Environmental Review 2011 - Eden Oak (Trailshead)

Report prepared for:
Eden Oak, Mississauga, ON

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Acronyms and Abbreviations

BBS	Breeding Bird Survey
CCSWS	Craigleith Camperdown Suberwatershed Study
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
DBH	Diameter (of a tree) at breast height
EIS	Environmental Impact Study
ELC	Ecological Land Classification
GSCA	Grey Sauble Conservation Authority
masl	meters above sea level
OBBA	Ontario Breeding Bird Atlas
SAR	Species at Risk

1.0 INTRODUCTION

1.1 Background

Multi-residential development is currently proposed for a 15.49-ha property known as Part Lot 20, Concession 2, Town of the Blue Mountains. The development proponent is Eden Oak (Mississauga), and the property is referred to as the Trailshead Property.

Under a preliminary servicing agreement with the Town of the Blue Mountains, the development footprint of the Trailshead Property has been cleared and graded, and a stormwater management pond has been constructed. Approximately 1.5 ha of the development footprint remains undisturbed. The current plan calls for 217 residential units and associated infrastructure within the footprint. A conceptual site plan is attached as Figure 2. The development area of the current plan (17.3 ha) is fairly consistent with the original plan for 77 units that was draft approved in 2007. Draft approval lapsed in July 2011.

An environmental overview report was prepared in 2004 by Ages Consultants limited, and submitted in support of the 2007 draft-approved plan (Registered Plan 529). This overview appears to have been received as a scoped Environmental Impact Study (EIS). A copy of this original EIS is attached as Appendix B.

In September 2011, pre-consultation was held for the current Eden Oak development proposal. In that consultation, the Grey Sauble Conservation Authority (GSCA) requested that an update of the 2004 EIS be completed.

1.2 Scope of Work

The overall purpose of this report is to provide review of the environmental constraints on the Trailshead Property, and to update the original EIS.

The original EIS (Ages, 2004) was a “Scoped” EIS, focused on a limited number of specific issues, and thus limited in coverage and intensity relative to a full intensive EIS. Based on the dialogue with the GSCA to date, the expectation is that the scope of this EIS update would be similarly focused.

The 2004 EIS identified two environmental features that would pose development constraints: 1) the wooded slope of the Nipissing Ridge, and 2) the corridor of the stream (i.e., Stream #7) that traverses the property.

The EIS concluded that the vegetation and wildlife communities present at the Eden Oaks property at the time were not expected to pose environmental constraints. In pre-consultation discussions with GSCA regarding the Trailshead Property, the potential presence of Butternut trees and Bobolinks was identified as an issue to be addressed.

Both species are now designated as species at risk (SAR), and neither was considered in the completion of the 2004 EIS.

This EIS update has been prepared to be a stand-alone report, and to effectively address the noted issues of concern and satisfy the requirements of a scoped EIS.

The EIS update is based on brief review of existing documents and relevant data, and also on the basis of data obtained through direct on-site assessment.

The on-site assessment was conducted to confirm the current conditions, especially in regard to the constraints identified in the 2004 EIS. The corridor of Stream #7 and the wooded slopes of the Nipissing Ridge have been directly examined. The report provides adequate and up-to-date descriptions of these features. .

Areas where woody vegetation is still present within or immediately adjacent to the Trailshead Property were also examined for the presence of Butternut trees. The potential presence of habitat suitable for Bobolinks and other grassland birds (i.e., meadow habitat) was also assessed during field surveillance.

2.0 METHODOLOGY

The work undertaken to allow the preparation of this EIS Report has included;

1. desktop review of available information (documents and data) regarding the characteristics of the property, and
2. focused field monitoring of the Trailshead Property.

The assessment of potential adverse effects collectively considers the findings of the desktop review and the on-site monitoring in a weight-of-evidence manner.

2.1 Review of Existing information

A review of existing information of relevance to the Trailshead Property has been completed. Several sources of information were consulted for this purpose, including:

- The Craigleith Camperdown Subwatershed Study (CCSWS) (Gore and Storrie, 1993),
- Grey County's web-based interactive GIS mapping tool,
- The Soil Survey of Grey County (Gillespie and Richards, 1954),
- The Ontario Breeding Bird Atlas (Cadman *et al*., 2007), and
- Results of ecological monitoring conducted in 2010 on the property immediately adjacent to the Trailshead property (i.e., the Oelbaum Property, Part of Lot 21, Concession 2, Town of The Blue Mountains).

2.2 On-Site Monitoring

On-site surveillance was conducted on 29 September and 12 October 2011. Focused site-specific monitoring was conducted to describe:

- plant community composition and distribution,
- current presence of SAR (Butternut and Bobolink),
- habitat potential for grassland bird SAR (e.g., Bobolink), and
- stream and aquatic habitat characteristics.

Surveillance of ecological endpoints was conducted throughout the property, focused on the noted endpoints of concern (woody plant communities, Stream #7, and SAR). Casual observations of terrestrial wildlife were also recorded.

3.0 SITE CHARACTERISTICS

The physical and biological characteristics of the Trailshead Property are described below.

3.1 Physical Characteristics

3.1.1 Topography

The Subject Property occupies an area of terraced relief. The southwest corner of the Trailshead property is occupied by the upper terrace of the Nippissing Ridge, with elevation in the range of 200 to 210 meters above sea level (masl). To the northeast of the base of the ridge, the majority of the property has little relief and an elevation of about 180-185 masl. The 20-25 m of relief between the upper and lower terraces is associated almost exclusively with the steep face of the ridge.

3.1.2 Soils

The original environmental review (Ages, 2004) suggests that soil throughout the property is Granby sand (Gs). This soil type consists of shallow sand over finer textured materials, and drainage is indicated as poor. The current investigation shows that the Granby sand is present throughout the majority of the property and all of the area proposed for development (i.e., the portion of the property below the Nipissing Ridge).

According to the Grey County soil survey (Gillespie and Richards, 1954), approximately one third of the Trailshead property contains soil classed as Waterloo sandy loam (Wsl). This includes the area occupied by the Nipissing Ridge, its upper terrace, and the land immediately at its base. This sandy loam exhibits relatively good drainage.

The presence of the Granby sand and Waterloo sandy loam was confirmed at field level. The portion of the Trailshead property proposed for development lies within the area of poorly drained Granby sand.

3.1.3 Hydrology

Based on subwatershed delineation reported in the CCSWS, the Trailshead property lies within two subwatersheds. Roughly half of the property to the west is within the subwatershed for Stream #7, with the eastern half draining to Stream #6. The Trailhead property occupies only a small fraction of the total basin areas of these two watersheds (i.e., <4% of the 205-ha basin of Stream # 7, and <2% of the 568-ha basin of Stream #6).

The total length of Stream #7 is approximately 4 km, with about 350 m (<10%) of the watercourse located within the boundary of the Trailshead Property.

The CCSWS reports that the hydrology of the various streams draining to Georgian Bay is most critically a function of infiltration in the upper terrace areas. Infiltration and runoff from lands below the ridge are much less important to the hydrological regime of a stream. During the recent reconnaissance, several points of seepage to Stream #7 were observed along the base of the ridge.

3.2 Ecological Characteristics

The following sections describe the ecological characteristics of the Trailshead Property. A description of the regional ecology is provided for context.

3.2.1 Regional Ecology

The Study Area is situated within the Mixedwood Plains *Ecozone*, and more specifically it is within the Manitoulin – Lake Simcoe *Ecoregion*, equivalent to Site Region 6E under Provincial classification.

This Manitoulin-Lake Simcoe Ecoregion is characterized by warm summers, mild winters, and relatively abundant precipitation (700 to 1000 mm/a) that is evenly distributed throughout the year. The dominant land cover is cropped land with significant areas of mixed forest. Climax vegetation is characterized by mixed hardwoods, including Sugar Maple, American Beech, Eastern Hemlock, Red Oak, and Basswood. Pioneer species include White Pine, Paper Birch, and Trembling Aspen.

3.2.2 Plant Communities

The original EIS (Ages, 2004) included Ecological Land Classification (ELC), identifying three community types within the Trailshead Property, including Deciduous Forest, Cultural Thicket, and Cultural Meadow. Further specification and detailed characterization of these communities was not provided in the 2004 report. Based on the recent on-site surveillance, and on past surveillance of adjacent properties, the identified community types are further described herein. A plant species list for the Trailshead Property is provided in Appendix A (Table A1). This list reflects only single season (fall) inventory and is acknowledged as incomplete.

On the upper terrace and face of the ridge, the main tree species comprising the mature deciduous forest canopy are Sugar Maple (*Acer saccharum*), Red Oak (*Quercus rubra*), and American Beech (*Fagus grandifolia*), White Birch (*Betula papyrifera*), Basswood (*Tilia americana*), Ironwood (*Ostrya virginiana*), and White Ash (*Fraxinus americana*) are also present. Most of these tree species are relatively common within the broader Manitoulin-Lake Simcoe Ecoregion. Under the ELC system of Lee et al. (1998), this deciduous forest type would be classed as FOD5-3 (dry-fresh Sugar Maple – Oak

Deciduous Forest Type). Owing to a closed canopy, vegetation is relatively sparse in the under-storey of the deciduous forest, and consists of saplings of the various tree species and common herbaceous species for the Ecoregion (e.g. Herb Robert, Zig-zag Goldenrod, Solomon's Seal).

Immediately below the ridge face, the wooded area is a mixture of a variety of deciduous trees, including Sugar Maple, Basswood, White and Red Ash (*Fraxinus americana* and *F. pennsylvanica*), and White Elm (*Ulmus americana*). Clusters of Trembling Aspen (*Populus tremuloides*), scattered hawthorns (*Crataegus* spp.) are also irregularly present. A few large Black Willow (*Salix nigra*) are present in close proximity to the stream. Butternuts (*Juglans cinerea*) are also present in this zone (see discussion in Section 3.2.5). A few scattered Eastern White Cedar (*Thuja occidentalis*) are present. This is the only notable presence of conifers within the Trailshead Property. Under the ELC system of Lee et al. (1998), this forest type would be classed as FOD7 (Moist Lowland Deciduous Forest Type).

The majority of the Cultural Thicket Community identified in the original EIS has recently been cleared and graded, and is no longer present. It is surmised that the thicket was dominated by red ash, consistent with successional thickets/savannahs found on adjacent properties. A narrow fringe of Staghorn Sumac (*Rhus typhina*), hawthorns (*Crataegus* spp.) and young ash (*Fraxinus* spp.) remains along the interface of the former thicket and the deciduous forest zone.

The Cultural Meadow community has also been subject to clearing and grading. The majority of the area now has relatively sparse vegetation cover, consisting mainly of herbaceous species typical of disturbed sites, many of which are non-native (see Table A1, Appendix A). Woody shrubs (red-osier dogwood, willows, aspens) are establishing in spots, but are mostly 1 m or less in height.

In the central portion of the proposed development area, there still remains an area (<1 ha) of cultural meadow that does not appear to have been altered in the recent site grading and clearing. The vegetative cover here is intermittent and dominated by grasses. The narrow and raised spoil piles created during grading, present mainly along the eastern edge of the development area, also exhibit a relatively dense plant cover that has a significant grass component.

The only observed occurrence of plants indicative of wet conditions was a scattering of sedges (*Carex* and *Scirpus* sp.) and narrow-leafed cattail (*Typha angustifolia*) along the edge of the newly constructed SWM pond, and also within drainage channels that have recently been excavated within the property.

3.2.3 Terrestrial Animals

The surveillance of the Trailshead Property yielded evidence of the presence of five species of native mammal, including;

- Meadow Vole (*Microtus pennslyvnaicus*),
- Eastern Chipmunk (*Tamias striatus*),
- Eastern Grey Squirrel (*Sciurus carolinensis*),
- Northern Raccoon (*Procyon lotor*), and
- White-tailed Deer (*Odocoileus virginianus*).

These are common species in Ontario and Grey County. Other common species of mammal are likely present at the Trailshead Property.

With regard to birds, 19 species were observed during the early fall surveillance. This included Canada Goose, Lesser Yellowlegs, Blue Jay, Song Sparrow, Field Sparrow, Savannah Sparrow, Chipping Sparrow, White-throated Sparrow, Northern Flicker, Yellow-bellied Sapsucker, Downy Woodpecker, Hairy Woodpecker, Black-capped Chickadee, American Goldfinch, Mourning Dove, American Crow, Common Raven, House Wren, and American Redstart. These species are all common birds in Grey County and throughout Ontario. Each species was observed resting or foraging within or immediately adjacent to the Trailshead Property. The large majority of avian occurrences were associated with the property perimeter (fence-lines and tree-lines). An overflight of a small flock of mixed blackbirds (Icteridae) was also observed, but individual species identification was not possible.

A full breeding bird survey (BBS) has not been completed for the Trailshead Property. In absence of this, existing BBS data of relevance from other sources has been consulted to gain an understanding of the species of birds that might occur in the general area during the breeding season. Specifically, Ontario Breeding Bird Atlas (OBBA) data as well as breeding bird survey data collected in 2010 at the neighbouring Oelbaum Property have been reviewed.

The Trailhead Property lies on the boundary between OBBA squares 17NK52 and 17NK53. During the most recent Ontario Breeding Bird Atlas (OBBA, 2001-2005), standardized breeding bird surveillance was conducted at 15 road-side point-count stations within square 17NK53, and 44 point-count stations in Square 17NK52. Data have been obtained for each of the noted squares, and also for the nearest individual point-count station (BSC et al., 2008). These data are summarized in Appendix A (Tables A2 and A3).

The OBBA surveillance of squares 17NK52/53 has identified 130 species of bird with some evidence of breeding within the 20-km^2 area of those squares. Of these species, 19 have been subject to assessment by COSEWIC or COSSARO. As of the date of this report, nine of the 19 have been deemed to be *Not at Risk*. The 10 species on record for the area in question that are currently designated as Species at Risk (SAR) include the Alder Flycatcher (*Endangered*), Barn Swallow (*Threatened*), Bobolink (*Threatened*), Canada Warbler (*Special Concern* – COSEWIC only), Chimney Swift (*Threatened* –

COSEWIC only), Common Nighthawk (*Special Concern* – COSEWIC only), Eastern Meadowlark (*Threatened*), Golden Winged Warbler (*Special Concern*), Louisiana Waterthrush (*Special Concern*), and the Red-headed Woodpecker (*Threatened* – COSEWIC, *Special Concern* – COSSAR0). The OBBA data indicate most of these species as either "possible' or "probable" breeders in the squares in question, and several have no breeding evidence on record in one or both squares for the last atlas period (2001-2005).

OBBA point-count station #9 (square 17NK53) is established along Lakeshore Road East, approximately 500 m west of the Trailshead Property, overlooking the Oelbaum Property. The data for this station are most representative of the avian community that resides in and around the Trailshead Property. A total of only eight species were recorded during OBBA surveillance at point-count station #9 (see Table A3, Appendix A). These eight species are very common in Ontario and Grey County, and none are currently considered to be species at risk (SAR).

The data from a BBS completed at the neighbouring Oelbaum Property are also considered to be representative of the avian community in the immediate area of the Trailshead Property. In total, that BBS has identified 50 species as present in the area of the Trailshead Property during the breeding season (Tables A4 and A5, Appendix A). Of these 50 species, the Bobolink was the only species designated as a species at risk by COSEWIC or COSSARO at the time of surveillance. There was a single observation of this species at the Oelbaum property in mid-May of 2010. No breeding evidence was observed in this single occurrence.

Since the completion of the Oelbaum BBS in 2010, other common grassland bird species have been designated as SAR under the Ontario ***Endangered Species Act*** (ESA). Specifically, the Barn Swallow (*Hirundo rustica*) and the Eastern Meadowlark (*Sturnella magna)* were both added to the Provincial SAR list as *Threatened* in January 2012. There were single occurrences of both species recorded during the Oelbuam BBS. These isolated occurrences were recorded at point count stations established within cultural meadow habitat (i.e., idle pasture).

3.2.4 Aquatic Ecology

Stream #7 is the only watercourse encountered within the confines of the Trailshead Property. Immediately below the Nipissing ridge, the stream exhibits mainly riffle flow (70% riffle, 25% run, 5% pool) and has a bank-full channel width in the range of 2-3 m. Substrate is largely cobble and gravel. There is very little in-stream cover (macrophytes, logs, undercut banks), other than a few boulders. As the stream progresses northward, the degree of run and pool habitat increases slightly, and undercut banks and some logs are encountered. Riparian cover is complete throughout most of the stream length through the Trailshead Property, except isolated pockets along the last 100 m where tree cover is less than complete.

Water temperature was recorded at several locations along Stream #7 throughout the day on 29 September, and again on 29 October. On 29 September, temperature was a constant 14 C^0 at several locations within the Trailshead Property, at morning, mid-day and later afternoon. Ambient air temperature ranged from 9 C^0 to 15 C^0 through the day. On 29 October, mid-day water temperature in Stream #7 was 6.5 C^0 at the culvert at Lakeshore Road, with ambient air temperature at about 8-9 C^0 following overnight lows slightly below 0 C^0. At the culvert on Grey Road 19, stream # 7 water temperature was 7.5 C^0. Concurrent temperatures in nearby streams #9 and #10 (at Lakeshore Road) were 7 C^0 and 9 C^0, respectively. Temperature data reported in the CCSWS show that stream # 7 exhibited late summer water temperatures of ~18 C^0, slightly higher than most of the other streams examined (15 to 17 C^0).

In the original EIS, Stream #7 was identified as a mixed warm/coolwater stream, based on available fishery data reported in the CCSWS. The fishery data are now 20 years old. No surveillance of fish communities in Stream #7 has been conducted since that time.

Fish surveillance of nearby Streams #9 and #10 was conducted in July 2010 (MNR license number 1057363) as part of an unpublished EIS for the adjacent Oelbaum property. No fish were caught in Stream #10, likely reflecting an intermittent pattern of flow. The catch record for the two stations surveyed along Stream #9 suggests a very low diversity of fish. Only two species were caught during the electrofishing effort. Creek chub (*Semotilus atromaculatus*) was the most abundant fish caught, followed by the Blacknose dace (*Rhinichthys obtusus*). These were also the most abundant species previously reported for Stream #7 in the CCSWS. These two fish species are native and common in the Great Lakes basin. They are typical of warm-water or cool-water streams in southern Ontario. Creek chub are found in virtually all streams that support fish. The CCSWS also reports a few fathead minnows and longnose dace in the upper and lower reaches of Stream #7. Rainbow trout are also reported, only for the lower reach of Stream #7. The assemblage of species reported for Stream #7 and adjacent streams is indicative of a cool/warmwater fishery.

3.2.5 Species at Risk

The available data indicate that four species at risk (SAR) have been observed on or near to the Trailshead Property, including the Butternut tree and three species of grassland bird (Bobolink, Barn Swallow, and Eastern Meadowlark).

The Provincial status of all but two of the plant species on record (see Table A1, appendix A) is either “secure” (S5) or “apparently secure” (S4). Butternut (*Juglans cinerea*) is ranked as “vulnerable” (S3). That is, this species is deemed vulnerable in Ontario due to a restricted range, relatively few populations, recent and widespread declines, or other factors making it vulnerable to extirpation. Butternut is listed as “Endangered” by COSEWIC (Federal) or CASSARO (Provincial).

A total of 27 butternuts were found within or immediately adjacent to the Trailshead property (see Table 1). Canker was obviously evident in all but six of these trees. Most of these trees exhibited some degree of die-back. Numerous dead butternuts (not recorded) were also observed within and around the property, showing signs that they likely succumbed to canker.

Four butternuts (B1, B2, B24, and B25) are outside of the southern property boundary and will not be directly affected by proposed development. Another five butternuts (B10 to B15) are immediately adjacent to the stream and thus protected within the proposed 30-m stream set-back (se Figure 2). Butternuts B18 – B20 are east of the existing barn structure, between the stream and the base of the ridge and within the 30-m stream setback. These will not be affected by the proposed development. B16 and B17 are in very close proximity to the existing barn, and removal at that barn is likely not achievable without destruction of these two butternuts. There are 3 butternuts (B3 to B5) that are in the northwest corner of the property, within about 5 m of the western property boundary. These could likely be retained just outside the back lot line of the third lot (proceeding counter-clockwise) on the proposed cul-de-sac). A total of eight butternuts (B6-B9, B21-23 and B26) all appear to fall within proposed lots around the cul-de-sac.

With regard to the grassland birds, there are records of occurrence on the property adjacent to the Trailshead Property. In the most recent OBBA (2001-2005), none of these species was observed at the point-count station closest to the Trailshead Property (see Table A3). In 2010, however, single occurrences of each of the three SAR were recorded at the neighbouring Oelbaum Property (Table A4 and A5). For the Bobolink, there was no evidence of breeding, while the Barn Swallow and Meadowlark were each assigned a breeding status of “possible” for the Oelbuam Property. The Oelbaum Property encompasses several hectares of idle pasture, which does provide conditions supportive of grassland birds. However, such habitat is absent within the Trailshead Property. Overall, the available data suggest that the likelihood of occurrence of breeding bobolink in the area around the Trailshead Property is relatively low. Owing to an absence of appropriate habitat within the Property, there is no expectation of occurrence of breeding pairs of these birds within the Trailshead Property boundary.

4.0 SUMMARY AND CONCLUSIONS

The original EIS (Ages Consultants, 2004) concluded that the woodland vegetation of the Nipissing Ridge and the corridor of Stream #7 were the two environmental features of the Trailshead Property (then referred to as the Glenleith Property) that would pose development constraints. In that EIS, existing data were reviewed to assess the potential presence of SAR and it was concluded that "none of the sources reviewed identified endangered or threatened species….in the vicinity of the property." Bobolink and Butternut were not considered as potential SAR at that time.

The EIS included recommendations to confirm its observations and conclusions. The GSCA has also requested an update of the original EIS, with specific concerns regarding Species at Risk (Butternut and Bobolink). Since the original discussions with the GSCA, other common grassland bird species (i.e., Barn Swallow and Eastern Meadowlark) have been designated as Species at Risk. These species are considered in this EIS update.

4.1 Woodland Vegetation

The recent surveillance of the Trailshead Property confirms the presence of deciduous forest as originally reported in the 2004 EIS. The woodland community on the upper terrace of the ridge is assessed as FOD5-3 (dry-fresh Sugar Maple – Oak Deciduous Forest Type). In the northwest portion of the Trailshead Property, in the low-lying area below the ridge, the existing woodland is classed as FOD7 (Moist Lowland Deciduous Forest Type). Both community types are common in Ontario.

Development should not occur within the Maple-Oak forest associated with the ridge. Where other constraints are absent, there is no reason for constraints on development within the Lowland forest area.

4.2 Stream Habitat

The original EIS recognized that control of erosion and alteration of hydrology were not critical concerns in regard to potential environmental constraints associated with Stream #7. Overall, the available information indicates that the area proposed for development within the Trailshead property is not expected to have meaningful influence on the hydrology or water quality of the local streams.

The original EIS recommended a buffer of 15-30 m, depending on the status as warm or coldwater fishery. The available data suggest that the Stream #7 supports a fish community that is warmwater to coolwater. Adoption of a setback appropriate for coldwater streams would be more than adequate in this case. Limited instances of development within 30 m of the stream (but no closer than 15 m) may be acceptable, particularly if the form of that development excludes impermeable surfaces.

The current conceptual site plan includes a 30-m setback from Stream #7 (see Figure 2). This is considered to be fully protective of the stream and its ecological functions.

4.3 Species at Risk

At this time, the available data indicate that four species at risk (SAR) are present within or near to the Trailshead property. These SAR (Butternut, Bobolink, Meadowlark and Barn Swallow) were not designated at the time of the original EIS.

For Butternut, 27 trees were identified during recent on-site surveillance. Most of the observed butternuts exhibit evidence of canker and poor health, and the long term natural presence of butternut in this location is likely jeopardized by the presence of the disease. This is consistent with findings of recent butternut surveillance on properties in the immediate vicinity of the Trailshead Property. Despite this prognosis, the proposed development would ideally be planned and constructed so that the existing butternuts are not adversely affected, to the extent practical. Ideally, none of the trees should be harmed or removed, and the associated root zone should remain undisturbed. To preclude any harm to the root system or above-ground growth of this tree, certain activities should be avoided within the drip-line of the tree (i.e., within 10 m or less of the trunk). Such activities include;

- Disturbance of soil deeper than 5 cm,
- Control or removal of vegetation other than through selective and light methods (i.e., no control through burning or herbicides, targeted removal with hand-held tools or machinery is acceptable),
- Passage of heavy machinery, particularly when the ground is wet, and
- Felling of other trees without ensuring fall direction away from the Butternut specimen.

The current conceptual site plan identifies the individual butternuts reported herein. The plan includes a 30-m buffer zone around each tree, which is considered wholly sufficient to protect those trees from potential impacts related to development activity.

Otherwise, it is recommended that a formal health assessment be completed for all butternuts within the Trailshead Property, and options be discussed with the MNR. It should be noted that three butternuts that are located in the Lowland Forest area are old and likely near the end of their life, regardless of the occurrence of canker. If development is to occur near Butternuts 8, 9 or 10, evaluation of the option to retain these trees within residential lots should consider the potential hazard posed by large trees in the late stages of their life.

Regarding the three grassland bird SAR, there are only isolated records of their presence in the general vicinity of the Trailshead Property, with no firm breeding evidence. Within the Property, grassland habitat is significantly limited at this time, being sparse

and patchy and accounting for <0.5 ha in total. In general, grassland areas that exhibit patches of bare ground, that are small and/or fragmented, or that are in close proximity to forest edges are least suitable as breeding or foraging habitat for Bobolinks, Barn Swallows and Meadowlarks (COSEWIC, 2010, 2011a, 2011b). Overall, the occurrence of breeding pairs of these grassland bird SAR within the development area of the Trailshead Property is not expected. No specific mitigation is recommended for the design of the proposed development.

5.0 REFERENCES

Ages Consultants Limited. 2004. Memo from Derek Coleman to David C. Slade, re: Glenleith Village - overview of environmental features and constraints. 28 April 2004.

Bird Studies Canada (BSC), Environment Canada's Canadian Wildlife Service, Ontario Nature, Ontario Field Ornithologists and Ontario Ministry of Natural Resources. 2008. Ontario Breeding Bird Atlas Database. Data accessed from NatureCounts, a node of the Avian Knowledge Network, Bird Studies Canada. Available at: http://www.naturecounts.ca. Accessed: 20 October 2011.

Cadman, M.D., D.A. Sutherland, G.G Beck, D. Lepage, and A.R. Couturier (eds.). 2007. Atlas of the Breeding Birds of Ontario, 2001 - 2005. Bird Studies Canada, Environment Canada, Ontario Field Ornithologists, Ontario Ministry of Natural Resources, and Ontario Nature. Toronto, ON.

County of Grey Geographic Information Systems (GIS) website (http://gis.greycounty.ca). Last accessed 13 October 2011

Gillespie, J.E. and N.R. Richards. 1954. Soil Survey of Grey County. Report No. 17 of the Ontario Soil Survey.

Gore and Storrie Limited (G&S). 1993. Craigleith Camperdown Subwatershed Study. Final report. Prepared on behalf of the Grey Sauble Conservation Authority.

Lee. H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray. 1998. Ecological Land Classification for Southern Ontario: First Approximation and Its Application. Ontario Ministry of Natural Resources, Southcentral Science Section, Science Development and Transfer Branch. SCSS Field Guide FG-02.

Species at Risk Act (SARA) Public Registry. http://www.sararegistry.gc.ca. Last accessed 16 October 2011.

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2010. COSEWIC Assessment and Status Report on the Bobolink (*Dolichonyx orizyvorus*) in Canada.

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2011a. COSEWIC Assessment and Status Report on the Barn Swallow (*Hirundo rustica*) in Canada.

Committee on the Status of Endangered Wildlife in Canada (COSEWIC). 2011b. COSEWIC Assessment and Status Report on the Eastern Meadowlark (*Sturnella magna*) in Canada.

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TABLES

Table 1: Results of Butternut Survey - Trailshead Property

Tree ID	UTM Coordinates		DBH (cm)	Health Status
	Easting	Northing		
B1	17 T 0554592	4929604	14	Canker evident (mild), no die-back observed
B2	17 T 0554531	4929583	27	Canker evident (moderate), especially on exposed roots, ~25% die-back
B3	17 T 0554333	4929827	13	Canker evident (moderate), ~20% die-back
B4	17 T 0554332	4929825	29	Canker evident (mild), ~25% die-back
B5	17 T 0554331	4929824	6	Healthy, canker not obviously evident
B6	17 T 0554365	4929783	13	Canker evident (mild), ~20% die-back
B7	17 T 0554361	4929765	133	Trunk hollow and heavily scarred with sapsucker holes, no obvious canker lesions, numerous dead lower branches, evidence of recent heavy fruiting
B8	17 T 0554401	4929771	53/51	Twin trunks, both with evidence of canker (advanced), evidence fruiting in recent years, no fruit at present
B9	17 T 0554403	4929767	77	Twin trunks (one trunk dead), canker advanced, heavy overgrowth of wild grape
B10	17 T 0554444	4929715	39	Advanced canker, heavy over-growth of wild grape
B11	17 T 0554460	4929675	41	Trunk is scarred with sapsucker holes, no discernable evidence of canker. A dead butternut is immediately adjacent.
B12	17 T 0554466	4929650	19/14	Twin trunks, both with evidence of canker (advanced), especially on exposed roots, ~30% die-back of lower branches
B13	17 T 0554476	4929649	41	Canker evident (advanced), especially on exposed roots, ~40% die-back of lower branches
B14	17 T 0554485	4929650	25	Canker evident (advanced), especially on exposed roots, ~40% die-back of lower branches
B15	17 T 0554488	4929652	18	Canker evident (moderate), heavy over-growth of wild grape
B16	17 T 0554403	4929722	14	Canker evident (advanced), especially on exposed roots, ~20% die-back of lower branches
B17	17 T 0554411	4929720	10	Advanced canker, very large lesion at base.
B18	17 T 0554417	4929722	23	Canker evident (moderate), especially on exposed roots.
B19	17 T 0554421	4929719	26	Mild canker evident.
B20	17 T 0554429	4929719	49	Canker evident (moderate), %30 die-back
B21	17 T 0554392	4929752	8	Canker evident (advanced), especially on exposed roots.
B22	17 T 0554391	4929747	13	No obvious signs of canker.
B23	17 T 0554400	4929753	9	Mild canker evident.
B24	17 T 0554612	4929622	11	No obvious signs of canker. Some wild grape over-growth.
B25	17 T 0554630	4929628	8 - 11	5 stems in a cluster. No obvious evidence of canker. Wild grape overgrowth.
B26	17 T 0554398	4929748	4	Moderate canker.
B27	17 T 0554480	4929758	6	Mild canker. Heavy grape overgrowth.

FIGURES

APPENDICES

Appendix A – Ecological Monitoring Data

Table A1: Plant Species List for the Trailshead Property

Common Name	Scientific Name	Provincial Status (S-RANK)[1]	Alien vs Native	Typical habitat
Alfalfa	*Medicago sativa*	NA	Alien	disturbed areas
Alternate-leaved Dogwood	*Cornus alternafolia*	S5	Native	open woodlands
American Basswood	*Tilia americana*	S5	Native	deep fertile soils, in association with other hardwoods
American Beech	*Fagus grandifolia*	S4	Native	usually found on rich, well-drained soils
Balsam Poplar	*Populus balsamifera*	S5	Native	moist, rich low lying ground
Black Locust	*Robinia pseudoacacia*	NA	Alien	well drained soils, disturbed areas
Black Medic	*Medicago lupulina*	NA	Alien	roadsides and waste areas
Black Raspberry	*Rubus occidentalis*	S5	Native	woodland openings and edges
Black Willow	*Salix nigra*	S4	Native	low wet areas
Bladder Campion	*Silene cucubalus*	NA	Alien	roadsides, fields
Brown Knapweed	*Centaurea jacea*	NA	Alien	roadsides, fields
Buckthorn	*Rhamnus cathartica*	NA	Alien	disturbed areas, woodland perimeter
Butternut	*Juglans cinerea*	S3	Native	fertile soils in shallow valleys or on gradual slopes
Canada Goldenrod	*Solidago canadensis*	S5	Native	roadsides, thickets and clearings
Canada Thistle	*Cirsium arvense*	NA	Alien	Roadsides, pastures and fields
Chicory	*Chicorium intybus*	NA	Alien	roadsides and waste areas
Choke Cherry	*Prunus virginiana*	S5	Native	rich soils in clearings or along forest edge
Coltsfoot	*Tussilago farfara*	NA	Alien	waste places and roadsides
Common Burdock	*Arctium minus*	NA	Alien	roadsides and waste areas
Common Buttercup	*Ranunculus acris*	NA	Alien	fields and meadows
Common Cinquefoil	*Potentilla simplex*	S5	Native	fields and dry woods
Common Dandelion	*Taraxacum officinale*	NA	Alien	lawns, fields, roadsides
Common Elderberry	*Sambucus nigra*	S5	Native	deciduous forest edge and understorey
Common Milkweed	*Asclepias syriaca*	S5	Native	roadsides, fields, dry soil
Common Mullein	*Verbascum thapsis*	NA	Alien	roadsides, fields, waste places
Common Plantain	*Plantago major*	NA	Alien	common to waste paces
Common Ragweed	*Ambrosia artemisiifolia*	S5	Native	roadsides, fields

Table A1: Plant Species List for the Trailshead Property

Common Name	Scientific Name	Provincial Status (S-RANK)[1]	Alien vs Native	Typical habitat
Common Strawberry	*Fragaria virginiana*	S5	Alien	pastures and rocky woods
Common Tansy	*Tanacetum vulgare*	NA	Alien	roadsides and waste areas
Common Yarrow	*Achillea millefolium*	NA	Alien	roadsides, fields, waste places
Curly Dock	*Rumex crispus*	NA	Alien	fields and waste places
Domestic Apple	*Malus pumila*	NA	Non-Native	orchards
Eastern White Cedar	*Thuja occidentalis*	S5	Native	usually associated with limestone, wet or dry conditions
English Plantain	*Plantago lanceolata*	NA	Alien	common to roadsides and waste places
Field Horsetail	*Equisetum arvense*	S5	Native	wet meadows, moist forests
Garlic mustard	*Alliaria petiolata*	NA	Alien	disturbed areas
Hawthorn	*Crataegus spp*	-	Native	oldfield habitat
Herb-Robert	*Geranium robertianum*	NA	Native	rocky woods and shorelines
Ironwood	*Ostrya virginiana*	S5	Native	well-drained areas, often in shade of larger hardwoods
Jewelweed	*Impatiens capensis*	S5	Native	moist, shady areas
Lady's Thumb	*Polygonum persicaria*	NA	Alien	cultivated ground, waste places
Large-tooth Aspen	*Populus grandidentata*	S5	Native	best on moist fertile soils, will grow on dry sandy soils
Manitoba Maple	*Acer negundo*	S5	Native	often in riparian or shoreline areas
Narrow-leaved Cattail	*Typha angustifolia*	NA	Native	marshes, ponds and ditches
New England Aster	*Symphyotrichum novae-angliae*	S5	Native	thickets, meadows, cultivated fields
Northern Maidenhair-fern	*Adiantum pedatum*	S5	Native	moist wooded areas
Ostrich Fern	*Matteuccia struthiopteris*	S5	Native	moist wooded areas
Phildelphia Fleabane	*Erigeron philadelphicus*	S5	Native	fields, open woods
Pineapple-weed	*Matricaria discoidea*	NA	Alien	roadsides and waste areas
Poison Ivy	*Toxicodendron radicans*	S5	Native	shores and banks, or areas with little competition
Red Ash	*Fraxinus pennsylvanica*	S5	Native	shores and banks, or areas with little competition
Red Clover	*Trifolium pratense*	NA	Alien	fields and wayside areas
Red Oak	*Quercus rubra*	S5	Native	deciduous forest
Red Raspberry	*Rubus idaeus*	S5	Native	woodland openings and edges

Table A1: Plant Species List for the Trailshead Property

Common Name	Scientific Name	Provincial Status (S-RANK)[1]	Alien vs Native	Typical habitat
Red-osier Dogwood	*Cornus sericea*	S5	Native	wetlands, wet fields and thickets
Reed Canary Grass	*Phalaris arundinacea*	S5	Alien	meadows, old pastures
Rough-fruited Cinquefoil	*Potentilla recta*	NA	Alien	fields and roadsides
Scotch Thistle	*Onopordum acanthium*	NA	Alien	roadsides, waste areas
Self-heal	*Prunella vulgaris*	S5	Alien	roadsides and waste areas
Small White Aster	*Symphyotrichum lateriflorum*	S5	Native	fields and meadows
Solomon's-seal	*Polygonatum biflorum*	S4	Native	woods and thickets
Staghorn Sumac	*Rhus typhina*	S5	Native	woodland edges, thickets
Sugar Maple	*Acer saccharum*	S5	Native	mature deciduous forest
Teasel	*Dipsacus sylvestris*	NA	Alien	roadsides and waste areas
Trembling Aspen	*Populus tremuloides*	S5	Native	grows best on well-drained moist sandy or gravelly soils
Tufted Vetch	*Vicia cracca*	NA	Alien	disturbed areas
Viper's Bugloss	*Echium vulgare*	NA	Alien	Meadows and open woods
Virginia Creeper	*Parthenocissus quinquefolia*	S4	Native	forest floor, woodland edges
White Ash	*Fraxinus americana*	S5	Native	woods and thickets
White Baneberry	*Actaea pachypoda*	S5	Native	woods
White Birch	*Betula papyrifera*	S5	Native	well drained soils, intolerant of shade
White Elm	*Ulmus americana*	S5	Native	moist, well-drained slopes and bottom-lands.
White Sweet Clover	*Melilotus albus*	NA	Alien	roadsides, field edges
Wild Carrot	*Daucus carota*	NA	Alien	roadsides, fields and waste areas
Wild Grape	*Vitis riparia*	S5	Native	woodland openings and edges
Wood Anemone	*Anemone quinquefolia*	S5	Native	deciduous forest
Wood Strawberry	*Fragaria vesca*	S5	Native	fields and open places
Woodland Horsetail	*Equisetum sylvaticum*	S5	Native	wet, wooded areas
Yellow Birch	*Betula alleghaniensis*	S5	Native	moist hardwood forests
Yellow Goat's-beard	*Tragopogon pratensis*	NA	Alien	roadsides, fields and waste areas
Zigzag Goldenrod	*Solidago flexicaulis*	S5	Native	woodlands and rich thickets

1 - Provincial Status (S-Rank): S3 - Vulnerable, S4 - Apparently Secure, S5 - Secure

Table A2: OBBA Data - Squares 17NK52 and 17NK53

Species		17NK52		17NK53		STATUS		
Common Name	**Scientific Name**	**1981-1985**	**2001-2005**	**1981-1985**	**2001-2005**	**SRANK[1]**	**COSEWIC[2]**	**COSSARO[2]**
Alder Flycatcher	*Empidonax virescens*	Confirmed	Possible		Probable	S2/S3	END	END
American Black Duck	*Anas rubripes*	Confirmed			Confirmed	S4		
American Crow	*Corvus brachyrhynchos*	Confirmed	Confirmed	Probable	Confirmed	S5		
American Goldfinch	*Carduelis tristis*	Confirmed	Probable	Probable	Probable	S5		
American Kestrel	*Falco sparverius*	Confirmed	Possible		Possible	S5		
American Redstart	*Setophaga ruticilla*	Confirmed	Possible	Possible	Probable	S5		
American Robin	*Turdus migratorius*	Confirmed	Confirmed	Confirmed	Confirmed	S5		
American Woodcock	*Scolopax minor*	Confirmed	Possible	Possible	Possible	S4		
Baltimore Oriole	*Icterus galbula*	Confirmed	Probable	Confirmed	Confirmed	S4		
Bank Swallow	*Riparia riparia*	Confirmed	Confirmed	Confirmed		S4		
Barn Swallow	*Hirundo rustica*	Confirmed	Confirmed	Confirmed	Confirmed	S4	THR	THR
Belted Kingfisher	*Ceryle alcyon*	Confirmed			Possible	S4		
Black-billed Cuckoo	*Coccyzus erythropthalmus*	Probable	Possible		Possible	S5		
Blackburnian Warbler	*Dendroica fusca*		Possible			S5		
Black-capped Chickadee	*Poecile atricapillus*	Confirmed	Confirmed	Probable	Confirmed	S5		
Black-crowned Night-heron	*Nycticorax nycticorax*	Possible		Confirmed	Confirmed	S3		
Black-throated Blue Warbler	*Dendroica caerulescens*	Possible	Probable		Possible	S5		
Black-throated Green Warbler	*Dendroica virens*	Possible	Possible		Possible	S5		
Black-and-white Warbler	*Mniotilta varia*	Probable	Possible		Possible	S5		
Blue Jay	*Cyanocitta cristata*	Confirmed	Confirmed	Confirmed	Probable	S5		
Blue-winged Teal	*Anas discors*	Confirmed			Possible	S4		
Blue-winged Warbler	*Vermivora pinus*		Possible			S4		
Bobolink	*Dolichonyx oryzivorus*	Confirmed	Probable	Confirmed	Possible	S4	THR	THR
Brewster's Warbler	*Vermivor Pinus*		Possible			NA		
Brown Creeper	*Certhia americana*	Probable	Possible			S5		
Brown Thrasher	*Toxostoma rufum*	Confirmed	Probable	Possible	Probable	S4		

Table A2: OBBA Data - Squares 17NK52 and 17NK53 (cont.)

Species		17NK52		17NK53		STATUS		
Common Name	**Scientific Name**	**1981-1985**	**2001-2005**	**1981-1985**	**2001-2005**	**SRANK[1]**	**COSEWIC[2]**	**COSSARO[2]**
Brown-head Cowbird	*Molothrus ater*	Confirmed	Probable	Confirmed	Probable	S4		
Canada Goose	*Branta canadensis*	Confirmed	Confirmed		Confirmed	S5		
Canada Warbler	*Wilsonia canadensis*	Possible			Possible	S4	SC	
Cedar Waxwing	*Bombycilla cedrorum*	Confirmed	Confirmed	Confirmed	Possible	S5		
Chestnut-sided Warbler	*Dendroica pensylvanica*	Confirmed	Possible		Probable	S5		
Chimney Swift	*Chaetura pelagica*	Probable				S4	THR	
Chipping Sparrow	*Spizella passerina*	Confirmed	Confirmed	Confirmed	Probable	S5		
Clay-colored Sparrow	*Spizella pallida*		Possible			S4		
Cliff Swallow	*Petrochelidon pyrrhonota*	Confirmed	Possible			S4		
Common Grackle	*Quiscalus quiscula*	Confirmed	Confirmed	Confirmed	Confirmed	S5		
Common Loon	*Gavia immer*			Possible	Possible	S5	NAR	NAR
Common Merganser	*Mergus merganser*	Probable		Confirmed	Confirmed	S5		
Common Nighthawk	*Chordeiles minor*			Probable	Possible	S4	SC	
Common Raven	*Corvus corax*		Probable		Possible	S5		
Common Snipe	*Gallinago delicata*	Confirmed	Possible			S5		
Common Tern	*Sterna hirundo*			Confirmed	Confirmed	S4	NAR	NAR
Common Yellowthroat	*Geothlypis trichas*	Confirmed	Probable	Possible	Probable	S5		
Cooper's Hawk	*Accipiter cooperii*		Possible		Possible	S4	NAR	NAR
Dark-eyed Junco	*Junco hyemalis*	Probable				S5		
Double-crested Cormorant	*Phalacrocorax auritus*				Confirmed	S5	NAR	NAR
Downy Woodpecker	*Picoides pubescens*	Confirmed	Possible	Confirmed	Possible	S5		
Eastern Bluebird	*Sialia sialis*		Confirmed			S5	NAR	NAR
Eastern Kingbird	*Tyrannus tyrannus*	Confirmed	Confirmed	Confirmed	Probable	S4		
Eastern Meadowlark	*Sturnella magna*	Confirmed	Probable	Confirmed	Probable	S4	THR	THR
Eastern Phoebe	*Sayornis phoebe*	Probable	Confirmed	Possible	Confirmed	S5		
Eastern Screech-Owl	*Megascops asio*	Possible	Possible	Possible		S5	NAR	NAR

Table A2: OBBA Data - Squares 17NK52 and 17NK53 (cont.)

Species		17NK52		17NK53		STATUS		
Common Name	**Scientific Name**	**1981-1985**	**2001-2005**	**1981-1985**	**2001-2005**	**SRANK[1]**	**COSEWIC[2]**	**COSSARO[2]**
Eastern Towhee	*Pipilo erythrophthalmus*	Confirmed	Possible	Possible		S4		
Eastern Wood-Pewee	*Contopus virens*	Confirmed	Probable	Possible	Possible	S4		
European Starling	*Sturnus vulgaris*	Confirmed	Confirmed	Confirmed	Confirmed	SNA		
Field Sparrow	*Spizella pusilla*	Confirmed	Possible	Possible	Possible	S4		
Gadwall	*Anas strepera*			Probable		S4		
Golden-crowned Kinglet	*Regulus satrapa*	Probable	Possible			S5		
Golden-winged Warbler	*Vermivora chrysoptera*		Probable			S4	SC	SC
Great Crested Flycatcher	*Myiarchus crinitus*	Confirmed	Confirmed	Possible	Probable	S4		
Gray Catbird	*Dumetella carolinensis*	Confirmed	Probable	Possible	Probable	S4		
Great Black-backed Gull	*Larus marinus*				Confirmed	S2		
Great Blue Heron	*Ardea herodias*	Possible		Confirmed	Confirmed	S5		
Great Egret	*Ardea alba*			Probable	Confirmed	S2		
Great Horned Owl	*Bubo virginianus*	Confirmed			Probable	S5		
Green Heron	*Butorides virescens*	Probable	Possible	Possible		S4		
Hairy Woodpecker	*Picoides villosus*	Confirmed	Possible		Possible	S5		
Herring Gull	*Larus argentatus*	Confirmed		Confirmed	Confirmed	S5		
Horned Lark	*Eremophila alpestris*	Confirmed	Possible			S5		
House Finch	*Carpodacus mexicanus*		Probable		Probable	NA		
House Sparrow	*Passer domesticus*	Confirmed	Probable	Confirmed		NA		
House Wren	*Troglodytes aedon*	Confirmed	Confirmed	Confirmed	Probable	S5		
Indigo Bunting	*Passerina cyanea*	Confirmed	Probable	Possible	Possible	S4		
Killdeer	*Charadrius vociferus*	Confirmed	Probable	Probable	Probable	S5		
Least Flycatcher	*Empidonax minimus*	Confirmed	Possible	Possible	Possible	S4		
Louisiana Waterthrush	*Seiurus motacilla*	Probable	Probable			S3	SC	SC
Magnolia Warbler	*Dendroica magnolia*		Possible			S5		

Table A2: OBBA Data - Squares 17NK52 and 17NK53 (cont.)

Species		17NK52		17NK53		STATUS		
Common Name	**Scientific Name**	**1981-1985**	**2001-2005**	**1981-1985**	**2001-2005**	**SRANK[1]**	**COSEWIC[2]**	**COSSARO[2]**
Mallard	*Anas platyrhynchos*	Confirmed	Probable	Confirmed	Confirmed	S5		
Mourning Dove	*Zenaida macroura*	Confirmed	Probable	Probable	Possible	S5		
Mourning Warbler	*Oporornis philadelphia*	Confirmed	Possible		Possible	S4		
Nashville Warbler	*Vermivora ruficapilla*	Confirmed	Possible		Possible	S5		
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*	Confirmed	Probable			S4		
Northern Waterthrush	*Seiurus noveboracensis*	Confirmed	Possible		Possible	S5		
Northern Cardinal	*Cardinalis cardinalis*	Confirmed	Probable	Probable	Probable	S5		
Northern Flicker	*Colaptes auratus*	Confirmed	Possible	Probable	Probable	S4		
Northern Harrier	*Circus cyaneus*	Probable				S4	NAR	NAR
Northern Pintail	*Anas acuta*			Confirmed		S5		
Orchard Oriole	*Icterus spurius*		Possible			S4		
Ovenbird	*Seiurus aurocapilla*	Confirmed	Probable		Probable	S4		
Pileated Woodpecker	*Dryocopus pileatus*	Probable	Possible			S5		
Pine Warbler	*Dendroica pinus*				Possible	S5		
Purple Finch	*Carpodacus purpureus*	Confirmed	Possible		Possible	S4		
Purple Martin	*Progne subis*	Confirmed			Confirmed	S4		
Red-bellied Woodpecker	*Melanerpes carolinus*				Possible	S4		
Red-breasted Merganser	*Mergus serrator*	Confirmed		Confirmed	Probable	S4/S5		
Red-breasted Nuthatch	*Sitta canadensis*	Probable		Confirmed	Possible	S5		
Red-eyed Vireo	*Vireo olivaceus*	Confirmed	Probable	Possible	Probable	S5		
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Probable				S4	THR	SC
Red-tailed Hawk	*Buteo jamaicensis*	Confirmed	Possible	Probable	Possible	S5	NAR	NAR
Red-winged Blackbird	*Agelaius phoeniceus*	Confirmed	Confirmed	Confirmed	Confirmed	S5		
Ring-billed Gull	*Larus delawarensis*			Confirmed	Confirmed	S4/S5		
Rock Dove	*Columba livia*	Confirmed	Possible	Possible	Possible	NA		

Table A2: OBBA Data - Squares 17NK52 and 17NK53 (cont.)

Species		17NK52		17NK53		STATUS		
Common Name	Scientific Name	1981-1985	2001-2005	1981-1985	2001-2005	SRANK[1]	COSEWIC[2]	COSSARO[2]
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Confirmed	Possible	Confirmed	Possible	S4		
Ruby-throated Hummingbird	*Archilochus colubris*	Probable	Probable	Possible	Possible	S5		
Ruffed Grouse	*Bonasa umbellus*	Confirmed	Confirmed	Confirmed		S5		
Savannah Sparrow	*Passerculus sandwichensis*	Confirmed	Possible		Probable	S4		
Scarlet Tanager	*Piranga olivacea*	Possible	Probable			S4		
Sedge Wren	*Cistothorus platensis*		Possible			S4	NAR	NAR
Song Sparrow	*Melospiza melodia*	Confirmed	Confirmed	Confirmed	Confirmed	S5		
Sora	*Porzana carolina*	Possible				S4		
Spotted Sandpiper	*Actitis macularius*	Confirmed		Confirmed	Probable	S5		
Swamp Sparrow	*Melospiza georgiana*	Confirmed	Probable		Probable	S5		
Tree Swallow	*Tachycineta bicolor*	Confirmed	Confirmed	Confirmed	Probable	S4		
Turkey Vulture	*Cathartes aura*	Confirmed	Confirmed	Probable		S5		
Upland Sandpiper	*Bartramia longicauda*	Confirmed	Probable			S4		
Veery	*Catharus fuscescens*	Confirmed	Probable	Possible	Possible	S4		
Vesper Sparrow	*Pooecetes gramineus*	Confirmed	Possible		Possible	S4		
Virginia Rail	*Rallus limicola*			Possible		S5		
Warbling Vireo	*Vireo gilvus*	Confirmed	Probable	Possible	Probable	S5		
Western Meadowlark	*Sturnella neglecta*	Possible				S3		
White-breasted Nuthatch	*Sitta carolinensis*	Confirmed	Possible	Possible	Possible	S5		
White-throated Sparrow	*Zonotrichia albicollis*	Confirmed	Possible			S5		
Wild Turkey	*Meleagris gallopavo*		Possible			S5		
Willow Flycatcher	*Empidonax traillii*		Probable		Possible	S5		
Winter Wren	*Troglodytes troglodytes*	Probable	Possible		Possible	S5		
Wood Duck	*Aix sponsa*	Confirmed	Probable		Possible	S5		
Wood Thrush	*Hylocichla mustelina*	Confirmed	Possible		Probable	S4		

Table A2: OBBA Data - Squares 17NK52 and 17NK53 (cont.)

Species		17NK52		17NK53		STATUS		
Common Name	Scientific Name	1981-1985	2001-2005	1981-1985	2001-2005	SRANK[1]	COSEWIC[2]	COSSARO[2]
Yellow Warbler	*Dendroica petechia*	Confirmed	Probable	Probable	Probable	S5		
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Confirmed	Probable	Possible	Possible	S5		
Yellow-rumped Warbler	*Dendroica coronata*	Probable	Possible		Possible	S5		

1. Provincial Rank: SE - Exotic, S2 - Imperiled, S3 - Vulnerable, S4 - apparently secure, S5 - Secure
2. COSEWIC/COSSARO Status: End - Endangered, Thr - Threatened, SC - Special Concern, NAR - not at risk

Table A3: OBBA Results - Square 17NK53, Point-Count Station #9

Species		Total Count	Provincial Rank[1]
Common Name	Scientific Name		
American Goldfinch	*Carduelis tristis*	5	S5
American Robin	*Turdus migratorius*	4	S5
Blue Jay	*Cyanocitta cristata*	7	S5
Cedar Waxwing	*Bombycilla cedrorum*	4	S5
Common Grackle	*Quiscalus quiscula*	1	S5
Mourning Dove	*Zenaida macroura*	2	S5
Ring-billed Gull	*Larus delawarensis*	3	S5/S4
Red-winged Blackbird	*Agelaius phoeniceus*	7	S5

1. S4 - apparently secure, S5 - Secure

Table A4: Summary of Point-Count Monitoring Results – Oelbaum Property

Species		Station Total					
Common name	Scientific name	PC-1	PC-2	PC-3	PC-4	PC-5	PC-6
American Crow	*Corvus brachyrhynchos*		4 (2)	7 (2)			1 (1)
American Goldfinch	*Carduelis tristis*	8 (2)	1 (1)	1 (1)	4 (3)	6 (3)	
American Redstart	*Setophaga ruticilla*	3 (1)			3 (1)	1 (1)	6 (3)
American Robin	*Turdus migratorius*	10 (3)	6 (3)	5 (2)	6 (3)		6 (3)
Barn Swallow	*Hirundo rustica*					2 (1)	
Black-capped Chickadee	*Parus atricapillus*	2 (1)	2 (2)	4 (2)		4 (1)	
Blue Jay	*Cyanocitta cristata*	1 (1)	6 (2)	2 (2)	4 (1)	4 (1)	1 (1)
Brown-headed Cowbird	*Molothrus ater*					4 (1)	2 (1)
Cedar waxwing	*Bombycilla cedrorum*	3 (1)			2 (1)	3 (1)	3 (2)
Chipping Sparrow	*Spizzela passerina*					2 (1)	
Common Grackle	*Quiscalus quiscula*	7 (2)	1 (1)	2 (1)	1 (1)	4 (1)	7 (2)
Common Yellowthroat	*Geothlypis trichas*	2 (1)		1 (1)			7 (3)
Downy Woodpecker	*Picoides pubescens*			1 (1)		1 (1)	
Eastern Kingbird	*Tyrannus tyrannus*	1 (1)					
Eastern Meadowlark	*Sturnella magna*	1 (1)					
Eastern Wood-Peewee	*Contopus virens*		6 (3)	2 (1)	2 (2)		
European Starling	*Sturnus vulgaris*	2 (1)					
Field Sparrow	*Spizzela pusilla*					3 (3)	
Gray Catbird	*Dumetella carolinensis*	1 (1)	1 (1)		3 (2)	2 (1)	2 (2)
Great Crested Flycatcher	*Myiarchus crinitus*		1 (1)	1 (1)		2 (1)	
Great Egret	*Casmerodius albus*	1 (1)				3 (1)	
Green Heron	*Butorides virescens*		2 (1)				
House Finch	*Carpodacus mexicanus*	2 (1)				2 (2)	
House Wren	*Troglodytes aedon*					2 (1)	
Indigo Bunting	*Passeina cyanea*			2 (1)			
Killdeer	*Charadrius vociferus*	4 (1)	1 (1)				
Mourning Dove	*Zenaida macroura*	2 (1)	3 (2)				
Northern Cardinal	*Cardinalis cardinalis*	1 (1)				1 (1)	
Northern Flicker	*Colaptes auratus*		1 (1)		2 (2)		
Northern Oriole	*Icterus galbula*	5 (3)					1 (1)
Ovenbird	*Seiurus aurocapillus*		1 (1)				
Red-eyed Vireo	*Vireo olivaceus*	2 (2)	11 (3)	8 (3)	9 (3)	2 (1)	1 (1)
Red-tailed Hawk	*Buteo jamaicensis*		2 (1)		1 (1)		
Red-winged Blackbird	*Agelaius phoeniceus*	5 (2)			1 (1)	1 (1)	14 (3)
Ring-billed Gull	*Larus delawarensis*	12 (1)				9 (1)	11 (1)
Song Sparrow	*Melospiza melodia*	3 (2)	1 (1)			5 (2)	4 (2)
Yellow Warbler	*Dendroica petechia*	2 (2)					1 (1)

Bracketed values indicate the number of point-count events (3 in total) during which the species was observed at the noted station

Table A5: Summary of all BBS Observations - Oelbaum Property

Species		Breeding Status		Conservation Status		
Common name	**Scientific name**	**Oelbaum Property**	**OBBA[1]**	**SRANK[2]**	**COSEWIC[3]**	**COSSARO[3]**
American Crow	*Corvus brachyrhynchos*	Probable	Confirmed	S5	-	-
American Goldfinch	*Carduelis tristis*	Probable	Probable	S5	-	-
American Redstart	*Setophaga ruticilla*	Probable	Probable	S5	-	-
American Robin	*Turdus migratorius*	Confirmed	Confirmed	S5	-	-
Barn Swallow	*Hirundo rustica*	Possible	Confirmed	S5	THR	THR
Belted Kingfisher	*Ceryle alcyon*	Observed	Possible	S5	-	-
Black-billed Cuckoo	*Coccyzus erythropthalamus*	Observed	Possible	S4	-	-
Black-capped Chickadee	*Parus atricapillus*	Probable	Confirmed	S5	-	-
Blue Jay	*Cyanocitta cristata*	Confirmed	Confirmed	S5	-	-
Bobolink	*Dolichonyx oryzivorus*	Observed	Probable	S4	THR	THR
Brown Thrasher	*Toxostoma rufum*	Possible	Probable	S5	-	-
Brown-headed Cowbird	*Molothrus ater*	Probable	Probable	S5	-	-
Canada Goose	*Branta canadensis*	Possible	Confirmed	S5	-	-
Cedar waxwing	*Bombycilla cedrorum*	Confirmed	Confirmed	S5	-	-
Chipping Sparrow	*Spizzela passerina*	Probable	Confirmed	S5	-	-
Common Grackle	*Quiscalus quiscula*	Confirmed	Confirmed	S5	-	-
Common Raven	*Corvus corax*	Possible	Probable	S5	-	-
Common Yellowthroat	*Geothlypis trichas*	Probable	Probable	S5	-	-
Downy Woodpecker	*Picoides pubescens*	Possible	Possible	S5	-	-
Eastern Kingbird	*Tyrannus tyrannus*	Possible	Confirmed	S5	-	-
Eastern Meadowlark	*Sturnella magna*	Possible	Probable	S5	THR	THR
Eastern Wood-Peewee	*Contopus virens*	Probable	Probable	S5	-	-
European Starling	*Sturnus vulgaris*	Confirmed	Confirmed	SE	-	-
Field Sparrow	*Spizzela pusilla*	Probable	Possible	S5	-	-
Gray Catbird	*Dumetella carolinensis*	Possible	Probable	S5	-	-
Great Crested Flycatcher	*Myiarchus crinitus*	Probable	Confirmed	S5	-	-
Great Egret	*Casmerodius albus*	Observed	Confirmed	S2	-	-
Green Heron	*Butorides virescens*	Observed	Possible	S4	-	-
House Finch	*Carpodacus mexicanus*	Possible	Probable	SE	-	-
House Wren	*Troglodytes aedon*	Probable	Confirmed	S5	-	-
Indigo Bunting	*Passerina cyanea*	Possible	Probable	S5	-	-
Killdeer	*Charadrius vociferus*	Confirmed	Probable	S5	-	-
Mallard	*Anas platyrhynchos*	Observed	Confirmed	S5	-	-
Mourning Dove	*Zenaida macroura*	Possible	Probable	S5	-	-
Northern Cardinal	*Cardinalis cardinalis*	Possible	Probable	S5	-	-
Northern Flicker	*Colaptes auratus*	Possible	Probable	S5	-	-
Northern Oriole	*Icterus galbula*	Probable	Confirmed	S5	-	-
Ovenbird	*Seiurus aurocapillus*	Possible	Probable	S5	-	-
Pileated Woodpecker	*Dryocopus pileatus*	Observed	Possible	S4/S5	-	-
Red-bellied Woodpecker	*Melanerpes carolinus*	Observed	Possible	S4		
Red-eyed Vireo	*Vireo olivaceus*	Probable	Probable	S5	-	-
Red-tailed Hawk	*Buteo jamaicensis*	Possible	Possible	S5	NAR	NAR
Red-winged Blackbird	*Agelaius phoeniceus*	Confirmed	Confirmed	S5	-	-

Table A5: Summary of Breeding Bird Status at the Oelbaum Property (cont.)

Species		Breeding Status		Conservation Status		
Common name	**Scientific name**	**Oelbaum Property**	**OBBA[1]**	**SRANK[2]**	**COSEWIC[3]**	**COSSARO[4]**
Ring-billed Gull	*Larus delawarensis*	Observed	Confirmed	S5	-	-
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	Possible	Possible	S5	-	-
Song Sparrow	*Melospiza melodia*	Confirmed	Confirmed	S5	-	-
Turkey Vulture	*Cathartes aura*	Observed	Confirmed	S4	-	-
Wild Turkey	*Meleagris gallopavo*	Possible	Possible	S5	-	-
Yellow Warbler	*Dendroica petechia*	Possible	Probable	S5	-	-
Yellow-bellied Sapsucker	*Sphyrapicus varius*	Observed	Probable	S5	-	-

1 - the highest breeding status reported in the 2001-2005 OBBA for either Square 17NK52 or 17NK53
2. Provincial Rank: , S2 - Imperiled, S4 - Apparently Secure, S5 - Secure, SE - Exotic
3. Status: NAR - not at risk, THR - Threatened

Appendix B – Environmental Review (2004)