



**GOSFIELD COMBER WIND
ENERGY PROJECT
ENVIRONMENTAL SCREENING
REPORT/ENVIRONMENTAL
IMPACT STATEMENT
APPENDIX D - BIRD REPORT**

File No. 160960113

December 2007

Table of Contents

1.0 INTRODUCTION	1.1
1.1 STUDY AREA AND AGENCY GUIDANCE	1.1
1.2 DETERMINING SITE SENSITIVITY AND LEVEL OF CONCERN	1.1
1.2.1 Determining Site Sensitivity	1.2
1.2.2 Size of the Facility	1.2
1.2.3 Determination of Category	1.2

2.0 METHODS	2.1
2.1 BACKGROUND DATA REVIEW	2.1
2.2 FIELD SURVEYS.....	2.1

3.0 RESULTS	3.1
3.1 HABITAT AND AREA CHARACTERISTICS	3.1
3.1.1 Study Area Characteristics	3.1
3.1.2 Designated Features.....	3.1
3.1.3 Other Features.....	3.2
3.2 FIELD SURVEYS.....	3.3
3.2.1 Spring and Fall Migration	3.3
3.2.2 Winter.....	3.3
3.2.3 Breeding Season	3.4
3.2.3.1 Species Presence	3.4
3.2.3.2 Species Densities	3.4
3.2.4 Species at Risk	3.6

4.0 SUMMARY AND DISCUSSION	4.1
---	------------

5.0 REFERENCES	5.1
-----------------------------	------------

List of Attachments

-
- Attachment A Figures
 - Attachment B Tables
 - Attachment C IBA Site Summary: Point Pelee
 - Attachment D List of Breeding Birds, 2007
 - Attachment E Point Count Results
 - Attachment F Height Summary

Table of Contents

List of Figures

Attachment A

Figure 2.1 Point Count Locations

List of Table

Attachment B

Table 1.1 Distances between Study Area and Natural Areas that are Important to Birds
Table 1.2 Level of Concern Category Matrix
Table 2.1 Frequency and density of some breeding species in the study area.

1.0 Introduction

1.1 STUDY AREA AND AGENCY GUIDANCE

Brookfield Power is proposing to develop a wind plant in Essex County, north of Leamington and east of Essex (**Figure 1.1, Main Report**). The study area is comprised of approximately 113,000 ha located in the Municipalities of Lakeshore, Kingsville and Leamington. The project is comprised of 151 turbines in the Municipalities of Lakeshore and Kingsville.

Stantec Consulting Ltd. (Stantec) was retained by Brookfield in 2006 to address study requirements under federal and provincial Environmental Assessment (EA) legislation for this proposal. A Natural Heritage Assessment for a smaller study area was prepared by BioLogic (2007, **Attachment A of Appendix A**), compiling the results of a bird study (Martin, 2005) as well as aquatic and vegetation studies. The bird studies for the original Gosfield wind project study area were scoped through consultation between BioLogic and Environment Canada (EC) and Canadian Wildlife Service (CWS) representatives. The BioLogic work program was endorsed by EC/CWS with the addition of radar studies to survey nocturnal migration (letter, R. Read, EC to D. Hayman, BioLogic, November 30, 2004).

In 2007, Stantec undertook additional avian surveys to assess the presence and abundance of breeding birds in an expanded study area. The purpose of this report is to summarize the results of earlier bird studies (Martin, 2005), report on the results of recent breeding bird surveys in the expanded study area, and evaluate potential impacts to birds as a result of the proposed project.

1.2 DETERMINING SITE SENSITIVITY AND LEVEL OF CONCERN

EC's Wind Turbine and Birds: A Guidance Document for Environmental Assessment (EC, 2007a) provides information on the method for determining the level of concern for wind farm sites as it relates to birds. There are four categories of concern. The categories are based on the sensitivity of the site and the size of the proposed facility. The general breakdown of these categories is as follows:

- Category 1.** Projects in this category represent the lowest level of potential risk to birds. Usually, projects would require some basic surveys before construction to assess bird populations within the proposed area for the turbines.

- Category 2.** Projects in this category present a moderate level of potential risk to birds, and would require basic surveys, to obtain quantitative information on birds using the site and to identify any potential mitigation measures to minimize damage to bird habitat during construction.

Category 3. Projects in this category present an elevated level of potential risk to birds, and require comprehensive surveys to gather baseline information.

Category 4. Projects in this category present a relatively high level of potential risk to birds, and consequently are likely to require the highest level of effort for the Environmental Assessment.

1.2.1 Determining Site Sensitivity

An analysis of site sensitivity, using information gathered from data sources and on-site surveys, is provided by BioLogic (2007, **Attachment A of Appendix A**). BioLogic concluded that the site sensitivity of the Gosfield study area was “Low”. However, EC indicated they would rank the site sensitivity as “Medium” to “High” because of the site’s relative proximity to Point Pelee, an important stopover location for migratory birds.

Several other features that may be important for birds are in the vicinity of the expanded study area. Features in the vicinity of the study are listed in **Table 1.1 (Attachment B)**, along with their distances to the study area and closest turbine.

Distances are approximate and are measured from the closest part of the feature in question. The features that are closest to the proposed turbines are the Jack Miner Bird Sanctuary, and the Lake St. Clair Shoreline, both of which are separated from the closest turbine by approximately 8.6 km. The boundary of Point Pelee National Park is 21.3 km from the closest proposed turbine. Despite the sizeable setback distances, we considered the number of features in the vicinity of the study area, and agree that the site sensitivity is “Medium” to “High” based on the criteria provided by EC (2007a).

1.2.2 Size of the Facility

The proposed facility was assigned a “Very Large” size category based on the total numbers of turbines proposed.

1.2.3 Determination of Category

The Gosfield site is determined to be a Category 3 site based on EC’s evaluation system using the Level of Concern Category Matrix (**Table 1.2, Attachment B**), a “Medium” site sensitivity and a “Very Large” size category. Field data collection was designed to meet the higher pre-construction monitoring data collection standards for a Category 3 or 4 site (BioLogic, 2007).

2.0 Methods

2.1 BACKGROUND DATA REVIEW

The following data sources were reviewed to obtain information regarding birds within the Study Area:

- Important Bird Areas summary (Bird Studies Canada and BirdLife International, undated)
- Natural Heritage Information Centre (NHIC) database, accessed July 2007
- Ontario Ministry of Natural Resources (MNR)
- Atlas of the Breeding Birds of Ontario (www.birdsontario.org/atlas/atlasmain.html)
- Gosfield Wind Farm Faunal Investigations (Martin, 2005)
- Spring 2005 Radar Monitoring: Gosfield Wind Power Project (Natural Resource Solutions, Inc., 2005)
- Pre-construction Monitoring Report: Gosfield Wind Farm (EchoTrack Inc., 2006; 2007 [**Appendix I**])

2.2 FIELD SURVEYS

Four seasons of field studies were conducted by Martin (2005) over a fourteen-month period between April, 2004 and May, 2005 in a subsection of the study area, hereafter referred to as the “original study area”. These studies included surveys for:

- Spring migrants (April 3, 4, 10 and 11, May 3, 2004; March 26, 27, April 9, May 1, 2005)
- Breeding birds (June 6, 19, 20 and 26, 2004)
- Fall migrants (October 4, November 12, 2004)
- Wintering birds (December 11, 2004; January 27, 28, February 26, 27, 2005).

Details regarding study methods are provided by BioLogic (2007, **Appendix A**).

Additional field surveys for breeding birds in the expanded study area were conducted by Stantec on June 13, 14, 27 and 28, 2007. Surveys began at, or within half an hour of, sunrise and were completed by 10:00 a.m. On all visits, precipitation and visibility conditions were within the parameters required by monitoring programs such as Environment Canada’s Breeding Bird Survey or the Ontario Forest Bird Monitoring Program, although windiness on the final survey date increased to a less suitable level by the end of the survey period.

**GOSFIELD COMBER WIND ENERGY PROJECT
ENVIRONMENTAL SCREENING REPORT/ENVIRONMENTAL IMPACT STATEMENT
APPENDIX D - BIRD REPORT**

Methods

December 2007

- Weather conditions during the June 13, 2007 survey were calm (1 on the Beaufort scale) with clear skies, no precipitation and a temperature of 18°C.
- The June 14, 2007 survey had temperatures of 21°C, with a wind of 0 (Beaufort scale), cloud cover of 10% and no precipitation.
- The June 27, 2007 survey was 22°C with a wind of 2 (Beaufort scale). Cloud cover was 40% during the survey and there was no precipitation.
- The June 28, 2007 survey was 20°C, with a wind of 4 (Beaufort scale). There were clear skies (20% cloud cover) and no precipitation.

To quantify the relative abundance of species within the study area, point counts were conducted in different habitat types over each of the visits. A total of 45 point count stations were surveyed with an early and late season point count completed at each station. The locations of point count stations were selected in compliance with the Recommended Protocols for Monitoring Impacts on Wind Turbines on Birds (EC, 2007b). Thirty-three point counts were located in cropland habitat where turbines are being proposed. Cropland was defined as planted rows and generally consisted of wheat, corn and soybeans.

Due to the small amount of natural habitat located within the study area, only four point counts fully located in forest were possible. Field habitat (pasture, fallow field and hayfields) in the study area was very limited (**Figure 2.1, Attachment A**). As a result, eight point counts were split between forest, field or agricultural communities. In such cases the point count was located so the different habitats would evenly split the point count in two halves, to allow for easier density calculations. In addition, birds observed in each habitat were recorded separately, so density calculations could be made independently for both habitats within the same point count. The locations and habitat type of the 45 point count stations are identified in **Figure 2.1 (Attachment A)**.

Ten minute point counts were conducted at each station. Bird observations were recorded at four distance regimes; within a 50 m radius, 50 to 100 m, outside the 100 m radius or flyovers. For each point count, a record was made of the start time and a hand held GPS unit was used to georeference its location. A brief description of the habitat was made for each point count. The height of each individual was recorded on 25 of the point counts. Four height regimes were used; on ground, below blade sweep (0 to 35 m) at blade sweep (35 to 125 m), above blade sweep (125 to 150 m) and well above blade sweep (over 150 m).

Densities per 10 ha were calculated for each point count. The average density for each species and for each species by community was also calculated. All density calculations were corrected for point counts that contained two different habitat types. To avoid double counting territorial birds recorded on both early and late counts, the maximum count of each species observed at a station was used in the analysis.

3.0 Results

3.1 HABITAT AND AREA CHARACTERISTICS

3.1.1 Study Area Characteristics

The study area is located in the physiographic region of southern Ontario known as the St. Clair Clay Plains. The region is one of little relief, with ground surface elevation between 175 and 213 metres above sea level. The Essex Clay Plain, a sub-region of the St. Clair Clay Plains, encompasses all of Essex County and the southern part of Kent County between the basins of Lake Erie to the south and Lake St. Clair to the north (Chapman and Putnam, 1984). Crops such as corn, soybeans, fruit and other cash crops are prevalent. Greenhouse farming also occurs.

The vegetation communities in the study area have been significantly altered by anthropogenic activities, predominantly clearing and draining of land for agricultural purposes. The majority (>90%) of lands have been converted to agricultural use, mostly tile-drained row crop fields. The study area is located in the Carolinian Forest Region of Canada. Essex County has a forest cover of approximately 5% (Jones Consulting Group, 2007). Woodlots in the study area are few in number and typically small due to agricultural activities. Very few hay fields, pastures or other habitat that would support large numbers of grassland birds are present in the study area.

The Windpower and Renewable Energy Planning Study for the County of Essex (Jones Consulting Group, 2007) lists ten types of areas that require “special attention with regards to planning, monitoring, and mitigative techniques” as they relate to the impact on birds and other wildlife. Of these ten types of areas, only one is potentially present in the study area:

- Any area that has Species-at-Risk present

Species at risk are discussed in **Section 3.2.4**.

3.1.2 Designated Features

Two Important Bird Areas (IBAs) have been designated by BirdLife International, in cooperation with Bird Studies Canada and Nature Canada, in the general region of the study area. The Point Pelee IBA is located approximately 11.3 km south of the study area. Point Pelee National Park is considered Globally Significant for its migratory waterbirds (in particular Red-breasted Mergansers and Bonaparte’s Gull) and landbird concentrations. It is Nationally Significant for the presence of threatened species (i.e. Prothonotary Warbler, Hooded Warbler, and Henslow’s Sparrow) and congregatory species. The park is renowned for its concentrations of songbirds during spring and fall migration. A site summary is provided in **Attachment C**.

**GOSFIELD COMBER WIND ENERGY PROJECT
ENVIRONMENTAL SCREENING REPORT/ENVIRONMENTAL IMPACT STATEMENT
APPENDIX D - BIRD REPORT**

Results

December 2007

The Eastern Lake St. Clair IBA is located approximately 6.5 km north of the study area. The IBA encompasses the open waters, eastern shore and marshlands of Lake St. Clair between the Sydenham and Thames rivers, as well as adjacent agricultural fields. The Eastern Lake St. Clair IBA was designated as a result of its globally and nationally significant concentrations of staging migratory waterfowl and shorebirds (particularly Black-bellied Plovers). The site also supports breeding species of concern, including King Rail, Least Bittern, Black Tern and Forsters Tern. A site summary is provided in **Attachment C**.

One Provincially Significant Wetland and several locally significant areas are present in the study area, but none were identified as being important for birds. These features are discussed in more detail in **Appendix A** (Natural, Agricultural and Socioeconomic Profile).

3.1.3 Other Features

The Jack Miner Bird Sanctuary is located approximately 2.75 km south of the southwestern corner of the study area. This Bird Sanctuary is a renowned refuge for Canada geese and ducks and a location that provides good viewing of the spring and fall migratory flight of Canada Geese. Feeding attracts large numbers of waterfowl, particularly in November and early December (www.jackminer.com).

Hillman Marsh, located approximately 7 km south of the southeastern corner of the study area, has been designated as a provincially significant wetland (PSW) and is one of the region's most significant wetlands. The diverse habitats of Hillman Marsh attract and support marsh, shore and field birds such as herons, egrets, terns, songbirds and ducks as well as a nesting pair of Bald Eagles. Over one hundred species of birds use Hillman Marsh as a migration stopover and waterfowl hunting occurs in the fall.

The shoreline of Lake Erie can support high numbers of ducks and spring migrant passerines (which land after crossing the lake on their northward journey), and also serves to concentrate raptors and other diurnal migrants in the fall as they migrate south.

Wheatley Harbour, located approximately 4.4 km southeast of the southeastern corner of the study area, supports concentrations of gulls, terns and cormorants, and is known as an excellent location to look for rare gulls. Wheatley Provincial Park is located on the shoreline of Lake Erie, just northeast of Point Pelee. In addition to providing natural stopover habitat for migrants, it also occasionally supports breeding species at risk.

3.2 FIELD SURVEYS

3.2.1 Spring and Fall Migration

Studies by Martin (2005) indicated that no large concentrations of spring or fall migrant birds staged in the original study area. There was very little movement of spring diurnal migrants through the original study area, with only blackbirds present in numbers ranging up to several hundred individuals. Fall migration of raptors was considerably less in the original study area than at the shoreline control sites (by one order of magnitude) and at local hawk watch locations (Holiday Beach and Erie Metropark) (by two to four orders of magnitude). Fall migration counts ranged from 0.3 to 68 raptors per observation hour in the study area and from 2.3 to 1,999 raptors per observation hour at Holiday Beach (Martin, 2005).

Radar studies of nocturnal migration were carried out in May, 2005 (NRSI, 2005) and on thirteen nights in September and October, 2005 (EchoTrack, 2006; 2007 [Appendix I]). Additional radar-acoustic surveys were conducted at the same points in August and September, 2007.

The spring radar work by NRSI indicated that there is the potential for large numbers of nocturnal migrants to pass over the site. Generally, the majority of targets were detected above blade height, with an average target height of well over 300 m (NRSI, 2005), except in inclement weather. A larger proportion, although still the minority, of migrants travelled at the height of the blade sweep during poor weather conditions, but many fewer migrants were travelling in those conditions (NRSI, 2005).

The fall radar work by EchoTrack indicated that overall flight density (including both birds and bats) was low to moderate, and at 0.7 (+/- 0.3 SE) targets/km/minute, was approximately 25% lower than the North American average (EchoTrack, 2007). 19.6% of the targets travelled at the height of blade sweep. Poor weather conditions lowered the overall risk of collision by reducing the number of birds and bats in flight, and did not result in lower flight altitudes.

Species richness in the study area during fall 2005 migration, as measured by banding and census, was significantly lower than that observed at surrounding sites such as Holiday Beach (EchoTrack, 2007). The fall radar studies detected a trend of decreasing flight height and activity as the distance to the Lake Ontario shoreline increased (EchoTrack, 2007).

3.2.2 Winter

Studies by Martin (2005) indicated that no large concentrations of wintering raptors, Snow Buntings or Horned Larks were present in the study area during the winter.

3.2.3 Breeding Season

3.2.3.1 Species Presence

Attachment D provides a complete list of species observed at the study site during Stantec's 2007 breeding bird monitoring program. A total of 58 bird species are listed as occurring in, or adjacent to, the study area, of which 57 are expected to be breeding on site. Martin (2005) identified an additional six species in the study area during the breeding season: Green Heron, Chimney Swift, White-breasted Nuthatch, Blue-gray Gnatcatcher, Northern Mockingbird, and Western Meadowlark. All of the species identified are ranked S5 (i.e., secure – common, widespread and abundant in Ontario), S4 (i.e., apparently secure – uncommon but not rare) or SE (i.e., exotic and not a native component of Ontario's fauna), except for the Carolina Wren, which is ranked S3S4 (rare to common in Ontario) and the Orchard Oriole, which is ranked SZB (no clearly definable occurrences of breeding).

One of the species observed during the breeding bird surveys has been designated as a species at risk by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) or the Committee on the Status of Species at Risk in Ontario (COSSARO): the Chimney Swift has recently been listed as federally threatened by COSEWIC.

Two area-sensitive forest nesting species, Cooper's Hawk and Blue-gray Gnatcatcher, were observed. These species require 4-50+ha and 30 ha of forested nesting habitat for breeding, respectively.

One open habitat area sensitive species was also observed. The Northern Harrier requires 30 ha of suitable open habitat such as open meadows, fallow lands or hay fields for nesting.

Sixteen species identified as Partners in Flight priority species were observed during field investigations. Northern Harrier, American Kestrel, Eastern Kingbird, Savannah Sparrow, Vesper Sparrow, Bobolink and Eastern Meadowlark are all grassland guild species. Black-billed Cuckoo, Willow Flycatcher and Brown Thrasher are all shrub/successional guild species. Northern Flicker, Eastern Wood-Pewee, Wood Thrush and Rose-breasted Grosbeak are forest guild species and Chimney Swift and Baltimore Oriole are classed as "other" for their habitat guild.

3.2.3.2 Species Densities

Fifty-four species were observed during point counts. A complete list of all birds observed and their abundance for all point counts is provided in **Attachment E**. The fifteen most abundant species in the study area and in each habitat type, determined from calculated species densities, are summarized in **Table 2.1 (Attachment B)**. The number of point counts on which each species was recorded is also included in this table.

Horned Lark were reported on the most point counts (40 of 45 point counts). The next most commonly reported species were Common Grackle (on 39 counts), Red-winged Blackbird (34), American Robin (33), European Starling (32), Mourning Dove (32) Song Sparrow (32), Brown-headed Cowbird (30), Killdeer (30) and Barn Swallow (23). These species are typical of agricultural lands and are reflective of predominance of this habitat and consequent siting of point counts in the study area.

Across all point counts, European Starling were found at the highest density of 12.7 pairs/10 ha. The next most common species were Common Grackle, House Sparrow and Red-winged Blackbird with densities of 10.5, 10.1, and 7.8 pairs/10 ha, respectively. These species are typical of the open agricultural landscape that covers the majority of the study area. The majority of species observed on point counts were recorded in densities of less than 2 pairs/10 ha.

Crop

Cropland comprises the majority of habitat in the study area. Fifty-one species were observed during point counts on actively cultivated cropland. A list of the most abundant species is provided in **Table 2.1 (Attachment B)**. The most abundant species observed in crop habitat were European Starling (12.1 pairs/10 ha), House Sparrow (9.6 pairs/ 10 ha) and Common Grackle (9.5 pairs/10 ha). These species were likely visiting or foraging rather than breeding in this habitat. Horned Lark and Red-winged Blackbird were the next most common species observed with densities of 8.3 and 7.8 pairs/ 10 ha respectively.

Fields

Eighteen species were observed during point counts in field habitat. A list of the most abundant field species is provided in **Table 2.1 (Attachment B)**. The results of the breeding bird surveys suggest that overall bird density was highest in field habitat, compared to cropland or forest. European Starling was by far the most common species recorded in field habitat (31.8 pairs/10 ha) followed by Red-winged Blackbird (19.1 pairs/10 ha), Bobolink (12.7 pairs/10 ha) and Brown-headed Cowbird (11.1 pairs/ 10 ha).

Forest

Forty-one species were observed during point counts in forest habitat. A list of the most abundant forest species is provided in **Table 2.1 (Attachment B)**. The most common species were Common Grackle (17.5 pairs/ 10 ha), House Sparrow (13.3 pairs/10 ha) and European Starling (11.1 pairs/10 ha). Other common species recorded include Mourning Dove, American Robin, and Barn Swallow, with densities of 9.6, 6.9, and 4.8 pairs/10 ha respectively. Forest habitat within the study area is generally comprised of small patches that are surrounded by cropland. The prevalence of edge species observed on point counts reflects this.

Height Observations

Attachment F provides a summary of the height observation of all birds observed during 25 of the point counts (i.e., on ground or below blade sweep [0 to 35 m], at blade sweep [35 to 125 m], above blade sweep [125 to 150 m], and well above blade sweep [over 150 m]). Height observations were recorded on 25 point counts. The majority of birds (99%) were observed on the ground or below the height of blade sweep of the proposed wind turbines.

Overall, only 1% of all birds observed during the point counts were at the height of blade sweep and none were observed above the blade sweep. This indicates that a very small percentage of birds are potentially at risk of collision with the wind turbine blades. This potentially susceptible group was comprised of three species: Turkey Vulture, Common Grackle and American Goldfinch. None of these species are designated species at risk.

All Turkey Vultures observed were recorded at the height of blade sweep (5 of 5 observations). The other two species were recorded at this height in very small percentages. Three percent (2 of 71) of Common Grackle observations and five percent (1 of 19) of American Goldfinch observations were at this height.

3.2.4 Species at Risk

One of the species observed by Martin (2005) during the breeding bird season, Chimney Swift, has been designated as threatened by COSEWIC. The study area spans seven 10 x10 km Ontario Breeding Bird Atlas squares. A review of the records reported indicates that seven species at risk were reported across these seven squares during atlas survey efforts (2001-2005). These include; Red-headed Woodpecker, Black Tern, Dickcissel, Chuck-will's-widow, Bald Eagle, Northern Bobwhite, and Cerulean Warbler. Exact locations of species occurrences are not available and it is likely that some of the species identified through the Atlas are not breeding in the study area. Furthermore, the NHIC database contains two records of Acadian Flycatcher and one record of Yellow-breasted Chat in the vicinity of the study area.

Chimney Swift was designated a threatened species by the COSEWIC in an April, 2007 assessment. Chimney Swifts use chimneys for roosting and breeding, and less commonly also nest in large hollow trees. Potential natural breeding habitat in the study area would be restricted to hedgerows or woodlands.

Red-headed Woodpecker is a provincial species of special concern and a federally threatened species. It favours sites where scattered large dead or dying trees occur such as fields, pastures, and roadsides (Cadman et al., 1987). Although it typically forages in trees, it will fly-catch from heights of 12-20 m above the ground (Smith et al., 2000). Potential habitat is present in the study area.

Black Tern is a provincial species of special concern, but considered not at risk federally. It breeds in shallow freshwater marshes with emergent vegetation and prefers marshes or marsh complexes of 20+ hectares in size (Dunn and Agro, 1995). No suitable habitat is present in the study area.

Dickcissel and Chuck-will's Widow are both ranked SZB provincially, indicating sporadic occurrences in the province in the breeding season. The Dickcissel prefers old fields while the Chuck-will's Widow is a nocturnal species that requires either deciduous or pine woodlands for breeding. During recent Ontario Breeding Bird Atlas efforts (2001-2005) Dickcissel was only reported in 11 squares province-wide, and Chuck-will's Widow was only reported in four squares. Occurrences of these species are generally well known and it is unlikely they are regularly nesting within the study area.

Bald Eagle is considered an endangered species in southern Ontario, but not at risk federally. Bald Eagle can nest in a diversity of habitats, but requires a mature tree, close to a large body of water (Cadman et al., 1987). There are no known nests in the study area.

Northern Bobwhite is a provincially and federally endangered species. It is dependent on grassland for breeding and also requires wooded cover. It will nest in fence rows and roadsides (Peck and James, 1983). Only about half of the Bobwhite population in southern Ontario are considered to be native wild birds (Royal Ontario Museum, 2005), and the species is considered to be extirpated as a resident from Essex County by Jones Consulting Group (2007).

Cerulean Warbler is a federal and provincial species of special concern. It breeds in forested landscapes with mature deciduous forest and requires tracts of more than 10 hectares in size (Hamel, 2000). It is unlikely to be found in the study area due to lack of suitable habitat.

Acadian Flycatcher is a federally and provincially endangered species. Preferred breeding habitat for the Acadian Flycatcher generally consists of large mature forests and deeply wooded ravines (Friesen and Stabb, 2001). A minimum of thirty hectares of suitable habitat are required. Acadian Flycatchers generally prefer large tracts of undisturbed forest and in Ontario, the species often breeds in black ash swamps (Whitehead and Taylor, 2002). No such habitat is present in the study area.

Yellow-breasted Chat is a provincial and federal species of special concern. It is not widespread in Ontario, but most records from the province are from the Carolinian region (Eagles, 1987). This species prefers early second-growth forest and shrub in abandoned agricultural fields, fencerows, forest edges and openings, and near streams (Eckerle and Thompson, 2001). In Ontario, it is usually found in shrubby tangles and deciduous thickets (Eagles, 1987).

This page left blank intentionally.

4.0 Summary and Discussion

The scarcity of natural habitat generally results in low bird use of the study area. Field studies conducted over a fourteen-month period in 2004 and 2005, additional studies conducted in the breeding season of 2007, and radar studies in 2005 and 2007 concluded that:

- The study area does not support concentrations of wintering birds
- The study area does not support significant concentrations of staging spring or fall migrants
- Flight activity over the study area during migration is approximately 25% less than the North American average
- Over 80% of nocturnal migrants travel above the height of turbine blades
- Fall raptor migration through the study area was considerably less than at a shoreline control site, and was several orders of magnitude less than that observed at Holiday Beach or Erie Metropark

Ten species of breeding grassland and shrubland birds that have been identified as species of conservation priority by Partners in Flight (2006) were represented in the breeding bird community. Most of these were encountered on fewer than 5% of the 45 point counts; Eastern Kingbird and Bobolink were encountered on fewer than 20% of the 45 point counts, and Vesper Sparrow and Savannah Sparrow were encountered on approximately half of the 45 point counts. Field habitat was the most important habitat for these species.

Several grassland species with aerial flight displays, including Horned Lark and Bobolink, may be at increased risk of collision with turbines as a result of this behaviour. Horned Lark was the most widespread species in the study area, and this species is one the most common fatalities at western wind power facilities (Arnett et al., 2007). However, neither species was observed at the height of turbine blades during 2007 breeding bird surveys.

Indirect effects have the potential to be greater threats to grassland breeding species than direct mortality. Destruction, fragmentation, and disturbance of habitat as a result of wind energy projects were identified as larger threats to breeding grassland birds than direct mortality (Kingsley and Whittam, 2007). The density of breeding grassland birds, including Bobolink, Red-winged Blackbird, and Savannah Sparrow, was shown to be reduced by 50% within 80 m of turbines in Minnesota grasslands. Grassland habitat located more than 180 m from turbines supported mean densities that were four times higher than habitat closer to turbines (Leddy et al., 1999).

Two species at risk, Chimney Swift and Red-headed Woodpecker, potentially breed in the study area. Both are designated as federally threatened by COSEWIC; the Red-headed Woodpecker is also listed as a provincial species of special concern by COSSARO. Natural habitat for both species may be present in large dead and dying trees in woodlots, hedgerows or along roadsides in the study area. The risk of direct mortality for Red-headed Woodpecker through collision with the wind turbines is expected to be low as its breeding season activities tend to be below the sweep area of the blades. The risk of collision to Chimney Swift may be higher as they are aerial foragers, feeding at heights of up to 150 m above the ground. Chimney Swifts have been known to travel up to six kilometres from their nest site to forage (Cink and Collins, 2002).

While significant spring staging and stopover of migratory birds occurs in several off-site features, including Point Pelee National Park, Wheatley Provincial Park and Hillman Marsh, migration in Ontario appears to operate along broad fronts rather than in focused corridors or through funnels (R. Read, Environment Canada, email to S. Zulerons, September 1, 2005). Once dispersing from the shoreline staging and stopover areas, migrants are expected to fly up to their primary flight altitude, which is well above blade height. Migrants generally are at risk of collision when they pass through the turbine blade sweep zone when ascending to and descending from their primary flight altitude. Given the lack of staging and stopover habitat in the study area, and the minimum 17.5 km distance between the proposed turbines and known staging and stopover habitat, turbines in the study area are not expected to interfere with migrants' ascent and descent. As a result, no significant direct mortality to migrants is anticipated.

5.0 References

- BioLogic. 2007. Natural Heritage Assessment for Gosfield Windfarm EA. Prepared for Brookfield Power, August 2007.
- Bird Studies Canada and BirdLife International. Undated. Important Bird Area Site Summary: Point Pelee, Leamington, Ontario. www.bsc-eoc.org/iba/site.jsp?siteID=ON006.
- Cadman, M. D., P. F. J. Eagles, and F. M. Helleiner. 1987. Atlas of the breeding birds of Ontario. Univ. of Waterloo Press, Waterloo, ON.
- Chapman, L. J. and D. F. Putnam. 1984. The Physiography of Southern Ontario: Third Edition. Ontario Geological Survey, Special Volume 2. 270 p.
- Cink, C. L., and C. T. Collins. 2002. Chimney Swift (*Chaetura pelagica*). In The Birds of North America, No. 646 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Dunn, E. H., and D. J. Agro. 1995. Black Tern (*Chlidonias niger*). In The Birds of North America, No. 147 (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, and The American Ornithologists' Union, Washington, D.C.
- Eagles, P.F.J. 1987. Yellow-breasted Chat. P. 424 in Atlas of the breeding birds of Ontario (M. D. Cadman, P. F. J. Eagles, and F. M. Helleiner, eds.). Univ. of Waterloo Press, Waterloo, ON.
- EchoTrack Inc. 2006. Pre-construction Monitoring Report: Gosfield Wind Farm. January 2006.
- EchoTrack Inc. 2007. Pre-construction Monitoring Report: Gosfield Wind Farm. October 2007.
- Eckerle, K. P., and C. F. Thompson. 2001. Yellow-breasted Chat (*Icteria virens*). In The Birds of North America, No. 575 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Environment Canada. 2007a. Wind Turbines and Birds: A Guidance Document for Environmental Assessment. February 2007.
- Environment Canada. 2007b. Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds. February 19, 2007.
- Friesen, L. and M. Stabb. 2001. Preserve Endangered Songbirds Factsheet: Acadian Flycatchers and Hooded Warblers. Bird Studies Canada. 2001.
- Hamel, P. B. 2000. Cerulean Warbler (*Dendroica cerulea*). In The Birds of North America, No. 511 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Jones Consulting Group Ltd. 2007. Windpower and Renewable Energy Planning Study. Prepared for the County of Essex, September 4, 2007.

**GOSFIELD COMBER WIND ENERGY PROJECT
ENVIRONMENTAL SCREENING REPORT/ENVIRONMENTAL IMPACT STATEMENT
APPENDIX D - BIRD REPORT**

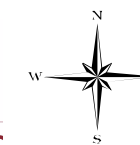
References

December 2007

- Kingsley, A. and B. Whittam. 2007. Wind Turbines and Birds: A Background Review for Environmental Assessment. Prepared for the Canadian Wildlife Service. Draft April 2, 2007.
- Leddy, K. L., K. F. Higgins and D. E. Naugle. 1999. Effects of wind turbines on upland nesting birds in Conservation Reserve Program grasslands. *Wilson Bulletin* 111(1): 100-104.
- Martin, D. 2005. Gosfield Wind Farm: Faunal Investigations. Prepared for BioLogic, October 18, 2005.
- Natural Resource Solutions Inc. 2005. Spring 2005 Radar Monitoring. Gosfield Wind Power Project. August 2005.
- Partners In Flight. 2006. Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain (North American Bird Conservation Region 13). Priorities, Objectives and Recommended Actions. Environment Canada (Ontario Region) and Ontario Ministry of Natural Resources. Final Draft, February 15, 2006.
- Peck, G. K and R. D. James. 1983. Breeding Birds of Ontario: Nidology and Distribution. Volume I Non-passerines. Royal Ontario Museum, Toronto, ON.
- Royal Ontario Museum. 2005. Ontario's Biodiversity: Species at Risk. Royal Ontario Museum and the Ontario Ministry of Natural Resources. <http://www.rom.on.ca/ontario/risk> March 2005.
- Smith, K. G., J. H. Withgott, and P. G. Rodewald. 2000. Red-headed Woodpecker (*Melanerpes erythrocephalus*). In *The Birds of North America*, No. 518 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.
- Whitehead, D. R., and T. Taylor. 2002. Acadian Flycatcher (*Empidonax vireescens*). In *The Birds of North America*, No. 614 (A. Poole and F. Gill, eds.). The Birds of North America, Inc., Philadelphia, PA.

Attachment A

Figures

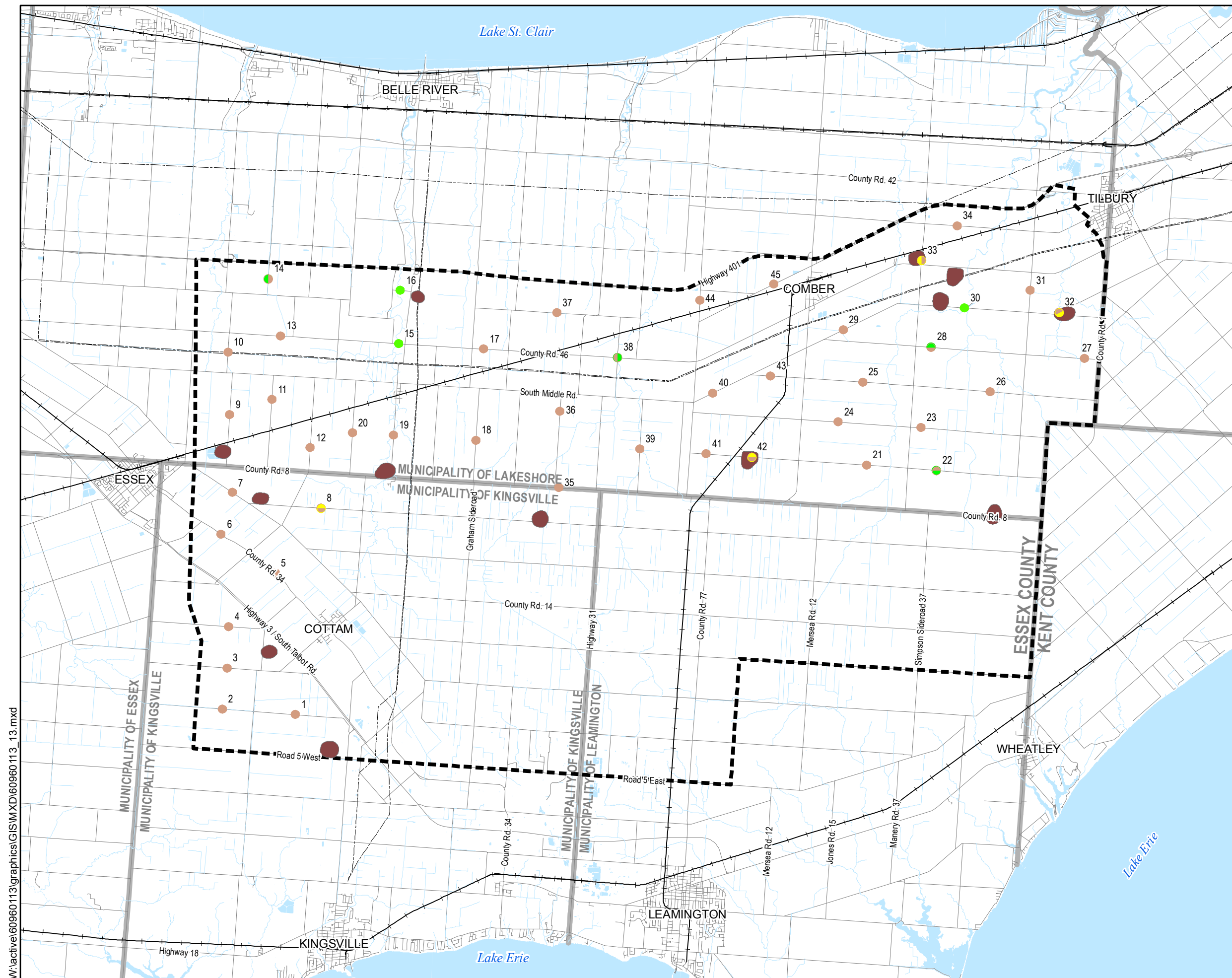


Stantec

0 1 2 3 Kilometers



1:125,000



- Study Area
- Existing Transmission Lines
- Railway
- Waterway
- Road
- Waterbody
- Point Count Locations**
 - Crop
 - Crop/Forest
 - Forest
 - Field/Crop
- Patches of Pasture / Fallow Field / Hayfield - 2007**
 - (not to scale and locations approximate)

PROJECT: GOSFIELD COMBER WIND ENERGY
PREPARED FOR: BROOKFIELD POWER

FIGURE NO. 2.1

POINT COUNT LOCATIONS

Revised: December, 2007

W:\active\60960113\graphics\GIS\MXD\60960113_13.mxd

Attachment B

Tables

Table 1.1 Distances between Study Area and Natural Areas that are Important to Birds

	Distance from Study Area Boundary	Distance from Closest Turbine
Jack Miner Bird Sanctuary	2.8 km	8.6 km
Lake Erie shoreline	3.6 km	8.9 km
Wheatley Harbour, Wheatley Provincial Park	4.4 km	17.5 km
Lake St. Clair shoreline	6.5 km	8.6 km
Hillman Marsh	7.0 km	20.8 km
Point Pelee National Park	11.3 km	21.3 km

Table 1.2 Level of Concern Category Matrix

Facility Size		Very High	High	Medium	Low
	Very Large	Category 4	Category 4	Category 3	Category 2
Large	Category 4	Category 3	Category 2	Category 2	
Medium	Category 4	Category 3	Category 2	Category 1	
Small	Category 4	Category 2	Category 1	Category 1	

Table 2.1 Frequency and density of some breeding species in the study area.

COMMON NAME	Number of point counts on which species was reported (of 45)	Overall density (45 point counts)	Density in Field (pairs/10 ha) (2 points)	Density in Crop (pairs/10 ha) (37 points)	Density in Forest (pairs/10 ha) (6 points)
Horned Lark	40	7.50	14.33	8.35	
Common Grackle	39	10.47	9.55	9.47	17.52
Red-winged Blackbird	34	7.78	19.11	7.83	
American Robin	33	4.81	3.18	4.56	6.90
European Starling	32	12.67	31.85	12.14	11.15
Mourning Dove	32	5.73	9.55	5.08	9.55
Song Sparrow	32	3.47	9.55	3.36	
Brown-headed Cowbird	30	3.40	11.15	2.84	4.25
Killdeer	29	3.26	7.96	3.44	
Barn Swallow	23	3.11	4.78	2.67	4.78
House Sparrow	23	10.12	9.55	9.64	13.27
American Goldfinch	19	2.26		2.32	
Chipping Sparrow	19	2.19		2.32	3.72
Northern Cardinal	16		4.78		4.25
Savannah Sparrow	16	1.77	9.55		
Vesper Sparrow	14			1.89	
Baltimore Oriole	12				3.72
Indigo Bunting	12				4.78

Table 2.1 Frequency and density of some breeding species in the study area.

COMMON NAME	Number of point counts on which species was reported (of 45)	Overall density (45 point counts)	Density in Field (pairs/10 ha) (2 points)	Density in Crop (pairs/10 ha) (37 points)	Density in Forest (pairs/10 ha) (6 points)
Tree Swallow	11		3.18		
Blue Jay	10				4.25
House Wren	10				3.72
Bobolink	8	2.76	12.74	2.67	
Cedar Waxwing	8				3.72
Downy Woodpecker	8				2.65

Attachment C

IBA Site Summary: Point Pelee

IBA	Point Pelee Leamington, Ontario			
Site Summary				
ON006	Latitude Longitude	41.9° N 82.5° W	Elevation Size	173 - 177 m 40.0 km²
Habitats: coniferous forest (temperate), freshwater marsh	Land Use: Nature conservation and research, Tourism/recreation		Potential or ongoing Threats: Erosion, Industrial pollution, Introduced species, Recreation/tourism	
IBA Criteria: Globally Significant: Waterfowl Concentrations, Migratory Landbird Concentrations, Nationally Significant: Threatened Species, Congregatory Species				
Conservation status: International Monarch Butterfly Reserve, National Park, Ramsar Site (Wetland of International Significance)				

[IBA Main page](#) [Map of Canadian IBA](#) [Query the IBA database](#) [Species Maps](#) [IBA Criteria](#) [Submit IBA checklist](#) [Français](#)

NEW: You can now submit your bird observations for Point Pelee

Site Description

Point Pelee National Park is located in southwestern Ontario near the town of Leamington. It is the most southerly mainland point in Canada, located on a sandspit that extends approximately 17 km southward into Lake Erie.

The majority of the park is marsh (approximately 11 km²) with deciduous forest being located on the higher sandy ground at the tip and along the west side of the peninsula. Within the drier areas, a variety of vegetative communities exist, all having been extensively modified by logging, housing, agriculture, and/or grazing prior to the establishment of the park. Of particular significance are the red cedar savannah and the hackberry forest communities which support several rare or threatened species of flora and fauna. Due to the parks southerly location a large number of provincially and nationally rare vascular plant species are present. Invasive plant species, however, are becoming an increasing problem and are out-competing many of these native species. Nationally threatened mammal species are also present, including the Eastern Mole and the reintroduced Southern Flying Squirrel.

Birds

Point Pelee National Park is most renowned for its concentrations of songbirds during both spring and fall migration. On some days the numbers of migrants are astounding. As an example, recent one-day peaks for several songbirds include: 5,000 Golden-crowned Kinglets, 3,000 Ruby-crowned Kinglets, 400 Yellow-rumped Warblers, 620 Nashville Warblers, 280 Chestnut-sided Warblers, and 1,400 Baltimore Oriole. It is likely that several million songbirds migrate through the Park each year.

Numerous nationally threatened species are also present during migration (Prothonotary Warbler - 11 reported from May 6 to 26, 1997; Hooded Warbler - 53 reported from April 20 to May 21, 1995; Louisiana Waterthrush - 12 reported from April 18 to May 11; and Henslows Sparrow - 11 reported from April 20 to May 23, 1996). Henslows Sparrow is also identified as a globally near-threatened species. In addition to concentrations of threatened migrating species, over a third of eastern Canadas Yellow-breasted Chat population (as many as 32 pairs were reported in 1995) breed within the Park. Yellow-breasted Chats are identified as nationally vulnerable.

A number of waterbirds also occur at Point Pelee in significant numbers. At least two species (Red-breasted Mergansers, and Bonapartes Gull) are regularly present in globally significant numbers during migration (i.e., greater than 1% of their populations), and over the last five years three additional species have occasionally been recorded in globally significant numbers (Common Tern, Forsters Tern, and Black Tern). Double-crested Cormorant have also occurred

in nationally significant numbers with as many as 8,600 birds being recorded in September of 1995.

Summary of bird records available for Point Pelee
[Click here to view all records](#)

Species	Season	Number	Unit	Date
American Wigeon	SM	3,300	I	1994
Baltimore Oriole	SM	1,400	I	1995
Bonaparte's Gull	FM	15,000 G	I	1992
Cerulean Warbler	SM	3	I	1995
Common Tern	SM	1,400 G	I	1994
Double-crested Cormorant (Interior)	FM	8,600 G	I	1995
Forster's Tern	SM	700 G	I	1994
Golden-crowned Kinglet	FM	5,000	I	1995
Great Black-backed Gull	FM	700	I	1994
Henslow's Sparrow	SM	6 - 16 N	I	1986 - 1997
Hooded Warbler	SM	14 - 53 N	I	1993 - 1997
Landbird Concentrations	SM			
Louisiana Waterthrush	SM	6 - 12 N	I	1994 - 1997
Olive-sided Flycatcher	FM	14	I	1996
Peregrine Falcon	FM	9 - 29	I	1992 - 1995
Prairie Warbler	SM	2 - 10 N	I	1993 - 1997
Prothonotary Warbler	SM	8 - 11 N	I	1993 - 1997
Red-breasted Merganser	FM	45,000 G	I	1992
Red-shouldered Hawk	FM	160 N	I	1993
Ruby-crowned Kinglet	FM	3,000	I	1995
Tundra Swan (Eastern)	SM	1,330 C	I	1996
Waterfowl	FM	45,000 G	I	1992
Yellow-breasted Chat (Eastern)	BR	10 - 32 N	P	1992 - 1995

Note: species shown in bold indicate that their population level (as estimated by the maximum number) exceeds at least one of the IBA thresholds (national, continental or global). The site may still not qualify for that level of IBA if the maximum number reflects an exceptional or historical occurrence.

Conservation Issues

Point Pelee was designated as a national park in 1918. It was the first to be created primarily on the merit of its biological value. In 1987, Point Pelee was designated as a Ramsar site because of its international importance as a staging area for waterfowl. It is also recognized as an international Monarch Butterfly Reserve.

The Point Pelee National Park Management Plan, last revised in 1995, outlines measures to maintain and enhance the ecological integrity of the park and identifies appropriate visitor-related use and facilities. Current conservation initiatives at the park include: the Red Cedar Savannah restoration project; White-Tailed deer population control; small mammal survey and monitoring; natural habitat restoration projects; organochlorine contaminant study; exotic plant management; and a groundwater quality study.

Human land use in southern Ontario and on Lake Erie has directly effected Point Pelee National Park. Prevailing westerly winds expose the park to airborne pollution from neighbouring industrial centres in the United States (Detroit, Toledo and Cleveland). Lake Eries poor water quality, due to industrial, urban and agricultural pollution, has altered the ecology of the marsh at the Park. The marsh flora and fauna has also been altered by introduced species from the Lake. High Lake Erie water levels have eroded and breached the eastern barrier ridge. Consequently, increased turbidity and wave action in the open ponds has resulted in the break-up of cattail mats and the movement of floating sections. The park is also threatened by oil and toxic chemical spills because of its location along the Great Lakes shipping channel. Extensive land clearing in the greater park ecosystem has isolated the park from other natural areas.

Attachment D

List of Breeding Birds, 2007

Wildlife Recorded from Gosfield Comber Study Area - Breeding Birds 2007~Attachment D

COMMON NAME	SCIENTIFIC NAME	ONTARIO STATUS	GLOBAL STATUS	COSSARO	COSEWIC	PIF	AREA	COMMENTS
BIRDS								
Mallard	<i>Anas platyrhynchos</i>	S5	G5					
Ring-necked Pheasant	<i>Phasianus colchicus</i>	SE	G5					
Turkey Vulture	<i>Cathartes aura</i>	S4	G5					
Northern Harrier	<i>Circus cyaneus</i>	S4	G5		NAR	x	30	
Cooper's Hawk	<i>Accipiter cooperii</i>	S4	G5	NIAC	NAR		4-50+	
Red-tailed Hawk	<i>Buteo jamaicensis</i>	S5	G5	NIAC	NAR			
American Kestrel	<i>Falco sparverius</i>	S5	G5			x		
Killdeer	<i>Charadrius vociferus</i>	S5	G5					
Ring-billed Gull	<i>Larus delawarensis</i>	S5	G5					flyover
Rock Pigeon	<i>Columba livia</i>	SE	G5					
Mourning Dove	<i>Zenaida macroura</i>	S5	G5					
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	S4	G5			x		
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	S4	G5					
Downy Woodpecker	<i>Picoides pubescens</i>	S5	G5					
Northern Flicker	<i>Colaptes auratus</i>	S5	G5			x		
Eastern Wood-Pewee	<i>Contopus virens</i>	S5	G5			x		
Willow Flycatcher	<i>Empidonax traillii</i>	S5	G5			x		
Eastern Phoebe	<i>Sayornis phoebe</i>	S5	G5					
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S5	G5					
Eastern Kingbird	<i>Tyrannus tyrannus</i>	S5	G5			x		
Warbling Vireo	<i>Vireo gilvus</i>	S5	G5					
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5	G5					
Blue Jay	<i>Cyanocitta cristata</i>	S5	G5					
American Crow	<i>Corvus brachyrhynchos</i>	S5	G5					
Horned Lark	<i>Eremophila alpestris</i>	S5	G5					
Purple Martin	<i>Progne subis</i>	S4	G5					
Tree Swallow	<i>Tachycineta bicolor</i>	S5	G5					
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	S5	G5					
Cliff Swallow	<i>Hirundo pyrrhonota</i>	S5	G5					
Barn Swallow	<i>Hirundo rustica</i>	S5	G5					
Black-capped Chickadee	<i>Poecile atricapilla</i>	S5	G5					
Carolina Wren	<i>Thryothorus ludovicianus</i>	S3S4	G5					
House Wren	<i>Troglodytes aedon</i>	S5	G5					
Wood Thrush	<i>Hylocichla mustelina</i>	S5	G5			x	4	

Wildlife Recorded from Gosfield Comber Study Area - Breeding Birds 2007~Attachment D

COMMON NAME	SCIENTIFIC NAME	ONTARIO STATUS	GLOBAL STATUS	COSSARO	COSEWIC	PIF	AREA	COMMENTS
American Robin	<i>Turdus migratorius</i>	S5	G5					
Gray Catbird	<i>Dumetella carolinensis</i>	S5	G5					
Brown Thrasher	<i>Toxostoma rufum</i>	S5	G5			X		
European Starling	<i>Sturnus vulgaris</i>	SE	G5					
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5	G5					
Yellow Warbler	<i>Dendroica petechia</i>	S5	G5					
Common Yellowthroat	<i>Geothlypis trichas</i>	S5	G5					
Chipping Sparrow	<i>Spizella passerina</i>	S5	G5					
Vesper Sparrow	<i>Poocetes gramineus</i>	S4	G5			X		
Savannah Sparrow	<i>Passerculus sandwichensis</i>	S5	G5			X		
Song Sparrow	<i>Melospiza melodia</i>	S5	G5					
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5	G5					
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	S5	G5			X		
Indigo Bunting	<i>Passerina cyanea</i>	S5	G5					
Bobolink	<i>Dolichonyx oryzivorus</i>	S4	G5			X	10	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	S5	G5					
Eastern Meadowlark	<i>Sturnella magna</i>	S5	G5			X		
Common Grackle	<i>Quiscalus quiscula</i>	S5	G5					
Brown-headed Cowbird	<i>Molothrus ater</i>	S5	G5					
Orchard Oriole	<i>Icterus spurius</i>	SZB	G5					
Baltimore Oriole	<i>Icterus galbula</i>	S5	G5			X		
House Finch	<i>Carpodacus mexicanus</i>	SE	G5					
American Goldfinch	<i>Carduelis tristis</i>	S5	G5					
House Sparrow	<i>Passer domesticus</i>	SE	G5					
Explanation of Status and Acronymns								
COSSARO: Committee on the Status of Species at Risk in Ontario								
COSEWIC: Committee on the Status of Endangered Species in Canada								
PIF: Ontario Partners in Flight conservation priority								
S3S4: Rare to common in Ontario								
S4: Common in Ontario: apparently secure, usually more than 100 occurrences								
S4S5: Common to very common in Ontario								
S5: Very common in Ontario, demonstrably secure								
SE: Exotic; not believed to be a native component of Ontario's fauna								
SZB: No clearly definable occurrences of breeding								

Wildlife Recorded from Gosfield Comber Study Area - Breeding Birds 2007~Attachment D

COMMON NAME	SCIENTIFIC NAME	ONTARIO STATUS	GLOBAL STATUS	COSSARO	COSEWIC	PIF	AREA	COMMENTS
SZN: no clearly definable occurrences of a non-breeding species								
G5: Very common globally; demonstrably secure								
NAR: Not At Risk								
NIAC: Not In Any Category of risk								
Area: Minimum patch size for area-sensitive species (ha)								
NOTE								
All rankings for birds refer to breeding birds unless the ranking is followed by N								

Attachment E

Point Count Results

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point1	point 2	point 3	point 4	point 5	point 6	point 7	point 8a
		crop	crop	crop	crop	crop	crop	crop	field
COMMON NAME	SCIENTIFIC NAME								
American Goldfinch	<i>Carduelis tristis</i>	0	3	0	4	0	0	1	1
American Kestrel	<i>Falco sparverius</i>	0	0	0	0	0	0	0	0
American Robin	<i>Turdus migratorius</i>	3	1	1	3	4	2	1	1
Baltimore Oriole	<i>Icterus galbula</i>	0	0	0	1	1	1	0	0
Bank Swallow	<i>Riparia riparia</i>	0	0	0	0	0	0	0	0
Barn Swallow	<i>Hirundo rustica</i>	1	1	1	1	0	2	0	0
Black-capped Chickadee	<i>Poecile atricapilla</i>	0	0	0	0	0	0	0	0
Blue Jay	<i>Cyanocitta cristata</i>	0	0	0	0	1	0	0	0
Bobolink	<i>Dolichonyx oryzivorus</i>	0	0	0	0	0	0	0	0
Brown Thrasher	<i>Toxostoma rufum</i>	0	0	0	0	0	0	0	0
Brown-headed Cowbird	<i>Molothrus ater</i>	0	2	1	3	0	0	1	1
Carolina Wren	<i>Thryothorus ludovicianus</i>	0	0	0	0	0	0	0	0
Cedar Waxwing	<i>Bombycilla cedrorum</i>	0	0	0	3	0	0	0	0
Chipping Sparrow	<i>Spizella passerina</i>	0	0	1	2	1	1	0	0
Cliff Swallow	<i>Hirundo pyrrhonota</i>	0	0	0	0	0	0	0	0
Common Grackle	<i>Quiscalus quiscula</i>	1	2	10	1	24	3	1	1
Common Yellowthroat	<i>Geothlypis trichas</i>	0	0	0	0	0	0	0	0
Cooper's Hawk	<i>Accipiter cooperii</i>	0	0	0	0	0	0	0	0
Downy Woodpecker	<i>Picoides pubescens</i>	0	0	0	0	0	0	0	0
Eastern Kingbird	<i>Tyrannus tyrannus</i>	0	2	0	1	0	0	0	0
Eastern Phoebe	<i>Sayornis phoebe</i>	0	0	0	0	0	0	0	0
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	0	0	0	0	0	0	0	0
Eastern Wood-Pewee	<i>Contopus virens</i>	0	0	0	0	0	0	0	0
European Starling	<i>Sturnus vulgaris</i>	3	1	6	10	12	6	2	2
Gray Catbird	<i>Dumetella carolinensis</i>	0	0	0	1	0	0	0	0
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	0	0	0	0	0	0	0	0
Horned Lark	<i>Eremophila alpestris</i>	2	1	2	1	0	2	3	3
House Finch	<i>Carpodacus mexicanus</i>	0	0	0	0	2	0	0	0
House Sparrow	<i>Passer domesticus</i>	0	6	2	1	12	30	0	0
House Wren	<i>Troglodytes aedon</i>	0	0	0	0	1	0	0	0
Indigo Bunting	<i>Passerina cyanea</i>	0	1	0	0	0	0	1	1
Killdeer	<i>Charadrius vociferus</i>	2	0	2	1	0	0	2	2
Mourning Dove	<i>Zenaida macroura</i>	0	2	2	3	2	6	1	1

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point1	point 2	point 3	point 4	point 5	point 6	point 7	point 8a
		crop	crop	crop	crop	crop	crop	crop	field
COMMON NAME	SCIENTIFIC NAME								
Northern Cardinal	<i>Cardinalis cardinalis</i>	0	0	0	0	1	0	2	2
Northern Flicker	<i>Colaptes auratus</i>	0	0	0	0	0	0	1	1
Northern Harrier	<i>Circus cyaneus</i>	0	0	0	0	0	0	0	0
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	0	0	0	0	0	0	0	0
Orchard Oriole	<i>Icterus spurius</i>	0	0	0	0	0	0	0	0
Purple Martin	<i>Progne subis</i>	0	0	0	0	0	0	0	0
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	0	0	0	0	0	0	0	0
Red-eyed Vireo	<i>Vireo olivaceus</i>	0	0	0	0	0	0	0	0
Red-tailed Hawk	<i>Buteo jamaicensis</i>	0	0	0	0	0	0	0	0
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1	1	8	3	0	2	0	0
Rock Pigeon	<i>Columba livia</i>	0	0	0	0	1	0	0	0
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	0	0	0	0	0	0	0	0
Savannah Sparrow	<i>Passerculus sandwichensis</i>	0	0	0	0	0	0	0	0
Song Sparrow	<i>Melospiza melodia</i>	2	2	1	0	0	0	2	2
Tree Swallow	<i>Tachycineta bicolor</i>	0	0	0	0	0	0	0	0
Turkey Vulture	<i>Cathartes aura</i>	0	0	0	0	0	0	0	0
Vesper Sparrow	<i>Pooecetes gramineus</i>	0	3	1	3	1	0	1	1
Warbling Vireo	<i>Vireo gilvus</i>	0	0	0	0	0	0	0	0
Willow Flycatcher	<i>Empidonax traillii</i>	0	0	0	0	0	0	0	0
Wood Thrush	<i>Hylocichla mustelina</i>	0	0	0	0	0	0	0	0
Yellow Warbler	<i>Dendroica petechia</i>	0	0	0	0	0	0	0	0

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 8b	point 9	point 10	point 11	point 12	point 13	point 14a	point 14b
		crop	crop	crop	crop	crop	crop	forest	crop
COMMON NAME	SCIENTIFIC NAME								
American Goldfinch	<i>Carduelis tristis</i>	0	1	1	1	1	2	0	0
American Kestrel	<i>Falco sparverius</i>	0	0	0	0	0	0	0	0
American Robin	<i>Turdus migratorius</i>	0	4	3	2	2	1	2	0
Baltimore Oriole	<i>Icterus galbula</i>	0	0	0	0	1	0	0	0
Bank Swallow	<i>Riparia riparia</i>	0	0	0	0	0	0	0	0
Barn Swallow	<i>Hirundo rustica</i>	0	1	1	2	0	1	0	0
Black-capped Chickadee	<i>Poecile atricapilla</i>	0	0	0	0	0	0	1	0
Blue Jay	<i>Cyanocitta cristata</i>	0	0	0	1	0	0	1	0
Bobolink	<i>Dolichonyx oryzivorus</i>	0	0	0	0	0	0	0	0
Brown Thrasher	<i>Toxostoma rufum</i>	0	0	0	0	1	0	0	0
Brown-headed Cowbird	<i>Molothrus ater</i>	0	1	0	1	0	1	1	0
Carolina Wren	<i>Thryothorus ludovicianus</i>	0	0	0	0	0	0	0	0
Cedar Waxwing	<i>Bombycilla cedrorum</i>	0	0	0	0	0	2	1	0
Chipping Sparrow	<i>Spizella passerina</i>	0	2	0	0	3	1	0	0
Cliff Swallow	<i>Hirundo pyrrhonota</i>	0	0	0	0	0	0	0	0
Common Grackle	<i>Quiscalus quiscula</i>	1	5	0	4	1	5	1	0
Common Yellowthroat	<i>Geothlypis trichas</i>	0	0	0	1	0	0	0	0
Cooper's Hawk	<i>Accipiter cooperii</i>	0	0	0	0	1	0	0	0
Downy Woodpecker	<i>Picoides pubescens</i>	0	0	0	0	0	1	1	0
Eastern Kingbird	<i>Tyrannus tyrannus</i>	0	0	0	0	1	0	0	0
Eastern Phoebe	<i>Sayornis phoebe</i>	0	0	0	0	0	0	1	0
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	0	0	0	0	0	0	0	0
Eastern Wood-Pewee	<i>Contopus virens</i>	0	0	0	0	0	0	1	0
European Starling	<i>Sturnus vulgaris</i>	0	4	0	2	2	4	0	0
Gray Catbird	<i>Dumetella carolinensis</i>	0	0	2	0	0	0	1	0
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	0	0	0	0	0	0	1	0
Horned Lark	<i>Eremophila alpestris</i>	1	1	0	2	2	0	0	0
House Finch	<i>Carpodacus mexicanus</i>	0	0	0	0	0	0	0	0
House Sparrow	<i>Passer domesticus</i>	0	0	0	1	2	4	0	0
House Wren	<i>Troglodytes aedon</i>	0	0	0	0	1	0	2	0
Indigo Bunting	<i>Passerina cyanea</i>	0	0	2	0	0	0	2	0
Killdeer	<i>Charadrius vociferus</i>	0	0	1	0	3	0	0	0
Mourning Dove	<i>Zenaida macroura</i>	0	5	0	2	1	3	0	0

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 8b	point 9	point 10	point 11	point 12	point 13	point 14a	point 14b
		crop	crop	crop	crop	crop	crop	forest	crop
COMMON NAME	SCIENTIFIC NAME								
Northern Cardinal	<i>Cardinalis cardinalis</i>	0	0	0	0	0	0	1	0
Northern Flicker	<i>Colaptes auratus</i>	0	0	0	0	0	0	0	0
Northern Harrier	<i>Circus cyaneus</i>	0	0	0	0	0	0	0	0
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	0	0	0	2	0	0	0	0
Orchard Oriole	<i>Icterus spurius</i>	0	0	0	0	0	0	0	0
Purple Martin	<i>Progne subis</i>	0	0	0	0	0	0	0	0
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	0	0	0	0	1	0	0	0
Red-eyed Vireo	<i>Vireo olivaceus</i>	0	0	0	0	0	0	2	0
Red-tailed Hawk	<i>Buteo jamaicensis</i>	0	0	1	0	0	0	0	0
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1	4	7	4	0	4	0	0
Rock Pigeon	<i>Columba livia</i>	0	0	0	0	0	0	0	0
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	0	0	0	0	0	0	0	0
Savannah Sparrow	<i>Passerculus sandwichensis</i>	0	0	0	0	0	0	0	0
Song Sparrow	<i>Melospiza melodia</i>	0	1	1	4	2	2	0	0
Tree Swallow	<i>Tachycineta bicolor</i>	0	1	0	0	1	0	0	0
Turkey Vulture	<i>Cathartes aura</i>	0	0	0	0	0	0	0	0
Vesper Sparrow	<i>Pooecetes gramineus</i>	0	3	4	2	0	0	0	1
Warbling Vireo	<i>Vireo gilvus</i>	0	0	0	0	0	0	0	0
Willow Flycatcher	<i>Empidonax traillii</i>	0	0	0	0	0	0	0	0
Wood Thrush	<i>Hylocichla mustelina</i>	0	0	0	0	0	0	0	0
Yellow Warbler	<i>Dendroica petechia</i>	0	0	0	0	0	0	0	0

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 15	point 16	point 17	point 18	point 19	point 20	point 21	point 22a
		forest	forest	crop	crop	forest	crop	crop	forest
COMMON NAME	SCIENTIFIC NAME								
American Goldfinch	<i>Carduelis tristis</i>	1	0	1	0	0	0	1	1
American Kestrel	<i>Falco sparverius</i>	0	0	0	0	0	0	0	0
American Robin	<i>Turdus migratorius</i>	1	1	2	3	2	1	5	5
Baltimore Oriole	<i>Icterus galbula</i>	1	1	1	0	1	0	1	1
Bank Swallow	<i>Riparia riparia</i>	0	1	0	0	0	0	0	0
Barn Swallow	<i>Hirundo rustica</i>	1	0	2	4	2	0	6	6
Black-capped Chickadee	<i>Poecile atricapilla</i>	0	0	0	0	0	0	1	0
Blue Jay	<i>Cyanocitta cristata</i>	1	0	0	0	1	0	1	1
Bobolink	<i>Dolichonyx oryzivorus</i>	0	0	0	0	0	0	0	0
Brown Thrasher	<i>Toxostoma rufum</i>	0	0	0	0	0	0	0	0
Brown-headed Cowbird	<i>Molothrus ater</i>	1	1	1	0	0	2	1	1
Carolina Wren	<i>Thryothorus ludovicianus</i>	0	1	0	0	0	0	0	0
Cedar Waxwing	<i>Bombycilla cedrorum</i>	0	0	0	0	2	0	1	2
Chipping Sparrow	<i>Spizella passerina</i>	1	1	1	2	1	0	3	3
Cliff Swallow	<i>Hirundo pyrrhonota</i>	0	1	0	0	0	0	0	0
Common Grackle	<i>Quiscalus quiscula</i>	3	2	1	7	3	2	8	10
Common Yellowthroat	<i>Geothlypis trichas</i>	0	0	0	0	0	0	0	0
Cooper's Hawk	<i>Accipiter cooperii</i>	0	0	0	0	0	0	0	0
Downy Woodpecker	<i>Picoides pubescens</i>	1	1	0	0	0	0	1	1
Eastern Kingbird	<i>Tyrannus tyrannus</i>	0	0	0	0	0	0	0	0
Eastern Phoebe	<i>Sayornis phoebe</i>	0	0	0	0	1	0	1	1
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	0	0	0	0	0	0	0	0
Eastern Wood-Pewee	<i>Contopus virens</i>	0	1	0	0	0	0	1	0
European Starling	<i>Sturnus vulgaris</i>	2	4	18	2	6	2	20	8
Gray Catbird	<i>Dumetella carolinensis</i>	0	0	0	0	1	0	1	1
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	0	0	0	0	0	0	1	0
Horned Lark	<i>Eremophila alpestris</i>	0	0	1	1	0	2	2	1
House Finch	<i>Carpodacus mexicanus</i>	0	0	0	0	0	0	0	0
House Sparrow	<i>Passer domesticus</i>	6	5	3	10	2	1	13	12
House Wren	<i>Troglodytes aedon</i>	1	1	0	0	0	0	2	1
Indigo Bunting	<i>Passerina cyanea</i>	2	1	0	0	0	0	2	2
Killdeer	<i>Charadrius vociferus</i>	0	0	2	1	0	0	3	1
Mourning Dove	<i>Zenaida macroura</i>	1	2	1	2	4	3	3	6

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 15	point 16	point 17	point 18	point 19	point 20	point 21	point 22a
		forest	forest	crop	crop	forest	crop	crop	forest
COMMON NAME	SCIENTIFIC NAME								
Northern Cardinal	<i>Cardinalis cardinalis</i>	0	1	0	0	2	1	1	2
Northern Flicker	<i>Colaptes auratus</i>	1	0	0	0	0	0	0	1
Northern Harrier	<i>Circus cyaneus</i>	0	0	0	0	0	0	0	0
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	0	0	0	0	0	0	0	0
Orchard Oriole	<i>Icterus spurius</i>	0	0	0	0	0	0	0	0
Purple Martin	<i>Progne subis</i>	0	3	0	0	0	0	0	0
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	0	0	0	0	1	0	0	1
Red-eyed Vireo	<i>Vireo olivaceus</i>	0	0	0	0	0	0	2	0
Red-tailed Hawk	<i>Buteo jamaicensis</i>	0	0	0	0	0	0	0	0
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	1	1	1	2	0	8	3	2
Rock Pigeon	<i>Columba livia</i>	0	0	0	0	0	0	0	0
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	0	1	0	0	2	0	0	2
Savannah Sparrow	<i>Passerculus sandwichensis</i>	0	0	1	0	0	0	1	0
Song Sparrow	<i>Melospiza melodia</i>	1	0	1	0	1	1	1	1
Tree Swallow	<i>Tachycineta bicolor</i>	1	0	0	0	0	0	0	1
Turkey Vulture	<i>Cathartes aura</i>	0	0	0	0	0	0	0	0
Vesper Sparrow	<i>Pooecetes gramineus</i>	0	0	0	0	0	1	1	1
Warbling Vireo	<i>Vireo gilvus</i>	0	1	1	0	0	0	1	0
Willow Flycatcher	<i>Empidonax traillii</i>	0	0	0	0	0	0	0	0
Wood Thrush	<i>Hylocichla mustelina</i>	0	0	0	0	0	0	0	0
Yellow Warbler	<i>Dendroica petechia</i>	0	0	0	0	0	0	0	0

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 22b	point 23	point 24	point 25	point 26	point 27	point 28a	point 28b
		crop	crop	crop	crop	crop	crop	forest	crop
COMMON NAME	SCIENTIFIC NAME								
American Goldfinch	<i>Carduelis tristis</i>	1	0	0	0	0	0	0	0
American Kestrel	<i>Falco sparverius</i>	0	0	0	0	0	0	0	0
American Robin	<i>Turdus migratorius</i>	3	0	2	0	0	0	1	1
Baltimore Oriole	<i>Icterus galbula</i>	2	0	0	0	0	0	0	0
Bank Swallow	<i>Riparia riparia</i>	1	0	0	0	0	0	0	0
Barn Swallow	<i>Hirundo rustica</i>	2	2	0	0	0	0	0	0
Black-capped Chickadee	<i>Poecile atricapilla</i>	0	0	0	0	0	0	0	0
Blue Jay	<i>Cyanocitta cristata</i>	1	0	0	0	0	0	1	0
Bobolink	<i>Dolichonyx oryzivorus</i>	0	0	4	0	12	0	0	0
Brown Thrasher	<i>Toxostoma rufum</i>	0	0	0	0	0	0	0	0
Brown-headed Cowbird	<i>Molothrus ater</i>	2	1	3	1	0	1	1	1
Carolina Wren	<i>Thryothorus ludovicianus</i>	1	0	0	0	0	0	0	0
Cedar Waxwing	<i>Bombycilla cedrorum</i>	2	0	0	0	0	0	0	0
Chipping Sparrow	<i>Spizella passerina</i>	2	0	1	0	0	0	0	0
Cliff Swallow	<i>Hirundo pyrrhonota</i>	1	1	0	0	0	0	0	0
Common Grackle	<i>Quiscalus quiscula</i>	5	1	1	1	7	0	8	1
Common Yellowthroat	<i>Geothlypis trichas</i>	0	0	0	0	0	0	0	0
Cooper's Hawk	<i>Accipiter cooperii</i>	0	0	0	0	0	0	0	0
Downy Woodpecker	<i>Picoides pubescens</i>	2	0	0	0	0	0	0	0
Eastern Kingbird	<i>Tyrannus tyrannus</i>	0	0	0	0	0	0	0	0
Eastern Phoebe	<i>Sayornis phoebe</i>	1	0	0	0	0	0	0	0
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	0	0	0	0	0	0	0	0
Eastern Wood-Pewee	<i>Contopus virens</i>	1	0	0	0	0	0	1	0
European Starling	<i>Sturnus vulgaris</i>	8	0	2	1	1	0	0	0
Gray Catbird	<i>Dumetella carolinensis</i>	1	0	0	0	0	0	0	0
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	0	0	0	0	0	0	0	0
Horned Lark	<i>Eremophila alpestris</i>	2	4	3	8	2	6	0	5
House Finch	<i>Carpodacus mexicanus</i>	0	0	0	0	0	0	0	0
House Sparrow	<i>Passer domesticus</i>	11	0	2	0	0	0	0	0
House Wren	<i>Troglodytes aedon</i>	2	0	0	0	0	0	1	0
Indigo Bunting	<i>Passerina cyanea</i>	3	0	0	0	0	0	1	0
Killdeer	<i>Charadrius vociferus</i>	0	2	1	1	2	0	0	0
Mourning Dove	<i>Zenaida macroura</i>	7	0	1	0	0	0	0	1

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 22b	point 23	point 24	point 25	point 26	point 27	point 28a	point 28b
		crop	crop	crop	crop	crop	crop	forest	crop
COMMON NAME	SCIENTIFIC NAME								
Northern Cardinal	<i>Cardinalis cardinalis</i>	3	0	0	0	0	0	0	0
Northern Flicker	<i>Colaptes auratus</i>	1	0	0	0	0	0	0	0
Northern Harrier	<i>Circus cyaneus</i>	0	0	0	0	0	0	0	0
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	0	0	0	0	0	0	0	0
Orchard Oriole	<i>Icterus spurius</i>	0	0	0	0	0	0	0	0
Purple Martin	<i>Progne subis</i>	3	0	0	0	0	0	0	0
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	1	0	0	0	0	0	0	0
Red-eyed Vireo	<i>Vireo olivaceus</i>	0	0	0	0	0	0	1	0
Red-tailed Hawk	<i>Buteo jamaicensis</i>	0	0	0	0	0	0	0	0
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	8	0	5	1	3	0	0	0
Rock Pigeon	<i>Columba livia</i>	0	0	0	0	0	0	0	0
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	2	0	0	0	0	0	0	0
Savannah Sparrow	<i>Passerculus sandwichensis</i>	0	0	0	1	1	2	0	0
Song Sparrow	<i>Melospiza melodia</i>	2	2	1	1	0	0	0	0
Tree Swallow	<i>Tachycineta bicolor</i>	1	0	1	0	0	0	0	0
Turkey Vulture	<i>Cathartes aura</i>	0	0	0	0	0	0	0	0
Vesper Sparrow	<i>Pooecetes gramineus</i>	1	0	0	0	0	0	0	0
Warbling Vireo	<i>Vireo gilvus</i>	1	0	0	0	0	0	0	0
Willow Flycatcher	<i>Empidonax traillii</i>	0	0	0	0	0	0	0	0
Wood Thrush	<i>Hylocichla mustelina</i>	0	0	0	0	0	0	0	0
Yellow Warbler	<i>Dendroica petechia</i>	0	0	0	0	0	0	0	0

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 29	point 30	point 31	point 32a	point 32b	point 33a	point 33b	point 34
		crop	forest	crop	field	crop	field	crop	crop
COMMON NAME	SCIENTIFIC NAME								
American Goldfinch	<i>Carduelis tristis</i>	5	1	0	0	2	0	0	0
American Kestrel	<i>Falco sparverius</i>	0	0	0	0	0	0	0	0
American Robin	<i>Turdus migratorius</i>	0	0	2	0	0	0	0	0
Baltimore Oriole	<i>Icterus galbula</i>	0	3	0	0	0	0	0	0
Bank Swallow	<i>Riparia riparia</i>	0	0	1	0	0	0	0	0
Barn Swallow	<i>Hirundo rustica</i>	1	0	0	2	0	0	0	0
Black-capped Chickadee	<i>Poecile atricapilla</i>	0	0	0	0	0	0	0	0
Blue Jay	<i>Cyanocitta cristata</i>	0	3	0	0	0	0	0	0
Bobolink	<i>Dolichonyx oryzivorus</i>	0	0	0	0	0	4	0	0
Brown Thrasher	<i>Toxostoma rufum</i>	0	0	0	0	0	0	0	0
Brown-headed Cowbird	<i>Molothrus ater</i>	1	3	1	1	0	0	0	0
Carolina Wren	<i>Thryothorus ludovicianus</i>	0	0	0	0	0	0	0	0
Cedar Waxwing	<i>Bombycilla cedrorum</i>	0	0	0	0	0	0	0	0
Chipping Sparrow	<i>Spizella passerina</i>	0	1	0	0	1	0	0	3
Cliff Swallow	<i>Hirundo pyrrhonota</i>	0	0	0	0	0	0	0	0
Common Grackle	<i>Quiscalus quiscula</i>	2	4	5	0	0	1	1	1
Common Yellowthroat	<i>Geothlypis trichas</i>	0	0	0	0	0	0	0	0
Cooper's Hawk	<i>Accipiter cooperii</i>	0	0	0	0	0	0	0	0
Downy Woodpecker	<i>Picoides pubescens</i>	0	0	0	0	0	0	0	0
Eastern Kingbird	<i>Tyrannus tyrannus</i>	0	1	0	0	0	0	0	0
Eastern Phoebe	<i>Sayornis phoebe</i>	0	0	0	0	0	0	0	0
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	0	1	0	0	0	0	0	0
Eastern Wood-Pewee	<i>Contopus virens</i>	0	1	0	0	0	0	0	0
European Starling	<i>Sturnus vulgaris</i>	0	1	0	2	5	8	0	11
Gray Catbird	<i>Dumetella carolinensis</i>	0	1	0	0	1	0	0	0
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	0	1	0	0	0	0	0	0
Horned Lark	<i>Eremophila alpestris</i>	4	0	4	1	2	0	1	3
House Finch	<i>Carpodacus mexicanus</i>	0	0	0	0	0	0	0	0
House Sparrow	<i>Passer domesticus</i>	0	0	0	0	0	0	0	0
House Wren	<i>Troglodytes aedon</i>	0	1	0	0	0	0	0	0
Indigo Bunting	<i>Passerina cyanea</i>	0	1	0	0	0	0	0	0
Killdeer	<i>Charadrius vociferus</i>	1	0	0	0	2	0	1	1
Mourning Dove	<i>Zenaida macroura</i>	0	4	1	2	0	0	0	4

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 29	point 30	point 31	point 32a	point 32b	point 33a	point 33b	point 34
		crop	forest	crop	field	crop	field	crop	crop
COMMON NAME	SCIENTIFIC NAME								
Northern Cardinal	<i>Cardinalis cardinalis</i>	0	1	0	0	0	0	0	0
Northern Flicker	<i>Colaptes auratus</i>	0	0	0	0	0	0	0	0
Northern Harrier	<i>Circus cyaneus</i>	0	0	0	0	0	0	0	0
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	0	0	0	0	0	0	0	0
Orchard Oriole	<i>Icterus spurius</i>	0	1	0	0	0	0	0	0
Purple Martin	<i>Progne subis</i>	0	0	0	0	0	0	0	0
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	0	1	0	0	0	0	0	0
Red-eyed Vireo	<i>Vireo olivaceus</i>	0	0	0	0	0	0	0	0
Red-tailed Hawk	<i>Buteo jamaicensis</i>	0	0	0	0	0	0	0	0
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	2	1	0	3	0	3	1	1
Rock Pigeon	<i>Columba livia</i>	0	0	0	0	0	0	0	0
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	0	0	0	0	0	0	0	0
Savannah Sparrow	<i>Passerculus sandwichensis</i>	2	0	0	1	1	2	0	0
Song Sparrow	<i>Melospiza melodia</i>	2	1	1	2	0	0	0	1
Tree Swallow	<i>Tachycineta bicolor</i>	2	0	0	1	0	1	0	0
Turkey Vulture	<i>Cathartes aura</i>	0	0	0	0	0	0	0	0
Vesper Sparrow	<i>Pooecetes gramineus</i>	0	0	0	0	0	0	0	0
Warbling Vireo	<i>Vireo gilvus</i>	0	0	0	0	0	0	0	0
Willow Flycatcher	<i>Empidonax traillii</i>	0	0	0	0	0	0	0	0
Wood Thrush	<i>Hylocichla mustelina</i>	0	0	0	0	0	0	0	0
Yellow Warbler	<i>Dendroica petechia</i>	1	1	0	0	0	0	0	0

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 35	point 36	point 37	point 38a	point 38b	point 39	point 40
		crop	crop	crop	forest	crop	crop	crop
COMMON NAME	SCIENTIFIC NAME							
American Goldfinch	<i>Carduelis tristis</i>	0	0	0	1	0	0	0
American Kestrel	<i>Falco sparverius</i>	0	0	0	0	0	0	0
American Robin	<i>Turdus migratorius</i>	0	1	0	1	2	1	0
Baltimore Oriole	<i>Icterus galbula</i>	0	0	0	0	0	0	0
Bank Swallow	<i>Riparia riparia</i>	0	0	0	0	0	0	0
Barn Swallow	<i>Hirundo rustica</i>	0	1	0	0	0	0	0
Black-capped Chickadee	<i>Poecile atricapilla</i>	0	0	0	0	0	0	0
Blue Jay	<i>Cyanocitta cristata</i>	0	0	0	0	0	0	0
Bobolink	<i>Dolichonyx oryzivorus</i>	5	0	1	0	0	0	4
Brown Thrasher	<i>Toxostoma rufum</i>	0	0	0	0	0	0	0
Brown-headed Cowbird	<i>Molothrus ater</i>	0	0	0	0	0	3	2
Carolina Wren	<i>Thryothorus ludovicianus</i>	0	0	0	0	0	0	0
Cedar Waxwing	<i>Bombycilla cedrorum</i>	0	0	0	2	0	0	0
Chipping Sparrow	<i>Spizella passerina</i>	0	0	0	0	0	0	0
Cliff Swallow	<i>Hirundo pyrrhonota</i>	0	0	0	0	0	0	0
Common Grackle	<i>Quiscalus quiscula</i>	0	0	0	2	0	0	4
Common Yellowthroat	<i>Geothlypis trichas</i>	0	0	0	0	0	0	0
Cooper's Hawk	<i>Accipiter cooperii</i>	0	0	0	0	0	0	0
Downy Woodpecker	<i>Picoides pubescens</i>	0	0	0	1	0	0	0
Eastern Kingbird	<i>Tyrannus tyrannus</i>	0	0	0	0	0	1	0
Eastern Phoebe	<i>Sayornis phoebe</i>	0	0	0	0	0	0	0
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	0	0	0	0	0	0	0
Eastern Wood-Pewee	<i>Contopus virens</i>	0	0	0	0	0	0	0
European Starling	<i>Sturnus vulgaris</i>	0	0	0	0	0	8	0
Gray Catbird	<i>Dumetella carolinensis</i>	0	0	0	1	0	0	0
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	0	0	0	0	0	0	0
Horned Lark	<i>Eremophila alpestris</i>	3	2	3	0	1	0	2
House Finch	<i>Carpodacus mexicanus</i>	0	0	0	0	0	0	0
House Sparrow	<i>Passer domesticus</i>	0	1	0	0	0	6	0
House Wren	<i>Troglodytes aedon</i>	0	0	0	0	0	0	0
Indigo Bunting	<i>Passerina cyanea</i>	0	0	0	0	0	0	0
Killdeer	<i>Charadrius vociferus</i>	1	0	3	0	1	1	1
Mourning Dove	<i>Zenaida macroura</i>	0	0	0	1	0	2	1

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 35	point 36	point 37	point 38a	point 38b	point 39	point 40
		crop	crop	crop	forest	crop	crop	crop
COMMON NAME	SCIENTIFIC NAME							
Northern Cardinal	<i>Cardinalis cardinalis</i>	0	0	0	1	0	1	0
Northern Flicker	<i>Colaptes auratus</i>	0	0	0	0	0	0	0
Northern Harrier	<i>Circus cyaneus</i>	1	0	0	0	0	0	0
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	0	0	0	0	0	0	0
Orchard Oriole	<i>Icterus spurius</i>	0	0	0	0	0	0	0
Purple Martin	<i>Progne subis</i>	0	0	0	0	0	0	0
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	0	0	0	0	0	0	0
Red-eyed Vireo	<i>Vireo olivaceus</i>	0	0	0	0	0	0	0
Red-tailed Hawk	<i>Buteo jamaicensis</i>	0	0	0	0	0	0	0
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	4	3	3	0	0	0	0
Rock Pigeon	<i>Columba livia</i>	0	0	0	0	0	0	0
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	0	0	0	0	0	0	0
Savannah Sparrow	<i>Passerculus sandwichensis</i>	2	0	1	0	0	1	2
Song Sparrow	<i>Melospiza melodia</i>	0	1	0	0	0	2	0
Tree Swallow	<i>Tachycineta bicolor</i>	0	0	0	0	1	0	0
Turkey Vulture	<i>Cathartes aura</i>	0	0	0	0	1	0	0
Vesper Sparrow	<i>Pooecetes gramineus</i>	0	0	0	0	0	0	0
Warbling Vireo	<i>Vireo gilvus</i>	0	0	0	0	0	0	0
Willow Flycatcher	<i>Empidonax traillii</i>	0	0	0	0	0	1	0
Wood Thrush	<i>Hylocichla mustelina</i>	0	0	0	2	0	0	0
Yellow Warbler	<i>Dendroica petechia</i>	0	0	0	0	0	2	0

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 41	point 42a	point 42b	point 43	point 44	point 45
		crop	crop	field	crop	crop	crop
COMMON NAME	SCIENTIFIC NAME						
American Goldfinch	<i>Carduelis tristis</i>	0	0	0	3	0	0
American Kestrel	<i>Falco sparverius</i>	0	0	0	0	0	2
American Robin	<i>Turdus migratorius</i>	0	3	1	0	0	0
Baltimore Oriole	<i>Icterus galbula</i>	0	0	0	0	0	0
Bank Swallow	<i>Riparia riparia</i>	0	0	0	0	0	0
Barn Swallow	<i>Hirundo rustica</i>	0	1	1	0	0	2
Black-capped Chickadee	<i>Poecile atricapilla</i>	0	0	0	0	0	0
Blue Jay	<i>Cyanocitta cristata</i>	0	0	0	0	0	0
Bobolink	<i>Dolichonyx oryzivorus</i>	0	5	4	0	0	0
Brown Thrasher	<i>Toxostoma rufum</i>	0	0	0	0	0	0
Brown-headed Cowbird	<i>Molothrus ater</i>	0	3	5	0	0	0
Carolina Wren	<i>Thryothorus ludovicianus</i>	0	0	0	0	0	0
Cedar Waxwing	<i>Bombycilla cedrorum</i>	0	0	0	0	0	0
Chipping Sparrow	<i>Spizella passerina</i>	0	0	0	0	0	0
Cliff Swallow	<i>Hirundo pyrrhonota</i>	0	0	0	0	0	0
Common Grackle	<i>Quiscalus quiscula</i>	4	0	4	0	0	0
Common Yellowthroat	<i>Geothlypis trichas</i>	0	0	0	0	0	0
Cooper's Hawk	<i>Accipiter cooperii</i>	0	0	0	0	0	0
Downy Woodpecker	<i>Picoides pubescens</i>	0	0	0	0	0	0
Eastern Kingbird	<i>Tyrannus tyrannus</i>	0	1	1	0	0	0
Eastern Phoebe	<i>Sayornis phoebe</i>	0	0	0	0	0	0
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	0	0	0	0	0	0
Eastern Wood-Pewee	<i>Contopus virens</i>	0	0	0	0	0	0
European Starling	<i>Sturnus vulgaris</i>	0	8	8	0	0	0
Gray Catbird	<i>Dumetella carolinensis</i>	0	0	0	0	0	0
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	0	0	0	0	0	0
Horned Lark	<i>Eremophila alpestris</i>	5	5	5	5	2	1
House Finch	<i>Carpodacus mexicanus</i>	0	0	0	0	0	0
House Sparrow	<i>Passer domesticus</i>	0	6	6	0	0	1
House Wren	<i>Troglodytes aedon</i>	0	0	0	0	0	0
Indigo Bunting	<i>Passerina cyanea</i>	0	0	0	0	0	0
Killdeer	<i>Charadrius vociferus</i>	1	2	3	0	1	1
Mourning Dove	<i>Zenaida macroura</i>	0	2	3	0	0	2

Point Count Results - Gosfield Comber June 2007 - Appendix E

		point 41	point 42a	point 42b	point 43	point 44	point 45
		crop	crop	field	crop	crop	crop
COMMON NAME	SCIENTIFIC NAME						
Northern Cardinal	<i>Cardinalis cardinalis</i>	1	1	1	0	0	0
Northern Flicker	<i>Colaptes auratus</i>	0	0	0	0	0	0
Northern Harrier	<i>Circus cyaneus</i>	0	1	0	0	0	0
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	0	0	0	0	0	0
Orchard Oriole	<i>Icterus spurius</i>	0	0	0	0	0	0
Purple Martin	<i>Progne subis</i>	0	0	0	0	0	0
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	0	0	0	0	0	0
Red-eyed Vireo	<i>Vireo olivaceus</i>	0	0	0	0	0	0
Red-tailed Hawk	<i>Buteo jamaicensis</i>	0	0	0	0	0	0
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	4	7	6	0	2	0
Rock Pigeon	<i>Columba livia</i>	0	0	0	0	0	0
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	0	0	0	0	0	0
Savannah Sparrow	<i>Passerculus sandwichensis</i>	0	2	3	2	0	0
Song Sparrow	<i>Melospiza melodia</i>	2	2	2	1	0	1
Tree Swallow	<i>Tachycineta bicolor</i>	0	1	0	0	0	0
Turkey Vulture	<i>Cathartes aura</i>	0	1	0	0	0	0
Vesper Sparrow	<i>Pooecetes gramineus</i>	0	0	0	0	0	0
Warbling Vireo	<i>Vireo gilvus</i>	0	0	0	0	0	0
Willow Flycatcher	<i>Empidonax traillii</i>	0	1	1	0	0	0
Wood Thrush	<i>Hylocichla mustelina</i>	0	0	0	0	0	0
Yellow Warbler	<i>Dendroica petechia</i>	0	2	2	0	0	0

Attachment F
Height Summary

Attachment F - Height Summary

COMMON NAME	Total Observed	On Ground or Below	%	At Blade	%	Above Blade	%	Well Above Blade
		Blade Sweep Height		Sweep Height		Sweep Height		Sweep Height
Turkey Vulture	5	0	0	5	100			
Common Grackle	71	69	97	2	3			
American Goldfinch	19	18	95	1	5			
Horned Lark	105	105	100					
European Starling	88	88	100					
Red-winged Blackbird	83	83	100					
Bobolink	65	65	100					
Mourning Dove	54	54	100					
Song Sparrow	38	38	100					
American Robin	36	36	100					
Killdeer	36	36	100					
Savannah Sparrow	32	32	100					
Brown-headed Cowbird	27	27	100					
Barn Swallow	22	22	100					
House Sparrow	21	21	100					
Blue Jay	9	9	100					
Indigo Bunting	9	9	100					
Bank Swallow	8	8	100					
Chipping Sparrow	7	7	100					
House Wren	6	6	100					
Northern Cardinal	6	6	100					
Tree Swallow	6	6	100					
Yellow Warbler	6	6	100					
Baltimore Oriole	4	4	100					
Gray Catbird	4	4	100					
American Kestrel	3	3	100					
Eastern Kingbird	3	3	100					
Eastern Wood-Pewee	3	3	100					
Cedar Waxwing	2	2	100					
Great Crested Flycatcher	2	2	100					
Mallard	2	2	100					
Orchard Oriole	2	2	100					
Red-bellied Woodpecker	2	2	100					
Willow Flycatcher	2	2	100					
Wood Thrush	2	2	100					
Black-capped Chickadee	1	1	100					
Cliff Swallow	1	1	100					
Downy Woodpecker	1	1	100					
Eastern Towhee	1	1	100					
Great Blue Heron	1	1	100					
Northern Harrier	1	1	100					
Red-eyed Vireo	1	1	100					
Red-tailed Hawk	1	1	100					
Ring-billed Gull	1	1	100					
Rock Pigeon	1	1	100					
Total	800	792	99	8	1	0		0