

**NATURAL HERITAGE**  
**ENVIRONMENTAL IMPACT STUDY**

**Hilton Head Heights Development:**  
**North & South Parcels**

**Within the Town of Meaford, Meaford Golf Course  
Municipality of Meaford  
County of Grey**

**PREPARED BY**

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# 1 Introduction

The Meaford Golf Course Limited has proposed a multi-lot residential development known as 'Hilton Head Heights' which shall be developed as two separate developments, the North Parcel and the South Parcel. This subdivision style development proposal for both parcels is located on part of Lot 17, Concession VI within the existing Meaford Golf Course and within the Town of Meaford fronting Ridge Road, Municipality of Meaford, County of Grey.

During the preliminary development consultation process, the applicants retained Aquatic and Wildlife Services (AWS) in April 2009 to complete a Natural Heritage Environmental Impact Study (EIS) to cover both the North and South Parcels. The EIS was to identify and address potential negative impacts on the natural environment that could occur from the proposed development plan. This Natural Heritage EIS has been undertaken to meet the requirements the Provincial Policy Statement (PPS) of 2005 Natural Heritage section 2.1, and the Grey County Official Plan and the Municipality of Meaford Official Plan.

Figure No. 1 provides a general site location map for the Study Lands (North and South Parcel) contained within the northern area of the Town of Meaford Golf Course. Figure No. 2 delineates the EIS Study Lands for the North and South Parcels, as the proposed residential development boundaries which currently are functioning as part of the golf course lands: driving range, parking lot, club house and a fairway. At this time, only the 'South Parcel' has been submitted for development of 26 detached dwellings having full municipal servicing. This report will follow the format requirements as outlined in the Natural Heritage Reference Manual second edition of March 2010.

Note: For this EIS report all *Italic writing* text sections are direct quotes from referenced documents and reports.

## 1.1 Background Review

A literature review and data search was conducted to aid in the identification of Natural Heritage Features and historical occurrence records for Flora and Fauna within and surrounding the subject Study Lands. This background review provided within Appendix I, was utilized to augment field data collection for the EIS process. A full listing of reports / documents cited has been provided within the reference section.

## 1.2 Field Study Methodology

The EIS field inventory works were focused on the development lands, referred to as the 'Study Lands'. Field survey works also included partial coverage of the adjacent review lands that were within the same landownership. Additional literature review and research for natural heritage feature identification and impact assessment concerns have been included for all of the '120m adjacent review lands' to the subject Study Lands through literature review and air photograph interpretation.

Flora survey fieldwork followed a 'random' search pattern throughout the Study Lands and adjacent land coverage area, during the spring and summer growing seasons of 2009. A full flora species listing of the Study Lands has been provided within Appendix III.

Fauna survey fieldwork followed a similar random approach within the Study Lands and covered portions of the adjacent review lands area. A full fauna species listing recorded through sightings, vocalization or evidence noted (track, scat) is provided within Appendix II. The Breeding Bird survey field timelines were in accordance with Bird Studies Canada Protocols and herpetofaunal survey works were in accordance to both Federal and Provincial field timelines in relation to the proposed development activity and site features.

### 1.3 Field Survey Dates

AWS field survey works were undertaken on seven dates, for 13.5 hours covering the spring and summer and fall seasons of 2009. Survey focus works are outlined for each date below, but also included all flora/fauna survey and assessment works for each site visit.

Table No. 1: Field Survey Dates

Date	Time & (Duration)	Survey Focus
May 7, 2009	12:30 pm to 2:00 pm (1.5 hrs)	Preliminary Assessment Reptile Hibernation Emergence
May 28, 2009	7:30 am to 8:30 am (1.0 hrs)	Breeding Birds Herpetofaunal
June 3, 2009	8:00 am to 9:30 am (1.5 hrs)	Breeding Birds Herpetofaunal
June 24, 2009	9:30 am to 12:00 pm (2 x 2.5 = 5.0 hrs)	Flora, Fauna Breeding Birds
July 28, 2009	2:00 pm to 4:00 pm (2.0 hrs)	Fauna, Fisheries, Vegetation Communities
August 27, 2009	2:00 pm to 3:00 pm (1.0 hrs)	Flora Fauna
September 28, 2009	9:00 am to 10:30 am (1.5 hrs)	Fisheries, Fauna Butternut Health assessment



## 2 Issues Summary Component: Significant Feature Analysis

The following seven Natural Heritage Features as defined by the Provincial Policy Statement 2.1 of March 1/05, have been researched on available reports, data banks, maps etc. currently available through municipal, provincial and federal agencies for this study area.

### 2.1 Habitat of Endangered and Threatened Species

Historical listings of Endangered and Threatened species within the Study Lands and the surrounding 120m adjacent review lands were researched through the Natural Heritage Information Centre (NHIC) web site. Species records maintained by the Ontario Ministry of Natural Resources (OMNR) are provided within Appendix I for the overlapping UTM grid squares that include the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and the Committee on the Status of Species at Risk in Ontario (COSSARO) listings.

Two historical records for the Threatened species 'Massasauga Rattlesnake' have been identified, however both records are from more than 30+ years ago with current Federal/Provincial habitat mapping for this species occurring 50 km away to the northwest (Bruce Peninsula). As such this species is no longer considered to be utilizing the surrounding habitat with no further impact assessment required.

Site-specific Flora and Fauna survey works through this EIS process included species inventory works, with listings provided under Appendix II and III respectively. No fauna species observed through the EIS survey works are currently listed under Provincial or Federal Endangered or Threatened species listings. Similarly no identifiable habitat within the Study Lands was noted as supporting listed ESA species (i.e. Bobolinks) due to the current land use activity and conditions. One flora vascular plant species, Butternut, which is currently listed both Federally and Provincially as 'Endangered' was identified within and adjacent to the subject Study Lands.

The Provincial Policy Statement (PPS) section 2.1.3 (a) states:

*Development and site alteration shall not be permitted in significant habitat of endangered species and threatened species.*

The Provincial Natural Heritage Policy section 2.1.6 for the adjacent lands to Endangered or Threatened species states:

*Development and Site Alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

This analysis has demonstrated that one Endangered vascular plant species has been identified to occur within the Study Lands and adjacent review lands. Therefore, further development impact assessment review is required for this Natural Heritage feature and provided under section 4.2.

## 2.2 Significant Wetlands

A review of Grey County Official Plan mapping for Significant Wetlands was undertaken and provided on Figure numbers 5 and 6. No significant wetlands or 'other wetlands' are identifiable within the Study Lands or the 120m adjacent review lands. In addition a review of the Municipality of Meaford Official Plan environmental constraint mapping provided on Figure No. 8, similarly does not identify any 'wetlands' within the Study Lands or its 120m adjacent review lands. This was also confirmed through a literature check of Owen Sound Ministry of Natural Resources wetland files and on-site EIS investigations of 2009.

The Provincial Policy Statement (PPS) section 2.1.3 (b) states:

*Development and site alteration shall not be permitted in significant wetlands in Ecoregions 5E, 6E and 7E.*

The Provincial Policy Statement (PPS) section 2.1.3 (c) states:

*Development and site alteration shall not be permitted in significant coastal wetlands*

The Provincial Natural Heritage Policy section 2.1.6 for the 120m adjacent lands to Provincially Significant Wetlands (PSW) states:

*Development and Site Alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

Though the subject Study Lands fall within Ecoregion 6E, this analysis has demonstrated that there is no designated significant wetland or wetlands, within the Study Lands or 120m adjacent review lands. As such this subdivision application for residential development would be in compliance with the PPS 2.1.3 (b and c) and similar environmental policies of the Grey County Official Plan section 2.8.3 and Municipality of Meaford Official Plan section B3.1.5.1. Therefore, no development impact assessment is required for this Natural Heritage feature.

## 2.3 Significant Woodlands

The County of Grey Official Plan has included the analysis and mapping of Significant Woodlands throughout the County. The provided Figure No. 6 that covers the subject Study Lands has not identified Significant Woodlands occurring within the Study Lands of Lot 17, concession VI. Along a portion of the north Study Lands boundary, a significant woodland has been identified on Figure No. 6 occurring within Lot 18, concession VI which is within the 120m adjacent review lands to this development proposal.

The Provincial Natural Heritage Policy Statement 2.1.4 (b) regarding Significant Woodlands states:

*Development and site alteration shall not be permitted in significant woodlands south and east of the Canadian Shield unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

The Provincial Natural Heritage Policy section 2.1.6 for the adjacent lands to Significant Woodlands states:

*Development and Site Alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

Through this analysis it has been demonstrated that there is no designated Significant Woodlands, within the Study Lands. As such this residential development proposal would be in compliance with the PPS 2.1.4 (b) and similar environmental policies of the Grey County Official Plan section 2.8.5.1 and Municipality of Meaford Official Plan. However, a portion of a designated Significant Woodland occurs within the northerly adjacent review lands, as such further development impact assessment is required to address the PPS 2.1.6 and similar County and Municipal Official Plan policies. This development impact assessment has been provided within section 4.3 of this report. X

## **2.4 Significant Valleylands**

Grey County or the Grey Sauble Conservation Authority has not yet identified potential Significant Valleylands within the Official Plan mapping or watershed reporting; as such this EIS has reviewed recommended Provincial evaluation criteria as listed in the 2010 Natural Heritage Reference Manual section 8.3, for determining said designations.

Figure No. 3, provides Federal topographical mapping of the surrounding area showing watercourses, terrain relief and prominent landscape features. In conjunction with County feature mapping shown on Figures 5 and 6 and Conservation Authority Regulatory mapping shown within Appendix IV, site-specific fieldwork, a broad review of the evaluation criteria can be undertaken. No prominent features such as small cliff faces, steep river valley slopes, distinctive landform, continuous valley forest cover, a high degree of naturalness, high species diversity or unique communities and/or functions area identifiable within this small, primarily urban watershed. Thus it can be concluded that this potential designation would not occur within the subject Study Lands or its 120m adjacent review lands.

The Provincial Natural Heritage Policy Statement section 2.1.4 (c) states:

*Development and site alteration shall not be permitted in significant valleylands south and east of the Canadian Shield unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

The Provincial Natural Heritage Policy section 2.1.6 for the adjacent lands to Significant Valleylands states:

*Development and Site Alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

With no Significant Valleyland designation occurring within the Study Lands or its 120m adjacent review lands, this proposed development activity is in compliance with the PPS section 2.1.4 (c) and 2.1.6 and similar policies of the Grey County Official Plan section 2.8.5.1 and Municipality of Meaford Official Plan. Therefore, no development impact assessment is required for this Natural Heritage Feature. X

## **2.5 Significant Areas of Natural and Scientific Interest (A.N.S.I.)**

A review for ANSI designations was undertaken, the Grey County Official Plan mapping provided on Figure number 6 and Municipality of Meaford Official Plan mapping provided on Figure number 8, show no ANSI designation identifiable within the Study Lands or its 120m adjacent review lands. This was confirmed through a literature check of Owen Sound Ministry of Natural Resources ANSI files.

The Provincial Natural Heritage Policy Statement (PPS) section 2.1.4 (e) states:

*Development and site alteration shall not be permitted in significant areas of natural and scientific interest unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

The Provincial Natural Heritage Policy section 2.1.6 for the 50m adjacent lands to ANSI's states

*Development and Site Alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

With no ANSI designation occurring within the Study Lands or its 120m adjacent review lands, this proposed development activity is in compliance with the PPS section 2.1.4 (e) and 2.1.6 and similar policies of the Grey County Official Plan section 2.8.5.3, and Municipality of Meaford Official Plan section B3.1.5.2. Therefore, no development impact assessment is required for this Natural Heritage feature. X

## 2.6 Significant Wildlife Habitat

Currently no specific habitat mapping has been undertaken within Grey County to identify Significant Wildlife Habitat, given the diversity and complexity of this component. As such, site-specific evaluations, are required to be undertaken by qualified individuals. Some aspects of historical Provincial inventory and assessment works for significant wildlife habitat features have been incorporated into Official Plan mapping i.e. deer wintering yards. The Municipality of Meaford mapping as shown on Figure No. 7, identifies no known historical features associated with Significant Wildlife Habitat for the Study Lands or its adjacent review lands.

For a full environmental analysis review, this EIS shall follow the recommended Provincial criteria listed within the OMNR October 2000, **Significant Wildlife Habitat Technical Guide (SWHTG)** publication for determining potential said designation within the Study Lands and adjacent review lands for the determination of the habitat significance. This particular Natural Heritage feature component can be subdivided into four distinct categories as outlined in the Natural Heritage Reference Manual (June 1999) and to a greater specific extent, within the Ontario Ministry of Natural Resources Significant Wildlife Habitat Technical Guide of October 2000. It has been recommended within this later technical manual, that within a municipality for the determination of significance, that the greatest emphasis should be placed on; representation, abundance, rare species and multiple benefits.

The four categories for evaluation of Significant Wildlife Habitat and a review of each are provided below.

### 2.6.1 Seasonal Concentration of Animals

The Significant Wildlife Habitat Technical Guide has identified 14 potential types of seasonal concentration areas:

- *Winter Deer Yards*
  - The Ontario Ministry of Natural Resources has no designated habitat within the Study Lands or adjacent review lands as would be reflected on the Municipality constraint mapping Figure number 8. This was confirmed through a literature review of Owen Sound MNR deeryard wintering mapping and through EIS fieldwork assessment of the Study Lands.
- *Moose late winter habitat*
  - Not applicable to Grey County
- *Colonial bird nesting sites*
  - No suitable habitat within the Study Lands or adjacent review lands.
- *Waterfowl stopover and staging areas*
  - No suitable habitat within the Study Lands or adjacent review lands.

- *Waterfowl nesting habitat*
  - No waterfowl nesting activity was observed within the Study Lands during the 2009 study period. No functioning habitat was identified within the Study Lands or adjacent review lands.
- *Shorebird migratory stopover sites*
  - No suitable habitat occurs within the Study Lands or adjacent review lands.
- *Migratory butterfly stopover areas*
  - Site lacks in suitable cover habitat or significant forage species, no identifiable habitat within the Study Lands or adjacent review lands.
- *Landbird migratory stopover areas*
  - This study area is not known for migratory bird stopover habitat by local birders or environmental agencies. Additionally the site is not in close proximity to any major flyways, occurs within an urban development setting and provides no significant unique or specialized habitat within the overall surrounding landscape to the Study Lands.
- *Raptor wintering areas*
  - No documented use, no habitat diversity or features within the subject lands that would support the required over wintering habitat for raptors.
- *Wild Turkey wintering areas*
  - Site has no large super canopy Conifer or Deciduous trees species with large branching for roosting, no suitable habitat within the Study Lands or adjacent review lands was identifiable.
- *Turkey Vulture summer roosting areas*
  - Site has no tall structures, super canopy trees with open surroundings or cliff faces, no identifiable suitable habitat within the Study Lands or adjacent review lands.
- *Reptile hibernacula*
  - Site has no exposed bedrock fractures or areas of high ground water table (required for over winter survival). Field survey works of May 7, 2009 site visit included potential reptile spring emergence activity (suitable time of year) with no sightings of reptile emergence activity. As such, with no identifiable hibernacula habitat or activity noted, it was concluded that the Study Lands and its adjacent review lands were not actively supporting reptile hibernaculum functions.



➤ *Bat hibernacula*

- The Study Lands do not support old building structures, large standing hollow trees, heavy deciduous forest canopy or geological features such as caves that could support hibernacula functions.

➤ *Bullfrog concentration areas*

- Species was not observed during the 2009 site visits and no identifiable habitat within the Study Lands or adjacent review lands that would function as 'concentration areas' for this species.

In summary for the sub-component section 2.6.1, the subject Study Lands has not been identified to support Seasonal Concentrations of Animals.

## **2.6.2 Rare Vegetation Communities or Specialized Wildlife Habitat**

### **2.6.2.1 Rare Vegetation Communities**

An analysis of vegetation community 'rarity' can be undertaken through following the Provincial Ecological Land Classification method for vegetation community type mapping and characterization. This analysis has been provided below, with vegetation community type mapping shown on Figure No. 9.

Site vegetation mapping and coding provided below follows accepted provincial standards as defined by the Ecological Land Classification (ELC) for Southern Ontario, First Approximation.

#### **Vegetation Community No. 1**

- No ELC coding
  - Grass lands with scattered trees, part of the actively managed golf course lands with significant lawn maintenance daily activities.

#### **Vegetation Community No. 2**

- Fresh-Moist Sugar Maple-Hardwood Deciduous Forest Type, Code: FOD6-5
  - Scattered pockets of Hardwood stands along watercourse/riparian zone habitat
  - Mix of Sugar Maple, Silver Maple, White Ash, Poplars, Basswood and White Cedar.
  - Average stand height of 15m, main stem diameter of 26cm dbh and mid-maturity age structure.

#### **Vegetation Community No. 3**

- Hedgerow cover, no ELC coding

- Mix of Sugar Maple, Scotch Pine, Basswood and Ash
- Ranges in widths from a singletree row to three trees wide.

#### **Vegetation Community No. 4**

- Dry-Fresh Sugar Maple – White Ash Deciduous Forest Type, Code: FOD5-8
  - Primarily mature age structure with a closed canopy.
  - Existing trail/road corridor along the south edge

#### **Vegetation Community No. 5**

- Active agricultural lands (orchard), No ELC coding

#### **Vegetation Community No. 6**

- Riparian Zone, Reed-canary Grass Organic Meadow Marsh Type, Code: MAM3-2
  - Disturbed lands, functioning as a minor grass buffer from the active golf greens/fairways to the watercourse.

Portions of vegetation community numbers 1, 2, 3 and 5 occur within the subject Study Lands.

All of the above noted vegetation community types have a Provincial status of S5 as per current Provincial NHIC rankings.

In conclusion for section 2.6.2.1, no rare vegetation communities were historically listed or observed during fieldwork completed in support of this environmental assessment. Field investigations and site mapping have not led to the identification of any rare vegetation community types (e.g., no observations of old growth forest, concentrations of rare plant species, savannah habitat etc.). Vegetation communities within the Study Lands have a Provincial ranking of S5 or considered “demonstrably secure in Ontario”. Both the Natural Heritage Training Manual and the Significant Wildlife Habitat Technical Guide (MNR 2000) have recommended that rare vegetation communities are those having Provincial rankings between S1 to S3.

#### **2.6.2.2 Specialized Habitat for Wildlife**

The Significant Wildlife Habitat Technical Guide (SWHTG) has identified 12 categories of for the evaluation of specialized habitats for wildlife:

- *Sites supporting area-sensitive species*
  - Fauna species listing is provided within Appendix III, for the subject Study Lands. Observed bird species that utilized the Study Lands have been compared to the bird listings within the Significant Wildlife Habitat Technical Guide, Appendix G-Table G-3, with no species having an ‘area-sensitive’ status.

- *Forest stands providing a diversity of habitat*
  - The forest stands within the subject Study Lands (vegetation community numbers 2 and 4 as shown on Figure No. 9) and surrounding adjacent review lands demonstrate only a low level of habitat diversity for stand types, ground cover or age structure (even aged stands), as such this study area is not considered to be a 'specialized' habitat type or ecological function use.
- *Old growth or mature forest stands*
  - There are no old growth trees within the Study Lands or old growth woodland characteristics present, as defined by the Province for Old Growth Forests Definitions (OMNR, 2003)
- *Seeps and springs*
  - No springs or seeps have been identified within the Study Lands, or within the adjacent review lands.
- *Woodlands supporting amphibian breeding ponds*
  - Within the Study Lands and adjacent review lands, no ponds or seasonal surface water ponding within woodlands were identifiable which would support amphibian-breeding activity within a woodland environment. Some small constructed golf course ponds are present which support amphibian breeding but were not considered to be natural or within woodlands but part of a grassed (vegetation community No. 6) riparian zone habitat area.
- *Special woodland feeding habitat*
  - This ecological function is associated with large stands of mast producing flora (either soft mast- i.e. raspberry-strawberry patches or hard mast- beech, oak trees), which does not occur within the Study Lands or was evident within the broader adjacent review lands.
- *Osprey & Specialised Raptor nesting habitat*
  - No observations or historical documentation of Osprey nesting have been made within these Study Lands, or noted in any reviewed Provincial records that cover the surrounding landscape. Habitat, existing land use activity and vegetation community types are not conducive to support Osprey or Specialized Raptor nesting activity.
- *Turtle nesting habitat*
  - No turtle species were observed within the subject Study Lands. Given the landscape terrain and land uses, no functional habitat for turtle nesting was identifiable.
- *Special moose habitats*
  - Not applicable within Grey County

➤ *Mink and Otter feeding/denning sites; Marten and Fisher denning sites*

- No suitable habitat occurs within the Study Lands for River Otter
- No Mink or suitable habitats that could support mink denning activity were observed with the Study Lands or identifiable within the adjacent review lands.
- Marten are not applicable in Grey County
- Fisher habitat is considered to be 'incidental' within Grey County, as per Owen Sound MNR wildlife files. No suitable habitats that could support Fisher denning activity were observed with the Study Lands or identifiable within the adjacent review lands

➤ *Areas of high diversity*

- The Study Lands have seen historical disturbances, and are immediately adjacent to residential dwellings with existing and active daily human recreational use activity. The surrounding 1km landscape is primarily an urban environment or agricultural fields. This landscape does not exhibit a high level of diversity; as such no significant habitat diversity or linkages to surrounding natural environment features were identifiable.
- No microhabitats have been identified on site or within the adjacent review lands.

➤ *Cliffs and caves*

- No geological features of this type are identifiable on the Study Lands-Development Lands. Though some exposed bedrock vertical faces were present, these were under 1m in height and not considered to be 'cliff faces'.

In summary for this sub-component section 2.6.2 no features or ecological functions for the subject Study Lands or adjacent review lands, has been identified to support rare vegetation or specialized habitat for wildlife.

### 2.6.3 Habitats of Species of Conservation Concern

The Significant Wildlife Habitat Technical Guide (MNR 2000) provides a guideline for assessment analysis to this sub-component, listed below. In addition it is noted, as required under the PPS, species that have been designated Threatened or Endangered by the OMNR and are protected in regulation are not included within the context of this sub-component.

Species that can be considered for conservation concern include:

- *Species identified as nationally endangered or threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) which are not protected in regulation under Ontario's Endangered Species Act*
  - None identified within the subject Study Lands

- *Species identified as provincially vulnerable based on lists of Vulnerable, Threatened, Endangered, Extirpated or Extinct Species of Ontario that are updated periodically by the OMNR*
  - None identified within the subject Study Lands
- *Species that are listed as rare in Ontario based on records kept by the Natural Heritage Information Center in Peterborough (S1 to S3 ranking)*
  - None identified within the subject Study Lands
- *Species that have a high percentage of their global population in Ontario and are rare or uncommon in the planning area*
  - None identified within the subject Study Lands
- *Species that are rare within the planning area, even though they may not be provincially rare (i.e. Locally Rare or Priority Conservation Species)*
  - One species, Carex pallescens (Pale Sedge) identified within the subject Study Lands, see Appendix II for listing and Figure No. 10 for colony location mapping. X
- *Species that are subjects of recovery program*
  - None identified within the subject Study Lands
- *Species considered important to the municipality, based on recommendations from the Conservation Advisory Committee.*
  - None identified within the subject Study Lands

In summary for this sub-component section 2.6.3, one locally rare (species of conservation concern) flora species, Pale Sedge (Carex pallescens) has been identified through EIS investigation within the Study Lands.

#### **2.6.4 Wildlife Movement Corridors**

No active or definable game trails for ungulate movement corridors were noted during the 2009 EIS field investigations for the Study Lands. Though through field investigations and air photo review, the hedgerow habitat of vegetation community No. 3 which occurs immediately west of the golf driving range (northwest corner of Study Lands) does provide a vegetated linkage corridor between the two-forested communities of No. 2 and 4. This treed linkage potentially functions as a minor terrestrial/ wildlife corridor between the two larger forested tracts, one being a significant woodland.

In summary for Significant Wildlife Habitat section 2.6 analysis, it has been demonstrated that the subject Study Lands and adjacent review lands support habitat for a Locally Rare Flora species, and support habitat for a minor wildlife linkage corridor. X

The Natural Heritage Provincial Policy Statement 2.1.4 (d) regarding Significant Wildlife Habitat states:

*Development and site alteration shall not be permitted in significant wildlife habitat unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

The Natural Heritage Provincial Policy Statement 2.1.6 regarding the adjacent lands for significant wildlife habitat states:

*Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

With Significant Wildlife habitat identified within the Study Lands, further development impact assessment is required and provided under reporting section 4.4 and 4.5. ✕

## **2.7 Fish Habitat**

Within the Study Lands, no stream course or natural surface water features can be identified as reflected on Figure number 2 (air photography), Figure number 3 (Topographical mapping) or Figure number 4 (Ontario Base mapping).

The Provincial Natural Heritage Policy Statement (PPS) section 2.1.5 states:

*Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.*

With no Fish Habitat identified within the Study Lands this proposed development activity is in compliance with the PPS section 2.1.5 and the Federal Fisheries Act ✕

The Provincial Natural Heritage Provincial Policy 2.1.6 regarding the adjacent lands for fish habitat states:

*Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.3, 2.1.4 and 2.1.5 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.*

All report Figures show two unnamed tributary branches flowing west to east across the Golf Course lands and within the development 'adjacent review lands'. The preliminary site investigation noted observations of numerous fish species within each tributary channel as such further development impact assessment is required and provided under reporting section 4.6 to address the PPS 2.1.6 and similar policies of the Grey County Official Plan section 2.8.5.5, and Municipality of Meaford Official Plan section B3.1.5.6.



### 3 Summary of Natural Heritage Features

X

From the seven provincial Natural Heritage features assessed, four have been identified to occur within the subject Study Lands or within the 120m adjacent review lands:

#### 3.1 Endangered Species: Butternut

- Four trees identified within the Study Lands plus three trees within the adjacent review lands.

#### 3.2 Significant Woodlands

- Vegetation community number 4, occurring within the northerly adjacent review lands

#### 3.3 Significant Wildlife Habitat: Two sub-component

- Locally Rare Flora: One colony of Pale Sedge (*Carex pallescens*)
- Wildlife Corridor: One minor vegetation linkage corridor noted

#### 3.4 Fish Habitat

- Within the two tributary branches adjacent to the development lands

Further development impact assessment and recommended mitigative measures to address these identified Natural Heritage features and/or ecological functions are provided within reporting section 4.

## 4 Development Impact Assessment

### 4.1 Development Description

CHANGED

The proposed Hilton Head Heights residential development concept plan is represented by two large parcels of land contained within the Meaford Golf Course on Lot 17, Concession VI within the Town of Meaford. At this present time, the applicant is proceeding with the 'South Parcel' only, see Gamsby and Mannerow Site Plan concept Appendix VII. This EIS reporting covers both development parcels, however depending upon the timeframe and concept design for the 'North Parcel' development, an EIS supplemental report may be required for the north parcel at that time.

The northern development parcel abuts the northern property line and is primarily contained within the existing Golf course driving range. The southerly edge is within a fairway area and the eastern parcel area is already partially developed with a parking lot, clubhouse, support building and road access along the east boundary.

The second or southern parcel occurs within a golf course fairway and putting green area, occurring along a large flat top ridge with a stream course flowing along both the north and south ridge toe area. The parcel area also has an existing gated road access point along the east boundary to the fronting municipal road.

Residential dwellings would be fully serviced through the Town of Meaford for sanitary and water. Presently both development parcel sites have several disturbances from current land use activity through native vegetation clearing, filling, watercourse channel realignment and intensive recreational activity use, all of which have historically altered the natural landscape and on-site natural ecology functions. Remaining lands supporting forest cover or hedgerow habitat also display site disturbance from past land use activities (agriculture) and adjacent human recreational and residential development activities.

At this the applicant is only proceeding with the south parcel development, for 26 detached residential dwellings within a current 'golf course fairway and green' area. This south parcel has an existing entrance and lane, which shall see some minor upgrading only to accommodate the new residential access road.

### 4.2 Endangered Species: Butternut

#### 4.2.1 Characterization

Within the northern development parcel, four Butternut Trees have been identified with site location mapping provided on Figure No. 10. No Butternut Trees were identified within the southern development parcel.

In addition to these four Butternut, one Butternut was identified within the adjacent review lands between the two development parcels (within the applicants land holdings) and two Butternut Trees were also identified north of the northern development parcel, within the adjacent review lands but located on private property (no access).

A full Butternut Tree health assessment to Provincial standards has been provided within Appendix VI, for the 5 accessible Butternut Trees. Butternut numbers 1, 2, 3 and 5 as shown on site location mapping of Figure No. 10, are retainable to Provincial health assessment standards. Butternut number 4 had extensive canker symptoms and almost dead, as such it did not meet Provincial health standards for retention.

The two-Butternut trees number 6 and 7 located off-site, within the Significant Woodland north of the northern property line (as shown on Figure No. 10 site location mapping) were estimated to be in good health with little visible sign of canker infestation and probably retainable. As these two Butternut trees were on separate private lands, a detailed health assessment to provincial standards was not undertaken.

#### 4.2.2 Impact Assessment

Butternut tree numbers 1, 2 and 3 are located within the western edge of the northern development parcel. The Province of Ontario recommends a 25m setback from retainable Butternut. A request was submitted to the Ministry of Natural Resources, Midhurst District for a reduced development setback to these Butternut saplings based on current landuse activity, size of trees and development proposal. A copy of the MNR response comment is included within Appendix VI, which denied the reduced setback. As such, Figure number 11 delineates the required provincial 25m-setback zone for 'no development' to the noted 6 retainable Butternut trees within this Study area.

Individual Lot delineation for back yard or side yard calculations could be within this setback area provided that no development activity occurs within this setback area, as no site alterations differing from the current activity of golf course grass cutting would be undertaken (consistent with residential dwelling lawn cutting).

In summary for Endangered Species, through this impact assessment, it has been demonstrated that this development proposal is in compliance to the PPS section 2.1.3 (a) and 2.1.6 and similar environmental policies of the Grey County Official Plan section 2.8.5.2 and Municipality of Meaford Official Plan.

### 4.3 Significant Woodlands

#### 4.3.1 Characterization

Figure No. 6, sourced from the Grey County Official Plan update mapping, has delineated the woodlands north of the subject property as Significant. The EIS vegetation community mapping provided on Figure No. 9 has identified this woodland stand as community number 4. A description to Provincial ecological standards has been provided within section 2.6.2.1 for this community.

Though Ontario Base Mapping shows a tree line just south of the north boundary of Lot 17, the actual significant woodland edge is located 4m north to this north property line, as a cleared agricultural laneway runs parallel to this fence line along the south boundary of Lot 18, see site photo No. 6. This 4m wide agricultural lane differentiates the woodland edge from the property

Lot line 17/18 which has a single row of trees & shrubs growing along the fence line, then the cleared lands of the golf course driving range abutting to the south.

#### 4.3.2 Impact Assessment

Field assessment of the average mature Sugar Maple crowns along this significant woodland edge noted an outer crown limit extending out 4m from the main stem, or to the outer (south) edge of the noted agricultural laneway. Accepted provincial buffer zones to maintain woodland edge tree health range from 1m beyond the tree canopy drip line to 2X the main canopy crown diameter. Specific to this site, with the noted cleared laneway and vegetated fence line existing between the significant woodland and the development lands, an 8m setback for the significant woodland edge (which represents a 4m setback from the Lot 17 north property line) should be maintained adjacent to this woodland feature. This 8m-setback width will provide adequate separation distance to the treed fence line vegetation that aids in buffering the significant woodland environment within Lot 18 and is consistent with accepted provincial guidelines.

In summary for Significant Woodlands, through this impact assessment, it has been demonstrated that this development proposal is in compliance to the PPS section 2.1.4 (b) and 2.1.6 and similar environmental policies of the Grey County Official Plan section 2.8.5.1 and Municipality of Meaford Official Plan section B3.1.5.4.

#### 4.4 Significant Wildlife Habitat: Flora Species of Conservation Concern

##### 4.4.1 Characterization

One colony of Pale Sedge (*Carex pallescens*) has been identified through EIS field investigations with location mapping provided on Figure No. 10. The colony size is approximately 1m square supporting 12 to 15 plants occurring within vegetation community number 6 or the watercourse natural riparian zone vegetation. This locally rare plant species colony occurs outside of the two development parcels, at its closest point it has a 25m-separation distance to the development lands.

This sedge species prefers a moist soil moisture regime with open/no canopy cover to semi-open canopy cover having full sun. Provincial ranking for this sedge species is S5 or considered to be 'very common and demonstrably secure in Ontario' and a Global ranking of G5 also considered to be very common. Presently this sedge species is considered rare within Grey County (excluding the former Keppel and Sarawak Townships), however it has been requested of the Bruce-Grey Plant Committee to review its current local status given the growing numbers of occurrence recorded within Grey County.

##### 4.4.2 Flora and Floristic Quality

Section 2.6.2.1 provides a description of vegetation communities found within the Study Lands and adjacent review lands. The following flora assessment provides more detail regarding the floristic surveys completed within the Study Lands and sensitivity to development, for an impact assessment on the local flora.

A total of 110 vascular plant species were recorded within the Study Lands, a full listing of species identification, significances status and Values to the 'Floristic Quality Assessment for Southern Ontario' has been provided within Appendix IV.

Of the total flora number, 61 species were considered native and 49 are non-native (introduced), which represents a 45 % non-native flora composition. Within Southern Ontario, the average non-native composition ranges between 20 to 30%, as noted by M. Oldham of OMNR Natural Heritage Information Center. This non-native percentage is well above the typical provincial range, reflecting a high botanical disturbance to the native flora community.

Floristic Quality Assessment values for the "coefficient of conservatism" scoring ranks are based on a plants degree of fidelity to a range of synecological parameters. An analysis of the provincial scorings for native species only, identified within the accessible (Lot 17) Study Lands is provided in Table 2 below.

Table No. 2: Native Flora Coefficient of Conservatism breakdown

Ranking	Description	Study Lands
0 to 3	<i>Plants found in a wide variety of plant communities including disturbed sites</i>	26 or 43 %
4 to 6	<i>Plants typically associated with a specific plant community, but tolerate moderate disturbances</i>	32 or 52 %
7 to 8	<i>Plants associated with a plant community in an advanced successional stage that has undergone minor disturbance</i>	3 or 5 %
9 to 10	<i>Those plants with high degrees of fidelity to a narrow range of synecological parameters</i>	0 or 0%

The above table demonstrates that 100 % of the accessible Study Lands native plant species occupy a wide range of habitat types, which tolerate varying degrees of disturbances and they are not dependent upon highly specialized habitats or generally sensitive to development impacts.

#### 4.4.3 Impact Assessment

The identified locally rare Pale Sedge species has a coefficient of conservation scoring of 5, which through Table No. 2, demonstrates this species can acclimate and tolerant to minor site disturbances or alterations and can be found in a range of suitable habitat conditions. Since this species is a Locally Rare, the land use planning responsibility is within the County and Municipal Official Plan control. Through this species analysis and habitat requirement assessment, it has been demonstrated that Pale Sedge is tolerant some site alterations. A buffer/setback to the adjacent watercourse has been recommended within section 4.6.2, as such no adverse impact from surface flow run-off alterations etc related to the development proposal are anticipated. Given the colony separation distance, a buffer zone established along the watercourse feature and this plant species showing tolerance to minor site alterations (demonstrated with the current golf course activity), no further setbacks or development constrains are required to maintain no negative impacts to this plant colony.

## 4.5 Significant Wildlife Habitat: Corridor Linkage

### 4.5.1 Characterization

Within the northern development parcel, a narrow vegetated (trees and shrubs) hedgerow occurs along the western boundary, also described as the 'outer limit edge' of the golf course driving range. This hedgerow has been mapped as part of vegetation community No. 3 on Figure No. 9, and a corridor linkage on Figure No. 10. This corridor area provides cover habitat for fauna and terrestrial linkage functions between the significant woodland habitat of vegetation community No. 4 (north edge of the north development parcel), to that of the north watercourse tributary branch and riparian vegetation communities No. 2 and 6 occurring along the south perimeter of the north development parcel.

### 4.5.2 Impact Assessment

Though this corridor area provides only minor ecological functions and is of local significance due to its size (5m in width x 60m long) and surrounding landuse disturbances, through surrounding air photo interpretation it has been determined that this corridor area is the only naturally vegetated linkage remaining between these noted natural heritage features. This corridor also supports the three retainable- endangered Butternut saplings as noted in section 4.2. X

As such, it is recommended that this corridor be maintained in its natural state and to continue providing ecological functions for both flora germination and fauna movement. Specific to this corridor, given its size, supporting low tree density and tree species/sizes occurring, it is recommended that a 5m buffer zone from site development be established to maintain tree health and no negative impacts to the corridor functions.

In summary for Significant Wildlife Habitat through this impact assessment, it has been demonstrated that this development proposal is in compliance to the PPS section 2.1.4 (b) and 2.1.6 and similar environmental policies of the Grey County Official Plan section 2.8.5.1 and Municipality of Meaford Official Plan section B3.1.5.4. X

## 4.6 Fish Habitat

### 4.6.1 Characterization

A literature review of MNR-Owen Sound office stream survey files was undertaken for these two tributary branches, with no historical data available.

To aid in potential development related impact assessment, two approaches for the determination of the aquatic sensitivity were completed; a qualitative fish community assessment and a thermal categorization assessment.

Random dip-net sampling to determine the fish community within these two tributary branches, adjacent to the noted development parcels was undertaken on July 28, 2009. Fish samples



captured and returned alive, were all of the Cyprinidae (minnow) family, being: Hornyhead Chub (*Nocomis biguttatus*), Northern Redbelly Dace (*Chrosomus eos*), Creek Chub (*Semotilus atromaculatus*) and Common Shiner (*Notropis cornutus*). The above noted fish species are commonly associated with warmwater environments.

Additionally on July 28, 2009, water temperature recordings for both tributaries were taken between 3:50 pm to 4:00 pm. At this site, the air temperature was recorded at 26.0 degrees C and water temperatures were consistent at 20.0 degrees C. Based on the Fisheries and Oceans Canada publication "A Simple Method to Determine the Thermal Stability of Southern Ontario Trout Stream", this thermal condition is reflective of a 'warmwater' regime. X

In addition, both tributary branches have in-line ponds constructed with concrete barriers with no fish passage capacity, water taking and minimal riparian zone cover.

#### 4.6.2 Impact Assessment

As noted within this EIS reporting section 2.7, no development or site alterations from the land use alteration proposal have been proposed or will occur within the stream courses or within fish habitat, from the proposed South Parcel development concept.

Through the above assessment, both of the on-site tributary branches are considered to be supporting a warmwater thermal regime. Within the Grey County Official Plan, section 2.8.5 (5) relating to watercourse setbacks it states:

*No development shall be permitted within 30 metres of the banks of a cold water stream or 15 metres of a warm water stream...* ✓

Within the 2010 Provincial Natural Heritage Reference Manual, Table 11-3 for Fish Habitat it states for warmwater streams:

*Recommended minimum natural vegetated cover adjacent to fish habitat of 30m or 15m where it is demonstrated as satisfying policy 2.1.6.*

Specific to this site, given the past land use activity (golf course), extensive land clearing, in-line ponds constructed and development activity proposed (including full servicing), a 15m buffer zone is sufficient to maintain no negative impacts to Fish Habitat within these subject warmwater stream courses. This separation distance is consistent with the noted County Official Plan and Provincial recommended guidelines. X

For the South Parcel, the development concept design is on full municipal servicing. The Gamsby and Mannerow Stormwater Management Report has identified the provincial requirements for stormwater treatment system (grit and oil separator) from the development. No negative impacts are anticipated to the receiving on-site southern water course for water quality and quantity. The drainage outlet has been designed to provincial erosion control standards and by having a steep gradient profile, no fish upstream movement is anticipated. As such it is anticipated that no harmful or negative impacts to Fish Habitat will be incurred to the adjacent stream course from the proposed south parcel design concept. X

## 5 Mitigation

The following Natural Heritage mitigative measures should be implemented through Site Plan Control and/or Agency permits/approvals. These measures are recommended to maintain the ecological functioning role and natural heritage features that have been identified within the Study Lands and are in compliance with provincial and municipal environmental policies and guidelines. Development constraint setbacks as described below have been portrayed on Figure No. 11 for the delineation of non-developable lands within the noted Study Lands-two development parcels

- 82'
- 5.1 A 25m setback for no development around the Endangered Butternut Trees No. 1, 2, 3, 6 and 7
- 2677 ROWS
- 5.2 An 8m setback for no development from the delineated Significant woodland or also described as vegetation community No. 4.
- 5.3 A 5m setback for no development or site alterations from the identified corridor linkage at the west end of the northern development parcel.
- 50
- 5.4 A 15m setback for no development from the identified two watercourse branches, with the setback distance commencing at the stream course top-of bank or outer limit for the in-line ponds. Exemption to this setback (but requiring GSCA permitting) will be for the construction of stormwater management outlet channel along the south boundary of the development South Parcel to the adjacent southern watercourse.
- 5.5 During construction activity, sedimentation control measures shall be in place and maintained in an operational functioning manner along the necessary development land perimeter to prevent sediment from reaching any surface water features adjacent to the construction site. Said sediment control measures shall remain in place until such time that lands have been graded, stabilized and vegetated with grass.

Within the southern development parcel, an area of steep slope with the watercourse feature running along its toe has been identified on Figure No. 11. Development adjacent to this forested steep slope may require further engineering analysis to assess the site stability and recommended engineering development setback distance to insure no negative impact to the riparian zone or watercourse feature at this site.

## 6 Conclusions

This report has demonstrated that through mitigative measures, this proposed development activity will be in compliance with the Provincial Natural Heritage Policy Statement, the Grey County Official Plan for Natural Heritage Features and Environmental policies and the Municipality of Meaford Official Plan Natural Heritage Features and Environmental policies. With development full servicing provided and the recommended development setbacks, no measurable negative environmental effects are predicted to occur on the identified natural heritage features, or ecological functions within the Study Lands or its adjacent review lands.

All comments contained within this report pertain to available literature, reports, documents and existing site conditions for this study area. All natural feature locations are estimates based on current maps available, Ontario Base Mapping and air photography interpretation. The maps contained within this report should not be considered 'a legal survey' but are considered adequate for this planning application review process.

Respectfully Submitted

A handwritten signature in black ink, appearing to read 'John Morton', with a long horizontal flourish extending to the right.

---

John Morton, Aquatic and Wildlife Services

## 7 References

- A Checklist of Vascular Plants for Bruce and Grey Counties Ontario, 1997  
Joint publication of OMNR, OSFN, SFN
- County of Grey Official Plan, 2000 and 2009 update review
- Dobbyn, Jon (1994). Atlas of the Mammals of Ontario. Federation of Ontario Naturalists.
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- Lee, H.T., W.D. Bakowsky, J. Riley, J. Bowles, M. Puddister, P. Uhlig and S. McMurray  
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Application. Ontario Ministry of Natural Resources, South central Science Section,  
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OMNR, Peterborough. [http://nhic.mnr.gov.on.ca/nhic\\_cfm](http://nhic.mnr.gov.on.ca/nhic_cfm)
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- Ontario Ministry of Municipal Affairs and Housing, 2005. Provincial Policy Statement
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- Ontario Ministry of Natural Resources, 2010  
Committee on the Status of Species at Risk in Ontario (COSSARO)  
[www.mnr.gov.on.ca/mnr/speciesatrisk](http://www.mnr.gov.on.ca/mnr/speciesatrisk)
- Ontario Ministry of Natural Resources, Owen Sound District  
Wildlife, Wetlands, ANSI and Fisheries files
- The Atlas of Breeding Birds of Ontario, 2001-2005  
Bird Studies Canada, Environment Canada, OFO, OMNR

## 8 Figures

Figure No. 1.....	Site Location
Figure No. 2.....	EIS Study Lands, Ont. Base Mapping
Figure No. 3.....	Surrounding Features, Topographical Mapping
Figure No. 4.....	EIS Study Lands, Air Photo
Figure No. 5.....	Grey County O.P. Land use Designations
Figure No. 6.....	Grey County O.P. Appendix 'B' Constraint Mapping
Figure No. 7.....	Municipality of Meaford O.P. Land use Designations
Figure No. 8.....	Municipality of Meaford O.P. Environmental Constraints
Figure No. 9.....	E.L.C. Land Classification Vegetation Communities
Figure No. 10.....	Natural Heritage Significant Features Delineation
Figure No. 11.....	Natural Heritage Significant Features Setbacks

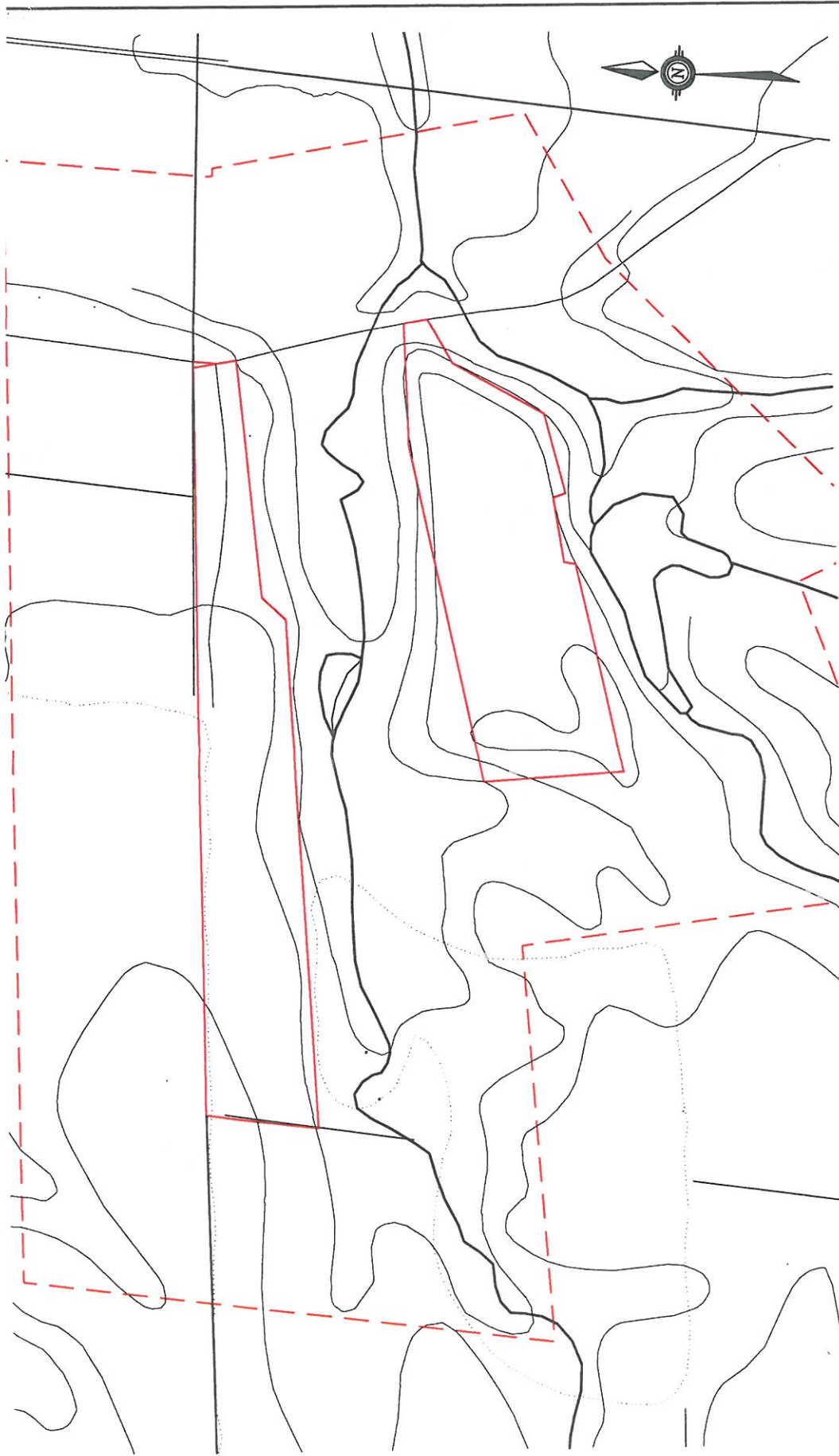


**Figure No. 1: Site Location**

- Source: Grey County web site





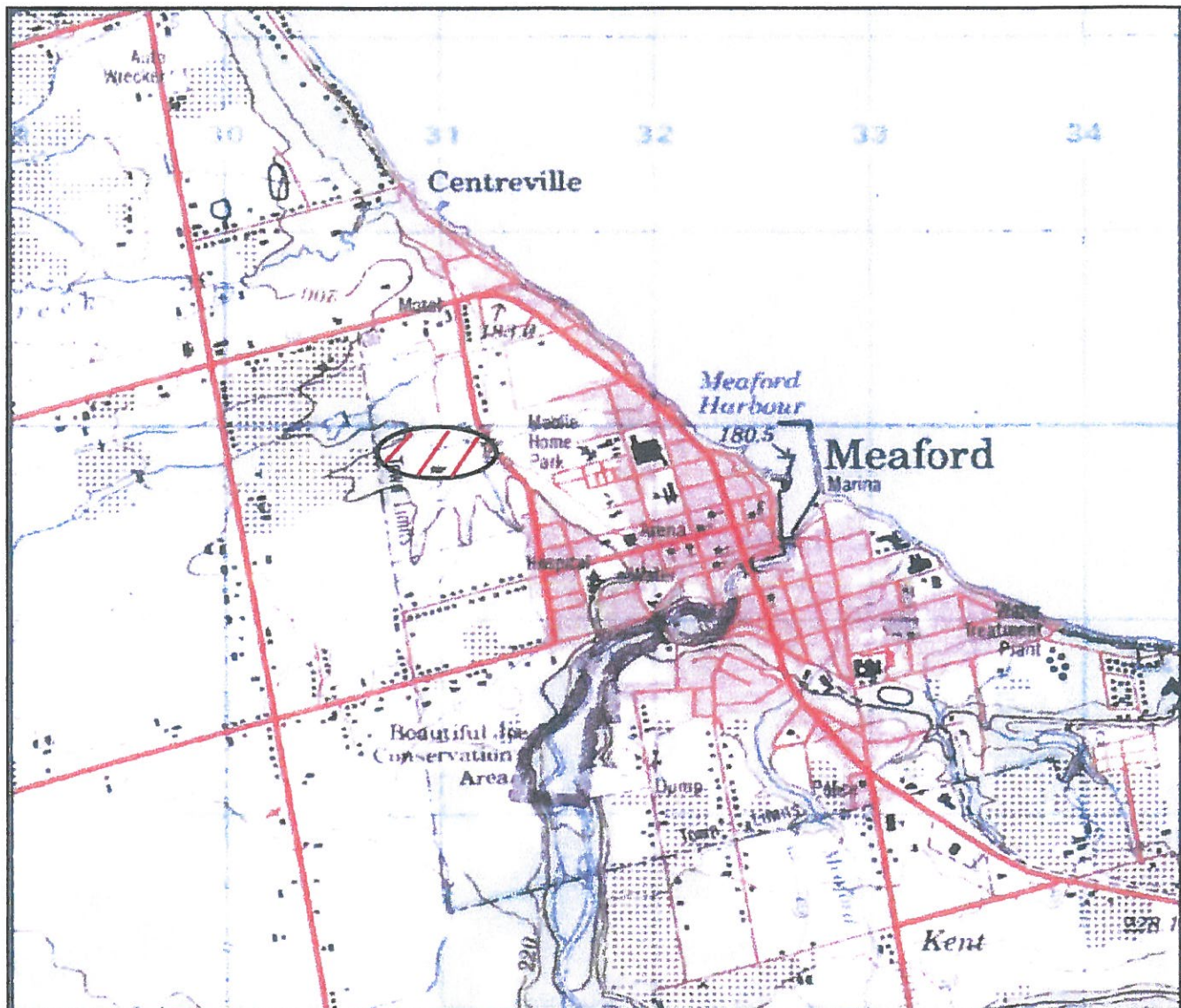


**FIGURE NO. 2: STUDY LANDS**  
**HILTON HEAD HEIGHTS: MEAFORD GOLF COURSE**  
**PART OF LOT 17, CONCESSION VI**  
**TOWN OF MEAFORD**  
**COUNTY OF GREY**

**SCALE:** 1:10000  
**SOURCE:** ONTARIO BASE MAP  
**AQUATIC AND WILDLIFE SERVICES**  
**AWS**  
 24009, R.R. #1, Chatham, ON, N7B 2A8  
 Phone: 519-777-3200, Fax: 519-777-3201, Email: info@aws.ca

**LEGEND:**  
 --- 120m ADJACENT LANDS  
 --- STUDY LANDS

**Figure No. 3: Surrounding Topographical Features**



**LEGEND**



Subject Site



Open Lands



Forested Lands



Stream & Surface Waters



Elevation Contour Lines



Roads

For Detailed Legend Features See Federal  
Topo. Series Mapping, Energy & Mines

**Project :** Hilton Head Heights

Town of Meaford

Municipality of Meaford

County of Grey

**Scale:**

1 : 30,000

**North**



**AWS**

**AQUATIC AND WILDLIFE SERVICES**  
Environmental Consulting & Resource Management

242090, R.R. # 1, Shallow Lake, Ontario, N0H 2K0



**Figure No. 4: Development / Study Lands, North & South Parcels**

- June 2006 air photography



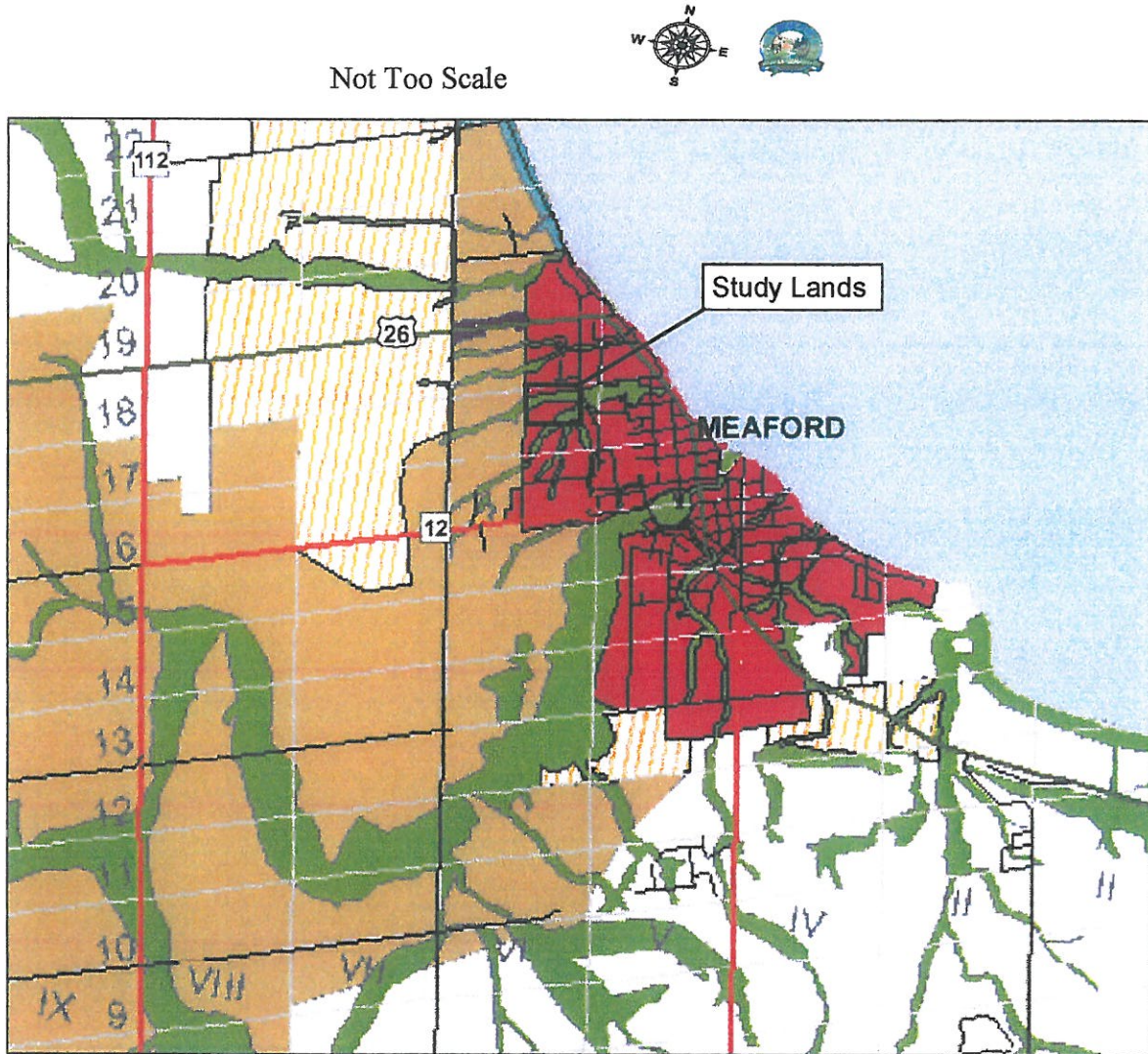
Air Photo Not Too Scale

Red outlined areas (two parcels) depict the proposed residential development or Study Lands within the existing Meaford Golf Course land (Golf Course Driving Range, Fairways, Greens, Parking Lot and Clubhouse)



**Figure No. 5: County Land Use Designation**

- Source: Grey County Official Plan, Schedule 'A'

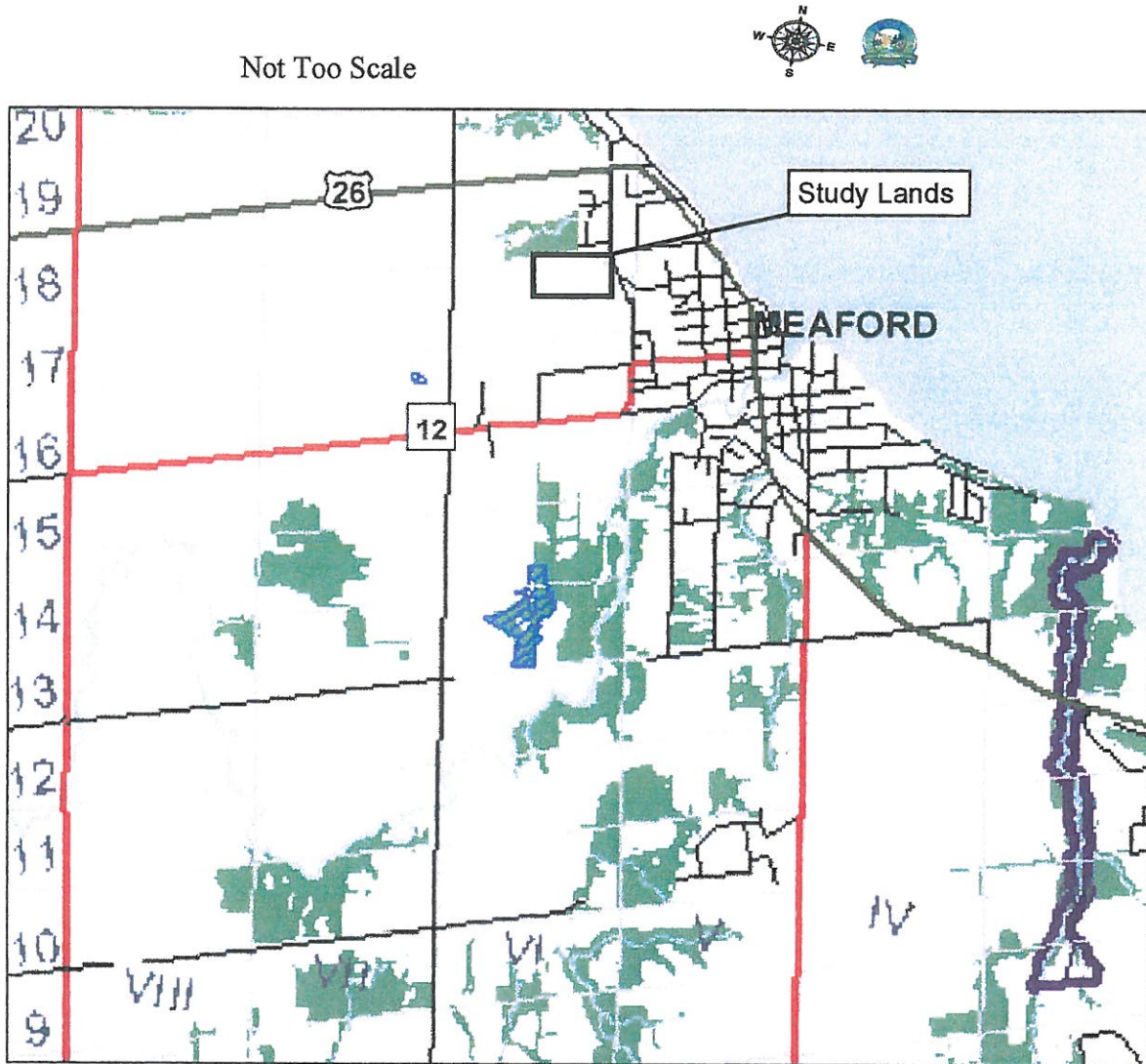


**LEGEND**

	Provincial Highway		Escarpment Recreation Area
	County Road		Recreational Resort Area
	Local Road		Hazard Lands
	Seasonal Road		Inland Lakes & Shoreline
	Niagara Escarpment Plan Boundary		Niagara Escarpment Plan Area
	Agricultural		Space Extensive Commercial
	Special Agriculture		Space Extensive Industrial
	Rural		Provincially Significant Wetlands
	Primary Settlement Area*		
	Secondary Settlement Area*		
	Tertiary Settlement Area*		

**Figure No. 6: County Environmental Constraints**

- Source: Grey County Official Plan, Appendix 'B' Map 1



**LEGEND**

- Provincial Highway
- County Road
- Local Road
- Seasonal Road
- Stream / River

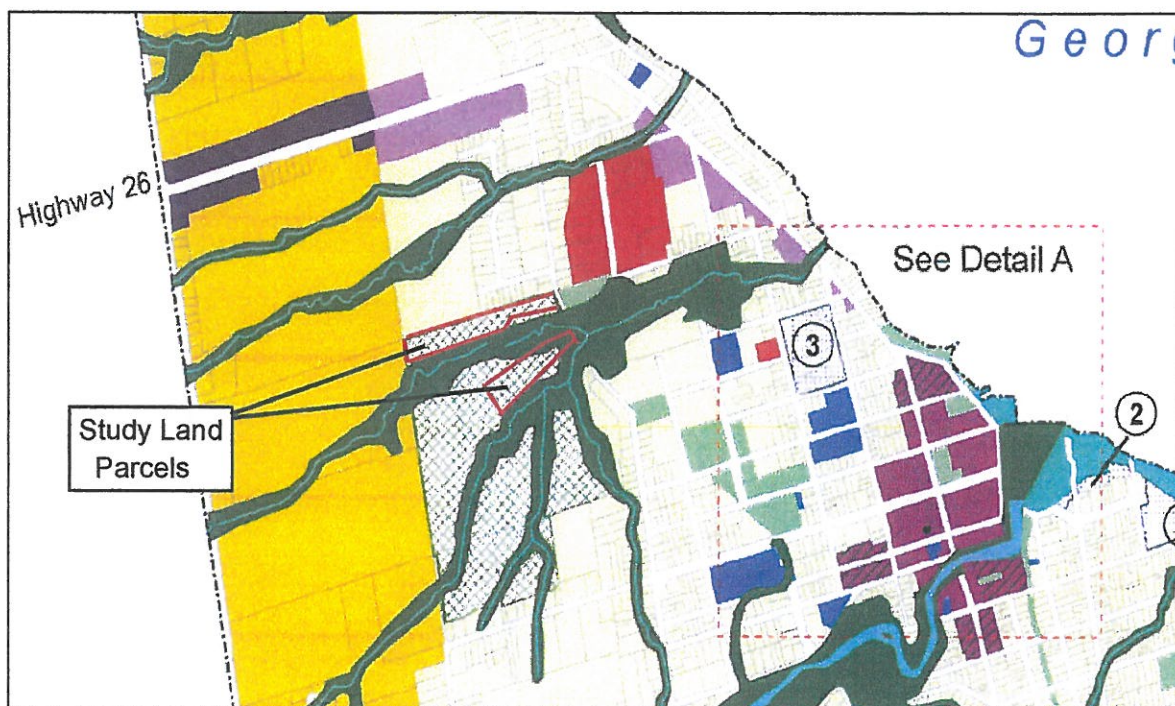
- Other Wetlands
- Lakes
- Earth & Life ANSI
- Earth ANSI
- Life ANSI
- Significant Woodlands



**Figure No. 7: Town of Meaford Land Use Designation**

- Source: Municipality of Meaford Official Plan, Schedule A-1

Not Too Scale



**Legend**

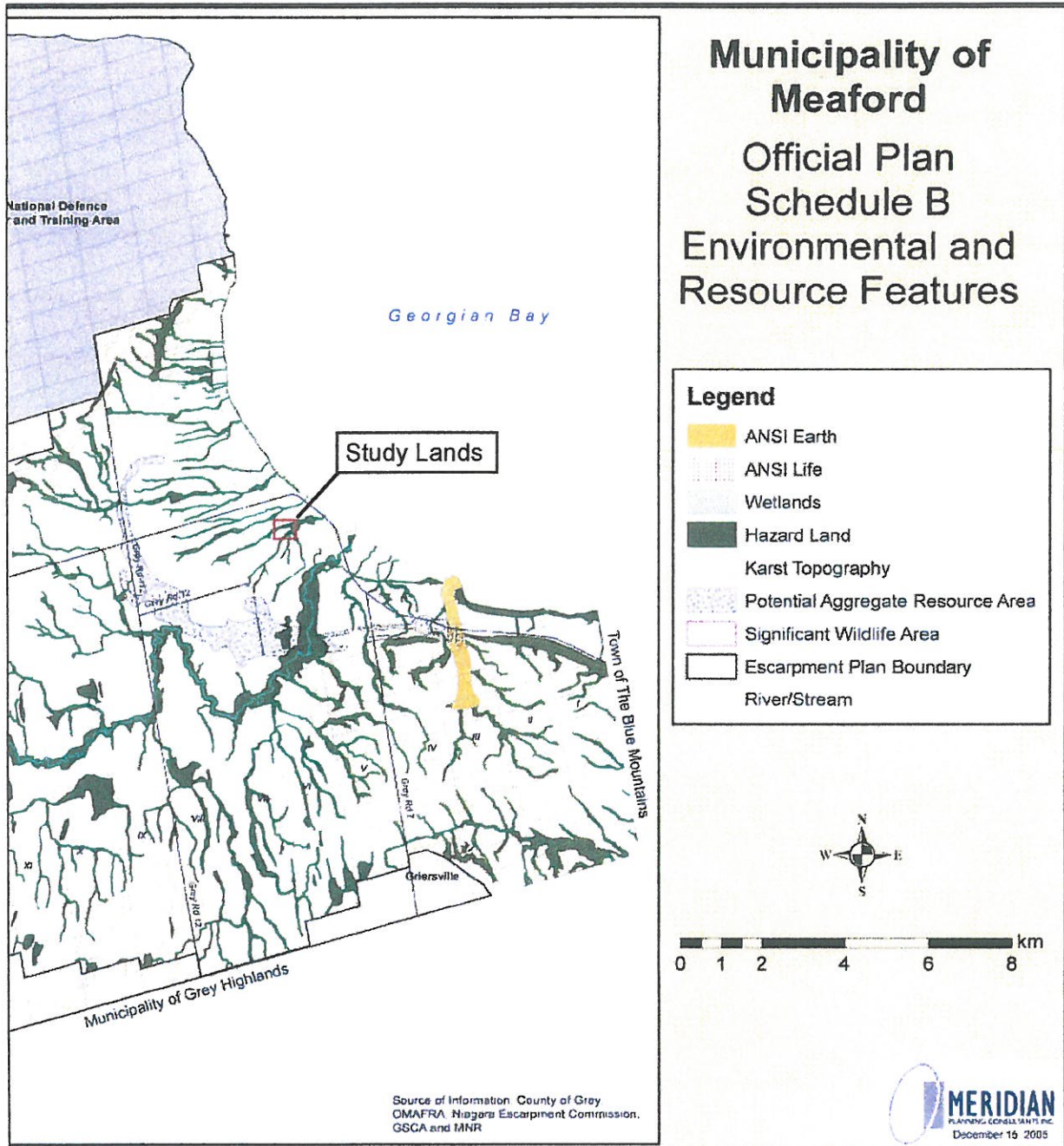
Urban Living Area	1 Urban Special Policy Area
Shoreline	Rural
Urban Employment Area	Agricultural
Urban Highway Commercial	Specialty Agricultural
Rural Highway Commercial	Environmental Protection
Downtown Core Commercial	Waste Disposal Site - Closed
Downtown Core Transition	Subject to Official Plan Section
Institutional	Schedule Boundary
Harbour Open Space	River/Stream
Major Open Space	
Major Recreation	
Future Urban Expansion Area	





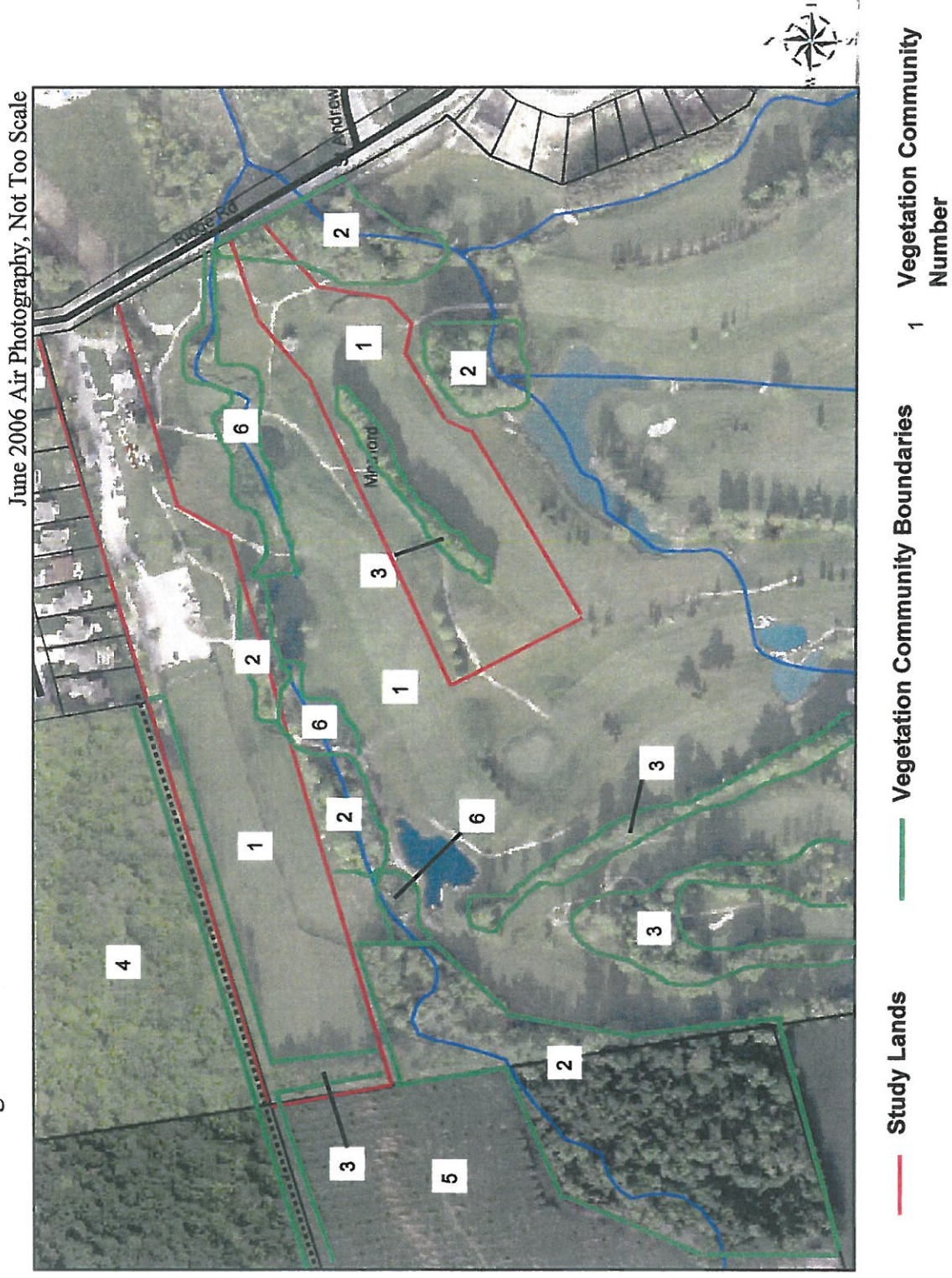
**Figure No. 8: Municipality of Meaford Environmental Constraints**

- Source: Municipality of Meaford Official Plan, Schedule B



**Figure No. 9: Vegetation Communities**

- Ecological Land Classification for Southern Ontario



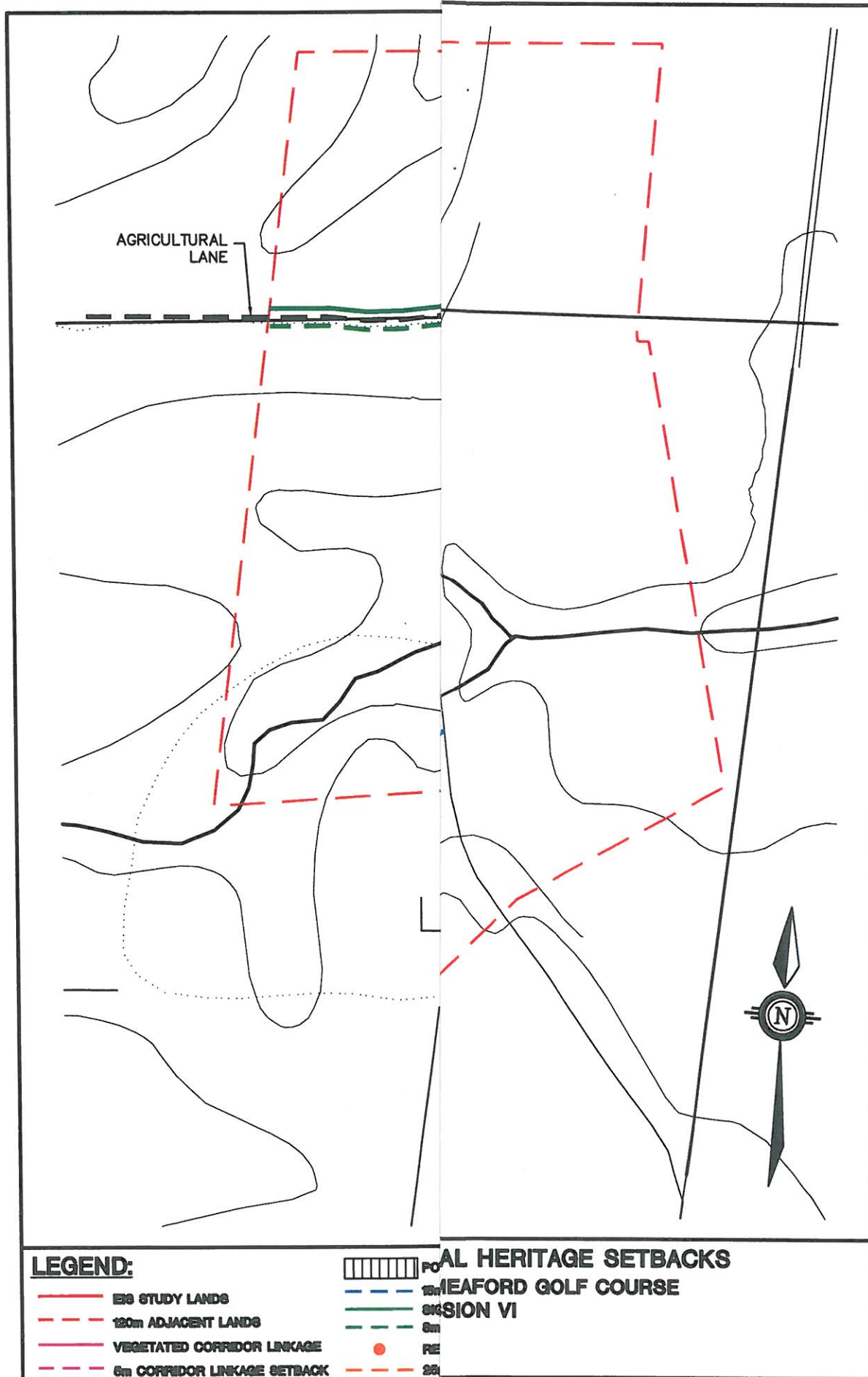
Hilton Head Development: EIS February 2011  
Municipality of Meaford, Town of Meaford Golf Course



Figure No. 10: Natural Heritage Significant Features

June 2006 Air Photography, Not Too Scale





## **APPENDIX I**

### **➤ Site Photos**





Photo No.17: Butternut Tree No. 7, sapling within Lot 18 along north edge of agricultural lane

Photo No.18: South watercourse branch with area of forested steep slope







Photo No. 1: Central area of Northern development parcel: looking west over Driving Range

Photo No. 2: Central area of Northern development parcel: looking east to parking lot and club house







Photo No. 3: East end of Southern development parcel: looking west over golf course fairway

Photo No. 4: South boundary of Southern development parcel: looking west along in-line pond/watercourse







Photo No. 5: Existing lane entrance off Ridge Road to Southern development parcel

Photo No. 6: Agricultural lane within Lot 18, looking west, Lot 17 north fence line on left, Significant Woodland on the right







Photo No. 7: Vegetation community No. 2, immature stands of mixed hardwoods

Photo No. 8: Vegetation community No. 4, Significant Woodlands on Lot 18







Photo No. 9: Vegetation community No. 5, old Apple orchard being cut out

Photo No.10: Vegetation community No.6, along north tributary watercourse branch







Photo No. 11: North tributary watercourse branch, showing water control structure and in-line pond

Photo No.12: South tributary watercourse branch, showing water control structure and in-line pond







Photo No. 13: Butternut saplings No. 1 to 3 (left to right) at west end of the Golf course driving range

Photo No.14: Butternut Tree No. 4, numerous dead branches and canker wounds, a non-retainable tree







Photo No. 15: Butternut tree No. 5 along north watercourse, healthy condition and retainable

Photo No.16: Butternut Tree No. 6 within Lot 18, no health assessment completed, appears to be retainable







Photo No.19: North watercourse, area of Pale Sedge colony with uncut golf course grasses

Photo No.20: East end of Northern development parcel, showing existing development and access



## **APPENDIX II**

- Natural Heritage Information Centre web site listing of Historical Significant Flora and Fauna within the overlapping two UTM 1km square grids



# Hilton Head Heights: Historical Significant Listings

## Legend

Railways (1:20k)

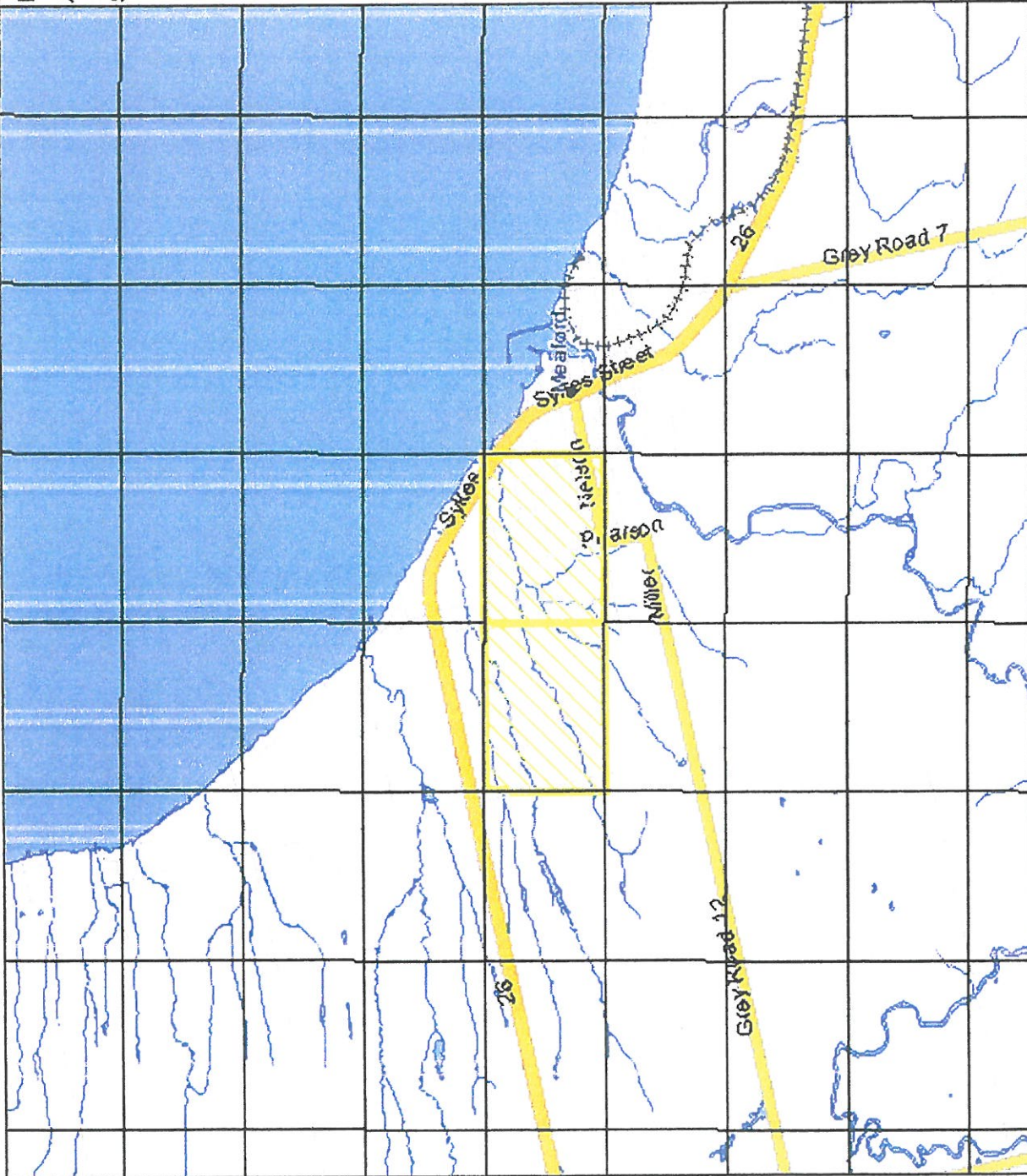


Settlements



Scale: 1:51,616

DO NOT USE FOR NAVIGATION



## Historical Records for Significant Flora & Fauna: Hilton Head Development, Meaford Golf Course

Listings from the MNR-Natural Heritage Information Center for the two 1km square UTM grids which overlap the subject Study Lands. As such the below species may not have been specifically observed/recorded within the subject Study Lands.

# of EOs	Unique Identifier (Element ID)	Spatial boundary feature	Scientific Name	English Name	G-rank	S-rank	Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status	Species At Risk in Ontario (SARO) Status	Canada General Status	Ontario General Status
1	180671	17NK33_19	Myotis septentrionalis	Northern Long-eared Bat	G4	S3?			Sensitive	Sensitive
1	180671	17NK33_09	Myotis septentrionalis	Northern Long-eared Bat	G4	S3?			Sensitive	Sensitive
1	180770	17NK33_09	Lampropeltis triangulum	Milksnake	G5	S3	SC	SC	Sensitive	Sensitive
1	180770	17NK33_19	Lampropeltis triangulum	Milksnake	G5	S3	SC	SC	Sensitive	Sensitive
1	182542	17NK33_09	Thamnophis sauritus	Eastern Ribbonsnake	G5	S3	SC	SC	Sensitive	Sensitive
1	182542	17NK33_19	Thamnophis sauritus	Eastern Ribbonsnake	G5	S3	SC	SC	Sensitive	Sensitive
1	180785	17NK33_09	Sistrurus catenatus	Massasauga	G3G4	S3	THR	THR	At risk	At Risk
1	180785	17NK33_19	Sistrurus catenatus	Massasauga	G3G4	S3	THR	THR	At risk	At Risk
1	151086	17NK33_09	Monarda didyma	Scarlet Beebalm	G5	S3				
1	151086	17NK33_19	Monarda didyma	Scarlet Beebalm	G5	S3				



### **APPENDIX III**

#### **➤ Fauna Survey Listing & Status**

## Fauna Listing & Status for Hilton Head Heights

Meaford Golf Course, Town of Meaford, Grey County

	Latin Name	Common Name	Global Rank	Prov Rank	National Status	Prov Status	Regional Status
<b>Mammals</b>	<i>Tamiasciurus hudsonicus</i>	Red Squirrel	G5	S5	Secure	Secure	Secure
	<i>Procyon lotor</i>	Raccoon	G5	S5	Secure	Secure	Secure
	<i>Sylvilagus floridanus</i>	Eastern Cottontail	G5	S5	Secure	Secure	Secure
	<i>Tamias striatus</i>	Eastern Chipmunk	G5	S5	Secure	Secure	Secure
	<i>Sciurus carolinensis</i>	Eastern Gray Squirrel	G5	S5	Secure	Secure	Secure
	<i>Lepus americanus</i>	Snowshoe Hare	G5	S5	Secure	Secure	Secure
	<i>Mephitis mephitis</i>	Striped Skunk	G5	S5	Secure	Secure	Secure
<b>Reptiles</b>	<i>Thamnophis sirtalis</i>	Common Garter Snake	G5	S5	Secure	Secure	Secure
<b>Amphibians</b>	<i>Rana clamitans</i>	Green Frog	G5	S5	Secure	Secure	Secure
	<i>Bufo americanus</i>	American Toad	G5	S5	Secure	Secure	Secure
	<i>Rana pipiens</i>	Northern Leopard Frog	G5	S5	Secure	Secure	Secure
	<i>Plethodon cinereus</i>	Red-backed Salamander	G5	S5	Secure	Secure	Secure
<b>Fish</b>	<i>Culaea inconstans</i>	Brook Stickleback	G5	S5	Secure	Secure	Secure
	<i>Semotilus atromaculatus</i>	Creek Chub	G5	S5	Secure	Secure	Secure
	<i>Rhinichthys cataractae</i>	Longnose Dace	G5	S5	Secure	Secure	Secure
	<i>Luxilus cornutus</i>	Common Shiner	G5	S5	Secure	Secure	Secure
	<i>Glaucocheilus lygdamus</i>	Silvery Blue	G5	S5	Secure	Secure	Secure
<b>Butterflies</b>	<i>Papilio glaucus</i>	Eastern Tiger Swallowtail	G5	S5	Secure	Secure	Secure
	<i>Limnitis arthemis arthemis</i>	White Admiral	G5	S5	Secure	Secure	Secure
	<i>Euphyes vestris</i>	Dun Skipper	G5	S5	Secure	Secure	Secure
	<i>Anax junius</i>	Common Green Darter	G5	S5	Secure	Secure	Secure
<b>Dragonflies &amp; Damselflies</b>	<i>Libellula pulchella</i>	Twelve-spotted Skimmer	G5	S5	Secure	Secure	Secure
	<i>Lestes dryas</i>	Emerald Spreadwing	G5	S5	Secure	Secure	Secure

# Birds

Latin Name	Common Name	Global Rank	Prov Rank	National Status	Prov Status	Regional Status	Breeding Codes
Agelaius phoeniceus	Red-winged Blackbird	G5	S5	Secure	Secure	Secure	Ob
Anas platyrhynchos	Mallard	G5	S5	Secure	Secure	Secure	Ob
Carduelis tristis	American Goldfinch	G5	S5	Secure	Secure	Secure	Ob
Cardinalis cardinalis	Northern Cardinal	G5	S4	Secure	Secure	Secure	Ob
Colaptes auratus	Northern Flicker	G5	S5	Secure	Secure	Secure	Ob
Cyanocitta cristata	Blue Jay	G5	S5	Secure	Secure	Secure	Ob
Dendroica petechia	Yellow Warbler	G5	S5	Secure	Secure	Secure	Ob
Geothlypis trichas	Common Yellowthroat	G5	S5	Secure	Secure	Secure	Ob
Picoides pubescens	Downy Woodpecker	G5	S5	Secure	Secure	Secure	Ob
Picoides villosus	Hairy Woodpecker	G5	S5	Secure	Secure	Secure	Ob
Poecile atricapillus	Black-capped Chickadee	G5	S5	Secure	Secure	Secure	Ob
Quiscalus quiscula	Common Grackle	G5	S5	Secure	Secure	Secure	Ob
Sayornis phoebe	Eastern Phoebe	G5	S5	Secure	Secure	Secure	Pr
Sitta carolinensis	White-Breasted Nuthatch	G5	S5	Secure	Secure	Secure	Ob
Sphyrapicus varius	Yellow-bellied Sapsucker	G5	S5	Secure	Secure	Secure	Ob
Spizella passerina	Chipping Sparrow	G5	S5	Secure	Secure	Secure	Po
Sturnus vulgaris	European Starling	G5	SNA	Secure	Secure	Secure	Po
Tachycineta bicolor	Tree Swallow	G5	S5	Secure	Secure	Secure	Ob
Turdus migratorius	American Robin	G5	S5	Secure	Secure	Secure	Po
Zenaidura macroura	Mourning Dove	G5	S5	Secure	Secure	Secure	Ob
Zonotrichia albicollis	White-Throated Sparrow	G5	S5	Secure	Secure	Secure	Po

Breeding Codes from Bird Studies Canada : Conf = Confirmed Ob = Observed Po = Possible Pr = Probable

Regional Status lists based on: Birds- Region No.9 (Grey) 'Atlas Breeding Birds of Ontario 2001-2005'  
Dragonflies & Damselflies (Grey) 'Regional Lists of Ontario Odonata'

Global and Provincial Rank: Based on current Ontario Natural Heritage Information Center listings

National Status based on: Species At Risk Act, COSEWIC 2010 Listings

Provincial Status based on: Endangered Species Act 2007, COSSARO Listings



## **APPENDIX IV**

### **➤ Flora Survey Listing & Floristic Quality Scoring**

# Flora Listing, Floristic Quality Scoring and Status for Hilton Head Heights Vascular Plants

Town of Meaford, Grey County

Two Species of Concern Identified: Butternut (Endangered) and Pale Sedge (Regionally Rare)

Latin Name	Common Name	Native or Intr.	Ontario Floristic Scoring			Significance			
			Coefficient of Conservation	Wetness Index	Global Rank	Prov Rank	National Status	Prov. Status	Reg. Status
<i>Acer saccharinum</i>	Silver Maple	N	5	-3	G5	S5	Secure	Secure	
<i>Acer saccharum</i>	Sugar Maple	N	4	3	G5	S5	Secure	Secure	
<i>Alliaria petiolata</i>	Garlic Mustard	I	4	3	G5	S5	Secure	Exotic	
<i>Arctium minus</i>	Burdock	I	*	5	GNR	SNA	Secure	Exotic	
<i>Arisaema triphyllum</i>	Jack-in-the-Pulpit	N	5	-2	G5	S5	Secure	Secure	
<i>Asclepias syriaca</i>	Common Milkweed	N	0	5	G5	S5	Secure	Secure	
<i>Asparagus officinalis</i>	Asparagus	I	*	3	GNR	SNA	Secure	Exotic	
<i>Aster puniceus</i>	Purple-stemmed Aster	N	6	-5	G5	S5	Secure	Secure	
<i>Betula alleghaniensis</i>	Yellow Birch	N	6	0	G5	S5	Secure	Secure	
<i>Bromus inermis</i>	Smooth Brome	I	*	5	GNR	SNA	Secure	Exotic	
<i>Carex aurea</i>	Golden Sedge	N	4	-4	G5	S5	Secure	Secure	
<i>Carex bebbii</i>	Bebb's Sedge	N	3	-5	G5	S5	Secure	Secure	
<i>Carex gracillima</i>	Graceful Sedge	N	4	3	G5	S5	Secure	Secure	
<i>Carex hystericina</i>	Porcupine Sedge	N	5	-5	G5	S5	Secure	Secure	
<b><i>Carex pallescens</i></b>	<b>Pale Sedge</b>	N	5	3	G5	S5	Secure	Secure	<b>Rare</b>
<i>Carex stipata</i>	Paper-edge Sedge	N	3	-5	G5	S5	Secure	Secure	
<i>Carex utriculata</i>	Beaked Sedge	N	7	-5	G5	S5	Secure	Secure	
<i>Carex vulpinoidea</i>	Fox Sedge	N	3	-5	G5	S5	Secure	Secure	
<i>Cerastium fontanum</i>	Mouse-ear Chickweed	I	*	3	GNR	SNA	Secure	Exotic	
<i>Circaea lutetiana</i>	Enchanter's Nightshade	N	3	3	G5	S5	Secure	Secure	
<i>Cirsium arvense</i>	Canada Thistle	I	*	3	GNR	SNA	Secure	Exotic	
<i>Cirsium vulgare</i>	Bull Thistle	I	*	4	GNR	SNA	Secure	Exotic	
<i>Convallaria majus</i>	Lily of the Valley	I	*	5	GNR	SE5	Secure	Exotic	
<i>Cornus foemina ssp. racemosa</i>	Grey Dogwood	N	2	-2	G5	S5	Secure	Secure	
<i>Cornus stolonifera</i>	Red Osier Dogwood	N	2	-3	G5	S5	Secure	Secure	

<i>Coronilla varia</i>	Crown Vetch	I	*	5	GNR	SNA	Secure	Exotic
<i>Crataegus monogyna</i>	European Hawthorn	I	*	5	GNR	SNA	Secure	Exotic
<i>Dactylis glomerata</i>	Orchard Grass	I	*	3	GNR	SNA	Secure	Exotic
<i>Eleocharis smallii</i>	Small's Spikerush	N	6	-5	G5	S5	Secure	Secure
<i>Epilobium hirsutum</i>	Hairy Willow-herb	I	*	-4	GNR	SE5	Secure	Exotic
<i>Epipactis helleborine</i>	Helleborine	I	*	5	GNR	SNA	Secure	Exotic
<i>Equisetum fluviatile</i>	Water Horsetail	N	7	-5	G5	S5	Secure	Secure
<i>Erigeron strigosus</i>	Rough Fleabane	N	0	1	G5	S5	Secure	Secure
<i>Erysimum chieranthoides</i>	Wormseed Mustard	I	*	3	GNR	SE5	Secure	Exotic
<i>Eupatorium maculatum</i>	Joe-Pye Weed	N	3	-5	G5	S5	Secure	Secure
<i>Eupatorium perfoliatum</i>	Boneset	N	2	-4	G5	S5	Secure	Secure
<i>Festuca pratensis</i>	Meadow Fescue	I	*	4	GNR	SE5	Secure	Exotic
<i>Fragaria virginiana</i>	Wild Strawberry	N	2	1	G5	S5	Secure	Secure
<i>Fraxinus americana</i>	White Ash	N	4	3	G5	S5	Secure	Secure
<i>Galium palustre</i>	Marsh Bedstraw	N	5	-5	G5	S5	Secure	Secure
<i>Geranium robertianum</i>	Herb Robert	I	*	5	GNR	SNA	Secure	Exotic
<i>Geum canadense</i>	White Avena	N	3	0	G5	S5	Secure	Secure
<i>Glyceria striata</i>	Fowl Manna Grass	N	3	-5	G5	S5	Secure	Secure
<i>Hieracium pilosella</i>	Mouse-ear Hawkweed	I	*	5	GNR	SE5	Secure	Exotic
<i>Hypericum perforatum</i>	Common St. John's Wort	I	*	5	GNR	SNA	Secure	Exotic
<i>Impatiens capensis</i>	Touch-me-not	N	4	-3	G5	S5	Secure	Secure
<i>Impatiens pallida</i>	Pale Touch-me-not	N	7	-3	G5	S5	Secure	Secure
<b>Juglans cinerea</b>	<b>Butternut</b>	N	6	2	G4	S3	<b>End</b>	<b>End</b>
<i>Juncus alpino-articulatus</i>	Alpine Rush	N	5	-5	G5	S5	Secure	Secure
<i>Juncus effusus</i>	Soft Rush	I	4	-5	G5	S5	Secure	Exotic
<i>Juniperus virginiana</i>	Red Cedar	I	4	3	GNR	SNA	Secure	Exotic
<i>Lonicera tartarica</i>	Tartarian Honeysuckle	I	*	3	GNR	SNA	Secure	Exotic
<i>Lycopus uniflorus</i>	Water Horehound	N	5	-5	G5	S5	Secure	Secure
<i>Lysimachia terrestris</i>	Swamp Candles	N	6	-5	G5	S5	Secure	Secure
<i>Maianthemum racemosum</i>	False Solomon Seal	N	4	3	G5	S5	Secure	Secure
<i>Malus pumila</i>	Apple	I	*	5	GNR	SNA	Secure	Exotic
<i>Malva moschata</i>	Musk Mallow	I	*	5	GNR	SNA	Secure	Exotic
<i>Matteuccia struthiopteris</i>	Ostrich Fern	N	5	-3	G5	S5	Secure	Secure
<i>Medicago lupulina</i>	Black Medick	I	*	1	GNR	SE5	Secure	Exotic
<i>Mentha spicata</i>	Spearmint	I	*	-4	GNR	SE4	Secure	Exotic
<i>Mentha x piperita</i>	Peppermint	I	*	-5	GNR	SE4	Secure	Exotic



<i>Nasturtium officinale</i>	Watercress	I	*	-5	GNR	SE	Secure	Exotic
<i>Onoclea sensibilis</i>	Sensitive Fern	N	4	-3	G5	S5	Secure	Secure
<i>Phalaris arundinacea</i>	Reed Canary Grass	N	0	-4	G5	S5	Secure	Secure
<i>Pinus sylvestris</i>	Scotch Pine	I	*	5	GNR	SE	Secure	Exotic
<i>Plantago lanceolata</i>	English Plantain	I	*	0	GNR	SE	Secure	Exotic
<i>Poa palustris</i>	Marsh Bluegrass	N	5	-4	G5	S5	Secure	Secure
<i>Poa pratensis</i>	Kentucky Bluegrass	N	0	1	G5	S5	Secure	Exotic
<i>Populus balsamifera</i>	Balsam Poplar	N	4	-3	G5	S5	Secure	Secure
<i>Populus grandidentata</i>	Big-toothed Aspen	N	5	3	G5	S5	Secure	Secure
<i>Populus nigra</i>	Lombardy Poplar	I	*	5	GNR	SE	Secure	Exotic
<i>Populus tremuloides</i>	Trembling Aspen	N	2	0	G5	S5	Secure	Secure
<i>Potentilla reptans</i>	Creeping Cinquefoil	I	*	0	GNR	SNA	Secure	Exotic
<i>Prunus serotina</i>	Black Cherry	N	3	3	G5	S5	Secure	Secure
<i>Ranunculus acris</i>	Common Buttercup	I	*	-2	GNR	SNA	Secure	Exotic
<i>Rhamnus cathartica</i>	Common Buckthorn	I	*	3	GNR	SNA	Secure	Exotic
<i>Rhus typhina</i>	Staghorn Sumac	N	1	5	G5	S5	Secure	Secure
<i>Rosa multiflora</i>	Multiflora Rose	I	*	3	GNR	SNA	Secure	Exotic
<i>Rosa rugosa</i>	Japanese Rose	I	*	3	GNR	SE5	Secure	Exotic
<i>Rubus alleghaniensis</i>	Blackberry	N	2	2	G5	S5	Secure	Secure
<i>Rubus occidentalis</i>	Black Raspberry	N	2	5	G5	S5	Secure	Secure
<i>Rumex crispus</i>	Curly Dock	I	*	-1	GNR	SNA	Secure	Exotic
<i>Rumex obtusifolius</i>	Broadleaved Dock	I	*	-3	GNR	SE5	Secure	Exotic
<i>Salix alba</i>	White Willow	I	*	-3	GNR	SE5	Secure	Exotic
<i>Salix discolor</i>	Pussy Willow	N	3	-3	G5	S5	Secure	Secure
<i>Salix fragilis</i>	Crack Willow	I	*	-1	GNR	SNA	Secure	Exotic
<i>Scirpus atrovirens</i>	Dark Green Bulrush	N	3	-5	G5	S5	Secure	Secure
<i>Scirpus microcarpus</i>	Red-sheathed Bulrush	N	4	-5	G5	S5	Secure	Secure
<i>Scirpus validus</i>	Soft-stemmed Bulrush	N	5	-5	G5	S5	Secure	Secure
<i>Solanum dulcamara</i>	Black Nightshade	I	*	0	GNR	SE5	Secure	Exotic
<i>Solidago altissima</i>	Tall Goldenrod	N	1	3	G5	S5	Secure	Secure
<i>Solidago flexicaulis</i>	Zigzag Goldenrod	N	6	3	G5	S5	Secure	Secure
<i>Sorbus aucuparia</i>	European Mountain Ash	I	*	5	GNR	SE5	Secure	Exotic
<i>Stachys palustris</i>	Woundwort	I	*	-5	GNR	SE5	Secure	Exotic
<i>Symphytum officinale</i>	Comfrey	I	*	5	GNR	SNA	Secure	Exotic
<i>Syringa vulgaris</i>	Lilac	I	*	5	GNR	SNA	Secure	Exotic
<i>Taraxicum officinale</i>	Dandelion	I	*	3	GNR	SNA	Secure	Exotic

<i>Thuja occidentalis</i>	White Cedar	N	4	-3	G5	S5	Secure	Secure	
<i>Tilia americana</i>	Basswood	N	4	3	G5	S5	Secure	Secure	
<i>Trifolium pratense</i>	Red Clover	I	*	2	GNR	SNA	Secure	Exotic	
<i>Tusselago farfara</i>	Colt's Foot	I	*	3	GNR	SNA	Secure	Exotic	
<i>Typha latifolia</i>	Cattail	N	3	-5	G5	S5	Secure	Secure	
<i>Ulmus americana</i>	American Elm	N	3	-2	G5	S5	Secure	Secure	
<i>Ulmus rubra</i>	Red Elm	N	6	0	G5	S5	Secure	Secure	
<i>Viburnum lentago</i>	Nannyberry	N	4	-1	G5	S5	Secure	Secure	
<i>Viburnum trilobum</i>	High-bush Cranberry	N	5	-3	G5	S5	Secure	Secure	
<i>Vicia cracca</i>	Common Vetch	I	*	5	GNR	SNA	Secure	Exotic	
<i>Vinca minor</i>	Periwinkle	I	*	5	GNR	SNA	Secure	Exotic	
<i>Viola cucullata</i>	Marsh Blue Violet	N	5	-5	G5	S5	Secure	Secure	
<i>Vitis riparia</i>	Wild Grape	N	0	-2	G5	S5	Secure	Secure	
<b>Mean</b>			4	0					

Total number of Native species = 61 or 55 %

Total number of Introduced (non-native) species = 49 or 45%

110