q3-1

**Volo Bog Transect and Qualitative Study Points –
Avian Investigation Survey 2009
Observer: Margo Milde**

Transect	OLD POINT	NEW POINT	GPS Coordinates	Notes
SE Hill prairie, marsh	Q1-1	Q1-1	N42.34575 W088.17539	hill top
	Q1-2	Q1-2	N42.35379 W088.17901	W of quarry
	--	Q1-3	N42.35591 W088.18255	obs. Blind
	--	Q1-4	N42.35042 W088.18024	SE marsh edge
	--	Q 1-5	N42.34890 W088. 18327	Obs. Tower
N B. Rd loop trails	T2-1	T2-1	N42.35243 W088.19055	Pond overlook
	T3-4	T3-4	N42.35613 W088.19700	N. central hayfield
	T3-5	T3-5	N42.35684 W088.19053	S. B Bog overlook
	T2-7	T2-7	N42.36167 W088.18799	W of B. Lake
	T2-8	T2-8	N42.35979 W088.18696	along N trail loop
	T2-5	T2-5	N42.35755 W088.18711	Suc. Field S loop
Pines and N hill prairie	T2-8	T2-8	N42.36412 W088.19098	N Hill prairie
	T3-7	T3-7	N42.36144 W088.19471	W of pine tract
	T3-6	T3-6	N42.36059 W088.19204	W of N. edge B Bog
NW Fields, W P. Bog	T3-1	T3-1	N42.36357 W088.20333	N P. Bog Sedge mead
	T3-2	T3-2	N42.36132 W088.20343	woods W of P Bog
	T3-3	T3-3	N42.35672 W088.20166	Wet/mesic prairie
	--	Q4-4	N42.35413 W088.20112	S P Bog marsh
	Q4-3	Q4-3	N42.35278 W088.20377	S hayfield/prairie*
	--	Q5-3	N42.35622 W088.20890	edge woods/W field
	Q5-2	Q5-2	N42.35600 W088.20770	midpt -hayfld/prairie
	Q5-1	Q5-1	N42.35592 W088.20455	E – hayfield/prairie
	Q4-2	Q4-2	N42.35945 W088.20443	field W of old quarry
Q4-1	Q4-1	N42.36370 W088.20591	E of residential area	
TamView trail loop	T1-1	T1-1	N42.34909 W088.19074	S of maint. bldg.
	T1-7	T1-7	N42.34425 W088.18742	woods/field corner
	T1-6	T1-6	N42.34363 W088.18109	E of wet woods
	T1-5	T1-5	N42.34368 W088.17745	N of Sul. Lake Rd
	T1-4	T1-4	N42.34846 W088.17680	E of pond
	T1-3	T1-3	N42.34904 W088.18040	S of E marsh
	T2-3	T2-3	N42.35265 W088.18062	W edge rest. prairie
	T2-4	T2-4	N42.35705 W088.18063	NE park corner hill
	T2-2	T2-2	N42.35263 W088.18752	Vis.Ctr. picnic area
Brandenburg Lake (by kayak)	T3-2	T3-2	N42.36231 W088.18574	SW corner B. Lake
	T3-1	T3-1	N42.36597 W088.68643	NW corner B. Lake
Volo Bog Boardwalk	Q2	Q2	N42.35107 W088.18837	back edge empl.park.
	(T1-2)	Q2A	N42.35155 W088.18473	Bog platform **

Grassland birds S	--	Q6-1	N42.36231 W088.18574	on hill W of B Rd ***
	--	Q6-2	N42.35162 W088.19281	hill SW of pond***

* point moved W in 2009 since original point now cultivated land with few birds

** replaces old pt. T1-2, deemed inaccessible due to high water in 2009

*** two points added in 2009 to survey grassland birds in this area.

Appendix C

Partial listing of avian species utilizing shrubland at Volo Bog State Natural Area during the 2009 Avian census

Observer: Margo Milde

American Woodcock
Mourning Dove
Ruby-throated Hummingbird
Northern Flicker
Alder Flycatcher
Least Flycatcher
Brown Thrasher
Blue-winged Warbler
Yellow warbler
Common Yellowthroat
Eastern Towhee
Song Sparrow
Swamp Sparrow
Northern Cardinal
Indigo Bunting

American robin	2	4	13	2	2	3	1
American robin	4	2	0				
American robin	3	2	9	5	3	1	7
American robin	3	1	9	1	2		
American robin	4	5	16	2		9	2
Transect legs where found	1		1		1		1
Transect points where found		1		1		1	
Qualitative study areas where found							
Total Transect Legs where found:	38						
Total Transect Points where found:	33						
Total Qualitative Study Areas were found:	3						
American woodcock							
American woodcock							
American woodcock							
American woodcock							
American woodcock							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	1						
Total Transect Points where found:	0						
Total Qualitative Study Areas were found:	0						
Baltimore oriole			2		1		2
Baltimore oriole			1				
Baltimore oriole							
Baltimore oriole							
Baltimore oriole							
Transect legs where found			1		1		1
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	14						
Total Transect Points where found:	7						
Total Qualitative Study Areas were found:	3						
Bank swallow			4				
Bank swallow			6				
Bank swallow						4	
Bank swallow		2	2	3			3
Bank swallow							
Transect legs where found			1			1	
Transect points where found		1		1			1
Qualitative study areas where found							
Total Transect Legs where found:	11						
Total Transect Points where found:	18						
Total Qualitative Study Areas were found:	3						
Barn swallow			2				
Barn swallow				3			
Barn swallow							
Barn swallow							5
Barn swallow							
Transect legs where found			1				
Transect points where found				1			1
Qualitative study areas where found							
Total Transect Legs where found:	16						
Total Transect Points where found:	14						
Total Qualitative Study Areas were found:	3						

Belted kingfisher						2
Belted kingfisher					1	1
Belted kingfisher		1			1	
Belted kingfisher						
Belted kingfisher						
Transect legs where found		1				1
Transect points where found					1	1
Qualitative study areas where found						
Total Transect Legs where found:	7					
Total Transect Points where found:	5					
Total Qualitative Study Areas were found:	3					
Black-and-white warbler						
Black-and-white warbler						
Black-and-white warbler						
Black-and-white warbler						
Black-and-white warbler						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	1					
Total Transect Points where found:	0					
Total Qualitative Study Areas were found:	0					
Black-capped chickadee		1		2		
Black-capped chickadee	1		3	1		5
Black-capped chickadee		1	2	3		
Black-capped chickadee	2					2
Black-capped chickadee	1	1		7		
Transect legs where found	1	1		1		1
Transect points where found			1			
Qualitative study areas where found						
Total Transect Legs where found:	32					
Total Transect Points where found:	21					
Total Qualitative Study Areas were found:	4					
Blue jay		1		1		3
Blue jay		1			2	2
Blue jay		1		2		1
Blue jay					3	
Blue jay				2		
Transect legs where found		1		1		1
Transect points where found		1		1		1
Qualitative study areas where found						
Total Transect Legs where found:	28					
Total Transect Points where found:	27					
Total Qualitative Study Areas were found:	3					
Blue-gray gnatcatcher						
Blue-gray gnatcatcher		2	1	1		1
Blue-gray gnatcatcher		6		2		
Blue-gray gnatcatcher		2				2
Blue-gray gnatcatcher	1	2				1
Transect legs where found	1	1		1		1
Transect points where found			1			1
Qualitative study areas where found						
Total Transect Legs where found:	21					
Total Transect Points where found:	11					

Total Qualitative Study Areas were found:	4				
Blue-winged warbler					
Blue-winged warbler					
Blue-winged warbler					
Blue-winged warbler					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	2				
Total Transect Points where found:	1				
Total Qualitative Study Areas were found:	0				
Blue-winged teal					
Blue-winged teal				1	
Blue-winged teal		1			
Blue-winged teal					1
Blue-winged teal		2			1
Transect legs where found		1		1	
Transect points where found					1
Qualitative study areas where found					
Total Transect Legs where found:	3				
Total Transect Points where found:	3				
Total Qualitative Study Areas were found:	1				
Bobolink		1			
Bobolink					
Bobolink					
Bobolink					
Bobolink					
Transect legs where found					
Transect points where found		1			
Qualitative study areas where found					
Total Transect Legs where found:	5				
Total Transect Points where found:	6				
Total Qualitative Study Areas were found:	1				
Brown thrasher					
Brown thrasher					
Brown thrasher				1	
Brown thrasher			1		
Brown thrasher		1	2		
Transect legs where found			1		
Transect points where found		1		1	
Qualitative study areas where found					
Total Transect Legs where found:	8				
Total Transect Points where found:	13				
Total Qualitative Study Areas were found:	2				
Brown-headed cowbird		3	11	3	
Brown-headed cowbird	5	2	20		2
Brown-headed cowbird	3	5	16	6	1
Brown-headed cowbird	3	3	8	4	4
Brown-headed cowbird					
Transect legs where found	1		1		1
Transect points where found		1		1	
Qualitative study areas where found					
Total Transect Legs where found:	31				

Total Transect Points where found:	28				
Total Qualitative Study Areas were found:	4				
Canada goose			2	3	3
Canada goose					
Canada goose			4		
Canada goose					5
Canada goose					
Transect legs where found				1	
Transect points where found		1			1
Qualitative study areas where found					
Total Transect Legs where found:	7				
Total Transect Points where found:	9				
Total Qualitative Study Areas were found:	4				
Cedar waxwing	2	2		2	3
Cedar waxwing		3	7	3	4
Cedar waxwing	2	3	4	3	3
Cedar waxwing			6	3	3
Cedar waxwing		1	8	7	2
Transect legs where found	1		1	1	1
Transect points where found		1		1	1
Qualitative study areas where found					
Total Transect Legs where found:	27				
Total Transect Points where found:	27				
Total Qualitative Study Areas were found:	4				
Chimney swift					
Chimney swift					
Chimney swift					
Chimney swift					
Chimney swift					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	5				
Total Transect Points where found:	1				
Total Qualitative Study Areas were found:	0				
Chipping sparrow				1	
Chipping sparrow					
Chipping sparrow					
Chipping sparrow					
Transect legs where found					
Transect points where found				1	
Qualitative study areas where found					
Total Transect Legs where found:	10				
Total Transect Points where found:	6				
Total Qualitative Study Areas were found:	4				
Common grackle		1			
Common grackle			1		
Common grackle			5		
Common grackle				2	
Common grackle	1				6
Transect legs where found	1		1		1
Transect points where found		1		1	
Qualitative study areas where found					
Total Transect Legs where found:	17				

Total Transect Points where found:	18						
Total Qualitative Study Areas were found:	4						
Common moorhen							
Common moorhen							
Common moorhen						1	1
Common moorhen							1
Common moorhen						1	1
Transect legs where found							
Transect points where found						1	
Qualitative study areas where found							1
Total Transect Legs where found:	3						
Total Transect Points where found:	4						
Total Qualitative Study Areas were found:	1						
Common yellowthroat	7	3	19	1	2	2	4
Common yellowthroat	3	4	9	2	1	2	2
Common yellowthroat	7		8	1	1	1	1
Common yellowthroat	2	2	4				
Common yellowthroat	8	7	10	3	2		2
Transect legs where found	1		1		1		1
Transect points where found		1		1		1	
Qualitative study areas where found							1
Total Transect Legs where found:	34						
Total Transect Points where found:	31						
Total Qualitative Study Areas were found:	3						
Cooper's hawk							
Cooper's hawk							
Cooper's hawk							
Cooper's hawk							
Cooper's hawk							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	3						
Total Transect Points where found:	3						
Total Qualitative Study Areas were found:	1						
Dickcissel							
Dickcissel							
Dickcissel							
Dickcissel							
Dickcissel							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	3						
Total Transect Points where found:	2						
Total Qualitative Study Areas were found:	0						
Double-crested cormorant							
Double-crested cormorant			4	1			
Double-crested cormorant	1			1	1		2
Double-crested cormorant							
Double-crested cormorant							
Transect legs where found	1		1				1
Transect points where found		1					
Qualitative study areas where found							

Total Transect Legs where found:	7				
Total Transect Points where found:	6				
Total Qualitative Study Areas where found:	1				
Downy woodpecker		1	1		
Downy woodpecker	1	3		1	1
Downy woodpecker		2	1		1
Downy woodpecker		1	1		
Downy woodpecker					
Transect legs where found		1		1	1
Transect points where found	1		1		
Qualitative study areas where found					
Total Transect Legs where found:	27				
Total Transect Points where found:	19				
Total Qualitative Study Areas where found:	3				
Eastern bluebird	1				
Eastern bluebird	1	1			1
Eastern bluebird		1			1
Eastern bluebird		1			
Eastern bluebird	1				
Transect legs where found	1	1			1
Transect points where found		1			
Qualitative study areas where found					
Total Transect Legs where found:	14				
Total Transect Points where found:	14				
Total Qualitative Study Areas where found:	2				
Eastern kingbird		1			1
Eastern kingbird		1			
Eastern kingbird		1			1
Eastern kingbird		2			1
Eastern kingbird	1	2	2	1	2
Transect legs where found	1	1			1
Transect points where found			1	1	1
Qualitative study areas where found					
Total Transect Legs where found:	21				
Total Transect Points where found:	13				
Total Qualitative Study Areas where found:	2				
Eastern meadowlark	2	1			
Eastern meadowlark	1				
Eastern meadowlark					
Eastern meadowlark					
Eastern meadowlark					
Transect legs where found	1				
Transect points where found		1			
Qualitative study areas where found					
Total Transect Legs where found:	10				
Total Transect Points where found:	7				
Total Qualitative Study Areas where found:	1				
Eastern phoebe				1	
Eastern phoebe					2
Eastern phoebe				1	
Eastern phoebe					
Eastern phoebe					
Transect legs where found					1
Transect points where found				1	

Qualitative study areas where found					
Total Transect Legs where found:	8				
Total Transect Points where found:	3				
Total Qualitative Study Areas were found:	3				
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Eastern screech owl					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	0				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	1				
Eastern towhee			1		
Eastern towhee				1	
Eastern towhee					
Eastern towhee					
Eastern towhee					
Transect legs where found				1	
Transect points where found			1		
Qualitative study areas where found					
Total Transect Legs where found:	20				
Total Transect Points where found:	10				
Total Qualitative Study Areas were found:	2				
Eastern wood peewee			2		1
Eastern wood peewee			1		
Eastern wood peewee			1		
Eastern wood peewee			2		1
Eastern wood peewee					1
Transect legs where found			1		1
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	13				
Total Transect Points where found:	12				
Total Qualitative Study Areas were found:	2				
European starling		3	1		
European starling	18		2		
European starling					
European starling					
European starling					
Transect legs where found	1		1		
Transect points where found		1			
Qualitative study areas where found					
Total Transect Legs where found:	16				
Total Transect Points where found:	17				
Total Qualitative Study Areas were found:	3				
Field sparrow		3	1		1
Field sparrow		3	2		2
Field sparrow		3	1		1
Field sparrow		7	2		
Field sparrow		5	2	3	1
Transect legs where found		1	1		1

Transect points where found			1			1
Qualitative study areas where found						
Total Transect Legs where found:	27					
Total Transect Points where found:	21					
Total Qualitative Study Areas were found:	2					
Grasshopper sparrow						
Grasshopper sparrow						
Grasshopper sparrow						
Grasshopper sparrow						
Grasshopper sparrow						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	7					
Total Transect Points where found:	4					
Total Qualitative Study Areas were found:	0					
Gray catbird		3	1	1	1	
Gray catbird		1	3	1		1
Gray catbird	1	5	1	1	1	
Gray catbird		3				2
Gray catbird		1	3		2	3
Transect legs where found	1	1	1	1	1	1
Transect points where found		1	1	1	1	1
Qualitative study areas where found						
Total Transect Legs where found:	33					
Total Transect Points where found:	26					
Total Qualitative Study Areas were found:	3					
Great blue heron						2
Great blue heron					1	1
Great blue heron		1				1
Great blue heron						1
Great blue heron						
Transect legs where found						
Transect points where found		1		1		1
Qualitative study areas where found						
Total Transect Legs where found:	8					
Total Transect Points where found:	10					
Total Qualitative Study Areas were found:	3					
Great-crested flycatcher						
Great-crested flycatcher						
Great-crested flycatcher						
Great-crested flycatcher						
Great-crested flycatcher						
Transect legs where found						
Transect points where found						
Qualitative study areas where found						
Total Transect Legs where found:	17					
Total Transect Points where found:	11					
Total Qualitative Study Areas were found:	2					
Great egret					1	1
Great egret			1		2	
Great egret		1	3		1	
Great egret					2	2
Great egret			1		2	1

Transect legs where found		1			
Transect points where found	1		1	1	1
Qualitative study areas where found					
Total Transect Legs where found:	9				
Total Transect Points where found:	9				
Total Qualitative Study Areas were found:	3				
Great horned owl		1			
Great horned owl					
Great horned owl					
Great horned owl					
Great horned owl					
Transect legs where found		1			
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	1				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	0				
Green heron		1			
Green heron		1			
Green heron		2		1	2
Green heron					
Green heron					
Transect legs where found		1			
Transect points where found				1	1
Qualitative study areas where found					
Total Transect Legs where found:	10				
Total Transect Points where found:	12				
Total Qualitative Study Areas were found:	3				
Hairy woodpecker	2		1	1	
Hairy woodpecker		1			
Hairy woodpecker			1		
Hairy woodpecker				1	
Hairy woodpecker					
Transect legs where found	1	1	1	1	
Transect points where found			1	1	
Qualitative study areas where found					
Total Transect Legs where found:	16				
Total Transect Points where found:	11				
Total Qualitative Study Areas were found:	3				
Henslow's sparrow					
Henslow's sparrow					
Henslow's sparrow					
Henslow's sparrow					
Henslow's sparrow					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	0				
Total Transect Points where found:	0				
Total Qualitative Study Areas were found:	1				
House finch					
House finch					
House finch					
House finch					

House finch							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	4						
Total Transect Points where found:	5						
Total Qualitative Study Areas were found:	2						
House sparrow							
House sparrow							
House sparrow							
House sparrow							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	10						
Total Transect Points where found:	3						
Total Qualitative Study Areas were found:	2						
House wren	4	3	7			1	2
House wren	2	2	7	1	2		1
House wren	5	2	23		2	1	4
House wren	2	1	5		1		1
House wren	1	2	10	2	2	1	1
Transect legs where found	1		1		1		1
Transect points where found		1		1		1	
Qualitative study areas where found							
Total Transect Legs where found:	36						
Total Transect Points where found:	33						
Total Qualitative Study Areas were found:	3						
Indigo bunting	1		1		2		5
Indigo bunting		2	2		1		2
Indigo bunting	2	3	3				
Indigo bunting			4				2
Indigo bunting			4		2	1	1
Transect legs where found	1		1		1		1
Transect points where found		1				1	
Qualitative study areas where found							
Total Transect Legs where found:	34						
Total Transect Points where found:	28						
Total Qualitative Study Areas were found:	3						
Killdeer					1		
Killdeer			2				
Killdeer	1				2		1
Killdeer							
Killdeer							
Transect legs where found	1		1				
Transect points where found					1		1
Qualitative study areas where found							
Total Transect Legs where found:	7						
Total Transect Points where found:	8						
Total Qualitative Study Areas were found:	1						
Least flycatcher			1				
Least flycatcher			1				
Least flycatcher							
Least flycatcher							

Least flycatcher					
Transect legs where found		1			
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	2				
Total Transect Points where found:	1				
Total Qualitative Study Areas where found:	0				
Mallard				1	1
Mallard	1				1
Mallard					4
Mallard				1	2
Mallard					
Transect legs where found	1		1		
Transect points where found				1	1
Qualitative study areas where found					
Total Transect Legs where found:	14				
Total Transect Points where found:	8				
Total Qualitative Study Areas where found:	3				
Marsh wren					
Marsh wren					
Marsh wren					
Marsh wren					
Marsh wren					
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	6				
Total Transect Points where found:	5				
Total Qualitative Study Areas where found:	2				
Mourning dove	1	2		1	
Mourning dove					
Mourning dove	1	1			
Mourning dove	1		1		
Mourning dove		2			
Transect legs where found	1	1			
Transect points where found		1	1	1	
Qualitative study areas where found					
Total Transect Legs where found:	13				
Total Transect Points where found:	10				
Total Qualitative Study Areas where found:	3				
Mute swan					2
Mute swan					2
Mute swan					2
Mute swan					1
Mute swan					1
Transect legs where found					
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	2				
Total Transect Points where found:	3				
Total Qualitative Study Areas where found:	1				
Northern cardinal	1	5	1	3	2
Northern cardinal		1	3		5

Orchard oriole		1			
Orchard oriole					
Orchard oriole					
Orchard oriole					
	Transect legs where found	1			
	Transect points where found				
	Qualitative study areas where found				
	Total Transect Legs where found:	2			
	Total Transect Points where found:	1			
	Total Qualitative Study Areas were found:	0			
Pied-billed grebe				1	
Pied-billed grebe				1	
Pied-billed grebe					4
Pied-billed grebe					3
	Transect legs where found				
	Transect points where found			1	1
	Qualitative study areas where found				
	Total Transect Legs where found:	1			
	Total Transect Points where found:	5			
	Total Qualitative Study Areas were found:	1			
Purple martin					
Purple martin					
Purple martin					
Purple martin					
Purple martin					
	Transect legs where found				
	Transect points where found				
	Qualitative study areas where found				
	Total Transect Legs where found:	8			
	Total Transect Points where found:	7			
	Total Qualitative Study Areas were found:	1			
Red-bellied woodpecker				1	
Red-bellied woodpecker		1			1
Red-bellied woodpecker					
Red-bellied woodpecker					
Red-bellied woodpecker					
	Transect legs where found	1			1
	Transect points where found			1	
	Qualitative study areas where found				
	Total Transect Legs where found:	17			
	Total Transect Points where found:	15			
	Total Qualitative Study Areas were found:	3			
Red-eyed vireo		1			1
Red-eyed vireo			1		4
Red-eyed vireo					
Red-eyed vireo					1
Red-eyed vireo				1	1
	Transect legs where found	1			1
	Transect points where found		1		1
	Qualitative study areas where found			1	
	Total Transect Legs where found:	21			
	Total Transect Points where found:	13			
	Total Qualitative Study Areas were found:	1			
Red-headed woodpecker					

Rock Pigeon				
Rock Pigeon				
Rock Pigeon				
Rock Pigeon				
Rock Pigeon				
	Transect legs where found			
	Transect points where found			
	Qualitative study areas where found			
	Total Transect Legs where found:	0		
	Total Transect Points where found:	1		
	Total Qualitative Study Areas were found:	0		
Rose-breasted grosbeak				
Rose-breasted grosbeak				
Rose-breasted grosbeak				
Rose-breasted grosbeak				
Rose-breasted grosbeak				
	Transect legs where found			
	Transect points where found			
	Qualitative study areas where found			
	Total Transect Legs where found:	8		
	Total Transect Points where found:	7		
	Total Qualitative Study Areas were found:	1		
Ruby-throated hummingbird				
Ruby-throated hummingbird				
Ruby-throated hummingbird				
Ruby-throated hummingbird				
Ruby-throated hummingbird				
	Transect legs where found			
	Transect points where found			
	Qualitative study areas where found			
	Total Transect Legs where found:	1		
	Total Transect Points where found:	1		
	Total Qualitative Study Areas were found:	0		
Sandhill crane				
Sandhill crane		2		
Sandhill crane				
Sandhill crane				
Sandhill crane				
	Transect legs where found	1		
	Transect points where found			
	Qualitative study areas where found			
	Total Transect Legs where found:	12		
	Total Transect Points where found:	7		
	Total Qualitative Study Areas were found:	2		
Savanna sparrow				
Savanna sparrow				
Savanna sparrow				
Savanna sparrow		1		
Savanna sparrow				
	Transect legs where found			
	Transect points where found	1		
	Qualitative study areas where found			
	Total Transect Legs where found:	4		
	Total Transect Points where found:	4		
	Total Qualitative Study Areas were found:	1		

Scarlet tanager								
Scarlet tanager								
Scarlet tanager								
Scarlet tanager								
Scarlet tanager								
Transect legs where found								
Transect points where found								
Qualitative study areas where found								
Total Transect Legs where found:	5							
Total Transect Points where found:	3							
Total Qualitative Study Areas were found:	2							
Sedge wren								
Sedge wren								
Sedge wren								
Sedge wren								
Sedge wren								
Transect legs where found								
Transect points where found								
Qualitative study areas where found								
Total Transect Legs where found:	2							
Total Transect Points where found:	3							
Total Qualitative Study Areas were found:	0							
Song sparrow	6	6	3	2	3	2		
Song sparrow	5	3	13	3	1	1	5	2
Song sparrow	10	5	21	5	7	2	8	
Song sparrow	5	5	14	3	2	2	3	4
Song sparrow	6	6	17	3	2	3	4	4
Transect legs where found	1	1		1		1		
Transect points where found		1		1		1		1
Qualitative study areas where found								
Total Transect Legs where found:	38							
Total Transect Points where found:	33							
Total Qualitative Study Areas were found:	3							
Sora				1				
Sora								
Sora								
Sora								
Sora								
Transect legs where found				1				
Transect points where found								
Qualitative study areas where found								
Total Transect Legs where found:	5							
Total Transect Points where found:	4							
Total Qualitative Study Areas were found:	1							
Spotted sandpiper			2					
Spotted sandpiper								
Spotted sandpiper								
Spotted sandpiper								
Spotted sandpiper								
Transect legs where found		1						
Transect points where found								
Qualitative study areas where found								
Total Transect Legs where found:	1							
Total Transect Points where found:	0							

Total Qualitative Study Areas were found:	1						
Swamp sparrow						1	1
Swamp sparrow						1	
Swamp sparrow						1	2
Swamp sparrow				1		3	2
Transect legs where found				1			1
Transect points where found						1	
Qualitative study areas where found							1
Total Transect Legs where found:	22						
Total Transect Points where found:	13						
Total Qualitative Study Areas were found:	2						
Tree swallow	5	1	5	3		4	2
Tree swallow	4	3	10	3		2	4
Tree swallow	6	3	12	3			2
Tree swallow		2	4				
Tree swallow							2
Transect legs where found	1		1				1
Transect points where found		1		1		1	
Qualitative study areas where found							1
Total Transect Legs where found:	29						
Total Transect Points where found:	29						
Total Qualitative Study Areas were found:	3						
Turkey vulture							
Turkey vulture							
Turkey vulture							
Turkey vulture							
Turkey vulture							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	1						
Total Transect Points where found:	3						
Total Qualitative Study Areas were found:	0						
Veery							
Veery							
Veery							1
Veery							
Veery							
Transect legs where found							1
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	7						
Total Transect Points where found:	7						
Total Qualitative Study Areas were found:	2						
Virginia rail							
Virginia rail							
Virginia rail							
Virginia rail							
Virginia rail							
Transect legs where found							
Transect points where found							
Qualitative study areas where found							
Total Transect Legs where found:	0						

Total Transect Points where found:	1				
Total Qualitative Study Areas were found:	1				
Warbling vireo			2		
Warbling vireo			2		
Warbling vireo			1		
Warbling vireo			2		
Warbling vireo					
Transect legs where found			1		
Transect points where found					
Qualitative study areas where found					
Total Transect Legs where found:	6				
Total Transect Points where found:	5				
Total Qualitative Study Areas were found:	1				
White-breasted nuthatch				1	
White-breasted nuthatch					
White-breasted nuthatch			2		1
White-breasted nuthatch			2		
White-breasted nuthatch					1
Transect legs where found			1		1
Transect points where found				1	
Qualitative study areas where found					
Total Transect Legs where found:	23				
Total Transect Points where found:	15				
Total Qualitative Study Areas were found:	3				
Willow flycatcher	2	1	5		1
Willow flycatcher	1	1	3		1
Willow flycatcher	1	2	4	1	1
Willow flycatcher			3	2	
Willow flycatcher					
Transect legs where found	1		1		
Transect points where found		1		1	1
Qualitative study areas where found					
Total Transect Legs where found:	17				
Total Transect Points where found:	16				
Total Qualitative Study Areas were found:	2				
Wood duck			1	1	
Wood duck					2
Wood duck					
Wood duck					
Wood duck					
Transect legs where found			1		
Transect points where found		1		1	
Qualitative study areas where found					
Total Transect Legs where found:	7				
Total Transect Points where found:	6				
Total Qualitative Study Areas were found:	3				
Wood thrush					2
Wood thrush				1	
Wood thrush				2	
Wood thrush					
Wood thrush					
Transect legs where found				1	1
Transect points where found					1
Qualitative study areas where found					

Total Transect Legs where found:	5						
Total Transect Points where found:	1						
Total Qualitative Study Areas were found:	1						
Yellow warbler	6	6	7		2	2	2
Yellow warbler	2	4	6		1	1	1
Yellow warbler	3	5	13	2	3	1	2
Yellow warbler			3				
Yellow warbler							
Transect legs where found	1		1		1		1
Transect points where found		1		1		1	
Qualitative study areas where found							
Total Transect Legs where found:	27						
Total Transect Points where found:	24						
Total Qualitative Study Areas were found:	3						
Yellow-throated vireo						1	
Yellow-throated vireo					1		
Yellow-throated vireo							
Yellow-throated vireo							
Yellow-throated vireo							
Transect legs where found					1		
Transect points where found						1	
Qualitative study areas where found							
Total Transect Legs where found:	4						
Total Transect Points where found:	2						
Total Qualitative Study Areas were found:	1						

Q1-4			Q1-5			Walk out		T1-7			T1-2			T1-6			T1-5		
Out	AtFO	OutFC	At	Out	AtFO	OutFC	In	FO	At	Out	AtFO	OutFC	At	Out	AtFO	OutFC	At	Out	AtFO
																			1
																			1
2																			2
1																			1
							2		1			2							
									1										
							1			1									
2				10					1	2			2	7		4	9		2
6			3	13										3		3	5		5
2			4	10			3		2					2		4			3
3			1	9			4		7				2	2		5	2		9
8			14	16															
1				1			1			1				1			1		1
			1						1				1			1			1

3
2
4
2
7
1

2 1
3 11
3 7
1 9
3 14
1 1

4
4
4
10
1

1 9
1 4
5 5
3 18
1 1
1

5 9
3 6
2 2
8 8
1 1
1

3 1
2 5
3 5
6 3
1 1
1

5 6
4 5
3 7
4 3
1 1
1

1
3
6
3
1
1
1
7
1

2
4
1
1
1
1
1
4
10
1
1

1
1
1
1
1
1

3
1
1
5
1

1
1
4
4
1

2
2
6
2
3
1

3
3
3
1

3
1
1
1
1

1
1

2
5
1

2
1
1

1
8
5
3
1
1

2
2
1
1

1
1

3
1

1
1

2
2
1
1

1
2
1
1

4
1
1

1 1
2 2
1 2
1 1
1 1

2 1
1 1
2 2
2 1
1 1

2 2
2 2
1 1
1 1

1 1
1 2
1 1
1 1

2
1

1
1
1

1
1

1
1

1

1

2

2

2

1

1

1

1

1

1

1

1

12

8

4

1

1

8

6

1

1

1

2

6

2

1

1

2

2

1

3

1

1

5

4

5

1

3

1

1

1

1

5

3

5

7

9

3

2

1

1

14
4
1

1

8

2

4
1
1

7
4
2
1
1

2
1
1

2 2
1 1
2 4
1

1

4
2 2
1

1

2

1

2

1

5 8
13

7

1

1

3

1
3
1

1

1

1

5 2

6 1

1

1

10
2
1

2
2
2 1
1 1
1

4 1
2

1

1

2
1
1

1
1

4
3
5
5
5
1

2 6
2 6
2 7
3 5
3 12
1 1
1

3
3
2
1

2 4
2 1
3 2
1 1
1 1

9
3 2
6 3
4 4
1 1

2 2
1
3 1
1 1

5 7
2 2
4 4
4 5
1 1
1

1

1

1

1

1

1

1

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1 2
1 1
1 1

1 1
1

1

1

2

1

1

1

1

1

2

1

1

3

1

1

1

1

1

1

1

1

3

1

1

1

1

2

1

1

1

1

6

2

13

3

4

4

4

7

9

2

1

4

5

21

5

4

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

1

1

1

1

1

1

1

1

1

1

1
1
1
1
1

10
6
3
1 1
1 1

1
2
1
5
1

1

1 3
1 1
3 2
2 3
1 1
1

2
1 1
3
1 1
1

1
2
2
1

1

1 3
3
1 1
1 1
1

1
1

1
1
1

1
1
1

1

1

1

1

1
1

1

1
1

2
1

1

1

1

1

1

1

1

1

2

1
1
1

1

1

3
1

1

1

1

1

2

1

1

1

2

1

2

1

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

6
4
5
1
4
1

2 2
2 9
1 14
2 8
2 3
1 1

3

1

2

3
2 1
4 3
3
1 1
1

2 2
1
1
1 1
1

4 3
1 2
2 3
1 3
1 1
1

4 7
3 4
3 1
3 1
1

2
2
1
1
1

1 1
1 10
1 3
1 1
1 1
1

2
1
1
1
1 1
1

1

1

1
2
1
1
1

1
1
1
1

1

1

1

1

1

1

1

5

1

1

3

2

4

2

1

1

2

1

1

2

1

1

1

1

1

5

1

3

3

1

1

1

1

1

1

1

2

4

1

1

1

1

2

4

2

1

2

1

1

1

1

3

1

1

2

1

1

1

1

2

1

1

1

1

2

2

1

2

1

2

6

1

3

2

2

2

3

1

4

2

4

3

1

1

2

2

2

2

6

2

5
5
1

2
2 2
3 6
1

2
1

2
3 5
1 1

2
2 3
1 1

2 2
2 2
1 1

3
3 1
1 1

2

1
1

1 2
1 1

2
1

1

1
1

1

1

1 1

1 1

1

1

1

1

7

2

1
1

1

1

1

1

1

1

1

1

1

1

1

1

1
2
1
1
1
1

2

1

2

1

1 2
1
1 1
1

1

1

1

1

10

1

1

1

1

1

1

1

1

17
30
20
6
4
1

24 21
15 23
23 14
9 15
8 12
1 1
1

30
30
12
15
1

15 35
14 20
20 18
4 11
1
1

20 45
8 15
1 24
8 14
1
1

15
10 5
15 6
6
1
1

32 15
6 16
12 25
8 6
1
1

1

1

1

1

2

1

3

1

1

1

2

1

2

1

1

1

4
8
10
5
3
1

2 1
4 15
5 8
4 6
5 16
1 1

5
3
3
3
1

3 3
3 4
3 2
2 5
1 1

3 7
3 3
4 6
6 2
1 1

3 4
2 2
3 4
3 3
1 1

5 10
6 5
3 15
4 5
1 1

2

2

2 2
1

1

1

1

1

1
1
3
1

1 1
1 4
3 5
1 3
2 3
1

3
1
1
1

3
1
3
1

1 3
1 1
4 6
1

2
1 1
1 2
1

7
11
7
2
1

1
3 3
2 4
1

2
2
1
1

2 6
1 4
1
1

3 3
1 5
2 2
1

5 6
5 5
3
2
1

4 11 3
8 4
2 7
1

2
1
1

1

4
1
6

1

1 6
9
11
1

1
1

5
1

1

1

1 2
1 1

1

1 1

1

1

3 8
2 5
1 3
2 1

1

1 9
3 5
4

1
1

3 9
5 3
4 4
1

1

T1-4		T1-3		T2-3		T2-4		T2-2		Walk in/out		
Out	At	Out	At	Out	At	Out	At	Out	At	In	FO	At
												2
												1
		1		2	1	1	1			2		1
								3		1		3
												2
		1		1	1		1			1		1
3	2	5		1	1	2	5	4	2			
5	2	6	3	5	5	5	15	3	2	5		1
3	3			2	5	5	6	2		4		5
9	3	5	7	1		4	29	4	3	7		7
										3		7
	1		1		1		1		1	1		
1		1		1		1		1				1

2
3 3
3 7
7 5

1

1

1
2 5
2 2
2

1

1

2
7
2
1 2

1

1

2 3
1 6
2 2
3 14

1

1

3 2
3 3
2
2

1

1

4
14
2
5
4
1

3
3
2
3
2
1

1

1

1

1

1

2
2

1

2 1
2 2
1

1

2
2
3

1

1

1

1

2

1

2
3
2

1

2
2

2

1

1

6

1

2
1

1

1
1
1

2 3
1

1
1

1 1
2
1
1

1
2 2
3 3
2 3
1

1
1
1

1
2
1

2 5
6 6
3 5
1

1
1

1 3
1
1

1
1

1
2 2
7 7
4 4
1

2
1 2
3 3
1

1
1
3
1

2
1

1
1

3
1
1

1
1
1

3 2
1

4
1

1
1

1
1
1

1
1

1
1
4
3
5
1

1

1

4

3

5

1

3

3

1

1
3
1

1

3

1

1

1

1

1

1

1

2

1

1
4
1

1

4

1

9

1

1
1
1
2
1

1

1

1

2

2

1

1

2

5

1

2
1
1
6

2

1

1

6

1

1
1
2
5
1
7
1

1

1

2

1

1

5

1

7

1

2
1
3
6
1

2

1

3

6

1

3 2
1 2
1 2
3 3

1 1
1

2
2
1
1

2 2
2 3
3 2
2 1

1 1
1

1 1
3
2 6
2 1

1 1
1

5
5
1 3
15

1 1
1

3
4 1
2
2 1

1 1
1

3
8
2
4
1
1

1

6
2
4
3
1

1

1

1 1
1 1
1 1

1

1

1

1

2
8

1

1
1

1

1
1

1

2

1
2

1

1
3 1
1 1
1

2

1 1

1

2 1
2 2
2 3
1 5
1 1

1

1

2

2

2
3

1

1

1

1

1

1

1

1

12
2
2
1
1

1

1

1

1

1

1

3
2 2
4 4
2 2
1 1
1

1
2 1
3
1 1
1

1

2
2 2
4 3
1
1 1
1

2
1
1 3
1 1
1

2
1 2
7
2 2
1 1
1

2
5
1 1
1 1
1

1
3 5
2 5
3 6
4 2
1 1
1

2 1
1 4
3 8
1 1
1

1
1
3
1
1

1
1

1
4
3
1
1
8
3
1
1
1

7
1
1

1
2
2
1
1

2 2
3 4

1

1

1
2 2

1

1

2 4
2 2

1

1

3 7
4 9

1

1

2

1

1

2

1

1

2
2
1

1

1

1

1 1

1

3

1

3

1

1

1

2

1

1

1

3

1

1

1



1
2

1

1

1



2

1

1

1



1

1

1

1



1

1

1

2

1

1

1

1

2

1

1



1

1



2

1

1

1

3

1



1

1

			1				1
			1				1
1							
1							
	1				3	1	
					1		2
	1					1	1

3 2
4 2
3 2
6 3

1 1
1

2 1
3 5
4 3
4 2

1 1
1

1 3
2 5
3 8
2 2

1 1
1

1 5
3 3
1 12
3 13

1 1
1

2
3 3
3 2

1 1
1

2 4
8 4
3 7
3 4
3 5
1 1

1

1

1

1

1

1

1

8		4
4	4	
	1	
1		

2	
1	
1	1
2	2
	1
1	
9	2
3	4
5	1
2	2
	1
1	

6	3
14	3
1	
	1
1	

2	
5	
1	
5	5
5	10
1	
	4
	1
1	
	1
	3
	1
1	

1	
1	
3	4
2	
	1
1	
	1
	1

1	
5	1
4	2
	2
	1
	1
	1
2	
1	

1
1
1
1

1

2

1

3
1

2

1

1

1

1

1

1

1

1

1

2

1

1

1

1

1

1

3

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

5

2

1

1

1

2

1

2	2	3	2		7	1		1
3		2	1	2	4		10	1
		3		1	4			2
	1		1		1		1	
1		1		1		1		1
					2			
					1			

T2-1				T3-4				T3-5				T2-7				T2-6				T2-5				Wall
Out	AtFO	OutFC	At	Out	AtFO	OutFC	At	Out	AtFO	OutFC	At	Out	AtFO	OutFC	At	Out	AtFO	OutFC	At	Out	AtFO	OutFC	At	In
1			3				1				1				1				2				2	3
4			4				5		1						1								2	
2			3							1														1
1			1				1				1				1				1					1
			2				3	2		2	3				2				3				2	1
3					2				9						1				2					1
7					2				6										5				3	1
			2		1				5						1				3				11	3
			5						6		3								3				3	3
7									3										3				5	
1					1						1				1				1					1
			1								1								1					

3
2
3
14
1
1

1
1 2
2 2
1
1
1

2 1
1 2
1
1 2
1

3 2
2
2
2
1

1
1
1
1
2 1
1

2
1 13
1 2
3
1
1

1
12
5
1

1

1

2 1
1 2

1

1

1

2

2

2

1

1

2
1
1

22

2
3
4
7

2

1

5

1

1

1

3
5
1

2
5
1

1
1
8
2
4
1
1

1 1
5
1 4
1 1

1
1

3
1 5
2 7
1 1

1
15
3
1

2
4
1
1
1

2
3
2
1
1

1 3
2
2
2 2
1 1
1

1
1
2
2 1
1 1
1

1
2
1
1 1
1

1
1
2
1

2
2
1

2
1

1

6

1

2

2

1

5
5

1

1
1

1

1

1

1

1

2

1

1

1

2
2 11

1

1

1 3

2

1

1

1

1 2

1 1

1

1

1

1

1

5
1

1

1

1

3

11
3

1

14

21

42

1

1

2

3
3

2
1

2

1

2

7

1

1

3
1

1

1

1

1
1

3
1

1

2
3

3

1

2

3

1

1

1

1

1

1

1
11
7
4
1

1 2
2 4
3 4
3 3
1 3
1 1
1

3
1 1
2 5
2 3
3 2
1 1
1

2
2
1
1
1

1
1
1

1

1

1
1
1 1
1 2
1 1
1

6
2
1

1

1

2

1

1

1

1
1
2
1

1
1
1

2
1
1
1

1
1
1

1
1
1
1

1
1
1

1
1
1

1
1

1
1

1
1

1
1

2
1
1
1

1
3
1
1

1
1
1

1
1

2
1
1

1
1

3
1
1
1

1
1

1
1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

2

1

4

1

1

1

1

1

2

1

1

1

1

1

1

1

2

1

3

3

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

3

2

3

4

9

1

1

1

1

1

1

1

1

2

8

5

1

2

1

4

1

1

2

1

13

1

1

2

1

3

2

4

9

	1			1	1	
1						
1						
1		1		1	1	1
3	1	4	1	3	5	2
1	1	3		1	2	5
	1	2	2		1	3
1	1	1	1	1	1	1
	1					
3						
1	1					
1	1			1		
1		1			1	1
					1	3
1						1
						1
1	1	1	1	1		
	1					
1						

1

1

1

1
1

1

1
1
1

1

1
1

1

3

1

1
6
5
2
1

3
2
3 7
1 2
1 1
1 1
1

3 2
1 1
2
1 1

1
1 1
1 1

1
1
1
1

1 2
2
2 9
1 5
1 1
1 1
1

1
1

1 2
1 1
1 1
1

2
1 2
1 1
1 1
1 1

2 2
1 2
1 1

2 1
1 1
3
1
1

2 1
2
3
2 4
1
1 1
1

3

1

3
3
5

1

7
9
4

1

2

1

2

14

1

1

3

3

2

1

3 1

2

1 1

2 1

1

1

1

3

2

1

3

9

2

2

1 4
1
1 2
1
1

1 3
1 3
3
1

2 1
2 2
3 1
1

1 2
1 1
2 1
1

1 4
1 2
1 4
1

5
1

1

1

1

1

1

1

1

1

1

1

1

1

4

1

2

1

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

1

1

1

2

1

1

1

1

1

1

1

1

3

1

2

1

1

1

1

1

1

1

1

1

1

4

1

1

1

2

3

1

1

1

1

1

1

1

25

15 1

4 2

4

30

14 27

4 50

3 4

2

15

22

17

4

1 1

1

1 12

12

4

21

2

1 1

1

2

1

1

1

1 1

1

1 1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

1

1

1
1

1

9
2

1

4
2
7
7
3
1

2
1
2
1
3
1

5
6
2
2
2
3
1
1

1 2
1
1
1
1

1
1

3
3 5
3 5
3 4
3 2
1
1

2 3
3
3
2
2
1
1

1
1
1

1 1
1 2
1
1

2
1

1 1
11
4
4
1
1

4
3
1

2

1

8

3

5

1

1

1

1

1

1

1

1

1

3

5

1

2

2

1

2

1

1

1

1

4

1

1

1

1

1

1

2

1

2

2

2

2

1

1

1

1

1

1

1

1

1

1

9

4

1

3

1
1
1

1

1

1

2

1
3

1

1

1

1 1

1 1

1

1
1

1

2

1

1
1

1

1

1

2
2
1
2
1

1 1
2 5
1

3
1
1

1
1

1
1

1
1
1

1
1

< out FO	T2-8				T3-6				T3-7				Walk out		T3-1				T3-2				At
	At	Out	AtFO	FO	At	Out	AtFO	FO	At	Out	AtFO	FO	In	FO	At	Out	AtFO	OutFO	At	Out	AtFO	OutFO	
	1												2				8						
	1			1	1	4			1	5			4		2	1			1	1		3	
		1								1			1			1				1		1	
	1				1										1				1			1	
	1	1			1								1	7	2			4				3	
	2				3				2	1			2	3				2	3			4	
	3								3	4			1	3	1			2	8			9	
	3				2	2			3	11			1	2					7			6	
		1								1			1			1				1			
	1				1				1					1				1				1	

1
2
2 3

1
1

1 1
1 1
1 1

1

1
1 6
2 5

1
1

1

1

2
3

1

1
2
2
1

1

3
1 1 3
1 3

1 1
1

2

1

3
2 3
2 5
7 7

1 1
1

3

1

1

1

1

1

2
2

1

3
3
1

1

1
2

1

1

1 1
4 2
3
3

1

1

1

1
2 2
2

1

1

3

1

1
2 1
2
6 4

1

1

1 2
2
2 3
2

1

1

2 3
3 6
10

1

1

1

2 3
7

1

1

2

1

1

1

3

2

1

1

1

1
2 3

1

1

2
1
2 2

1

1

2

1

5

1

1
1
8 3

1

1

|

7 3
5
2
1

|

1
1
1 3
1

|

1
1
1 3
3 2
3 7
1

|

|

2
3 1
1

|

1
1
2 3
2 3
1

|

1
1
2 4
2
1

2
2
1

1

2

1

2

1

1
3

1

3
2 3
8

1
1

1

1

2 12

1 1

2

1

5

4
1

2

1

1

1

3

1
1

5
4
2

1

1

2

1

5

1

1 7
3

1 1

3
2

1

1 2
1
1 1
1

1 1
1

1

1

1 1
2 2
2
2

1 1
1

1

1

2
2 2
1 3
2 4

1 1
1

1

1

2

1

1

1 1
2
3
3

1 1
1

2 1
1
2 2
2 1

1 1
1

6
2
2
2

1

1

1

1
1
1
1

1
1

1
2 2
1
1
1

1
2
1
1
1

1
1 1
1 1
1
1

1
1 3
2
1
1

1
1
1
1
1
2
2
2
1

2

1

1

1

1

1

1

1 2
1

1
1

1

1

1
1

1
1

1

1

1

1

1

2

1
1

1

|

3 5

|

3
2 2

|

1
3 2

|

1
1

|

4 1
4 1

|

1
3 2

1

1

|

1

1

1

1

1

1

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2

1

1 1
3 2
2

1
1

2 2
3
2
4 2

1
1

2
2
3 5
2 11

1
1

3

1
1

3 1
4
3 2
3

1

6 1
3 2
2 11
5 8

1

1

1

10
6
3
4

1

1

1

1
1
1
1

1

1
2
1
1

2

1

3
2
2

1

1
2
2
1

1

2
2
5
2

1
1
1

1
1
1
1

1
2
2
1
1

2
1
1

2
1
1
1

15
1

1 1
1 1
1

1
3
1
1
1
2
1
1
1

1
1
1
1
1

1
1
2
1
1
1
1

1
1
1
1
1
1
1

|

1

1

|

2

2

1

1

|

1

2

1

1

1

2

3

1

1

|

|

1

1

|

1

1

1

|

4

1

2

1

1

T3-3			Q4-4			Q4-3			Q5-3			Q5-2			Q5-1			At		
Out	AtFO	OutFO	At	Out	AtFO	OutFO	At	Out	AtFO	OutFO	At	Out	AtFO	OutFO	At	Out	AtFO	OutFO	At	
			1				5				2			2						
			2	1							2				3					1
			2	5																1
					1							1								1
			1				1				1				1					1
3			3				6				1			3	2		3	2		5
4				4			3	3			2	6		6	7		4			2
6			3					5			4	3		2			1			
			2	4			3	2			3	3		7	4		1	5		4
					1				1				1						1	
			1				1				1			1			1			1

2
5
3

1

3 17
2
4 2

1 1
1

2
3 1
2 4
2 1

1 1
1

2
7
1

2

1 1
1

3 2

1 1
1

1
2 1
3

1 1
1

2
2

1

2

1

1

1

1

1

1
2

1

4

1

5

1

2

1

1

1

2
9 12
2 2

1 1
1

3
18

2

1 1
1

4
6 7

1 1
1

1
5
3

1

1

1

2

1

1

1

1

1

2

1

2

2

1

3

1

2

1

2

1

3

3

1

2

2

2

2

1

2

2

3

1

1

2

1

1

4

1

1

1

1

1

4

2

2

1

4

2

1

1

1

2

3

1

2
5

1

2
2 2
3

1

2

1

2

1

1

1

1
1

1

2 3
3 1

1

1

1

1

2

1

2 7
1
10

1

1

1

1

2

1

2

1

2

1

2 1
2

1 1
1

2

1

1

1 3
2 5
2 1
1

1

1

1

1 5

1 1
1

1 2

1

4

1

2
4
3

1

2 6
2 3
3 1
3 1

1 1
1

1

1

1 1
1

1 1
1

6

1

1

1

4

1

1

1 1
2

1 1
1

4 14

1

3
2
2
1

1

1
1

1

1

1 1

1

1
1

1

1

1 1
1

1

1

1

2 1
1
2 2
2 2

1
1
1

1
1
1

1
3
1 1

1

1

1

1 1

1 1

1

1

1

1

1

1

2

1

1
1

1

2
2

1

1

1

1

1

1

1

1

1

1
2

1

1

1

1 1
1

1

1

1

1

1

1 1
1

1

1

		1		1		1
		1		1		1
	16	3	10		5	1
		14	60			
12	50	22	30			
	30	50				
1		1		1		
	1				1	1
		1				
5	2	10	3	1		1
2		2	2			3
		1		1	1	5
					2	3
1				1	3	3
	1					

1
1 1
2 1
3 1
1 1
1
1

1
2 2
1 2
1 1
1
1
1

7 7 4
1 1
1
1
1
1

1 11 9 4 2
3 4 1
1
1
1
1

1 1 9 13 3
1 1
1
1
1
1

1

|

1

1

|

1

1

|

1

1

2

2

|

2

|

1

|

2

1

1

1

				1				
					1		1	
			8 3					
			18		10			
			18		37		4	
3		1						
1		1		1			1	
			1					
1					2 2		1	1
5			1		1 2			1
3	2 2		2 5		2 2	2	2 2	1
	1		1		2		1	
1		1		1		1	1	
	1		1		1		1	1
			1				1	2
3	2		2		1 1	1 1	1	2
			3		2 1		1	
					3		3	
1			1		1		1	
	1		1		1		1	1
			2		3		1	2
					1			
			2			2	1	
							2	
			1		1		1	1

1
2
1
1

3
4
1

1

1

2 1

1

2

2

2

1

1

1

1

2

2

1

1

1

1

1

1

1

1

1

1

1

1

1

1

2

2

1

1

2

1

1

1

1

1

1

1

1

1

1

1

2 8
3 30

1 1
1

12
3

3 4

1 1
1

1

1

2 3
5 3

1 1
1

2

4

1 1
1

1

1

1

1

1

1

8
5
28

1

17 26
45
17 20
31

1 1
1

13
2
4 4

1 1
1

24
9
1

1 1
1

1

1 1
1 3

1 1
1

1

2 12
3 3
5
1 1
1

1

1

1

1

5
5
3
4

1

1

1

5

1

3

1

1

1

1

1

1

2

1

2

4

1

3

1

2

1

1

1

5
11
7
2

1

3 10
3 7
3 5

1 1
1

1

1

3 1
2 2
2 5
2

1 1
1

1

1

2 31
2 2
2
2

1 1
1

2 3
4 2

1 1
1

1 3
2 1
2 2
3 5

1 1
1

2
2
4
2

1

2
2
5

2 2
2 2
2
3

1

1 1
1

3

5 15

4 4

2 3

5

10 13

15

3

1
3

2 4

6

2

4 5
1
4

1

1 1
1

1 1
1

1 1
1

1 1
1

1 1
1

1 1
1

4

1

2

1

1

1

2

1

1

1

1

1

2

1

2

1

1

4

1

1

1

4

3

1

1

2

1

1

1

3
2
4
3
1

7 3
3 2
3
3
1
1

1

7 2
5 6
1
3 4
1

3 2
3 2
3 7

4
5
6
9
4
1
1

1
2
2 1
3
2
1

2
3
2

1

1

1

2

1

1

1

2

3 3
2
2
7
8

1

1

2

2

1

1
1

1 2
1

1

2

2
1

3

1

1

1

1

1

1

7
2
3
1

2
2
3
1 3
1

1

1

2
1
1

2 2
2
1

1

1

2
2

1 2
3

1

3 5

3
1

1

3
7
1

1

1
1
1

1

1 1

1

1
1
1
3
1

1

2

1

2

4

1

5

1

1

1

4

1

1

3

7

1

9

2

4

2

2

2

1

2

2

4

7

1

1

2

2

2

1

1

10

1

1

1

1

1

1

3

5

2

3

1

1

1

3

3

2

3

3

5

2

1

1

1

1

4
3
5
2
2
1
1

1
1
2
1
1
1

2
1
6
1

1

1

1

1

2 3
2
3

1
1
1

1
1

4
2
3
4
3

1 11

62

1

1
2
2
1
1
1

3

1

3
2
1

3 2
2
2
1
2
1

1
2

2 1
17

8

4
1

1

1
1

1

5

1

1

1

1

1

3 2
2 5
4

1

2 2
2 3
2 1
2

1
4
3
6

1

3 1
3 2
1 1
2
1

3
2
3
3
1

1

1

1

1

1

1
4

1

1

1

1
1
2
1

1

1

1

1

3
1
1

1

1
1

1

1

2 1

1

1

3 1

2

2

2

2

1

1

2

3

1

2
1
1
1

1
2
1

1

1

23 2

1
1

3

1

1

1

5

2

3

1

1

1

1

1

1

3

2

3

1

1

3

2

1

1

1

1

10

8

4

2

2

1

2

3

1

2

1

3

1

1

1 1
3

1 1
1

1

1

1

1

1 1
2 3
2 2

1

1

1

1 1
1 2
3 6

1

1

1

1

1

1

1

1

2

1

1

1

1
1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

1

3

3

1

1

2

2

1

1

1

2

2
1

1
3 1

1

1

1

3
2
2 1

2

3 3
2

1 3

4

1

1
1

1

1

1

1

1

1

2
5

2

1

1

2
3

2

2

1

2

5

2

2

2

1

5

1

1

1

1

1
1 1
1

1

1

1

1
1

2 2
1 4

1

1 3

2
6
1
1
1

1
1

1

1

2 2

1

2
2

3

1
1

1
1

1

1

1

1 1

1 1

1

1

1 1
1 1
1

1

1
1
2

1

1

1

12
4
4
1

2 4
3
1

1

1

1

1

1

18 35
3 16
3 10
14

1

5 12
8 8
6 12
7 14

10
18
5
16
1
1
1

5 3
13 4
5 7
3
5
1

15
26
13
15
4
1

|

- - - - -

|

1

|

2

|||

1

1

2

1

|

1

1

|

1

9
5
5
1

2 1
2 5
3
1

1 1
1

1

3 3
2 2
2

2 1
6 1
3
3 4

1

1

2

1

2 2
4 1
2 1
2
3
1

1
1
1

3
3
2
3
2
1

1

1

3 5
1 4
1 1

5

1

1

1

1 4
1 5
2

2 4
1 1
4 2

2
2
1 2
1 3

1 2
5 5
5 3
2

1

2

1

3 1
6

1
3
2

1

1

1

1

1

1

1

1

1

1

1

1

1

3

1

1

1

2

2

1

1

2

1

4

1

1

1

5

2

1

1

1



1

1

3 4
3 6
3
1

2 3
2
3 2
2 5

1



2

2

1

1 2
1

2

2

1
5
2
1
1

2
1
1

1

5 3
3 3
5 3
5

2
2
7
2

1

1

3

1

1

3

1

1
1

2

1

10

1

1

2

1

1

1

1

2
3
2
4

5
1
2
1

1
1

2
2

1
3
3
3

2

2

7

1

3

1

2

1

1

1

1

1

1

5

2

3

4

1

4
5
2

2
1
1

5

1

3

1

1

3

1

1

55

1

1

1

1

1
2 2
2 2

1

1

2

2

1
1

4
6
3
1

2
1
1
2
3
1

1

2 1

2
3
1
2

1 1

1

1

1

1

2

1

1
1

1

1

1

1

1 1
2
2
1

2 1
1 1
1
2

1

1

1
1

1

4
2

1

1

1

1 1
1
1
1

1

1

1 1

6

4 1
21

1

1
1
3

2
2
1
1

3 1
3 2
4 1
2
1

2
3
1
1

1

1
1

1

1

1

1

1

1

1

1

1

1

1
1
1

1

1

1

1

1
1
2

1

1
2

1

1

2 1
3 3
3 2
1

1
2

3

2

2
1

1

1

1

2

1

2

1

1

1

1

1

2

2
1

1

1

1

1

4 1
2
3 1
1 1

1
1
1
2

2
3
3
1

1

2

1

1

4

1

1

1

1

3

1

1

1

2

1

1

1

1

2

1

12

1

1

10
8
18

1

3

3

1

1

3

3

3

6

4

18

20

8

1

1

1

3
4
4
3
2
1

2

1

1

2
1
3

1

1

1 2
3 1
2 1
2

3
2
2
5

2

3
1

1

1

1

1

1

2
1

1

1
1
2

1

1

1

1

1

1

1

1 1

1
1 1

2 1

1

1

3
1



1



1



2
2



AVIAN ECOLOGICAL INVESTIGATIONS
TABULATION SHEET with comparisons to 1983 survey

Observer: Margo Milde

Site: Volo Bog State
Natural Area

Address: 1206 Raleigh Rd

Year 2009

Glenview IL 60025

mrm1206@yahoo.com

845.724.4716

* A. O. U. = American Ornithologists' Union

** Indicate the total number of different Transect Legs and Census Stops the Species was recorded; five transect Sets would have about 50 Census Stops and 55 Transect Legs.

@ If the species occurred in 7 of the "Additional" Census Stops established by the observer for qualitative sampling, enter the number 7 in this column.

Use one of the following categories for this column: 1 - 5 pairs; 6 - 15 pairs, 16 - 50 pairs, or > 50 pairs

Species found in 2009 at VBSNA:

Species (In A.O.U.* order)	Total Number of Different Species Recorded **		Species present in addl habitats @ (1983)	Estimated Number # (1983 in parentheses)	Habitat Preferences and breeding status 2009 (1983 in parentheses)
	Transect Legs (1983 in parentheses)	Stops (1983 in parentheses)			
Canada Goose (1983)	7 (0)	9 (0)	B. Lake, Bdwlk, Prairie/Marsh overlook (2)	6 - 15 pairs (0)	Natural lake, Marsh; many fly in to forage (confirmed breeder)
Mute Swan	2	3	0	1 - 5 pairs	Marsh (confirmed breeder)
Wood Duck (1983)	7 (1)	6 (3)	B. Lake, Bdwlk., Prairie/Marsh overlook (0)	1 - 5 pairs (1 - 5 prs)	Marsh, Floodplain forest, Natural lake (confirmed breeder)
Mallard (1983)	14 (3)	8 (3)	B. Lake, Bdwlk., Prairie/Marsh Overlook (1)	6 - 15 pairs (1 - 5 prs)	Natural lake, Marsh (confirmed breeder)
Blue-winged Teal (1983)	2 (0)	3 (2)	0 (0)	1 - 5 pairs (1 - 5 prs)	Marsh
Ring-necked Pheasant (1983)	1 (0)	0 (4)	0 (1)	0 (6 - 15 prs)	Successional field
Pied-billed Grebe	5	1	Boardwalk	1 - 5 pairs	Bog, Marsh (confirmed breeder)
Double-crested Cormorant	7	6	B. Lake	0 (forager only)	Natural lake, Marsh (fly in to forage)
Great Blue Heron (1983)	8 (6)	10 (4)	B. Lake, Bdwlk (1)	0 (forager only) (0)	Marsh, . Natural lake (fly in to forage)
Great Egret	9	9	Bdwlk, B. Lake, Prairie/Marsh overlook	0 (forager only)	Marsh, . Natural lake (fly in to forage)
Green Heron (1983)	10 (7)	12 (9)	B. Lake, Bdwlk (1)	6 - 15 pairs (1 - 5 prs)	Marsh, Floodplain forest, Natural lake, Bog
Turkey Vulture	1	3	0	0	Prairie, Savanna, Upland Woods
Northern Harrier	0	1	0	0 (itinerant male)	Marsh
Cooper's Hawk	3	3	B. Lake	1 - 5 pairs	Upland forest, Floodplain Forest, Savanna
Red-tailed Hawk (1983)	11 (2)	8 (8)	Bdwlk. (2)	1 - 5 pairs (1 - 5 prs)	Savanna, Prairie, Suc. field
Virginia Rail (1983)	0	1	Bdwlk. (2)	1 - 5 pairs (1 - 5 prs)	Marsh, Bog
Sora (1983)	5 (1)	4(0)	Bdwlk (1)	6 - 15 pairs (6 - 15 pairs)	Marsh, Bog
Common Moorhen	3	4	Boardwalk	1 - 5 pairs	Marsh, Bog
American Coot (1983)	1 (0)	2 (1)	0 (1)	1 - 5 pairs (1 - 5 prs)	Marsh (confirmed breeder)
Sandhill Crane	12	7	Boardwalk, Prairie/Marsh Overlook	6 - 15 pairs	Marsh, Sedge meadow, Cropland (confirmed breeder)
Killdeer (1983)	7 (2)	8 (2)	Prairie/Marsh Overlook (0)	1 - 5 pairs (1 - 5 prs)	Dev. land, Natural lake, Prairie, Successional field
Spotted Sandpiper	1	0	Prairie/Marsh Overlook (0)	0 (nests at quarry)	Marsh
American Woodcock (1983)	1 (2)	0 (1)	0 (0)	1 - 5 pairs (1 - 5 prs)	Suc. field, Savanna
Ring-billed Gull	1	3	B. Lake	0 (forager only)	Natural lake, Dev. Land, Marsh
Rock pigeon (1983)	0 (1)	1 (0)	0 (1)	0 (0)	Developed land, near buildings
Mourning Dove (1983)	12 (13)	9 (15)	B. Lake, Bdwlk, Prairie/Marsh Overlook (4)	6 - 15 pairs (6 - 15 prs)	Savanna, Suc. field, Prairie, Forageland
Yellow-billed Cuckoo (1983)	1 (11)	0 (11)	0 (1)	1 - 5 pairs (6-15 prs)	Upland forest, Savanna, Floodplain forest
Eastern Screech-Owl (1983)	0 (0)	0 (0)	Night birding (1)	1 - 5 pairs (1-5 prs)	Upland forest, Floodplain forest (confirmed breeder)
Great Horned Owl (1983)	1 (2)	0 (0)	0 (1)	1 - 5 pairs (1 - 5 prs)	Upland forest, Floodplain forest
Chimney Swift (1983)	5 (0)	1 (1)	0 (0)	0	Can aerial forage in any habitat
Ruby-throated Hummingbird	1	1	0	1 - 5 pairs	Dev. land (Visitor center feeder), Upland forest, Suc. field, Savanna, Floodplain forest
Belted Kingfisher (1983)	7 (2)	5 (3)	B. Lake, Bdwlk, Prairie/Marsh Overlook (0)	0 (0)	Marsh, Natural Lake (Fly in to forage at Volo Bog)
Red-headed Woodpecker (1983)	1 (0)	0 (1)	1 (2)	1 - 5 pairs (1 - 5 prs)	Floodplain forest (confirmed breeder)
Red-bellied Woodpecker (1983)	17 (1)	15 (1)	Prairie/Marsh Overlook, B. Lake, Bdwlk. (1)	6 - 15 pairs (1 - 5 prs)	Upland woods, Savanna, Floodplain forest
Downy Woodpecker (1983)	27 (10)	19 (12)	Prairie/Marsh Overlook, B. Lake, Bdwlk (2)	16 - 50 pairs (6 - 15 prs)	Upland forest, Savanna, Bog, Floodplain forest
Hairy Woodpecker (1983)	16 (1)	11 (2)	Prairie/Marsh Overlook, B. Lake, Bdwlk (1)	6 - 15 pairs (1-5 prs)	Upland forest, Floodplain forest
Northern Flicker (1983)	17 (12)	18 (17)	Prairie/Marsh Overlook, B. Lake, Bdwlk. (2)	6-15 pairs (6 - 15 prs)	Upland forest, Floodplain Forest, Bog, Savanna
Olive-sided Flycatcher (1983)	0 (1)	1 (0)	0 (1)	0 (late migrant) (0)	Upland woods
Eastern Wood Peewee (1983)	13 (7)	12 (11)	Prairie/Marsh Overlook, B. Lake (5)	6 - 15 pairs (6 - 15 prs)	Upland forest, Floodplain forest
Alder Flycatcher (1983)	1	0 (2)	Bdwalk (0)	0 (late migrant?) (1-5 prs)	Marsh, Sedge meadow, Bog
Willow Flycatcher (1983)	17 (15)	16 (14)	Bdwlk., Prairie/Marsh Overlook (5)	16 - 50 pairs (16 - 50 prs)	Sedge meadow, Prairie, Suc. field, Bog

Least Flycatcher (1983)	2 (2)	1 (1)	0 (1)	1 - 5 pairs (1-5)	Upland forest, Floodplain forest
Eastern Phoebe	8	3	Prairie/Marsh Overlook, B. Lake, Bdwk.	1 - 5 pairs	Upland forest, Savanna, Sedge meadow, Floodplain forest (confirmed breeder)
Great Crested Flycatcher (1983)	17 (10)	11 (13)	Prairie/Marsh Overlook, B. Lake (4)	6 - 15 pairs (6 - 15 prs)	Upland forest, Floodplain forest
Eastern Kingbird (1983)	21 (7)	13 (4)	Prairie/Marsh Overlook, B. Lake (4)	6 - 15 pairs (6 - 15 prs)	Savanna, Prairie, Sedge meadow, Suc. field
Yellow-throated Vireo (1983)	4 (2)	2 (2)	Bdwk. (0)	1 - 5 pairs (1 - 5 prs)	Upland forest, Floodplain forest
Warbling Vireo (1983)	6 (2)	5 (3)	B. Lake (1)	6 - 15 pairs (1 - 5 prs)	Upland woods, Floodplain forest
Red-eyed Vireo (1983)	21 (6)	13 (9)	B. Lake (5)	6 - 15 pairs (6 -15 prs)	Upland woods, Floodplain forest
Blue Jay (1983)	28 (15)	27 (18)	Prairie/Marsh Overlook, B. Lake, Bdwk. (3)	16 - 50 pairs (16-50 prs)	Upland forest, Floodplain forest, Savanna, Bog (confirmed breeder)
American Crow (1983)	23(11)	25 (19)	Prairie/Marsh Overlook, B. Lake (6)	16 - 50 pairs (6 - 15 prs)	Dev. land, Upland forest, Floodplain forest, Savanna, Bog (confirmed breeder)
Purple Martin (1983)	8 (2)	7 (2)	Bdwalk. (1)	0 (0)	Dev. Land, Natural lake, Marsh, Bog (Nest in communal houses outside the park)
Tree Swallow (1983)	29 (8)	29 (10)	Prairie/Marsh Overlook, Bdwk., B. Lake (3)	16 - 50 pairs (1 - 5 prs)	Marsh, Sedge meadow, Prairie, Bog, Nat. Lake (frequently nest in bluebird boxes) (conf. breeder)
Northern Rough-winged Swallow (1983)	6 (1)	6 (0)	B. Lake, Bdwk (0)	0 (0)	Natural lake, Marsh (fly in to forage)
Bank Swallow (1983)	11 (0)	18 (2)	Prairie/Marsh Overlook, B. Lake, Bdwk. (0)	0 (0)	Natural lake, prairie (nests at quarry nearby)
Barn Swallow (1983)	16 (6)	14 (9)	Prairie/Marsh Overlook, B. Lake, Bdwk. (3)	6 - 15 pairs (1 - 5 prs)	Dev. land, Marsh, Suc. field, Prairie, Sedge meadow (nests at Visitor Center) (conf. breeder)
Black-capped Chickadee (1983)	32 (13)	21 (16)	Prairie/Marsh Overlook, B Lake, Bdwk (4)	16 - 50 pairs (6-15 prs)	Upland forest, Floodplain Forest, Savanna, Bog
White-breasted Nuthatch (1983)	23 (3)	15 (4)	Prairie/Marsh Overlook, B. Lake, Bdwk (1)	16 - 50 pairs (1 - 5 prs)	Upland forest, Floodplain forest, Savanna
House Wren (1983)	36 (14)	33 (16)	Prairie/Marsh Overlook, B. Lake, Bdwk. (6)	16-50 pairs (6 - 15 prs)	Upland forest, Savanna, Prairie, Sedge Meadow, Marsh (occ. nest in bluebird boxes) (conf. breeder)
Sedge Wren (1983)	2 (4)	3(4)	0 (2)	6 - 15 pairs (1-5 prs)	Sedge meadow, Prairie, Forageland
Marsh Wren (1983)	6 (2)	5 (2)	Prairie/Marsh Overlook, Bdwk. (0)	16 - 50 pairs (6 - 15 prs)	Marsh, Sedge Meadow, Bog
Blue-gray Gnatcatcher	21	11	Prairie/Marsh Overlook, B Lake, Bdwk	16 - 50 pairs	Upland forest, Floodplain forest, Bog
Eastern Bluebird	14	14	Prairie/Marsh Overlook	16 - 50 pairs	Savanna, Prairie, Suc. field (confirmed breeder)
Veery (1983)	7 (12)	7 (14)	B. Lake, Bdwk. (4)	1 - 5 pairs (6 - 15 prs)	Upland forest, Floodplain forest, Bog
Wood Thrush (1983)	5 (4)	1 (7)	B. Lake (3)	1 - 5 pairs (6 -15 prs)	Upland forest, Floodplain forest
American Robin (1983)	38 (15)	33 (18)	Prairie/Marsh Overlook, B. Lake, Bdwk. (7)	> 50 pairs (16 - 50 prs)	Dev. land, Suc. field, Upland forest, Floodplain forest, Savanna, Bog (confirmed breeder)
Gray Catbird (1983)	33 (16)	26 (16)	Prairie/Marsh Overlook, B. Lake, Bdwk. (6)	16 - 50 pairs (16 - 50 prs)	Upland forest, Floodplain forest, Savanna, Suc. field, Bog
Brown Thrasher (1983)	8 (1)	13 (1)	Prairie, B/Marsh Overlook (0)	6 - 15 pairs (1 - 5 prs)	Savanna, Prairie, Forageland, Suc. field (confirmed breeder)
European Starling (1983)	16 (4)	17 (6)	Prairie/Marsh Overlook, B. Lake, Bdwk. (2)	6 - 15 pairs (6-15 prs)	Dev. land, Upland forest, Floodplain forest, Cropland, Suc. field (confirmed breeder)
Cedar Waxwing (1983)	27 (15)	27 (18)	Prairie/Marsh Overlook, B Lake, Bdwk (5)	6 - 15 pairs (6 - 15 prs)	Upland forest, Savanna, Bog, Floodplain forest
Blue-winged Warbler	2	1	0	1 - 5 pairs	Successional field
Yellow Warbler (1983)	27 (16)	24 (16)	Prairie/Marsh Overlook, B.Lake, Bdwk. (4)	16 - 50 pairs (16 - 50 prs)	Marsh, Sedge meadow, Prairie, Suc. field
Black-and-white Warbler	1	0	0	0	Upland forest (late migrant)
Common Yellowthroat (1983)	34 (18)	31 (20)	Prairie/Marsh Overlook, B. Lake, Bdwk. (7)	16 - 50 pairs (16 - 50 prs)	Marsh, Sedge meadow
Eastern Towhee (1983)	20 (1)	10 (0)	Prairie/Marsh Overlook, B. Lake (2)	6 - 15 pairs (1 - 5 prs)	Savanna, Upland forest
Chipping Sparrow (1983)	10 (1)	6 (1)	Prairie/Marsh Overlook, B. Lake (1)	1 - 5 pairs (1 - 5 prs)	Dev. land (picnic area), Suc. field, Prairie
Field Sparrow (1983)	27 (9)	21 (13)	Prairie/Marsh Overlook (7)	16 - 50 pairs (6 - 15 prs)	Forageland, Suc. field, Prairie (confirmed breeder)
Savannah Sparrow (1983)	4 (2)	4 (2)	Prairie/Marsh Overlook (2)	1 - 5 pairs (1 - 5 prs)	Prairie, Suc. field, Forageland
Grasshopper Sparrow (1983)	7 (0)	4 (0)	0 (1)	6 - 15 pairs (1-5 prs)	Prairie, Forageland
Henslow's Sparrow	0	0	Prairie/Marsh Overlook	1 - 5 pairs	Prairie
Song Sparrow (1983)	38 (14)	33 (19)	Prairie/Marsh Overlook, B. Lake, Bdwk. (7)	16 - 50 pairs (16 - 50 prs)	Prairie, Sedge meadow, Marsh, Suc. field, Natural lake, Bog (confirmed breeder)
Swamp Sparrow (1983)	22 (15)	13 (16)	Prairie/Marsh Overlook, B. Lake, Bdwk. (5)	16 - 50 pairs (16-50 prs)	Sedge meadow, Marsh, Bog (confirmed breeder)
Scarlet Tanager (1983)	5 (1)	3 (1)	Prairie/Marsh Overlook, B. Lake (0)	6 - 15 pairs (1-5 prs)	Upland forest
Northern Cardinal (1983)	36(14)	33 (21)	Prairie/Marsh Overlook, B. Lake, Bdwk. (8)	16 - 50 pairs (6 - 15 prs)	Upland forest, Savanna, Suc. field, Dev. land, Bog, Floodplain forest
Rose-breasted Grosbeak (1983)	8 (8)	7 (7)	Prairie/Marsh Overlook (3)	6 - 15 pairs (6 - 15 prs)	Upland forest, Savanna, Floodplain forest, bog
Indigo Bunting (1983)	34 (11)	28 (13)	Prairie/Marsh Overlook, B. Lake, Bdwk. (6)	16 - 50 pairs (16-50 prs)	Upland forest, Floodplain forest, Savanna, Suc. field, Bog
Dickcissel	3	2	0	6 - 15 pairs	Prairie, Forageland
Bobolink (1983)	5 (4)	6 (2)	Prairie/Marsh Overlook (1)	6 - 15 pairs (1 - 5 prs)	Forageland, Prairie, Suc. field
Red-winged Blackbird (1983)	37 (18)	33 (22)	Prairie/Marsh Overlook, B. Lake, Bdwk. (6)	> 50 pairs (16 - 50 prs)	Marsh, Sedge meadow, Cropland, Forageland, Suc. field, Floodplain forest (confirmed breeder)
Eastern Meadowlark (1983)	10 (2)	7 (5)	Prairie/Marsh Overlook (2)	1 - 5 pairs (6-15 prs)	Prairie, Forageland, Suc. field
Common Grackle (1983)	17 (12)	18 (18)	Prairie/Marsh Overlook, B. Lake, Bdwk. (4)	16 - 50 pairs (16 - 50 prs)	Upland forest, Sedge Mead., Marsh, Savanna, Bog, Floodplain forest, Cropland (conf. breeder)
Brown-headed Cowbird (1983)	31 (12)	28 (18)	Prairie/Marsh Overlook, B Lake, Bdwk. (4)	16-50 pairs (6-15 prs)	Upland forest, Floodplain forest, Savanna, Dev. land, Suc. field, Cropland, Forageland
Orchard Oriole	2	1	0	1 - 5 pairs	Savanna

Baltimore Oriole (1983)	14 (6)	7 (4)	Prairie/Marsh overlook , B. Lake , Bdwk (4)	6 - 15 pairs (1 - 5 prs)	Upland forest, Bog, Marsh, Floodplain forest
House Finch	4	5	Prairie/Marsh Overlook	1 - 5 pairs	Dev. Land (Manager's residence and Visitor Center)
American Goldfinch (1983)	38 (15)	33 (16)	Prairie/Marsh Overlook , B. Lake , Bdwk. (4)	16-50 pairs (6-15 prs)	Prairie, Sedge meadow, Suc. field, Bog, Forageland
House Sparrow (1983)	10 (1)	3 (2)	B. Lake , Bdwk. (0)	6 - 15 pairs (6-15 prs)	Dev Land (Visitor Center, Mgr. residence)

Total species found in 2009: 96

Species found in 2009 but not in 1983:

Mute Swan	2	3	0	1 - 5 pairs	Marsh (confirmed breeder)
Pied-billed Grebe	5	1	Boardwalk	1 - 5 pairs	Bog, Marsh (confirmed breeder)
Double-crested Cormorant	7	6	B. Lake	0 (forager only)	Natural lake, Marsh (fly in to forage)
Great Egret	9	9	Bdwik, B. Lake, Prairie/Marsh overlook	0 (forager only)	Marsh , Natural lake (fly in to forage)
Turkey Vulture	1	3	0	0	Prairie, Savanna, Upland Woods
Northern Harrier	0	1	0	0 (itinerant male)	Marsh
Cooper's Hawk	3	3	B. Lake	1 - 5 pairs	Upland forest, Floodplain Forest, Savanna
Common Moorhen	3	4	Boardwalk	1 - 5 pairs	Marsh, Bog
Sandhill Crane	12	7	Boardwalk, Prairie/Marsh Overlook	6 - 15 pairs	Marsh, Sedge meadow, Cropland (confirmed breeder)
Spotted Sandpiper	1	0	Prairie/Marsh Overlook (0)	0 (nests at quarry)	Marsh
Ring-billed Gull	1	3	B. Lake	0 (forager only)	Natural lake, Dev. Land, Marsh
Ruby-throated Hummingbird	1	1	0	1 - 5 pairs	Dev. land (Visitor center feeder), Upland forest, Suc. field, Savanna, Floodplain forest
Eastern Phoebe	8	3	Prairie/Marsh Overlook, B. Lake, Bdwk.	1 - 5 pairs	Upland forest, Savanna, Sedge meadow, Floodplain forest (confirmed breeder)
Blue-gray Gnatcatcher	21	11	Prairie/Marsh Overlook, B. Lake, Bdwk	6 - 15 pairs	Upland forest, Floodplain forest, Bog
Eastern Bluebird	14	14	Prairie/Marsh Overlook	16 - 50 pairs	Savanna, Prairie, Suc. field (confirmed breeder)
Blue-winged Warbler	2	1	0	1 - 5 pairs	Successional field
Black-and-white Warbler	1	0	0	0	Upland forest (late migrant)
Henslow's Sparrow	0	0	Prairie/Marsh Overlook	1 - 5 pairs	Prairie
Dickcissel	3	2	0	6 - 15 pairs	Prairie, Forageland
Orchard Oriole	2	1	0	1 - 5 pairs	Savanna
House Finch	4	5	Prairie/Marsh Overlook	1 - 5 pairs	Dev. Land (Manager's residence and Visitor Center)

Species found in 2009 but not 1983: 21

Species found in 1983 but not in 2009:

Least Bittern	0	1	1	1-5 pairs	Marsh
Red-shouldered Hawk	1	1	0	0	Nonbreeding summer resident
King Rail	1	1	0	1 - 5 pairs	Marsh, Bog
Black-billed Cuckoo	3	2	2	1 - 5 pairs	Floodplain forest
Acadian Flycatcher	1	0	0	1 - 5 pairs	Upland forest
White-eyed Vireo	1	3	1	1 - 5 pairs	Floodplain forest (edge), Bog
Mourning Warbler	1	0	1	0	Nonbreeding summer resident
Yellow-breasted Chat	3	3	0	1 - 5 pairs	Successional field, Bog

Total species found in 1983 but not in 2009: 8

AVIAN ECOLOGICAL INVESTIGATIONS
TABULATION SHEET

Observer: Margo Milde

Site: Volo Bog State
Natural Area

Address: 1206 Raleigh Rd

Year 2009

Glenview IL 60025

mrm1206@yahoo.com

845.724.4716

* A. O. U. = American Ornithologists' Union

** Indicate the total number of different Transect Legs and Census Stops the Species was recorded; five transect Sets would have about 50 Census Stops and 55 Transect Legs.

@ If the species occurred in 7 of the "Additional" Census Stops established by the observer for qualitative sampling, enter the number 7 in this column.

#

Species found in 2009 at VBSNA:

Species (In A.O.U.* order)	Total Number of Different Species Recorded **		Species present in addl habitats @	Estimated Number #	Habitat Preferences and breeding status 2009
	Transect Legs	Stops			
Canada Goose	7	9	B. Lake, Bdwlk, Prairie/Marsh overlook	6 - 15 pairs	Natural lake, Marsh; many fly in to forage (confirmed breeder)
Mute Swan	2	3	0	1 - 5 pairs	Marsh (confirmed breeder)
Wood Duck	7	6	B. Lake, Bdwlk., Prairie/Marsh overlook	1- 5 pairs	Marsh, Floodplain forest, Natural lake (confirmed breeder)
Mallard	14	8	B. Lake, Bdwlk., Prairie/Marsh Overlook	6 - 15 pairs	Natural lake, Marsh (confirmed breeder)
Blue-winged Teal	2	3	0	1 - 5 pairs	Marsh (probable breeder)
Ring-necked Pheasant	1	0	0	0	Successional field
Pied-billed Grebe	5	1	Boardwalk	1 - 5 pairs	Bog, Marsh (confirmed breeder)
Double-crested Cormorant	7	6	B. Lake	0 (forager only)	Natural lake, Marsh (fly in to forage)
Great Blue Heron	8	10	B. Lake, Bdwlk	0 (forager only)	Marsh, , Natural lake (fly in to forage)
Great Egret	9	9	Bdwlk, B. Lake, Prairie/Marsh overlook	0 (forager only)	Marsh, , Natural lake (fly in to forage)
Green Heron	10	12	B. Lake, Bdwlk	6 - 15 pairs	Marsh, Floodplain forest, Natural lake, Bog
Turkey Vulture	1	3	0	0	Prairie, Savanna, Upland Woods
Northern Harrier	0	1	0	0 (itinerant male)	Marsh
Cooper's Hawk	3	3	B. Lake	1 - 5 pairs	Upland forest, Floodplain Forest, Savanna
Red-tailed Hawk	11	8	Bdwlk.	1 - 5 pairs	Savanna, Prairie, Suc. field

Virginia Rail	0	1	Bdwlk.	1 - 5 pairs	Marsh, Bog
Sora	5	4	Bdwlk	6 - 15 pairs	Marsh, Bog
Common Moorhen	3	4	Boardwalk	1 - 5 pairs	Marsh, Bog
American Coot	1	2	0	1 - 5 pairs	Marsh (confirmed breeder)
Sandhill Crane	12	7	Boardwalk, Prairie/Marsh Overlook	6 - 15 pairs	Marsh, Sedge meadow, Cropland (confirmed breeder)
Killdeer	7	8	Prairie/Marsh Overlook	1 - 5 pairs	Dev. land, Natural lake, Prairie, Successional field
Spotted Sandpiper	1	0	Prairie/Marsh Overlook	0 (nests at quarry)	Marsh
American Woodcock	1	0	0	1 - 5 pairs	Suc. field, Savanna
Ring-billed Gull	1	3	B. Lake	0 (forager only)	Natural lake, Dev. Land, Marsh
Rock pigeon	0	1	0	0	Developed land, near buildings
Mourning Dove	12	9	B. Lake, Bdwlk. Prairie/Marsh Overlook	6 - 15 pairs	Savanna, Suc. field, Prairie, Forageland
Yellow-billed Cuckoo	1	0	0	1 - 5 pairs	Upland forest, Savanna, Floodplain forest
Eastern Screech-Owl	0	0	Night birding	1 - 5 pairs	Upland forest, Floodplain forest (confirmed breeder)
Great Horned Owl	1	0	0	1 - 5 pairs	Upland forest, Floodplain forest
Chimney Swift	5	1	0	0	Can aerial forage in any habitat
Ruby-throated Hummingbird	1	1	0	1 - 5 pairs	Dev. land (Visitor center feeder), Upland forest, Suc. field, Savanna, Floodplain forest
Belted Kingfisher	7	5	B. Lake, Bdwlk, Prairie/Marsh Overlook	0	Marsh, Natural Lake (Fly in to forage at Volo Bog)
Red-headed Woodpecker	1	0	1	1 - 5 pairs	Floodplain forest (confirmed breeder)
Red-bellied Woodpecker	17	15	Prairie/Marsh Overlook, B. Lake, Bdwlk.	6 - 15 pairs	Upland woods, Savanna, Floodplain forest
Downy Woodpecker	27	19	Prairie/Marsh Overlook, B. Lake, Bdwlk	16- 50 pairs	Upland forest, Savanna, Bog, Floodplain forest
Hairy Woodpecker	16	11	Prairie/Marsh Overlook, B. Lake, Bdwlk	6 - 15 pairs	Upland forest, Floodplain forest
Northern Flicker	17	18	Prairie/Marsh Overlook, B. Lake, Bdwlk.	6-15 pairs	Upland forest, Floodplain Forest, Bog, Savanna
Olive-sided Flycatcher	0	1	0	0 (late migrant)	Upland woods
Eastern Wood Peewee	13	12	Prairie/Marsh Overlook, B. Lake	6 - 15 pairs	Upland forest, Floodplain forest
Alder Flycatcher	1	0	Bdwalk	0 (late migrant?)	Marsh, Sedge meadow, Bog

Willow Flycatcher	17	16	Bdwlk., Prairie/Marsh Overlook	16 - 50 pairs	Sedge meadow, Prairie, Suc. field, Bog
Least Flycatcher	2	1	0	1 - 5 pairs	Upland forest, Floodplain forest
Eastern Phoebe	8	3	Prairie/Marsh Overlook, B. Lake, Bdwlk.	1 - 5 pairs	Upland forest, Savanna, Sedge meadow, Floodplain forest (confirmed breeder)
Great Crested Flycatcher	17	11	Prairie/Marsh Overlook, B. Lake	6 - 15 pairs	Upland forest, Floodplain forest
Eastern Kingbird	21	13	Prairie/Marsh Overlook, B. Lake	6 - 15 pairs	Savanna, Prairie, Sedge meadow, Suc. field
Yellow-throated Vireo	4	2	Bdwlk.	1 - 5 pairs	Upland forest, Floodplain forest
Warbling Vireo	6	5	B. Lake	6 - 15 pairs	Upland woods, Floodplain forest
Red-eyed Vireo	21	13	B. Lake	6 - 15 pairs	Upland woods, Floodplain forest
Blue Jay	28	27	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16 - 50 pairs	Upland forest, Floodplain forest, Savanna, Bog (confirmed breeder)
American Crow	23	25	Prairie/Marsh Overlook, B. Lake	16 - 50 pairs	Dev. land, Upland forest, Floodplain forest, Savanna, Bog
Purple Martin	8	7	Bdwalk	0	Dev. Land, Natural lake, Marsh, Bog (Nest in communal houses outside the park)
Tree Swallow	29	29	Prairie/Marsh Overlook, Bdwlk., B. Lake	16 - 50 pairs	(frequently nest in bluebird boxes) (conf. breeder)
Northern Rough-winged Swallow	6	6	B. Lake, Bdwlk	0	Natural lake, Marsh (fly in to forage)
Bank Swallow	11	18	Prairie/Marsh Overlook, B. Lake, Bdwlk.	0	Natural lake, prairie (nests at quarry nearby)
Barn Swallow	16	14	Prairie/Marsh Overlook, B. Lake, Bdwlk.	6 - 15 pairs	Dev. land, Marsh, Suc. field, Prairie, Sedge meadow (nests at Visitor Center) (conf. breeder)
Black-capped Chickadee	32	21	Prairie/Marsh Overlook, B. Lake, Bdwlk	16 - 50 pairs	Upland forest, Floodplain Forest, Savanna, Bog
White-breasted Nuthatch	23	15	Prairie/Marsh Overlook, B. Lake, Bdwlk	16 - 50 pairs	Upland forest, Floodplain forest, Savanna
House Wren	36	33	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16-50 pairs	Upland forest, Savanna, Prairie, Sedge Meadow, Marsh (occ. nest in bluebird boxes) (conf. breeder)
Sedge Wren	2	3	0	6 - 15 pairs	Sedge meadow, Prairie, Forageland
Marsh Wren	6	5	Prairie/Marsh Overlook, Bdwlk.	16 - 50 pairs	Marsh, Sedge Meadow, Bog
Blue-gray Gnatcatcher	21	11	Prairie/Marsh Overlook, B. Lake, Bdwlk	16 - 50 pairs	Upland forest, Floodplain forest, Bog
Eastern Bluebird	14	14	Prairie/Marsh Overlook	16 - 50 pairs	Savanna, Prairie, Suc. field (confirmed breeder)
Veery	7	7	B. Lake, Bdwlk.	1 - 5 pairs	Upland forest, Floodplain forest, Bog
Wood Thrush	5		B. Lake	1 - 5 pairs	Upland forest, Floodplain forest
American Robin	38	33	Prairie/Marsh Overlook, B. Lake, Bdwlk	> 50 pairs	Dev. land, Suc. field, Upland forest, Floodplain forest, Savanna, Bog (confirmed breeder)
			Prairie/Marsh Overlook, B. Lake		Upland forest, Floodplain forest, Savanna, Suc. field,

Gray Catbird	33	26	Bdwlk.	16 - 50 pairs	Bog
Brown Thrasher	8	13	Prairie , B/Marsh Overlook	6 - 15 pairs	Savanna, Prairie, Forageland, Suc. field (confirmed breeder)
European Starling	16	17	Prairie/Marsh Overlook, B. Lake, Bdwlk.	6 - 15 pairs	Dev. land, Upland forest, Floodplain forest, Cropland, Suc. field (confirmed breeder)
Cedar Waxwing	27	27	Prairie/Marsh Overlook, B Lake, Bdwlk	6 - 15 pairs	Upland forest, Savanna, Bog, Floodplain forest
Blue-winged Warbler	2	1	0	1 - 5 pairs	Successional field
Yellow Warbler	27	24	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16 - 50 pairs	Marsh, Sedge meadow, Prairie, Suc. field
Black-and-white Warbler	1	0	0	0	Upland forest (late migrant)
Common Yellowthroat	34	31	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16 - 50 pairs	Marsh, Sedge meadow
Eastern Towhee	20	10	Prairie/Marsh Overlook, B. Lake	6 - 15 pairs	Savanna, Upland forest
Chipping Sparrow	1	6	Prairie/Marsh Overlook, B. Lake	1 - 5 pairs	Dev. land (picnic area), Suc. field, Prairie
Field Sparrow	27	2	Prairie/Marsh Overlook	16 - 50 pairs	Forageland, Suc. field, Prairie (confirmed breeder)
Savannah Sparrow	4	4	Prairie/Marsh Overlook	1 - 5 pairs	Prairie, Suc. field, Forageland
Grasshopper Sparrow	7	4	0	6 - 15 pairs	Prairie, Forageland
Henslow's Sparrow	0	0	Prairie/Marsh Overlook	1 - 5 pairs	Prairie
Song Sparrow	38	33	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16 - 50 pairs	Prairie, Sedge meadow, Marsh, Suc. field, Natural lake, Bog (confirmed breeder)
Swamp Sparrow	22	13	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16 - 50 pairs	Sedge meadow, Marsh, Bog (confirmed breeder)
Scarlet Tanager	5	3	Prairie/Marsh Overlook, B. Lake	6 - 15 pairs	Upland forest
Northern Cardinal	36	33	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16 - 50 pairs	Upland forest, Savanna, Suc. field, Dev. land, Bog, Floodplain forest
Rose-breasted Grosbeak	8	7	Prairie/Marsh Overlook	6 - 15 pairs	Upland forest, Savanna, Floodplain forest, bog
Indigo Bunting	34	28	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16 - 50 pairs	Upland forest, Floodplain forest, Savanna, Suc. field, Bog
Dickcissel	3	2	0	6 - 15 pairs	Prairie, Forageland
Bobolink	5	6	Prairie/Marsh Overlook	6 - 15 pairs	Forageland, Prairie, Suc. field
Red-winged Blackbird	37	33	Prairie/Marsh Overlook, B. Lake, Bdwlk.	> 50 pairs	Marsh, Sedge meadow, Cropland, Forageland, Suc. field, Floodplain forest (confirmed breeder)
Eastern Meadowlark	10	7	Prairie/Marsh Overlook	1 - 5 pairs	Prairie, Forageland, Suc. field
Common Grackle	17	18	Prairie/Marsh Overlook, B. Lake, Bdwlk.	16 - 50 pairs	Upland forest, Sedge Mead., Marsh, Savanna, Bog, Floodplain forest, Cropland (conf. breeder)
			Prairie/Marsh Overlook, B Lake,		Upland forest, Floodplain forest, Savanna, Dev. land,

Brown-headed Cowbird	31	28	Bdwlk.	16-50 pairs	Suc. field, Cropland, Forageland
Orchard Oriole	2	1	0	1 - 5 pairs	Savanna
Baltimore Oriole	14	7	Prairie/Marsh Overlook , B. Lake , Bdwlk	6 - 15 pairs	Upland forest, Bog, Marsh, Floodplain forest
House Finch	4	2	Prairie/Marsh Overlook	1 - 5 pairs	Dev. Land (Manager's residence and Visitor Center)
American Goldfinch	38	33	Prairie/Marsh Overlook , B. Lake , Bdwlk.	16-50 pairs	Prairie, Sedge meadow, Suc. field, Bog, Forageland
House Sparrow	10	3	B. Lake , Bdwlk.	6 - 15 pairs	Dev Land (Visitor Center, Mgr. residence)

Total species found in 2009:

96