SAAR Environmental Limited
BIOLOGISTS

SUMMARY

SAAR Environmental Limited was retained to conduct a Scoped Environmental Impact Study (EIS) on a 42.29 hectare (104.5 acre) parcel of land to identify the extent and location of sensitive areas and opportunities for three proposed severances off the original parcel for single family residences.

An EIS was required due to identified significant woodland (County of Grey) and the presence of unevaluated wetlands. The EIS addresses possible effects of construction and humans on natural heritage defined by the Provincial Policy Statement. Seasonal wildlife inspections were undertaken to describe the natural environment. These include detail on vegetation, amphibians, reptiles, mammals, birds and invertebrates. Rare through common habitat and species were analyzed for sensitivity to development, with mitigation proposed where appropriate.

SAAR ground truthed the proposed location of the three severances to assist in recommending the least intrusive areas for future building envelopes, and mitigative tools to lessen effects of human residential uses such as lighting, and timing windows for the noise of the construction periods.

1.0 LOCATION

Figure 1 illustrates the general location of the site. All figures follow the north cardinal point up.

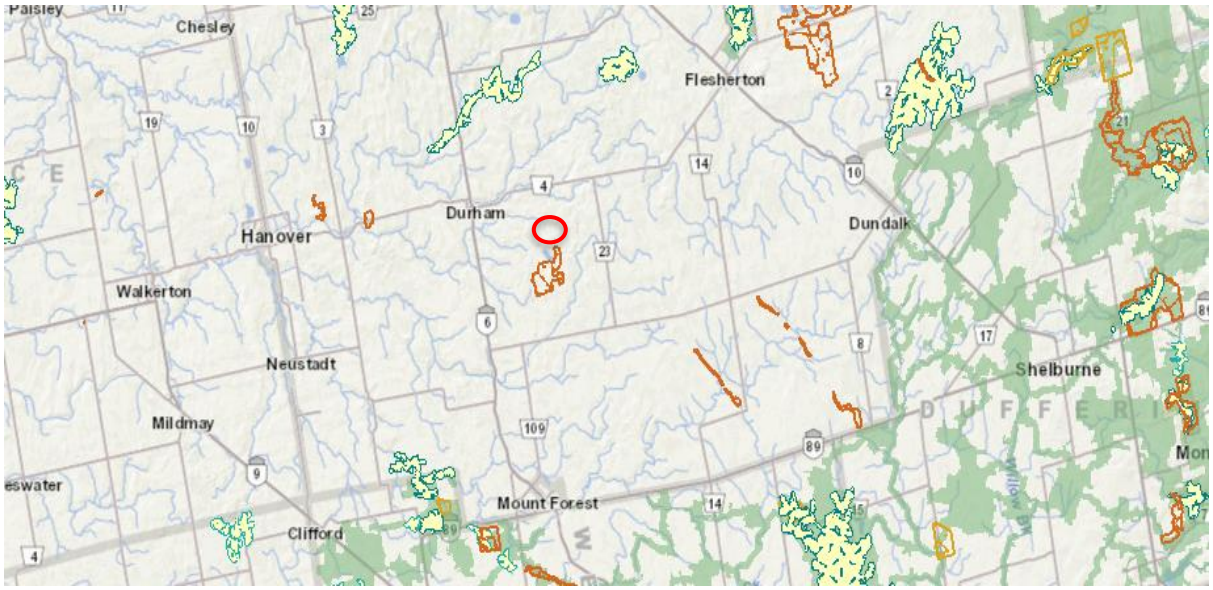


Figure 1: Key Map

The site is located north of Mount Forest, east of Hanover, just over two hours north of Toronto driving up Highway 6. It falls north of a kame moraine identified as an Earth Science Area of Natural and Scientific Interest (ANSI), immediately north of Wilder Lake.

2.0 PROPOSED USE

Figure 2 provides a lower level view of the study site including the parcel limits and area proposed for the three severances. The land use would be three single family residential lots. The severance area is one of plantation pine, with some existing openings that provide opportunity to situate building envelopes closer to the southern lot limits (Southgate Road 26).

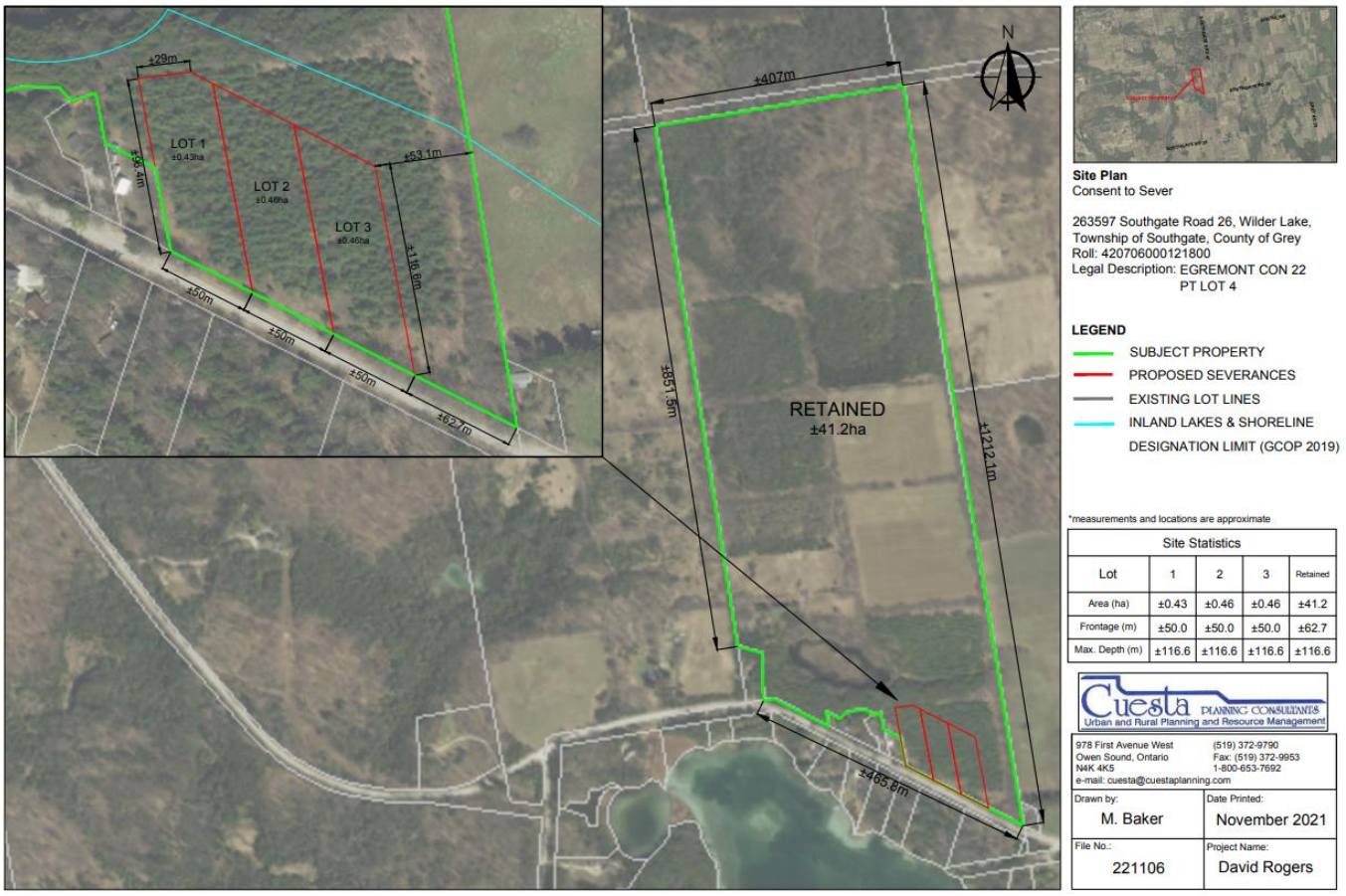
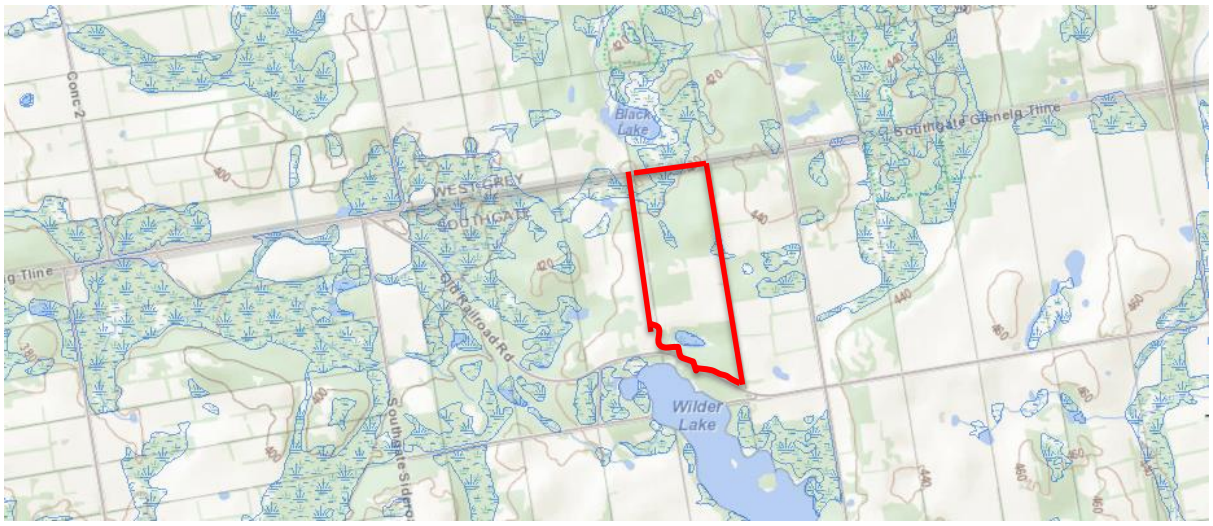


Figure 2: Parcel limits are outlined in green, with the area proposed for three severances in red.

SAAR fieldwork identifies areas of opportunity for the building envelope locations, and setbacks from sensitive species and/or habitats. Heavy machinery would be required to excavate basements, septic beds and bull-dozers, graders to install driveways. Machinery is noisy, creates dust on open earth, yet is short lived in impact. Additional seasonal and/or residential human persistence along Southgate Road 26 can bring added effects on wildlife through domestic pets foraging, weedy plant introductions, garden plant invasion into forests, noise and lighting of the yard. These effects will be examined in the impact assessment portion of the report (Section 4.0).

2.1 ADJACENT LAND (120M)

Figure 3 outlines the study site relative to wetland habitat on and adjacent to study site. The southern part of this parcel is well suited to support a low level of development such as the three severances for single family residential use; it is located outside of key natural heritage features such as the westerly wetland, within edges of a plantation block, and adjacent to long term traditional farmed fields that will be farmed for the conceivable future.



We recommended severances be placed outside of wetland habitat and connecting links, and this can be achieved for this study site. Although the site is not located amidst abundant peak wetland habitat as seen on adjacent surrounding lands, it is still optimal to maintain component upland parts for wetland species travel and use after their breeding events in the wetland itself. Detailed further in Section 4.0.

2.2 SUB-REGIONAL LAND (1KM+)

The site is bound to the south by Southgate Road 26 and existing cottage and residential use. Lake features include Wilder Lake to the south, and Black Lake to the north. Wilder Lake also supports cottages, the Homestead 18-hole golf course and resort and a future subdivision.

There are no drainage features on the study site. The surrounding landscape location of wetlands can be appreciated from Figure 4 below.

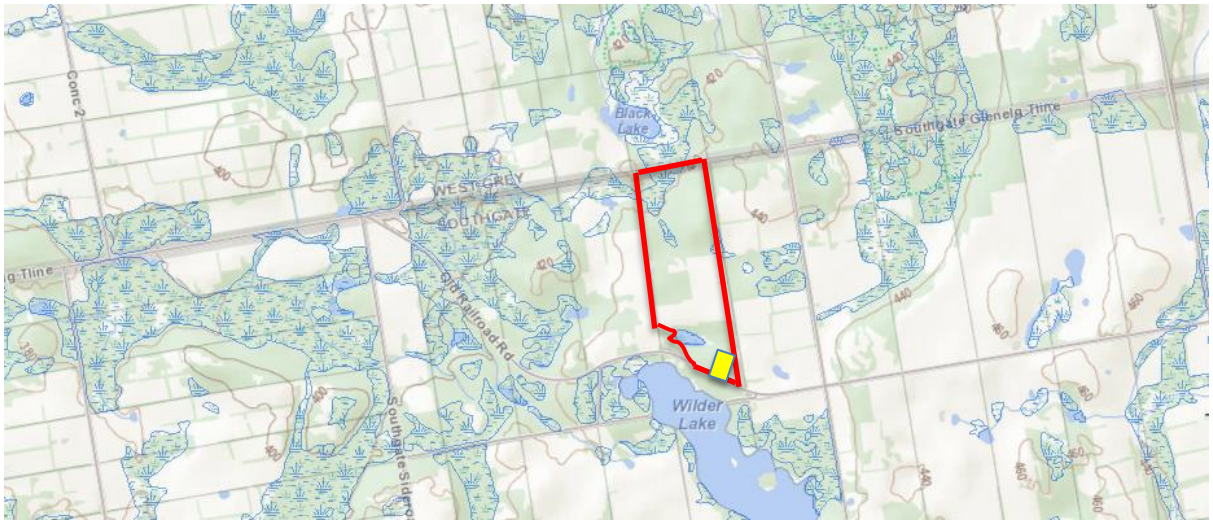
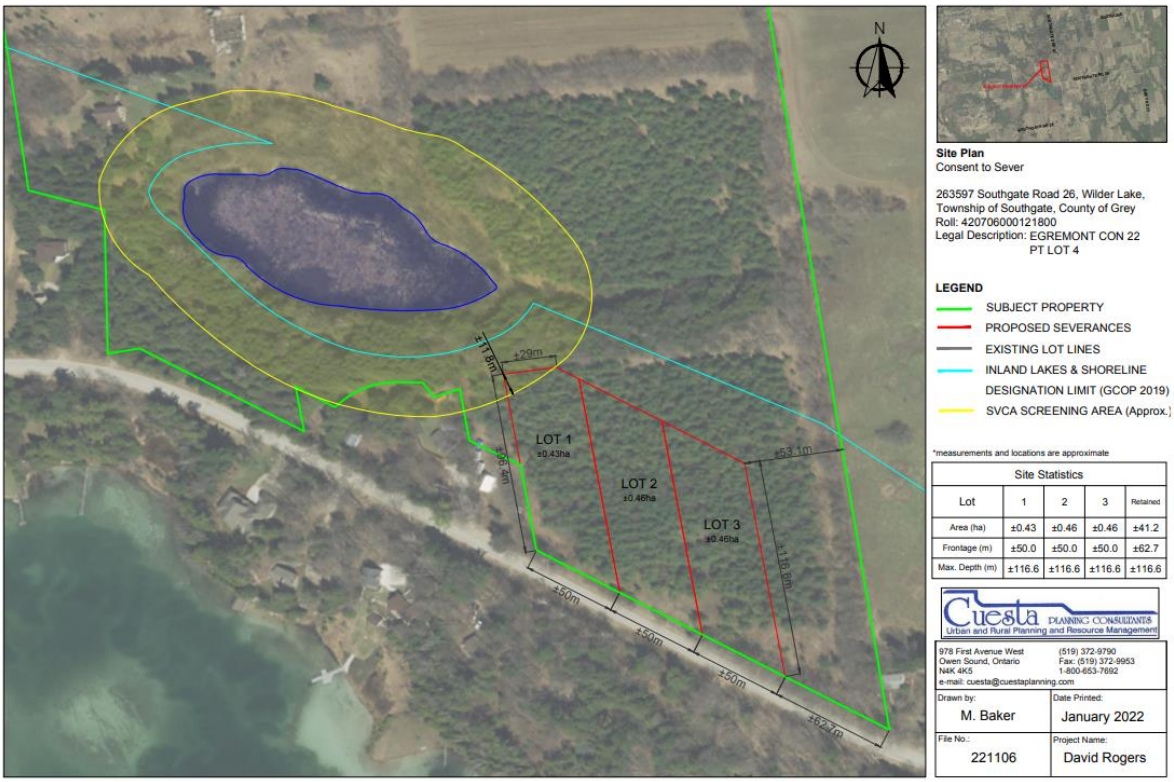


Figure 4: Parcel limits and general area of proposed three severances for 3 single family residences

Landscape connections for wildlife were examined on and 120m from the study site for wildlife flow paths, be they terrestrial, aquatic or avian species. In particular, the potential for wetland species travel, and roadkill, across Southgate Road 26 to Wilder Lake environs was checked during each inspection. Our study approach is summarized in the following report Section 3.0, followed by the results of the wildlife surveys in report Section 4.0.

3.0 STUDY APPROACH

The EIS (Environmental Impact Study) was required as the corner of the westerly proposed lot fell within the Saugeen Valley Conservation Authority screening area adjacent to a hazard feature, and because the proposed severance area falls within significant woodland of a settlement area (Inland Lakes & Shoreline Designation). Both the wetland hazard feature and the woodland required analysis.



Study terms of reference were circulated to review agents. SAAR is happy to tour any reviewers on site and indicate the areas arrived at for the proposed building envelopes if/as required.

3.1 BACKGROUND INFORMATION

Background information and nearby EIS reports were reviewed against policy and technical guidelines to determine if the quantity, quality and type of feature meets criteria established for “significance”. Background information and provincial and federal measuring tools included:

- Species at Risk Act (SARA, 2002)
- Endangered Species Act (ESA 2007)
- Significant Wildlife Habitat for Eco Region 6E Schedules (MNRF, 2015)
- Provincial Policy Statement (PPS, 2020)
- Grey County Official Plan (2019) and Town of Southgate OP
- Natural Heritage Reference Manual (MNRF, 2012)
- Natural Heritage Information Centre (NHIC) database for rare species and habitats
- Conservation Authorities Act Ontario Regulation for Wetlands
- Adjacent lands studies where applicable
- Wildlife Atlas information

3.2 POLICY & REGULATIONS

This section identifies policy and regulation. Policy was briefly noted during the background information stage of project delivery, then re-visited for conformity and consistency relative to what we found on and near the study site, and specifically relative to what kind of site alteration is being proposed.

3.2.1 SAUGEEN VALLEY CONSERVATION AUTHORITY (SVCA)

The study site falls within the Saugeen Valley Conservation Authority watershed. SVCA has an agreement with the Township of Southgate to comment on natural heritage. The EIS study approach was circulated to SVCA, Grey County and First Nations for discussion and collaboration.

3.2.2 PROVINCIAL POLICY

3.2.2 a) PROVINCIAL POLICY STATEMENT (PPS, 2020)

The provincial policy statement describes natural heritage with seven component parts. The policy is outlined below. This guides how natural features and areas shall be protected for the long term in Section 2.1.1 of the PPS. Although many parts of the Provincial Policy Statement guide how to approach reviewing land uses, Section 2.0 Wise Use and Management of Resources, and 2.1.3 with 2.1.9 in particular focus the Provincial interest.

The natural heritage policies under the Planning Act Provincial Policy Statement (PPS, 2014) cover nine general categories as outlined below:

- *Natural Heritage Systems;*
- *Fish Habitat;*
- *Habitats of Endangered and Threatened Species;*
- *Significant Areas of Natural and Scientific Interest (ANSI);*
- *Significant Wetlands;*
- *Significant Coastal Wetlands;*
- *Significant Wildlife Habitat;*
- *Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River); and,*
- *Significant Valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Mary's River).*

The study site supports fish habitat and tree cover considered "significant", detailed in the EIS.

PPS S.2.1.8: Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 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.

Background searches identify potential natural heritage defined by the PPS, lower and upper tier Official Plan framework as:

- Significant Woodland
- Significant Wildlife Habitat
- Fish Habitat
- Habitat of Endangered and Threatened Species

Field surveys were conducted to evaluate presence and extent of the above potential natural heritage. Results are detailed in report section 4.0, assessed for development impact in Section 5.0.

3.2.2 b) OTHER REGULATIONS

The statute guiding separation distance, and mitigative measures, for threatened and endangered species is the Endangered Species Act (ESA) and our background information search includes circulating a request for any information to the agency mandated with this statute, the Ministry of Environment Conservation and Parks (MECP).

The Species of Concern are guided by the Species at Risk Act (SARA) of Ontario and recommendations are made in the report for observed Monarch Butterfly. Many bird species, common and rare, are further protected under the Migratory Bird Convention Act, in particular many waterfowl species. Timing windows for machinery on site in future to construct single family residences are provided in the report to meet this statute requirement.

4.0 BIOPHYSICAL INVENTORY

The study site was inspected during peak wildlife events, summarized in Table 1.

TABLE 1: WILDLIFE SURVEYS

DATE	SURVEY	DURATION	WEATHER
May 11	Herpetofauna ELC	8-9pm Concurrent	20C B1 Level3
June 8	BB ELC Nightjars	8-9am Concurrent 9-10pm	16C B0
June 28	BB	7:30-8:30	11C B2
July 4	ELC Herptiles	Noon-2pm	20C B3
August 11	ELC Fall flora	12:00-2:00pm	26C B0

4.1 METHODOLOGY OVERVIEW

Landform and forested areas were first surveyed during meandering transects to characterize surfacewater drainage on and near the site and investigate the potential relation of adjacent lands for wildlife along these flow paths. SAAR characterized habitats by sampling vegetation at different seasons, by documenting amphibian and bird calls and sitings, and inspecting the site during peak basking hours for species including turtles and snakes. A combination of meandering transects and targeted surveys adapted from monitoring and atlas programs is further detailed below.

4.1.1 VEGETATION

Roving surveys were conducted throughout the study site. Vegetation was recorded in field books. Sample perigynia were collected if/as required for further identification by dissecting microscope. The plant species habitat types were analyzed for sensitivity to development.

Conservation status was also reviewed, as well as native versus non-native and invasive character of vegetation where relevant; if for instance a previously disturbed area supported invasive flora, we would include a target recommendation to remove the invasives while installing specific native flora.

One method to describe vegetation on site is the Ecological Land Classification system (Lee et al., 1998). This was used to describe the main habitat types on the study site using cues including the site topography, soils, flora and then depicting the main habitats on an arial photograph. Soil profiles assisted in delineating for instance, the boundaries of wet land versus upland forest.

When conducting roving surveillance through a habitat type, we noted the relative species composition including the dominant tree type(s) for super-canopy, canopy, shrub layer and ground cover of both woody and non-woody plant species.

4.1.2 BIRDS

The bird community was sampled firstly using the scientific method of random plots. The random plots then received the point-count method, where the observer records birds heard and observed within a fixed point, discerning acoustically and visually outward for 100m over two 5 minute periods of time, with plots distanced 250m from eachother (Marsh Monitoring Program, 2003: Ontario Breeding Bird Atlas, 2007). This is more of an atlas type of detail capture, modified through augmenting field observations made concurrently when conducting the other wildlife surveys on the study site; e.g. Wood Thrush heard during evening amphibian surveys. Provincial and federal nightjar surveys for roadside were also modified; in that we increased the field effort vs. roadside protocols for six minute sampling areas. We attended during the mid summer moon event and remained on and near the site for an hour.

4.1.3 AMPHIBIANS

One of the ways to document amphibians, the amphibian monitoring protocol of the Ontario Marsh Monitoring Program (MMP, 2003) uses a similar method as for birding above, with point-count stations and a 100m acoustic radius. The call level heard, from 1-3 with 3 being the highest, was recorded a half hour past sunset. Dusk and pre dawn were also times where concurrent wildlife activity was recorded (e.g. bat flight).

4.1.4 MAMMALS

Incidental observations of mammals were made during all inspections, and a focus on migration between summer and winter habitats was made during fall surveys. Direct visual confirmation was recorded, as well as secondary sign (rubs, hair, claw climbing marks, track, dens).

4.1.5 REPTILES

Concurrent observations during all other surveys were made including searches of forest floor structure; deadfallen logs, rock rubble, burrows and suitable habitat for basking and feeding reptiles. Wetland structures were also surveyed during appropriate weather conditions for basking noon through three p.m. scanning floating logs, rocks, floating vegetation for snakes, turtles. The presence or absence of amphibians, fish forage, and fish, was also noted in relation to food chain dynamics for reptiles and salamanders. Incidental cyprinid observations were made at wetland edges as the minnows appeared to be touring the shoreline at dusk.

4.2 BACKGROUND

Documented rarities within 10km by NHIC (Natural Heritage Information Centre) were:

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
915822	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	17NJ1888	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
915831	SPECIES	Wood Thrush	Hylocichla mustelina		SC	THR	17NJ1987	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
926542	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17NJ2088	

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
926542	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17NJ2088	

The atlas block coverage includes adjacent 1km blocks of open land for grassland birds such as the confirmed Bobolink not supported in the pine plantation which edge we have identified near the road for the houses.

The Midland Painted Turtle was not observed but is possible in the Black Lake wetlands, and with less probability in the roadside wetland; this was subject to greater field effort with no basking or travelling turtles. Note the NHIC atlas block with the turtle record captures half water (Wilder Lake) and may not be representative of the inland wetland pocket. The wetland is setback from development and will not be fragmented by any internal road network or be subject to noise or light pollution given available mitigation and best management practices.

4.3 FIELD RESULTS

4.3.1 VEGETATION COMMUNITIES

One of the methods used to describe plant communities is a Provincial Ecological Land Classification system (ELC, Lee et al., 1998) for similar vegetation of 0.5 hectare or larger areas. We used and modified the ELC when encountering sensitive habitat smaller than these mapping sizes; namely all the wetland pockets due to their support ecological features and functions.

FOM4 Dry-Fresh White Cedar Mixed Forest Ecosite

White Cedar-American Elm-White Spruce-Trembling Aspen-Large-tooth Aspen-White Birch-Green Ash-White Ash-Balsam Fir-Basswood-Yellow Birch-Ironwood-Black Cherry-Sugar Maple. The ground cover in this young forest supports Moist Wood Fern, Ginger, Starflower, Wild Sarsaparilla, Carex flava, Wild Lily-of-the-valley.

Understory species include Alternate-leaved Dogwood, Raspberry, Blackberry, Honeysuckle, Moist Wood Fern, Searsucker Sedge, Heal's All, Helleborine Orchid.

Figure 5: ELC Vegetation Communities

The general area supports mixed forest and hedgerows (FOM), deciduous forest and hedgerows (FOD), wetland (OAO, SWT2-2) as outlined above. Vegetation at key habitat locations gathered during reconnaissance is detailed further below.

ANTH (Anthropogenic man made habitats)

Roadside vegetation along Southgate Road 26 includes Butter & Eggs, Wild Grape, Reed Canary Grass, Daisy Fleabane, Heals-all, Polygonum, Curly Dock, Bracken Fern, Coltsfoot, Yellow Hawkweed, Sow Thistle, Black Medic, Common Burdock, English Plantain, Common Mullein, Tall Goldenrod, Wild Mint, Phleum, Strawberry, Raspberry, Spotted Knapweed, Rough-fruited Cinquefoil, Milkweed,

Dandelion, Wild Carrot, Bull Thistle, Bouncing Bet. Joe-Pye-Weed is found along the cart trail that leads in a northerly direction up the site, parallel to the east side lot line.

Openings in the White Pine Plantation supported Scotch Pine, Trembling Aspen, White Cedar with raspberry and Spotted Knapweed as well as Brown-eyed Susan. Butterflies included Cloud Sulphurs and late August dragonfly groups were predominantly White-faced Skimmers.

Field crops included corn and barley on surrounding land. Birds recorded during roving reconnaissance through the fields and forest edges included Chipping Sparrow, Great-crested Flycatcher, American Crow, American Robin, American Goldfinch, Red-eyed Vireo, Sandhill Cranes in flight, Red-winged Blackbird, Gray Catbird and Chestnut-sided Warbler at the northeast quadrat.

The fields with silo and remnant barn foundation, which are located northwest of the proposed severance area, did not support any evident Bobolink. Bobolink were confirmed in the next atlas block. A small planted area of Tamarack are supported north of the silo.

PLANTATION BLOCKS

The White Pine plantation that characterizes the main tree cover at the severance area grades into FOM2 Dry-Fresh White Pine-Maple-Oak Mixed Forest Ecosite as succession of native tree assemblages occurs.

FOM2 Dry-Fresh White Pine-Maple-Oak Mixed Forest Ecosite

Repeat tree assemblages are White Pine with Sugar Maple, White Ash, Basswood and Red Oak to a lesser degree. The understory supports Opposite-leaved Dogwood, Wild Sarsaparilla, Herb Robert, Ginger, Coltsfoot, Solomon's Seal, Daisy Fleabane, Wood Avens, Black Walnut located during White Walnut (Butternut) SAR searches. Eastern Wood Pewee in northeast quadrat forest, flight included overlap into pine plantation.

FOM2 Hedgerows

Hedgerows also contain the FOM2 woodland elements but also supported more Basswood elements, Sugar Maple-American Beech-Black Chery-White Ash-Elm.

Forest shrub layers included Alternate-leaved Dogwood, Maple-leaved Viburnum, Wild Sarsaparilla, with Brown-eyed Susan, White Doll's Eyes, Wood Violets, Evening Primrose. A few cart trails exist through the plantation, as well as the hedgerow. Trails are lined with the invasive Spotted Knapweed which should be removed during future home building. Other trail edge plants included Sow Thistle, Yellow Hawkweed, Rough-fruited Cinquefoil, Dandelion, Wild Carrot, Bouncing Bet, Bull Thistle, Balsam Ragwort and Heal's-all.

OAO and SWT2-2 WILLOW MINERAL THICKET SWAMP TYPE

Edges of honeysuckle, wild mint, blackberry, alternate-leaved buckthorn, slender Willow, Meadowsweet, Sensitive fern, Anemone, Reed Canary Grass, Carex eburnea. The southern coniferous uplands included White Cedar and Red Pine plantation with a limited understory of Helleborine Orchid, Artist's Conch, Wild Lily of the Valley, Blue Cohosh and Carex flava.

Concurrent documentation of bird song included Common Yellowthroat, Wild Turkeys, House Wren, Black-capped Chickadee, Red-winged Blackbird, American Goldfinch, Song Sparrow, Common Flicker.

5.0 IMPACT ASSESSMENT

5.1 PROPOSED SITE ALTERATION

Single family residence land use requires some site alteration to place the home, septic and driveway. The initial change requires some tree removal to situate the structures, and achieve a fire break between the home and the surrounding mixed forest, in particular where coniferous plantation tree species with higher fire hazard exist at the east quadrat of the study site.

Creating a level platform at building envelopes, and excavating for construction of the tile bed, dwelling and driveway requires heavy machinery (high hoe, bull-dozer, chain-saw). Machinery effects include noise, dust and vibration. Later construction of the dwelling itself involves less noise after the building is closed in; carpentry then takes place with hand held tools (saws, drills) within the constructed shell that produce less noise than large machines.

5.2 SIGNIFICANT WOODLAND ANALYSIS

Dominant tree species supported on the proposed severance area are plantation White Pine.

Tree assemblages on the broader parcel include White Cedar-Trembling Aspen-Sugar Maple-White Birch-Basswood-Black Cherry-Ironwood-Elm, and plantation blocks. This mixed wood is common and representative of the ecological and planning area.

The Grey County Official Plan (GCOP, 2019) provides criteria to assess significance of the woodland:

"In order to be considered significant, a woodland shall be:

either greater than or equal to forty (40) hectares in size outside of settlement areas, or greater than or equal to four (4) hectares in size within settlement area boundaries.

If a woodland fails to meet the size criteria outside a settlement area, a woodland can also be significant if it meets any two of the following three criteria:

- *Proximity to other woodlands i.e. if a woodland was within 30 metres of another significant woodland, or*
- *Overlap with the boundaries of a Provincially Significant Wetland and Significant Coastal Wetlands, Core Area, Significant Valleylands, or a Significant Areas of Natural and Scientific Interest , or*
- *Interior habitat of greater than or equal to eight (8) hectares, with a 100 metre interior buffer on all sides.*

No development or site alteration may occur within Significant Woodlands or their adjacent lands unless it has been demonstrated through an environmental impact study, as per Section 7.11 of this Plan, that there will be no negative impacts on the natural features or their ecological functions. Adjacent lands are defined in Section 7 and 9.18 of this Plan".

Forest cover does not attain the 40 hectare size criteria for lands outside of settlement areas, but does meet and exceed the 4 hectare size for tree cover within settlement areas; although the Inland Lakes and Shoreline Designation (GCOP) for this study site, is not characterized by typical hamlet settlement elements such as some measure of commercial use, a hamlet, infra-structure of servicing (water, gas), it is our understanding that this designation is treated as a settlement area. Thus, the forest cover is significant woodland. The southern forest patch is approximately 9 hectares with 1.5 ha of wetland opening = 7.5ha, exceeding the 4ha size standard for settlement area.

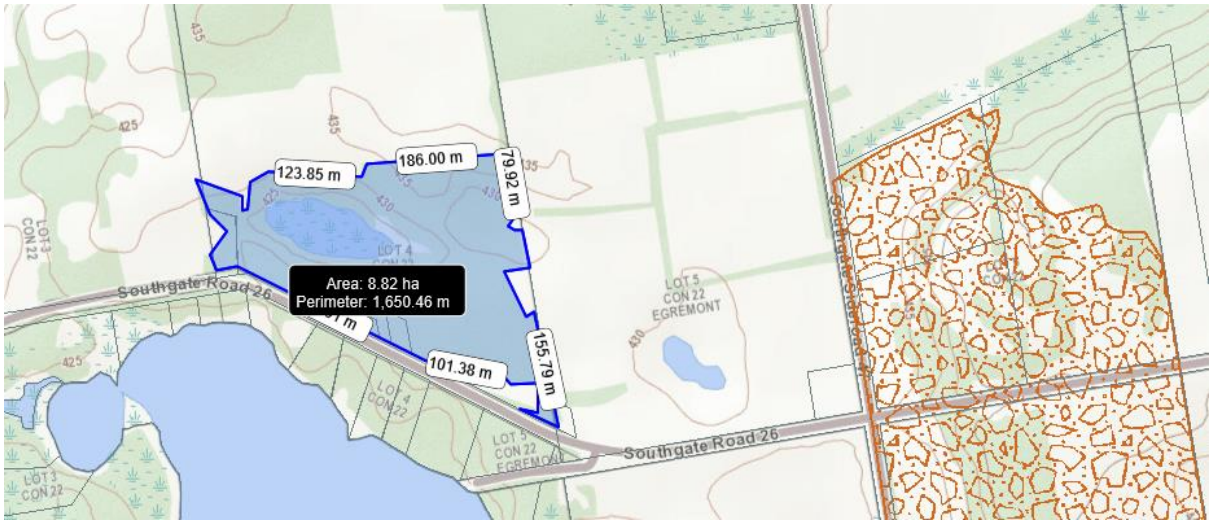


Figure 6: Tree cover at the south end of the parcel exceeds the 4 hectare size used in GCOP settlement areas for significant woodland determination.

The area of the building envelopes is suggested to fall predominantly outside of tree cover and maintain the broader forest after development. Note the majority of the tree type near the severance area is a man made white pine plantation.

5.3 FISH HABITAT

Nearby water bodies include Wilder Lake which supports a warmwater fishery, and travel via Camp Creek to riffles supporting Brown and Brook Trout. These adjacent lands (120-500m) lake features are not found on site, nor is there a drainage feature or connection on site to Wilder Lake at the proposed severance area.

The wetland feature located west of the proposed severances supports warmwater minnow species.

5.4 SIGNIFICANT WILDLIFE HABITAT

MNRF describes this as an area where wildlife live, feed, breed, and travel to fulfill their life cycle congregating seasonally. Provincial guidelines help define Significant Wildlife Habitat (Natural Heritage Reference Manual, Significant Wildlife Habitat Technical Guide, MNRF, 2012), and guide development or site alteration within SWH (Provincial SWH Mitigation Support Tool, MNRF, 2014). The ultimate determination rests with the expertise of the field biologist and Provincial reviewers.

Significant wildlife habitat is defined below, with specific criteria to attain SWH status:

- Seasonal concentrations of animals;
- Rare vegetation communities or specialized habitats for wildlife
- Specialized Habitat for Wildlife
- Habitat for Species of Conservation Concern
- Animal Movement Corridors
- Exceptions for EcoRegion 6E

Our analysis confirmed potential for specialized habitat for wildlife:

- Amphibian Breeding Habitat
- Woodland Area-Sensitive Bird Breeding Habitat (See Point Count Locations)
- Grassland Area-Sensitive Bird Breeding Habitat

The Province directs 50m setbacks or lower level surveys. The setbacks are met and exceeded by the recommended placement of the building envelopes from habitats later determined to achieve “significance” status, confirming the scoped level EIS is appropriate for the proposed level of land use.

Figure 7: From north to south, the point count locations are P1 (north) to P2 (south)

Results from June surveys noted below during the consecutive two 5 minute recording periods; 10 minute sampling per point count locations in June 2022.

Bird Point Count Data

P2 SOUTH	P1 NORTH
Grey Catbird	Ovenbird
Great-crested Flycatcher	Eastern Wood Pewee
Black-and-white Warbler	Black-capped Chickadee
Red-eyed Vireo	American Crow
Common Yellowthroat	Red-eyed Vireo
Chipping Sparrow	American Goldfinch
Yellow Warbler	Cooper's Hawk M
Chestnut-sided Warbler	Turkey Vulture
Sandhill Cranes flyover	Sandhill Cranes (3)
Blue Jay	American Robin
American Robin	Red-tailed Hawk
American Goldfinch	Eastern Phoebe
Eastern Phoebe	

The 250m radius of any point count yields an overlap in species heard acoustically especially birdsong that carries far, so there are repeat observations. Bird species were also documented during roving surveys across the study site and add to the point count data (See Appendix).

Conservation status species on or near the study site include grassland bird species. Grassland birds including Bobolink were observed within 500m of the study site, as well as Barn Swallows within 650m of the study site. Since the Eastern Wood Pewee, a bird of Special Concern status, was heard throughout June on adjacent forested lands, we explored habitat and area requirements in greater detail (See S. 5.5.2 Sensitive Species) for our review of field literature.

Forest area sensitive birds were observed and heard within the core forest during concurrent amphibian monitoring surveys; for instance, Hermit Thrush. Species and habitats are detailed further in the Impact Assessment section of the report.

5.5 POTENTIAL SIGNIFICANT WILDLIFE HABITAT

5.5.1 BATS

The larger retained parcel offers farm field openings, wetland openings and forest hedgerows abutting a white pine plantation block for bat foraging opportunities.

Wetlands and areas around waterbodies (e.g., riparian areas and forest edges) are important foraging habitat for Little Myotis, Northern Myotis and Tri-colored Bat. Activities that degrade or remove wetlands have the potential to degrade a portion of the bat foodbase; insects supplied by the wetland.

The roadside wetland to the west of the proposed severances, and the inland wetland well distanced from the severance area, are conserved through setback and lack of incursion of driveways or roads.

Driveways are somewhat flexible off of Southgate Road 26 as they can be constructed within existing areas of disturbance; the plantation, existing openings with high weedy index of plants.

5.5.2 SENSITIVE SPECIES

The diversity and abundance of the species and habitats did not attain “significance” levels of criteria set by the Province to be considered Significant Wildlife Habitat (SWH), nor are the species and habitats here Threatened or Endangered species under provincial and federal protective statutes. However, some are sensitive to various land uses; these are explored with recommendations to mitigate effects.

5.5.2.1 FOREST BREEDING AMPHIBIANS AND SALAMANDERS

Both wetland features, the small roadside wetland that falls under the 0.5 hectare size of consideration when mapping wetland hazards (SVCA) and provincial wetland units (MNRF), and the inland larger wetland, support breeding amphibians and salamanders.

The roadside wetland supported a chorus of Tree Frogs (Call Level 2), as well as earlier spring Wood Frog chorus during dusk surveys (Call Level 1). Spotted Salamanders were observed south of the inland wetland pond – this also falls outside of proposed severance area but with greater distance. The north salamander activity took place in treed wetland south of an off site lake (Black Lake).

Although we did not observe any salamanders breeding in the roadside wetland, they may breed, with scant evidence if minnows eat their eggs. We have recommended, in a precautionary planning approach, that conserving the hardwood border to the roadside wetland is prudent so any spring breeders whether frog or salamander, can travel and use uplands after breeding.

Potential effects of the three single family residential lots can include introduction of weedy and invasive plant species into the forest, herptile losses through domestic pets, noise and night lighting impacts on predator-prey dynamics of these evening breeders, and more.

Figure 8: The area of northerly hardwoods flanking the wetland is recommended for retention by the landowners. We observed a few Wood Frog in this area, and no specimen amphibians or salamanders in the southerly needle duff forest floor of the conifer tree cover.

The hardwoods and space on surrounding lands provides small populations of amphibians and salamanders access to other populations for breeding diversity of their larger clan (meta-population).

Observed use by amphibians and salamanders is low and likely a direct consequence of egg predation by the minnow species in the wetland.

5.5.2.2 EASTERN WOOD PEWEE (EWPW)

The EWPW was heard in the north forest block. The Significant Wildlife Habitat Guideline recommends a 50m setback which is exceeded. Timing windows are also invoked for heavy machinery during the construction period to limit effects during bird breeding season (April 1- August 1). This is invoked for all bird species by the Migratory Bird Convention Act, and this can only be changed with prior attendance by a “qualified biologist” to confirm no harm to nesting birds including the EWPW.

The EWPW is considered a “Species of Special Concern” by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as it did not meet criteria for population decline to raise status to Threatened; for instance the EWPW does not have a small restricted total population (See below range). NatureServe ranked the EWPW as ‘globally secure’ (G5) and the IUCN Red List respectively ‘Least concern’.

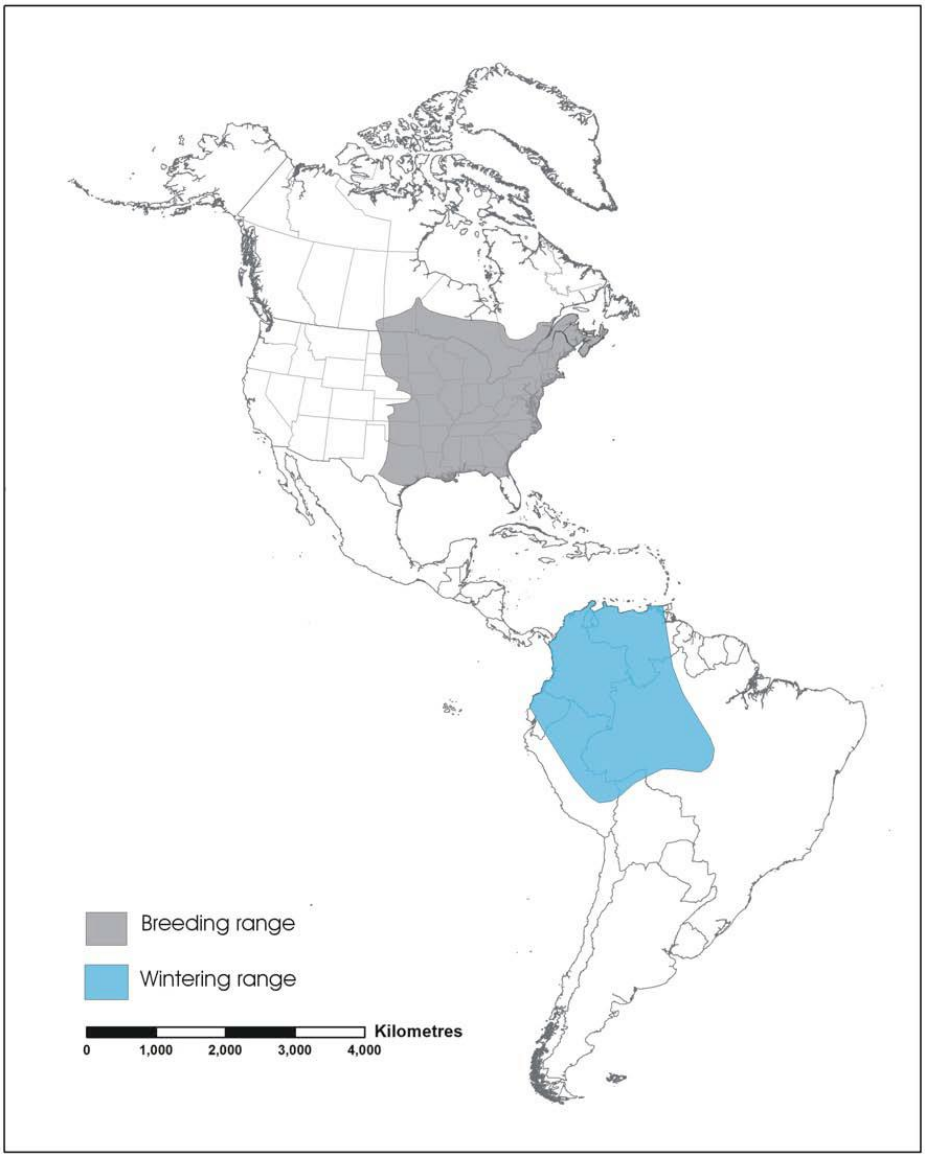


Figure 9: Range of the Eastern Wood Pewee (COSEWIC 2012).

COSEWIC describe the Eastern Wood Pewee (EWPW) as a most common and widespread songbird of North American eastern forests, resilient to many kinds of habitat change similar to other birds that forage on flying insects; a mobile food source.

The EWPW decline is not understood but COSEWIC noted it may be linked to loss or degradation of wintering habitat in South America (COSEWIC, 2012). COSEWIC notes the EWPW occupies the mid canopy at forest clearings and edges of hardwoods in summer more than mixed forests where canopy layers are absent or sparse. The original parcel supports abundant deciduous elements which are not in decline here or in the larger planning area.

Research notes the bird colonizes new habitats in spring – is not site tenacious or true to prior year nest sites – and arrives in late May advertising through bird song and behavior to attract a mate. Interestingly,

forest trails have been studied to have a sheltering effect from the bird predators of edges that prey on the EWPW.

Potential effects of trail systems through forests on EWPW can be:

- Consistent loud noise or excess forest cover could affect the ability of the male EWPW to be heard singing or seen, potentially affecting securing a mate, courting and breeding. This would again be true later if the pair or different pair attempted a second brood
- Removing or degrading surfacewater input to wetlands such that wetland hydro-period mimicked drought conditions; this would affect insect clutches produced off the wet land and limit one part of their food base. Other insects COSEWIC reports the bird is known to hawk from the air include species from Diptera, Homoptera, Lepidoptera, Hymenoptera, Coleoptera, Orthoptera, Plecoptera and Ephemeroptera
- Removing substantial amounts of mixed forest with no shrub canopy layers and some forest openings; one field study in southern Ontario noted territories for the bird averaged 1.76ha +-0.24ha for 26 pairs in deciduous forest, and 27 pair in pine plantation (Falconer, 2010)
- Clearing some forest increases the existing forest edge effects. The EWPW is not prone to predation from the edge invaders such as the Brown-headed Cowbird and this potential effect is not a substantial risk for this insectivore; i.e. it is breeding in natural openings within the forest that exert edge effects and support observed predators already; Raccoon, American Crow, Red Squirrel, American Blue Jay, Brown-headed Cowbird.

No clearing of forest is proposed for the lands where we documented EWPW song in June of 2022.

MITIGATION

- In Canada, EWPW nests and eggs are protected under the *Migratory Birds Convention Act.* A biologist must inspect the site before construction to confirm presence/absence of an active nest, a standard BMP
- COSEWIC research summaries also recommend selection cuts to create small openings in forest canopy. This is intuitive since openings and linear openings in particular offer insects a flight path, and their predators, be they birds or bats, a runway to capture them. Natural openings are present and can be increased to balance the ecology of forest, forest edge, open meadow species such as the Bobolink

We have reviewed thesis material that contemplated quite well the conundrum of human effects (high levels tested in the study being tourism levels). The study is an interesting one as many focus on short term effects of land use – dispersal further into the woodland – but as the study points out, isn't always linked to nest survival or fecundity. Red-eyed Vireo of the field research study nested close to and away from trails surveyed, with many nests parasitized by Brown-headed Cowbirds closest to trails with reduced numbers of young produced in those locations, with productivity improving by 65m distances from wide trails. With respect to this study site, the level of proposed residential use across the parcel (3 lots) is not expected to negatively impact on future nest success of the EWPW in the forest.

6.0 MITIGATION SUMMARY

Key natural heritage features on or within 120m of the proposed subdivision as defined within Section 2.1 of the Provincial Policy Statement (PPS) under the Planning Act:

- Significant Woodland
- Potential SWH Specialized Habitat for Wildlife (Amphibian Breeding Habitat, Wetlands)

Woodland analysis confirmed the treed area meets significant woodland thresholds in the GCOP for settlement areas (property is designated as Rural, Hazard and Inland Lakes & Shoreline). Future tree removal is minimized thus, by placing building envelopes in partially existing clearings closer to the southerly lot limit.

The wetland did not meet SWH thresholds established by the Province (SWH Criteria for EcoRegion 6E, MNRF) however wetland setbacks are invoked nontheless in a precautionary manner to safeguard any function within the wetland over time.

Mitigation is available to conserve the above noted natural heritage to avoid negative impact.

1. Maintain wetland functions by setback of severance area, and building envelopes

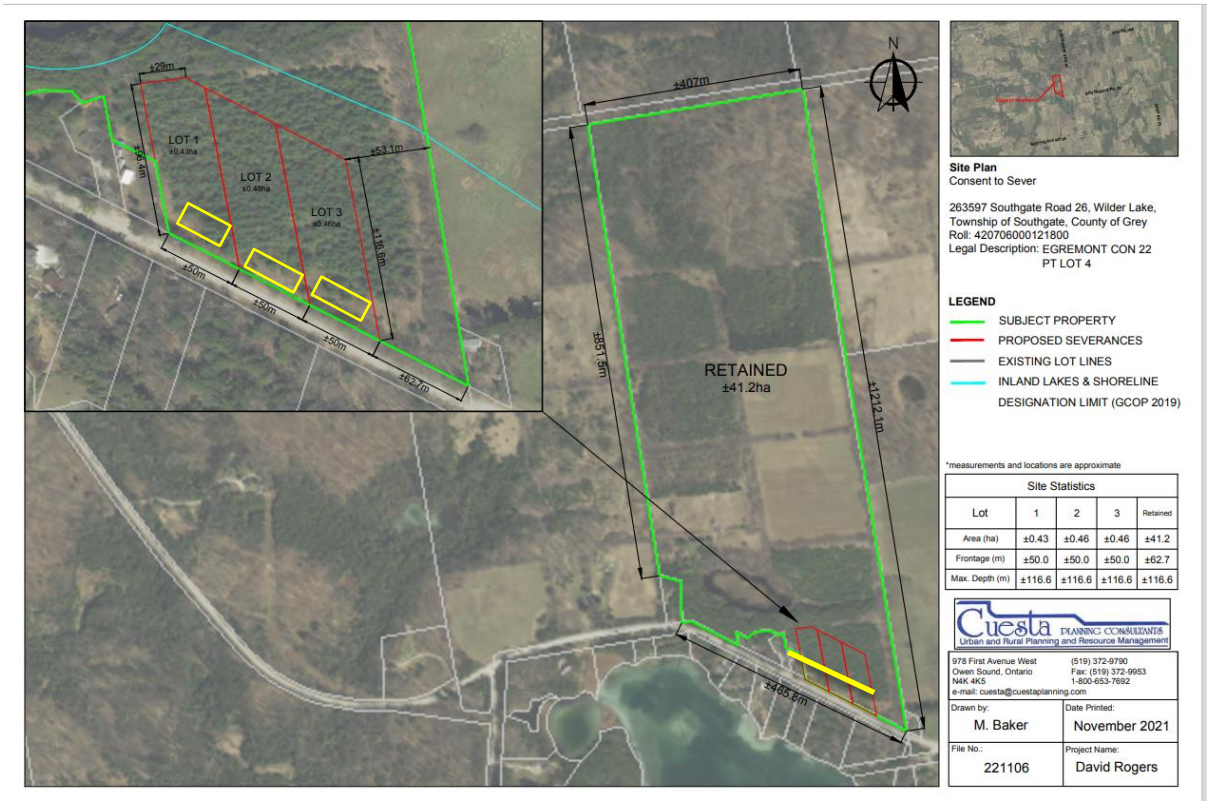
2. Maintain night sky conditions for wildlife by restricting rear yard lights to downward directed hooded lights, no barn standard pole lights

BEST MANAGEMENT PRACTICES

- IF the April 1-August 15 timing window for breeding birds cannot be achieved during construction schedules, the proponent requires a “qualified biologist” on site before heavy machinery to confirm no impact to bird nests (Migratory Bird Conservation Act)
- Secure filter cloth around the perimeter of construction areas to limit sediment runoff from site
- Restrict grading on lands adjacent to the westerly wetland
- Restrict construction days to 7am - 7pm avoiding noise impact at night
- Plant native vegetation vs. exotic species around the future single family residences

The main mitigation for low level development severances is limiting the land use to specific areas. This is done in two ways, first, by limiting the severance area relative to ecology features, second, by directing the site alteration required to build a house, septic and driveway through timing windows to avoid effects of development at peak wildlife times.

Map 1 illustrates the recommended limit of incursion from road (approx. 40m) for building envelopes.



Map 1: Limit of incursion for building envelopes at approximately two road widths (40m). Building envelopes were selected to fall onto existing small clearings easily accessed from Southgate Road 26.

7.0 CONCLUSIONS

There is opportunity to locate all three building envelopes within existing roadside edge effects along Southgate Road 26. The lots support a portion of plantation and open area with opportunity to support human uses without negative impact to nearby ecological features and functions of the two wetland pockets.

Adjacent open farmland to the north on the retained parcel, did support stopover and feeding function for observed Sandhill Crane, and has potential to support grassland nesting birds. This habitat is not altered through the location of the proposed roadside severances, in particular through the siting we have recommended for the building envelopes within the existing roadside edge effects zone.

Thus the three severances being sought by the proponent can conform to environmental policies of MNRF, SARA, ESA and be consistent with the Provincial Policy Statement of the Planning Act and reflected environmental policy in the Grey County Official Plan natural heritage system.

IMPACT STATEMENT

This report has been prepared by SAAR Environmental Limited.

The assessment represents the conditions at the subject property only at the time of the assessment, and is based on the information referenced and contained in the report. The conclusions presented herein respecting current conditions represent the best judgment of the assessors based on current environmental standards.

SAAR finds with adherence to our recommended mitigation the future proposed level of single family residences can meet the policy test of no negative impact. In particular, our recommendations to situate building envelopes with setbacks from both the roadside westerly wetland, and extensive setbacks from the inland northerly (off site) wetland, is consistent with the goals expressed in Section 2.1 Natural Heritage policies of the Provincial Policy Statement.

Specifically PPS S. 2.1.2 of Natural Heritage 2.1, regarding connectivity of natural features in an area; we have ground truthed these areas, mapped them and set them back from the proposed land use.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

Sincerely,

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APPENDIX

SPECIES LISTS

Latin Name	Common Name	Mitigation
Equisetaceae	**Horsetail Family**	
Equisetum arvense	Field Horsetail	
Dennstaedtiaceae	**Bracken Family**	
Pteridium aquilinum	Bracken Fern	
Dryopteridaceae	**Wood Fern Family**	
D. intermedia	Evergreen Wood Fern	
Onoclea sensibilis	Sensitive Fern	
Athyrium felix-femina	Lady Fern	
Cupressaceae	**Cypress Family**	
Thuja occidentalis	White Cedar	
Pinaceae	**Pine Family**	
Abies balsamea	Balsam Fir	
Picea glauca	White Spruce	
Pinus strobus	White Pine	
Pinus resinosa	Red Pine	
Pinus sylvestris	Scotch Pine	
Poaceae	**Grass Family**	
Danthonia spicata	Poverty Oat Grass	
Phalaris arundinaceae	Reed Canary Grass	
Poa pratensis	Kentucky Bluegrass	

Cyperaceae	**Sedge Family**	
Carex diandra	Lesser Tussock Sedge	
Carex gracillima	Graceful Sedge	
Carex hystericina	Porcupine Sedge	
Carex vulpinoidea	Fox Sedge	
Carex pensylvanica	Searsucker Sedge	
Scirpus atrovirens	Dark-Green Bulrush	
Lemnaceae	Lemna minor	
Nymphaceae	**Water Lily Family**	
Potamogeton natans	Pondweed	
Haloregaceae	**Milfoil Family**	
Myriophyllum sibiricum	Eurasian Milfoil	
Juncaceae	**Rush Family**	
J effusus	Common Rush	
J. tenuis	Poverty Rush	
Liliaceae	**Lily Family**	
Polygonatum odoratum	Solomon’s Seal	
Mainthemum canadensis	Wild Lily of the Valley	
Violaceae	**Violet Family**	
Viola sororia	Wood Violet	
Salicaceae	**Willow Family**	
Populus balsamifera L.	Balsam Poplar, Balm of Gilead	
Populus grandidentata	Large Toothed Aspen	
P. tremuloides	Trembling Aspen	

Salix lucida	Shining Willow	
Betulaceae	**Birch Family**	
Alnus incana	Speckled Alder	
B. papyrifera	White Birch	
Ostrya virginiana	Ironwood	
Fagaceae	**Beech Family**	
Quercus rubra	Red Oak	
Ulmaceae	**Elm Family**	
Ulmus americana L.	White Elm	
Juglandaceae	**Walnut Family**	
Juglans nigra	Black Walnut	
Polygonaceae	**Buckwheat Family**	
Rumex crispus	Curly Dock	
R. orbiculatus	Great Water Dock	
Ranunculaceae	**Crowfoot Family**	
Ranunculus acris L.	Tall Buttercup	
Rosaceae	**Rose Family**	
Aronia melanocarpa	Chokeberry	
Fragaria virginiana	Common Strawberry	
Prunus pensylvanica	Pincherry	
Spirea alba	Narrow-leaved Meadowsweet	
Prunus serotine	Black Cherry	
Prunus virginiana	Chokecherry	

Rosa acicularis	Prickly Wild Rose	
R. strigosus	Wild Red Raspberry	
Frageria virginiana	Virginia Strawberry	
Potentilla simplex	Cinquefoil	
Malus pumila	Common Apple	
Apiaceae	**Umbellifer Family**	
Daucus carota	Wild Carrot	
Leguminosae	**Bean Family**	
Lotus corniculatus+	Birds-foot Trefoil	
Meliotus alba+	White Sweet Clover	
Trifolium pretense+	Red Clover	
Vicia cracca L.+	Cow vetch	
Anacardiaceae	**Cashew Family**	
Rhus radicans	Poison Ivy	
R. typhina	Staghorn Sumac	
Aceraceae	**Maple Family**	
Acer saccharum	Sugar Maple	
A. rubrum	Red Maple	
Rhamnaceae	**Buckthorn Family**	
Rhamnus cathartica	Common Buckthorn	
Rhamnus	Alternate-leaved Buckthorn	
Adoxaceae	**Elderberry Family**	
Sambucus nigra	Elderberry	
Rubiaceae	**Madder Family**	

Galium palustre	Marsh Bedstraw	
Typhaceae	**Cattail Family**	
Typha angustifolia	Narrow-leaved Cattail	
Vitaceae	**Grape Family**	
Vitus riparia	Frost Grape	
Tiliaceae	**Linden Family**	
Tilia Americana	Basswood	
Araliaceae	**Ginseng Family**	
Aralia nudicalis	Wild sarsaparilla	
Aralia racemosa	Spikenard	
Cornaceae	**Dogwood Family**	
Cornus sericea	Red-osier Dogwood	
C. alternifolia	Alternate-leaved Dogwood	
Oleaceae	**Olive Family**	
Fraxinus Americana	White Ash	
F. pennsylvanica	Green Ash	
Asclepiadaceae	**Milkweed Family**	
Asclepias syriaca	Common Milkweed	
Boraginaceae	**Borage Family**	
Iridaceae	Iris Family	
Iris	Blue Flag	
Lamiaceae	**Mint Family**	
L. uniflorus Michx.	Northern Bugleweed	
Mentha arvensis L.	Wild Mint	

Lycopus americanus	Water Horehound	
Monarda fistulosa	Wild Bergamot	
Prunella vulgaris L.	Heal’s All	
Satureja vulgaris	Dogmint	
Solanaceae	**Nightshade Family**	
Solanum dulcamara L.	Climbing Nightshade	
Scrophulariaceae	**Figwort Family**	
Linaria vulgaris	Butter and Eggs	
Verbascus Thapsus	Common Mullein	
Plantaginaceae	**Plantain Family**	
Plantago lancealata	English Plantain	
Plantago major	Common Plantain	
Caprifoliaceae	**Honeysuckle Family**	
V. acerifolim	Maple-leaved Viburnum	
Balsaminaceae	**Touch-me-not Family**	
Impatiens capensis	Spotted Touch-me-not	
Asteraceae	**Aster Family**	
Achillea millefolium	Yarrow	
Ambrosia artemisiifolia	Common Ragweed	
Anaphalis margaritaceae	Pearly Everlasting	
Arctium minus	Common Burdock	
Aster macrophyllus	Large Leaved Aster	
Aster novae-angliae	New England Aster	

Chrysanthemum leucanthemum+	Ox-eye Daisy	
Cichorium intybis+	Chickory	
Cirsium arvense	Canada Thistle	
Erigeron annuus	Annual Daisy Fleabane	
Centuaurea stoebe	Spotted Knapweed	
Hieracium aurantiacum	Orange Hawkweed	
H. caespitosum	Yellow Hawkweed	
Sonchus arvensis	Sow Thistle	
Senecio aureus L.	Golden Ragwort	
S. canadensis	Canada Goldenrod	
S. hispida	Hairy Goldenrod	
Taraxacum officinale	Dandelion	
Tussilago farfara	Coltsfoot	
Eupatorium maculatum	Spotted Joe Pye Weed	

+ Naturalized

R and THR Ontario Rare and Threatened Conservation Status

Liverworts: Snakeskin Liverwort in W1

HERPTILES

Common Name	Scientific Name	Rank	COSEWIC	W1	W2
Mudpuppy	Necturus maculosus	G5S4	NAR		
Red-spotted Newt	Notophthalmus viridescens viridescens	G5S5			
Blue-spotted Salamander	Ambystoma laterale	G5S4			
Spotted Salamander	Ambystoma maculatum	G5S4		x	
Four-toed Salamander	Hemidactylium scutatum	G5S4	NAR		
Northern Redback Salamander	Plethodon cinereus	G5S5			ADJ N
Eastern American Toad	Bufo americanus americanus	G5S5		x	
Tetraploid Gray Treefrog	Hyla versicolor	G5S5		x	x
Western Chorus Frog	Pseudacris triceriata	SC		x Call Level 1	X Call Level 2
Northern Spring Peeper	Pseudacris crucifer crucifer	G5S5		x	x
Wood Frog	Rana sylvatica	G5S5		x	x
Northern Leopard Frog	Rana pipiens	G5S5	NAR	x	x
Green Frog	Rana clamitans melanota	G5S5		x	
Mink Frog	Rana septentrionalis	G5S5			
Bullfrog	Rana catesbeiana	G5S4			

Common Snapping Turtle	Chelydra serpentina serpentina	G5S5			
Common Musk Turtle	Sternotherus odoratus	G5S4			
Midland Painted Turtle	Chrysemys picta marginata	G5S5			
Common Map Turtle	Graptemys geographica	G5S4			
Blanding's Turtle	Emydoidea blandingii	G4S3			
Wood Turtle	Clemmys insculpta	G4S2	SC		
Spotted Turtle	Clemmys guttata	G5S3	SC		
Eastern Garter Snake	Thamnophis sirtalis sirtalis	G5S5			x
Northern Water Snake	Nerodia sipedon sipedon	G5S5			
Northern Redbelly Snake	Storeria occipitomaculata occipitomaculata	G5S5			
Brown Snake	Storeria dekayi	G5S5			
Smooth Green Snake	Liochlorophis vernalis	G5S4			
Northern Ringneck Snake	Diadophis punctatus edwardsi	G5S4			
Eastern Hognose Snake	Heterodon platirhinos	G5S3	THR		
Eastern Milk Snake	Lampropeltris triangulum triangulum	G5S4			

Species at Risk (Nationally and/or Provincially) are noted in bold. G = Global rank, S = Provincial rank, THR = Threatened, SC = Special Concern, NAR = Not At Risk, VUL = Vulnerable, NIAC = Not In Any Category

Mammals

Family	Species	Scientific Name	Status	Presence
Insectivora	Black-backed Shrew	Sorex arcticus	G5S5	
	Common Shrew	Sorex cinerus	G5S5	x
	Smoky Shrew	Sorex fumeus	G5S5	
	Pygmy Shrew	Sorex hoyi	G5S4	
	Water Shrew	Sorex palustris	G5S5	
	Northern Short-tailed Shrew	Blarina brevicauda	G5S5	x
	Hairy-tailed Mole	Parascalops breweri	G5S4	
	Star-nosed Mole	Condylura cristata	G5S5	
Chiroptera	Little Brown Bat	Myotis lucifuga	G5S5	
	Northern Long-eared Bat	Myotis septentrionalis	G4S3	
	Silver-haired Bat	Lasionycteris noctivagans	G5S4	
	Big Brown Bat	Eptesicus fuscus	G5S5	x
	Eastern Red Bat	Lasiurus borealis	G5S4	
	Hoary Bat	Lasiurus cinereus	G5S4	
Lagomorpha	Snowshoe Hare	Lepus americanus	G5S5	x
Rodentia	Least Chipmunk	Tamias minimus	G5S5	
	Eastern Chipmunk	Tamias striatus	G5S5	x

	Woodchuck	Marmota monax	G5S5	
	Gray Squirrel (Black Phase)	Sciurus carolinensis	G5S5	x
	Red Squirrel	Tamiasciurus hudsonicus	G5S5	x
	Northern Flying Squirrel	Glaucomys sabrinus	G5S5	
	Beaver	Castor canadensis	G5S5	x
	Deer Mouse	Peromyscus maniculatus	G5S5	
	Southern Red-backed Vole	Clethrionomys gapperi	G5S5	
	Heather Vole	Phenacomys intermedius	G5S4	
	Rock Vole	Microtus chrotorrhinus	G4S3	
	Meadow Vole	Microtus pennsylvanicus	G5S5	x
	Muskrat	Ondatra zibethicus	G5S5	
	Southern Bog Lemming	Synaptomys cooperi	G5S4	
	Norway Rat	Rattus norvegicus	G5SE	
	House Mouse	Mus musculus	G5SE	
	Meadow Jumping Mouse	Zapus hudsonius	G5S5	
	Woodland Jumping Mouse	Napaeozapus insignis	G5S5	
	Porcupine	Erethizon dorsatum	G5S5	x

Carnivora	Coyote	Canis latrans	G5S5	scat
	Eastern Wolf	Canis lupus	G4S4	
	Red Fox	Vulpes vulpes	G5S5	x
	Black Bear	Ursus americanus	G5S5	
	Raccoon	Procyon lotor	G5S5	x
	Marten	Martes americana	G5S5	
	Fisher	Martes pennanti	G5S5	Scent at north parcel limit
	Ermine	Mustela erminea	G5S5	
	Long-tailed Weasel	Mustela frenata	G5S4	
	Least Weasel	Mustela nivalis	G5SU	
	Mink	Mustela vison	G5S5	
	Striped Skunk	Mephitis mephitis	G5S5	
	River Otter	Lontra canadensis	G5S5	
	Canada Lynx	Lynx canadensis	G5S5	
	Bobcat	Lynx rufus	G5S4	
	White-tailed Deer	Odocoileus virginianus	G5S5	X Hair and track

Fish List in W1

Family Name	Species	Common Name	Rank
Cyprinidae	Phoxinus eos	Northern Redbelly Dace	G5S5
Cyprinidae	Luxilus cornutus	Common Shiner	G5S5
Gasterosteidae	Culaea inconstans	Brook Stickleback	G5S5

(Source: Scott, W.B. 1967. Freshwater Fishes of Eastern Canada)

Note W1 is the west wetland, setback from the area of the proposed severances, while W2 falls off the north parcel limits and was not ground truthed; herptile dusk chorus was recorded from this study site.

BIRDS

Birds were observed and/or heard in spring through summer. If noted on both June breeding season times, they are likely breeders. Those that were only migrants are noted with “M”, and those on adjacent lands 120m or greater with “ADJ” and compass point direction.

American Robin

American Goldfinch

Red-winged Blackbird

Red-tailed Hawk

Barred Owl ADJ N

Sandhill Cranes ADJ N

Eastern Kingbird

Common Grackle

American Crow

American Phoebe

Black-capped Chickadee

White-throated Sparrow (Spring N)

Northern Flicker (Also one roadkill within 100m on Southgate Road 26)

Hairy Woodpecker

Pileated Woodpecker

House Wren

Black-throated Green Warbler

Mourning Dove

Rose-breasted Grosbeak

American Redstart

Common Yellowthroat

Black-and-white Warbler

Red-eyed Vireo

Eastern Wood Pewee ADJ 80m

Ovenbird ADJ 100m

Ring-billed Gull

Gray Catbird

Mourning Dove

Chipping Sparrow

Barn Swallow ADJ NE

Bobolink ADJ NE

Great-crested Flycatcher

Willow Flycatcher

BATS

Big Brown Bat

ODONATES (Dragonflies and damselflies)

Sympetrum obtrusum	White-faced Meadowhawk
Calopteryx maculata	Ebony Jewelwing
Enallagma erbium	Marsh Bluet
Amphiagrion saucium	Eastern Red Damsel
Libellula pulchella	Twelve-spotted Skimmer