

**Preliminary Breeding Bird Inventories of
Long Point Region Conservation Authority
Forest Tracts in 2002**

Denis Lepage

Bird Studies Canada
P.O. Box 160
Port Rowan, Ontario N0E 1M0

for
Long Point Region Conservation Authority
Port Dover, Ontario

November 2002

Executive summary

This report presents the preliminary findings of bird inventories conducted by Bird Studies Canada employees in forest tracts managed by the Long Point Region Conservation Authority, in Norfolk County, Ontario. A total of 16 sites were visited at least once during the breeding season in 2002. A total of 81 bird species was detected during the surveys, of which 76 were considered at least as possible breeders.

The site with the most species recorded were Watson Dam (44 species), Gesquire/Roney/Travis-DeSilver (43 species) and Harvey (41 species). Based on the sum of all conservation priority scores for each species found at a site, sites with the highest conservation priority scores were Brant, Gesquire/Roney/Travis-DeSilver and Harvey (47 points each), as well as Watson Dam (46 points). Sites with the most forest interior species were Brant, Gesquire/Roney/Travis-DeSilver, McKay/Lipsett and Harvey (10 species each). When the information on species richness, conservation priority and forest interior birds was combined together in an overall score, sites with the highest combined scores were Gesquire/Roney/Travis-DeSilver (41.5 points), Harvey (40.5 points), Brant (38 points), Watson Dam (34 points), Allan (32.5 points), Leitch/Davis and McKay/Lipsett (29.5 points each). Sites with the lowest overall scores included Parsons, Anderson, Middleton Wetlands and DeVos.

Several significant species were found during the inventories, including Vulnerable, Threatened and Endangered (VTE) species: Sharp-shinned Hawk, Cooper's Hawk, Red-headed Woodpecker (VTE), Red-bellied Woodpecker, Acadian Flycatcher (VTE), Winter Wren, Magnolia Warbler, Magnolia Warbler and Blackburnian Warbler (1 record each), as well as Cerulean Warbler (VTE, 4 records from 2 sites) and Hooded Warbler (VTE, 6 records from 3 sites). These records came from 10 different sites: Allan, Anderson and Hanson/Earl/Danylevich tracts (3 records each), Brant, Harvey, Leitch/Davis and McKay/Lipsett (2 records each) and Harris/Floyd, Jacques and Watson Dam (1 record each).

The results contained in this report should be considered as preliminary and subject to change following more intensive surveys in the future.

Table of contents

| | |
|--|----|
| Executive summary | 2 |
| Table of contents | 3 |
| Introduction and methods | 4 |
| Results and Discussion | 8 |
| Acknowledgments | 17 |
| Literature cited | 17 |
| Appendix 1. List of provincially and regionally rare forest species that required further documentation | 18 |

Introduction and methods

This report contains the results of breeding bird inventories done in 2002 in designated forest lands managed by Long Point Region Conservation Authority (LPRCA). Areas that were identified under the memorandum of agreement between the LPRCA and Bird Studies Canada (16 sites; Table 1) were surveyed in morning hours, when the birds are most actively singing, during the month of June, at the height of the breeding season. Each area was visited at least once under favorable weather conditions (i.e., windy and stormy days were avoided).

Census method: The surveyor walked in the forest interior, starting at sunrise, and identified all bird species that were detected within the area boundaries. In addition, each species was assigned codes of breeding evidence following the Ontario Breeding Bird Atlas coding scheme (Table 2). Only the highest level of breeding evidence is provided for each location (e.g., if a species was initially assigned a code S for singing male and was later found building a nest, only the code N was retained).

Area covered: Although the entire area of each property was not systematically covered, all representative habitats were surveyed at each site.

Abundance: In order to provide an estimate of abundance of each species, point counts were conducted in the forest interior in each area. Point counts were done every 20-40 minutes and georeferenced with a GPS unit. The surveyors followed the Ontario Breeding Bird Atlas methodology with a 5-minute duration, recording the total number of birds within and beyond 100m of the point. Points were spaced at least 250m apart whenever possible.

Vulnerable and Threatened species: Any sightings of VTE species were further documented, as well as were those of regionally rare species, as defined under the Ontario Breeding Bird Atlas criteria in region #5 (Long Point region, see Appendix 1) or listed as rare in McCracken (1987). The number of individuals and the sex and age of the birds were noted for each sighting, together with the exact GPS location of the observation and any additional relevant details.

Priority sites: Each site was assigned a priority ranking score, based upon BSC's importance ranking for the Haldimand-Norfolk region (Couturier 1999). Each site was scored using three different methods:

- 1) Species richness, based on the number of bird species observed (excluding species seen outside their breeding habitat);
- 2) Conservation priority score, based on the sum of all conservation priority scores for species observed at each site. For example, if species A, B and C were detected at a site and have been identified as priority species in the Long Point Area by Couturier (1999), their scores were simply added together to provide a total site score. Species scores range from 0 to 4 with high score indicating highest priorities. Species that were not identified as priority in Long Point have

been excluded from this score (species score = 0).

3) Forest interior scores, calculated as the number of forest interior species at each site. Forest interior species were defined following Freemark and Collins (1989).

All sites were also ranked for each scores and their ranks were added to provide an overall score.

Table 1. List of LPRCA sites surveyed in 2002

| Site name | Date(s) surveyed | Effort (no. hours) | Description | Number of Point Counts | Area (acres) |
|--|-------------------------|---------------------------|-------------------------------|-------------------------------|---------------------|
| Allan | 10/06 | 3h25 | part lot 9, cons. 4 | 5 | 50 |
| Drodz (Brant) | 25/06 | 2h30 | part lot 17, cons. 9 | 9 | 100 |
| Gesquire/Roney/Travis-De Silver | 7/06 | 3h55 | part lots 7 & 8, cons. 1 | 10 | 167 |
| Greathead | 21/06 | 3h30 | part lot 9, cons. 3 | 12 | 50 |
| Jacques | 17/06 | 2h45 | part lot 21, cons. 4 | 9 | 20 |
| Middleton Wetlands Cons. Area (Parrot tract) | 14/06 | 2h50 | part lot 17, cons. 1 & 2 | 7 | 65 |
| Watson Dam Cons. Area | 13/06 & 26/06 | 6h45 | From road 30 to Jackson Rd. | 18 | 150 |
| Harris, Harris, Floyd | 9/06 | 3h30 | part lots 11 & 12, cons. 4 | 7 | 150 |
| Leitch/Davis | 24/06 | 3h30 | part lot 18, cons. 13 | 12 | 50 |
| Anderson | 10/06 | 3h30 | part lots 15 & 16, cons. 1 | 2 | 180 |
| McKay/Lipsett | 19/06 | 3h15 | part lots 2 & 3, cons. 2 | 11 | 200 |
| Parsons/Vanderhaeghe | 12/06 | 3h05 | part lots 24 & 25, cons. 4STR | 7 | 100 |
| DeVos | 11/06 | 3h15 | part lot 15, cons. 12 | 7 | 95 |
| Earl/Danylevich | 18/06 | 2h55 | part lots 7 & 8, cons. 6 | 7 | 40 |
| Harvey | 6/06 | 4h00 | part lot 6, cons. ENR | 8 | 100 |

Table 2. List of breeding evidence codes from the Ontario Breeding Bird Atlas, ordered by their level of breeding confirmation (with the highest level of confirmation at the bottom). The breeding categories are OBS (observed only), POSS (possible breeder), PROB (probable breeding), CONF (confirmed breeder).

| Code | Category | Description |
|-------------|-----------------|---|
| X | OBS | Species observed in its breeding season (no breeding evidence) |
| H | POSS | Species observed in its breeding season in suitable nesting habitat |
| S | POSS | Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season |
| P | PROB | Pair observed in suitable nesting habitat in nesting season |
| T | PROB | Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code. "T" is not to be used for colonial birds, or species that might forage or loaf a long distance from their nesting site e.g. Kingfisher, Turkey Vulture, and male waterfowl |
| D | PROB | Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation |
| V | PROB | Visiting probable nest site |
| A | PROB | Agitated behaviour or anxiety calls of an adult |
| B | PROB | Brood Patch on adult female or cloacal protuberance on adult male |
| N | PROB | Nest-building or excavation of nest hole |
| DD | CONF | Distraction display or injury feigning |
| NU | CONF | Used nest or egg shells found (occupied or laid within the period of the survey) |
| FY | CONF | Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight |
| AE | CONF | Adult leaving or entering nest sites in circumstances indicating occupied nest |
| FS | CONF | Adult carrying fecal sac |
| CF | CONF | Adult carrying food for young |
| NE | CONF | Nest containing eggs |
| NY | CONF | Nest with young seen or heard |

Results and Discussion

All sites were visited once over the period, except for Watson Dam which was visited on 2 occasions because of its elongated shape. A total of 81 bird species was detected during the surveys, of which 76 were considered at least as possible breeders (Table 3). The site with the most species recorded (excluding non-breeders) were Watson Dam (44 species), Gesquire/Roney/Travis-DeSilver (43 species) and Harvey (41 species). Based on the sum of all conservation priority scores for each species found at a site, sites with the highest conservation priority scores were Brant, Gesquire/Roney/Travis-DeSilver and Harvey (47 points each), as well as Watson Dam (46 points).

The high score for Watson Dam Conservation area is partly attributable to the fact that the site was visited on 2 different mornings, during which different habitats were covered. A total of 38 species were found on both visits, providing a score of 35 points for the first visit, and 34 points for the second visit. In addition, the habitats at Watson Dam are also more diversified, owing to the presence of Little Otter Creek. Likewise, the high score obtained by Gesquire/Roney/Travis-De Silver is partly explained by the variety of habitats between the Gesquire/Roney section and the Travis-De Silver section.

The sites with the fewest species were Anderson (21 species), Harris/Floyd (28 species) and DeVos (28 species). The Conservation priority score for 2 of these sites, however, was increased by the presence of Hooded Warbler. Greathead had the lowest conservation priority score overall (21 points). Other sites with a low score were Anderson (24 point), Parsons (25 points) and DeVos (25 points). It must be pointed out that the low score for Anderson could partly be attributable to an uncharacteristically low bird activity during the morning of the census and that additional surveys may change this figure.

A total of 22 species associated primarily with forest interior habitat were detected during the surveys (Table 3). Individual sites with the most forest interior species were Brant, Gesquire/Roney/Travis-DeSilver, McKay/Lipsett and Harvey (10 forest interior species each). Sites with the least forest interior species were Parsons (4 species), and Jacques and Anderson (5 species).

When the 3 scores were combined together in a global score, a few sites seemed to stand out of the group: Gesquire/Roney/Travis-DeSilver (41.5 points), Harvey (40.5 points), Brant (38 points), Watson Dam (34 points), Allan (32.5 points), Leitch/Davis and McKay/Lipsett (29.5 points each) (Figure 1). These are sites that, based on our surveys, have a higher diversity of species, and a higher number of conservation priority species or forest interior species. When only the conservation priority score and the forest interior scores were combined (excluding species richness), the same sites conserved the highest scores, but in a slightly different order (Figure 2). Sites with the lowest overall scores included Parsons, Anderson (see earlier comment), Middleton Wetlands and DeVos.

It is important to point out that the scores calculated for each site should be considered as preliminary, and that more intensive inventories may actually reveal different patterns if species (especially significant ones) were present but not detected during the surveys. This could partly explain the low scores obtained by the Anderson tract, for example. Additionally, some species may not occupy a given breeding territory every year. Up to 3 or 4 more visits may be required during the breeding season to obtain a more accurate composition of the bird species at each site.

The site scores will also be affected the diversity of habitats, which could include habitats that are not really suitable for forest interior species, such as edge habitat or small wetland patches. Therefore, species richness alone should be interpreted with caution, and will not always be a good reflection of the quality of the site for birds, especially for habitat sensitive species.

In addition to habitat diversity, the surface area of a site will also influence its overall richness, up to a certain maximum threshold. Most of the site surveyed are small areas that are unlikely to contain the full diversity of the avifauna that characterize the region. Some species will require larger territories, but there is also only so many bird territories that can fit inside a small area. Therefore, the scores provided in this report will partly be a reflection of how large the site was, and they will only give limited indications about the quality of the habitat.

One of the problem associated with species inventories alone is that they give only limited information about the quality of the habitat. If a bird is present, we assume that the habitat is suitable for them. While this is true to certain extent, birds may also occupy marginal habitats that are unsuitable for breeding, or they may occupy a territory that is so poor that they are unable to raise their chicks successfully in most years (population sink). This could be either because of a lack of food, higher predation, higher brood-parasitism, etc. In addition to species inventories, more intensive studies on bird reproductive success in each area would be required to assess the actual quality of the habitat for birds.

Significant species:

Several significant species were found during the inventories, including VTE species: Sharp-shinned Hawk, Cooper's Hawk, Red-headed Woodpecker (VTE), Red-bellied Woodpecker, Acadian Flycatcher (VTE), Winter Wren, Magnolia Warbler, Magnolia Warbler and Blackburnian Warbler (1 record each), as well as Cerulean Warbler (VTE, 4 records from 2 sites) and Hooded Warbler (VTE, 6 records from 3 sites). The details of these observation are included in Table 5.

These records came from 10 different sites: Allan, Anderson and Hanson/Earl/Danylevich tracts (3 records each), Brant, Harvey, Leitch/Davis and McKay/Lipsett (2 records each) and Harris/Floyd, Jacques and Watson Dam (1 record each).

Point counts: Based on point counts, the 12 most abundant species (average number of birds per point, Table 6) overall were: Red-eyed Vireo, Ovenbird, Eastern Wood-Pewee, American Crow,

Rose-breasted Grosbeak, Veery, Wood Thrush, Blue Jay, American Robin, Black-capped Chickadee, Song Sparrow and Brown-headed Cowbird. Eleven of these species were also the most widespread overall (based on percentage of point counts with at least one individual, Table 7): the Black-capped Chickadee, which came in 13th, was less often detected than Great Crested Flycatcher.

In many cases, the most common or abundant species overall were also the most common or abundant at specific sites. Some of the other species that were locally common include:

- Mourning Dove (Jacques, Parsons/Vanderhaeghe)
- Downy Woodpecker (Allen, Jacques, Watson Dam, Harris/Harris/Floyd)
- Yellow-bellied Sapsucker (Middleton Wetlands)
- House Wren (Brant)
- Cedar Waxwing (Brant, Greathead, McKay/Lipsett)
- Yellow Warbler (Gesquire/Roney/Travis-De Silver)
- American Redstart (Allen, Brant, Gesquire/Roney/Travis-De Silver, Middleton Wetlands)
- Northern Waterthrush (Greathead, Harris/Harris/Floyd, Leitch/Davis, Earl/Danylevich)
- Common Yellowthroat (Jacques)
- Scarlet Tanager (McKay/Lipsett, De Vos, Earl/Danylevich)
- American Goldfinch (Watson Dam, Leitch/Davis)
- Indigo Bunting (Allen, Watson Dam, De Vos)
- Baltimore Oriole (Brant, Parsons/Vanderhaeghe)
- Common Grackle (Gesquire/Roney/Travis-De Silver, De Vos, Harvey)

Table 3. Species detected during the LPRCA surveys in 2002, with the highest breeding evidence code for each site. The conservation priority score for each species is based on Couturier (1999). See Table 2 for explanation of breeding evidence codes. VTE species are marked with * (vulnerable) or ++ (endangered or threatened at the provincial or federal level).

| Species | Habitat use ¹ | Cons. priority score | Allan | Drodz (Brant) | Gesquire/Roney/Travis-De Silver | Greathead | Jacques | Middleton Wetlands | Watson Dam | Harris, Harris, Floyd | Leitch/Davis | Anderson | McKay/Lipsett | Parsons/Vanderhaeghe | DeVos | Earl/Danylevich | Harvey |
|------------------------|--------------------------|----------------------|-------|---------------|---------------------------------|-----------|---------|--------------------|------------|-----------------------|--------------|----------|---------------|----------------------|-------|-----------------|--------|
| Scarlet Tanager | I | 3 | S | S | S | S | S | S | S | S | | H | S | S | S | S | S |
| Eastern Towhee | I/E | 3 | S | S | S | | S | | S | S | | | | S | | S | |
| Chipping Sparrow | E | 0 | S | S | S | S | S | | S | | | H | | S | | | |
| Field Sparrow | E | 2 | | | X | A | X | X | S | | | | | | | X | |
| Song Sparrow | E | 0 | S | S | S | S | S | S | CF | | CF | | S | S | S | S | S |
| Swamp Sparrow | E | 3 | | | | | S | | S | | | | | | | | |
| Northern Cardinal | I/E | 0 | | | S | S | S | S | S | | S | H | S | S | S | S | S |
| Rose-breasted Grosbeak | I/E | 0 | P | A | P | S | S | S | A | S | A | H | S | S | S | S | S |
| Indigo Bunting | E | 0 | S | A | S | S | | | A | | A | H | | S | P | S | S |
| Bobolink | E | 3 | | | | | | | X | | | | | | | | |
| Red-winged Blackbird | E | 0 | | | | | | S | S | | S | | | | | S | |
| Common Grackle | E | 0 | H | | H | H | H | H | H | H | H | | H | H | H | H | H |
| Brown-headed Cowbird | E | 0 | H | S | H | | H | H | S | H | S | H | H | H | H | H | P |
| Baltimore Oriole | E | 0 | S | NY | | | S | S | S | S | S | | S | S | S | S | S |
| American Goldfinch | E | 2 | H | S | H | H | H | H | P | | S | H | H | H | H | H | H |

| | | | | | | | | | | | | | | | | | |
|--|--|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Number of species (excluding X's) | | | 38 | 36 | 43 | 30 | 34 | 35 | 44 | 28 | 36 | 21 | 34 | 31 | 28 | 35 | 41 |
| Conservation priority score | | | 43 | 47 | 47 | 25 | 34 | 28 | 46 | 28 | 30 | 20 | 34 | 25 | 25 | 29 | 47 |
| Forest interior score | | | 8 | 10 | 10 | 6 | 5 | 6 | 7 | 7 | 9 | 5 | 10 | 4 | 7 | 8 | 10 |

¹ Habitat used by forest species, based on Freemark & Collins (1989): I/E = forest interior and edge, I = forest interior, E = edge

Table 4. Scores for each LPRCA site. The highest rank values indicate the highest scores (the average rank is given in cases where scores are equal)

| | Scores | | | Ranks | | | Overall scores | |
|-----------------------------------|------------------|-----------------------------|-----------------------|----------------------|---------------------------------|---------------------------|---------------------|---|
| | Species richness | Conservation priority score | Forest interior score | Species richness (A) | Conservation priority score (B) | Forest interior score (C) | Total score (A+B+C) | Combined Cons. prior. & Forest interior (B+C) |
| 1 Allan | 38 | 43 | 8 | 12 | 11 | 9.5 | 32.5 | 20.5 |
| 2 Drodz (Brant) | 36 | 47 | 10 | 10.5 | 14 | 13.5 | 38 | 27.5 |
| 3 Gesquire/Roney/Travis-De Silver | 43 | 47 | 10 | 14 | 14 | 13.5 | 41.5 | 27.5 |
| 4 Greathead | 30 | 25 | 6 | 4 | 3 | 4.5 | 11.5 | 7.5 |
| 5 Jacques | 34 | 34 | 5 | 6.5 | 9.5 | 2.5 | 18.5 | 12 |
| 6 Middleton Wetlands | 35 | 28 | 6 | 8.5 | 5.5 | 4.5 | 18.5 | 10 |
| 7 Watson Dam | 44 | 46 | 7 | 15 | 12 | 7 | 34 | 19 |
| 8 Harris, Harris, Floyd | 28 | 28 | 7 | 2.5 | 5.5 | 7 | 15 | 12.5 |
| 9 Leitch/Davis | 36 | 30 | 9 | 10.5 | 8 | 11 | 29.5 | 19 |
| 10 Anderson | 21 | 20 | 5 | 1 | 1 | 2.5 | 4.5 | 3.5 |
| 11 McKay/Lipsett | 34 | 34 | 10 | 6.5 | 9.5 | 13.5 | 29.5 | 23 |
| 12 Parsons/Vanderhaeghe | 31 | 25 | 4 | 5 | 3 | 1 | 9 | 4 |
| 13 DeVos | 28 | 25 | 7 | 2.5 | 3 | 7 | 12.5 | 10 |
| 14 Earl/Danylevich | 35 | 29 | 8 | 8.5 | 7 | 9.5 | 25 | 16.5 |
| 15 Harvey | 41 | 47 | 10 | 13 | 14 | 13.5 | 40.5 | 27.5 |

Table 5. Significant species records in 2002. VTE species are marked with * (vulnerable) or ++ (endangered or threatened at the provincial or federal level).

| species | date | LPRCA track | UTM zone | UTM easting | UTM northing | Details |
|-------------------------|--------|------------------------|----------|-------------|--------------|--|
| Sharp-shinned Hawk | 10-Jun | Anderson | 17 | 555080 | 4729921 | |
| Cooper's Hawk | 19-Jun | McKay/Lipsett | 17 | 547994 | 4727190 | adult seen flying over |
| Red-headed Woodpecker * | 10-Jun | Allan | 17 | 530011 | 4721991 | heard calling |
| Red-bellied Woodpecker | 17-Jun | Jacques | 17 | 569224 | 4743164 | male seen |
| Acadian Flycatcher ++ | 24-Jun | Leitch/Davis | 17 | 539987 | 4762683 | singing male (seen) |
| Winter Wren | 24-Jun | Leitch/Davis | 17 | 540376 | 4762990 | singing male (heard) |
| Magnolia Warbler | 6-Jun | Harvey | 17 | 524701 | 4722707 | singing male (seen) |
| Magnolia Warbler | 26-Jun | Watson Dam | 17 | 526845 | 4741499 | singing male (seen) |
| Blackburnian Warbler | 6-Jun | Harvey | 17 | 524618 | 4722322 | singing male (heard) |
| Cerulean Warbler * | 10-Jun | Allan | 17 | 530254 | 4721929 | singing male (heard) |
| Cerulean Warbler * | 10-Jun | Allan | 17 | 529852 | 4721654 | singing male (heard) |
| Cerulean Warbler * | 25-Jun | Brant (Drozd) | 17 | 539785 | 4767573 | singing male (seen) |
| Cerulean Warbler * | 25-Jun | Brant (Drozd) | 17 | 539226 | 4767935 | singing male (seen) |
| Hooded Warbler ++ | 9-Jun | Harris/Floyd | 17 | 529781 | 4723762 | singing male (seen) |
| Hooded Warbler ++ | 10-Jun | Anderson | 17 | 555445 | 4730182 | singing male (seen) |
| Hooded Warbler ++ | 10-Jun | Anderson | 17 | 554927 | 4730172 | singing male (seen) |
| Hooded Warbler ++ | 18-Jun | Hanson/Earl/Danylevich | 17 | 547102 | 4733719 | singing male (seen). 2 or 3 males heard in track |
| Hooded Warbler ++ | 18-Jun | Hanson/Earl/Danylevich | 17 | 547240 | 4733797 | singing male (seen). 2 or 3 males heard in track |
| Hooded Warbler ++ | 18-Jun | Hanson/Earl/Danylevich | 17 | 547327 | 4733904 | singing male (seen). 2 or 3 males heard in track |
| Hooded Warbler ++ | 19-Jun | McKay/Lipsett | 17 | 547730 | 4727537 | singing male (heard) |

Table 6. Abundance of species detected during point counts (average number of birds detected per point count)

| | Allen | Drodz (Brant) | Gesquire/Roney/Travis-De Silver | Greathead | Jacques | Middleton Wetlands | Watson Dam | Harris, Harris, Floyd | Leitch/Davis | Anderson | McKay/Lipsett | Parsons/Vanderhaeghe | DeVos | Earl/Danylevich | Harvey | All sites |
|------------------------------|-------|---------------|---------------------------------|-----------|---------|--------------------|------------|-----------------------|--------------|----------|---------------|----------------------|-------|-----------------|--------|-----------|
| Number of point counts | 5 | 9 | 10 | 12 | 9 | 7 | 18 | 7 | 12 | 2 | 11 | 7 | 7 | 7 | 8 | 131 |
| Veery | 0.4 | 1.1 | 0.9 | 1.6 | 0.4 | 0.9 | 0.5 | 0.9 | 0.8 | | 0.4 | 0.9 | 0.1 | 0.9 | 0.5 | 0.73 |
| Wood Thrush | 1 | 1.6 | 0.6 | 0.2 | 0.7 | 1 | 0.1 | 1.4 | | | 1.3 | | 0.3 | | 0.8 | 0.56 |
| American Robin | 0.2 | 0.1 | 0.4 | 0.2 | 0.3 | 1.1 | 0.2 | 0.6 | 1.2 | | 1.2 | 0.3 | 0.1 | 0.4 | 0.9 | 0.51 |
| Gray Catbird | 0.2 | 0.2 | 0.5 | | 0.2 | | 0.1 | | 0.1 | | | | | | | 0.1 |
| Brown Thrasher | | | 0.1 | | | | | | | | | | | | | 0.01 |
| Cedar Waxwing | | 1.1 | | 0.6 | 0.2 | | 0.2 | | 0.3 | | 0.5 | | | | | 0.24 |
| Blue-winged Warbler | | | | | | | 0.2 | | | | | 0.1 | 0.1 | | | 0.04 |
| Blue/Golden-winged Warbler | | 0.1 | | | | | | | | | | | | | | 0.01 |
| Yellow Warbler | | | 0.6 | 0.1 | | 0.1 | 0.4 | | 0.3 | | | | | | | 0.14 |
| Chestnut-sided Warbler | | | 0.1 | | | 0.1 | | | | | | | | 0.4 | | 0.04 |
| Magnolia Warbler | | | | | | | 0.1 | | | | | | | | 0.3 | 0.02 |
| Black-throated Green Warbler | | | 0.2 | | | | | | | | | | | | | 0.02 |
| Pine Warbler | | | | | | | 0.2 | | | | 0.1 | | 0.1 | | 0.1 | 0.05 |
| Cerulean Warbler | 0.2 | 0.2 | | | | | | | | | | | | | | 0.02 |
| American Redstart | 0.8 | 0.3 | 0.9 | | | 0.6 | 0.1 | 0.1 | 0.2 | | 0.2 | | 0.1 | | 0.3 | 0.23 |
| Ovenbird | 3.2 | 0.4 | 1.9 | 1.4 | 0.1 | 1.1 | 0.1 | 1.4 | 0.8 | 0.5 | 1.3 | 2.1 | | 0.9 | 2.1 | 1.05 |
| Northern Waterthrush | | 0.1 | 0.4 | 0.8 | | | | 0.9 | 0.5 | | | | | 0.4 | | 0.22 |
| Mourning Warbler | | 0.3 | 0.2 | | 0.1 | 0.1 | 0.1 | | | 0.5 | | 0.1 | | | 0.1 | 0.09 |
| Common Yellowthroat | | | 0.1 | | 0.7 | | 0.3 | | 0.3 | | | 0.3 | | | 0.3 | 0.15 |
| Hooded Warbler | | | | | | | | 0.1 | | 1 | 0.1 | | | 0.3 | | 0.05 |
| Canada Warbler | | | 0.1 | | | | | | | | | | | | | 0.01 |
| Scarlet Tanager | | 0.3 | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | 0.4 | | 0.5 | 0.4 | 0.1 | 0.6 | 0.6 | 0.3 | 0.23 |
| Eastern Towhee | | | 0.4 | | 0.1 | | | | | | | 0.1 | | | | 0.05 |
| Chipping Sparrow | 0.2 | | 0.2 | 0.2 | 0.1 | | 0.2 | | | 1 | | 0.3 | | 0.1 | | 0.11 |
| Field Sparrow | | | 0.1 | | 0.1 | | 0.1 | | | | | | | 0.3 | | 0.05 |
| Song Sparrow | 0.2 | 0.7 | 0.7 | 0.1 | 1 | 0.3 | 1 | | 0.3 | | | 0.7 | 0.3 | 0.3 | 0.1 | 0.43 |
| Swamp Sparrow | | | | | 0.1 | | 0.1 | | | | | | | | | 0.02 |
| Northern Cardinal | | | 0.2 | 0.2 | 0.2 | | 0.2 | | 0.1 | 0.5 | 0.1 | | | 0.3 | 0.3 | 0.13 |
| Rose-breasted Grosbeak | 2.4 | 0.6 | 1.1 | 0.3 | 0.6 | 1.4 | 0.8 | 1.6 | 0.5 | 0.5 | 0.8 | 0.4 | 1 | 1 | 0.9 | 0.85 |
| Indigo Bunting | 0.6 | 0.1 | 0.3 | 0.1 | | | 0.5 | | 0.3 | | | 0.1 | 0.3 | | 0.1 | 0.18 |
| Red-winged Blackbird | | | 0.3 | | | 0.1 | 0.1 | | 0.1 | | | | | 0.1 | | 0.05 |
| Common Grackle | | | 0.4 | 0.1 | 0.2 | 0.7 | 0.2 | 0.4 | 0.4 | | 0.1 | 0.1 | 0.3 | 0.1 | 1.3 | 0.3 |
| Brown-headed Cowbird | 0.8 | 0.2 | 0.5 | | 0.1 | 0.6 | 0.6 | 0.6 | 0.1 | | 0.2 | 0.6 | 0.7 | 0.3 | 0.6 | 0.37 |
| Baltimore Oriole | 0.2 | 0.4 | | | 0.1 | 0.1 | 0.3 | 0.3 | 0.2 | | 0.2 | 0.6 | 0.1 | 0.1 | 0.1 | 0.19 |
| American Goldfinch | 0.2 | 0.1 | 0.2 | 0.1 | 0.1 | 0.3 | 0.7 | | 0.3 | | 0.1 | 0.1 | | 0.1 | 0.1 | 0.21 |

Table 7. Occurrence of species detected during point counts (percentage of points with at least one individual of a species)

| | Allen | Drodz (Brant) | Gesquire/Roney/Travis-De Silver | Greathead | Jacques | Middleton Wetlands | Watson Dam | Harris, Harris, Floyd | Leitch/Davis | Anderson | McKay/Lipsett | Parsons/Vanderhaeghe | DeVos | Earl/Danylevich | Harvey | All sites |
|------------------------------|-------|---------------|---------------------------------|-----------|---------|--------------------|------------|-----------------------|--------------|----------|---------------|----------------------|-------|-----------------|--------|-----------|
| Number of point counts | 5 | 9 | 10 | 12 | 9 | 7 | 18 | 7 | 12 | 2 | 11 | 7 | 7 | 7 | 8 | 131 |
| Veery | 40 | 77.8 | 50 | 83.3 | 44.4 | 71.4 | 33.3 | 71.4 | 50 | | 36.4 | 71.4 | 14.3 | 71.4 | 37.5 | 51.9 |
| Wood Thrush | 60 | 100 | 30 | 16.7 | 66.7 | 57.1 | 11.1 | 71.4 | | | 54.5 | | 28.6 | | 62.5 | 35.9 |
| American Robin | 20 | 11.1 | 30 | 16.7 | 22.2 | 100 | 22.2 | 42.9 | 83.3 | | 81.8 | 28.6 | 14.3 | 42.9 | 50 | 39.7 |
| Gray Catbird | 20 | 11.1 | 20 | | 11.1 | | 5.6 | | 8.3 | | | | | | | 5.3 |
| Brown Thrasher | | | 10 | | | | | | | | | | | | | 0.8 |
| Cedar Waxwing | | 66.7 | | 25 | 11.1 | | 22.2 | | 16.7 | | 54.5 | | | | | 16.8 |
| Blue-winged Warbler | | | | | | | 11.1 | | | | | 14.3 | 14.3 | | | 3.1 |
| Blue/Golden-winged Warbler | | 11.1 | | | | | | | | | | | | | | 0.8 |
| Yellow Warbler | | | 40 | 8.3 | | 14.3 | 27.8 | | 16.7 | | | | | | | 9.9 |
| Chestnut-sided Warbler | | | 10 | | | 14.3 | | | | | | | | 28.6 | | 3.1 |
| Magnolia Warbler | | | | | | | 5.6 | | | | | | | | 25 | 2.3 |
| Black-throated Green Warbler | | | 20 | | | | | | | | | | | | | 1.5 |
| Pine Warbler | | | | | | | 16.7 | | | | 9.1 | | 14.3 | | 12.5 | 4.6 |
| Cerulean Warbler | 20 | 22.2 | | | | | | | | | | | | | | 2.3 |
| American Redstart | 60 | 33.3 | 60 | | | 42.9 | 11.1 | 14.3 | 16.7 | | 18.2 | | 14.3 | | 25 | 19.1 |
| Ovenbird | 100 | 44.4 | 80 | 75 | 11.1 | 57.1 | 5.6 | 85.7 | 41.7 | 50 | 81.8 | 71.4 | | 71.4 | 100 | 54.2 |
| Northern Waterthrush | | 11.1 | 30 | 50 | | | | 71.4 | 25 | | | | | 42.9 | | 16 |
| Mourning Warbler | | 22.2 | 10 | | 11.1 | 14.3 | 11.1 | | | 50 | | 14.3 | | | 12.5 | 7.6 |
| Common Yellowthroat | | | 10 | | 66.7 | | 27.8 | | 25 | | | 28.6 | | | 25 | 14.5 |
| Hooded Warbler | | | | | | | | 14.3 | | 100 | 9.1 | | | 28.6 | | 4.6 |
| Canada Warbler | | | 10 | | | | | | | | | | | | | 0.8 |
| Scarlet Tanager | | 33.3 | 10 | 16.7 | 22.2 | 14.3 | 11.1 | 42.9 | | 50 | 36.4 | 14.3 | 42.9 | 57.1 | 25 | 22.1 |
| Eastern Towhee | | | 20 | | 11.1 | | 5.6 | | | | | 14.3 | | | | 3.8 |
| Chipping Sparrow | 20 | | 20 | 8.3 | 11.1 | | 22.2 | | | 100 | | 28.6 | | 14.3 | | 10.7 |
| Field Sparrow | | | 10 | | 11.1 | | 11.1 | | | | | | | 14.3 | | 3.8 |
| Song Sparrow | 20 | 66.7 | 40 | 8.3 | 66.7 | 28.6 | 61.1 | | 25 | | | 42.9 | 28.6 | 14.3 | 12.5 | 31.3 |
| Swamp Sparrow | | | | | 11.1 | | 5.6 | | | | | | | | | 1.5 |
| Northern Cardinal | | | 20 | 16.7 | 22.2 | | 16.7 | | 8.3 | 50 | 9.1 | | | 28.6 | 12.5 | 11.5 |
| Rose-breasted Grosbeak | 80 | 55.6 | 80 | 25 | 55.6 | 71.4 | 55.6 | 85.7 | 41.7 | 50 | 63.6 | 28.6 | 85.7 | 71.4 | 50 | 58 |
| Indigo Bunting | 40 | 11.1 | 30 | 8.3 | | | 44.4 | | 25 | | | 14.3 | 28.6 | | 12.5 | 16.8 |
| Red-winged Blackbird | | | 10 | | | 14.3 | 5.6 | | 8.3 | | | | | 14.3 | | 3.8 |
| Common Grackle | | | 40 | 8.3 | 22.2 | 28.6 | 16.7 | 42.9 | 16.7 | | 9.1 | 14.3 | 28.6 | 14.3 | 50 | 19.8 |
| Brown-headed Cowbird | 40 | 22.2 | 40 | | 11.1 | 57.1 | 44.4 | 57.1 | 8.3 | | 18.2 | 57.1 | 42.9 | 28.6 | 37.5 | 30.5 |
| Baltimore Oriole | 20 | 33.3 | | | 11.1 | 14.3 | 27.8 | 28.6 | 8.3 | | 18.2 | 28.6 | 14.3 | 14.3 | 12.5 | 16 |
| American Goldfinch | 20 | 11.1 | 10 | 8.3 | 11.1 | 28.6 | 50 | | 33.3 | | 9.1 | 14.3 | | 14.3 | 12.5 | 18.3 |

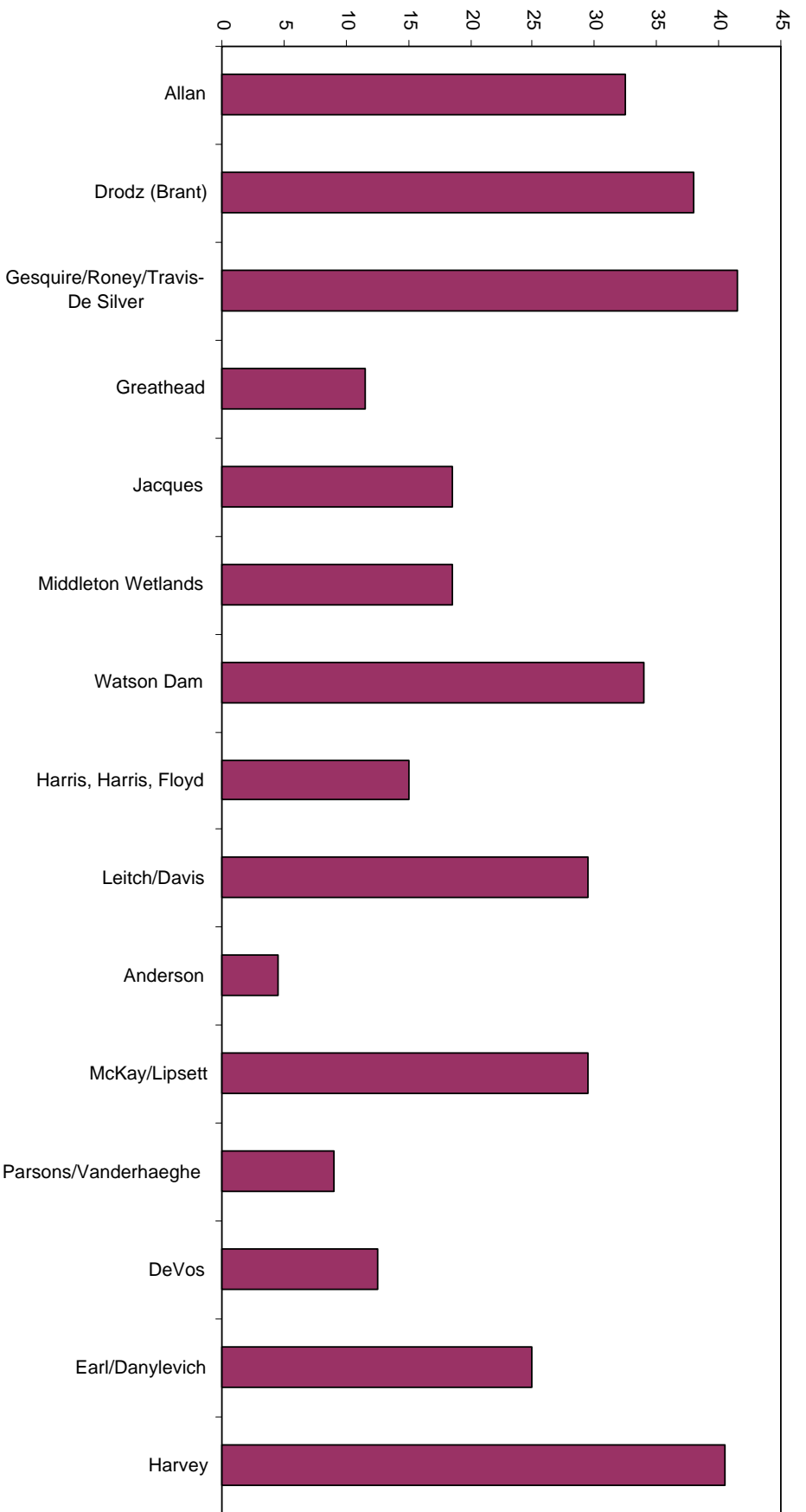


Figure 1. Overall scores for each LPRCA site (combination of Species Richness, Conservation Priority and Forest Interior scores).

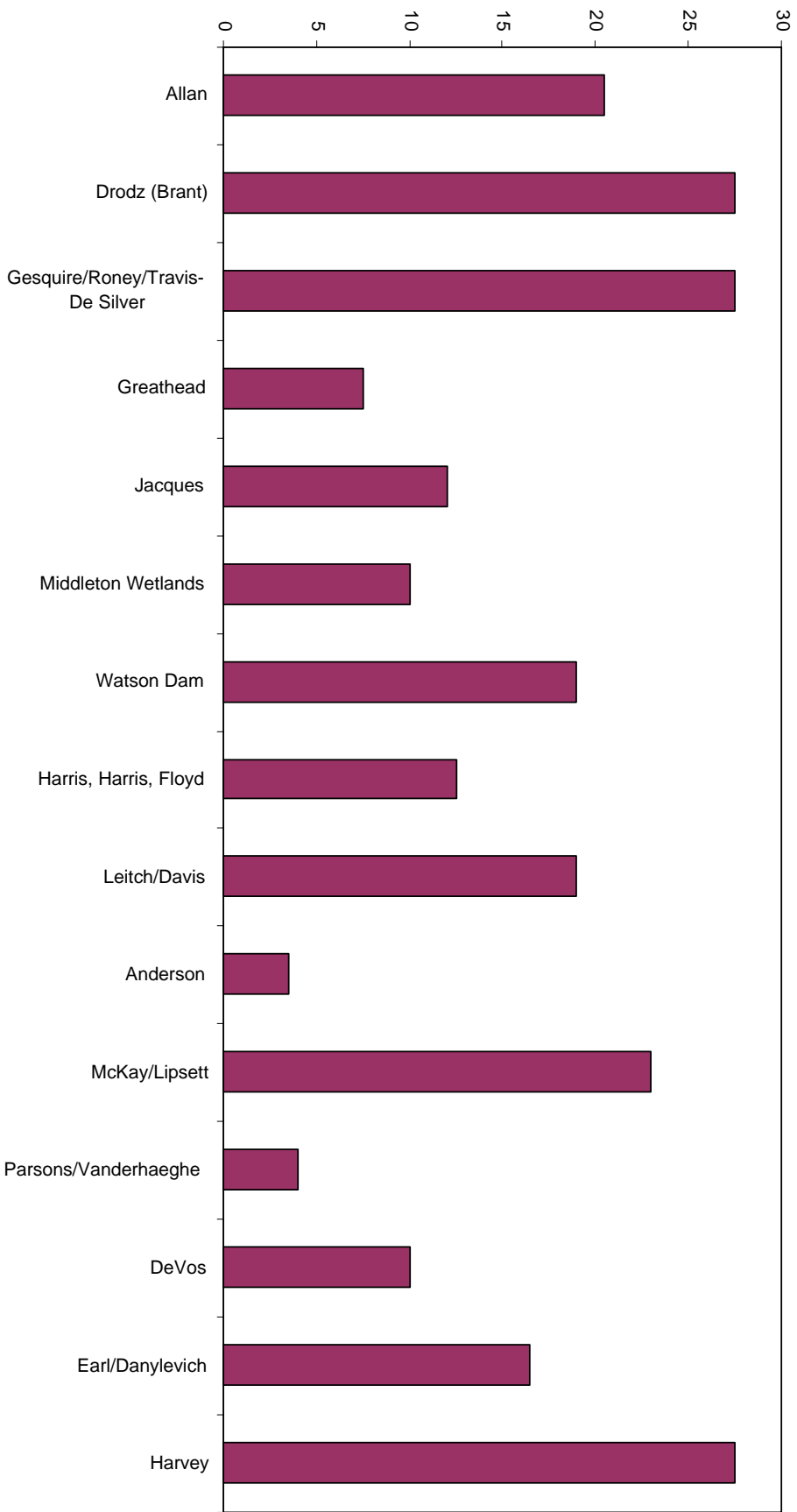


Figure 2. Overall scores for each LPRCA site (combination of Conservation Priority and Forest Interior scores).

Mammals and other vertebrates: Only incidental observations of mammals have been recorded during the inventories. Virtually all sites had both Grey (or Black) Squirrels as well as Chipmunks Deer tracts were found in many sites. A family of racoons (one adult with 4 young) was observed at McKay/Lipsett. A possible fox den was found in Middleton Wetlands.

Acknowledgments

I would like to thank the Long Point Region Conservation Authority for providing funding for this study, as well as surveyors who helped me collect data in the forest tracts: Jody Allair, Don Graham and Jon McCracken. I would also like to thank Jon McCracken for his comments on this report.

Literature cited

Couturier, A. 1999. Conservation priorities for birds in Southern Ontario. Unpublished Bird Studies Canada report, 17pp (plus appendices).

Freemark, K. and Collins, B. 1992. Landscape ecology of birds breeding in temperate forest fragments. In *Ecology and conservation of neotropical migrant landbirds* (eds John M. Hagan III and David W. Johnston). Smithsonian Institution Press.

McCracken, J.D. 1987. Annotated checklist to the birds of Haldimand-Norfolk. *In* The natural areas inventory of the regional municipality of Haldimand-Norfolk. Norfolk Field Naturalists.

Appendix 1. List of provincially and regionally rare forest species that required further documentation when observed (Status: P = provincially rare, R = regionally rare).

| | | | | | |
|------------------------|---|------------------------|---|------------------------|---|
| Hooded Merganser | R | Winter Wren | R | Cerulean Warbler | P |
| Sharp-shinned Hawk | R | Golden-crowned Kinglet | R | Prothonotary Warbler | P |
| Cooper's Hawk | P | Hermit Thrush | R | Louisiana Waterthrush | P |
| Northern Goshawk | R | White-eyed Vireo | P | Kentucky Warbler | P |
| Red-shouldered Hawk | P | Solitary Vireo | R | Hooded Warbler | P |
| Barred Owl | R | Brewster's Warbler | P | Yellow-breasted Chat | P |
| Chuck-will's-widow | P | Nashville Warbler | R | White-throated Sparrow | R |
| Red-headed Woodpecker | P | Northern Parula | R | Dark-eyed Junco | R |
| Red-bellied Woodpecker | P | Magnolia Warbler | R | Purple Finch | R |
| Acadian Flycatcher | P | Yellow-rumped Warbler | R | Pine Siskin | R |
| Tufted Titmouse | P | Blackburnian Warbler | R | | |
| Carolina Wren | P | Prairie Warbler | P | | |