

# Scoped Environmental impact Study 1388 Ahmic Lake Road

October 2023



## Contents

Introduction.....	3
Approach .....	4
Background Information .....	4
Field Investigation .....	4
Existing Conditions .....	4
Ecological Setting .....	4
Ecological Land Classification.....	5
Ecosites.....	5
Terrestrial Ecosites.....	6
Wetland Ecosites.....	9
Shoreline Cruise .....	11
Existing Dock .....	11
Proposed Boat House Location.....	12
Proposed Dock Location .....	13
Natural Heritage Considerations .....	15
Environmental Protection Zoning.....	15
Fish Habitat .....	18
Deer Wintering Area .....	20
Proposed Development .....	22
Cottage and Accessory Buildings.....	22
Boathouse .....	22
Dock.....	22
Recommended Mitigation .....	22
Summary .....	23
Appendix A: Sketch of the Proposed Development .....	24

## Introduction

The subject property is an approximate 4.5-hectare parcel, (10.4 ha as more than half is flooded land) with approximately 650 metres frontage of shoreline on Neighick Lake (formerly Beaver Lake). The property is described as 1388 Ahmic Lake Road (Figure 1). A large portion of the property is zoned Environmental Protection (EP), and the entire shoreline frontage is identified as fish habitat. Both designations preclude development of a cottage and associated infrastructure. Based on the available aerial information, it appears that the current zoning and fish habitat designations may be incorrect.



*Figure 1: The location and boundary of the subject property is shown in a red outline.*

The landowner wishes to establish a development envelope for future residential use and will potentially require a zoning by-law amendment to facilitate this. A sketch of the proposed development is included in Appendix A.

FRi was retained to complete a scoped EIS to assess the existing conditions and provide an opinion on the extent and type of habitat available. The background information consolidation, field work and reporting were guided by a Preconsultation Memo from July 21, 2023. The memo indicated

that an Environmental Impact Study be prepared identifying the nature of the EP zone and the fish habitat, the limits of the fish habitat areas and providing recommendations regarding the preservation of habitat. The memo also noted that the property is within Stratum II deer wintering habitat.

This report will address Stratum II deer wintering habitat, the extent of the EP zone based on the natural heritage values, the extent of fish habitat and a suitable dock and boathouse location. For all three considerations, an assessment of impact and recommendations for avoiding negative impacts are included.

## Approach

FRi took a two-part approach to assessing the existing conditions on the property. They include both background research and in-person field investigation.

## Background Information

FRi completed a thorough search and consolidation of the existing background information. This included a review of the following:

- Municipal planning documents – Official Plan, Zoning By-law and associated schedules<sup>1</sup>
- Land Information Ontario Geohub<sup>2</sup> - GIS layers
- Leaf-off 2018 orthoimagery
- Fisheries Protection Program – Request for Review<sup>3</sup>
- Fisheries and Oceans – Species at risk critical habitat; aquatic species at risk GIS data<sup>4</sup>
- FishOnline<sup>5</sup>

## Field Investigation

A single in-person field visit was conducted on August 29, 2023, by two FRi biologists. The entire property was walked, including a cruise of the entire shoreline frontage. The ecosites on the property were assessed and the type and extent of fish habitat was similarly assessed.

## Existing Conditions

### Ecological Setting

The subject property is within the Ontario Shield Zone, Georgian Bay Ecozone (5E). This ecozone occupies more than half of Ontario and contains both boreal forest and non-boreal Great Lakes – St. Lawrence Forest regions. It experiences long cold winters and short warm summers. There

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<sup>1</sup> <https://magnetawan.com/residents/planning-zoning>

<sup>2</sup> <https://geohub.lio.gov.on.ca/>

<sup>3</sup> <https://www.dfo-mpo.gc.ca/pnw-ppe/measurements-mesures-eng.html>

<sup>4</sup> <https://www.lioapplications.lrc.gov.on.ca/AgMaps/Index.html?viewer=AgMaps.AgMaps&locale=en-CA>

<sup>5</sup> <https://www.lioapplications.lrc.gov.on.ca/fishonline/Index.html?viewer=FishONLine.FishONLine&locale=en-CA>

are a wide range of temperatures, precipitation and diverse surficial geology and substrates, as well as complex drainage patterns.<sup>6</sup>

It is more specifically within the Huntsville Ecodistrict (5E-8). The climate in this ecoregion is cool temperate and humid; with mean annual temperatures ranging from 2.8 to 6.2°C and a growing season between 183 and 219 days. Mean precipitation ranges between 771 and 1134 annually.<sup>7</sup> The Huntsville Ecodistrict is situated on the southern edge of the Precambrian Shield and is comprised of gneissic and granitic bedrock. Exposed bedrock is common, as is bedrock covered by limited unconsolidated matter; reflecting the bedrock-controlled geology of the region. There are localized pockets of clay and silt scattered throughout the ecodistrict; wetlands are present in lower areas adjacent the upland bedrock knobs. The forest composition in this region is dominated by mixed forest with pure deciduous and coniferous stands.

### Ecological Land Classification

The ecosites on and within 120 metres of the subject property, to the extent possible respecting adjacent private property, were determined and are described in detail below. The represented ecosites correspond to potential habitat and natural heritage features and could reflect the rationale for the EP zoning. They are described below.

### Ecosites

Ecological land classification or 'ecosites' are determined by assessing the soil and vegetation characteristics of a site. An ecosite is a contiguous area that shares soil, moisture, and vegetation characteristics, and is at least 0.5 hectares in size. Areas smaller than 0.5 ha are typically not considered standalone ecosites and are included as part of the larger landscape ecosite. However, where small, unique areas are present on the landscape, they are assessed and delineated as ecoelements.

There is one (1) terrestrial ecosites and two (2) wetland ecosites represented on the subject property. The terrestrial ecosite is represented in the tall-treed (Tt) condition, while the wetland ecosites are represented in shrub (S) and open (N) condition. The adjacent properties are other private land, and in the absence of permission to access these lands, the ecosites are assumed contiguous with the assessed types and boundary apparent from the available imagery and observation in the field.

There is a change in forest type along a narrow section of parts of the shoreline where balsam fir and occasional Eastern white cedar (*Thuja occidentalis*) are present in the forest canopy and understory. They are visible in the aerial imagery; however, they were not large enough (>0.5ha)

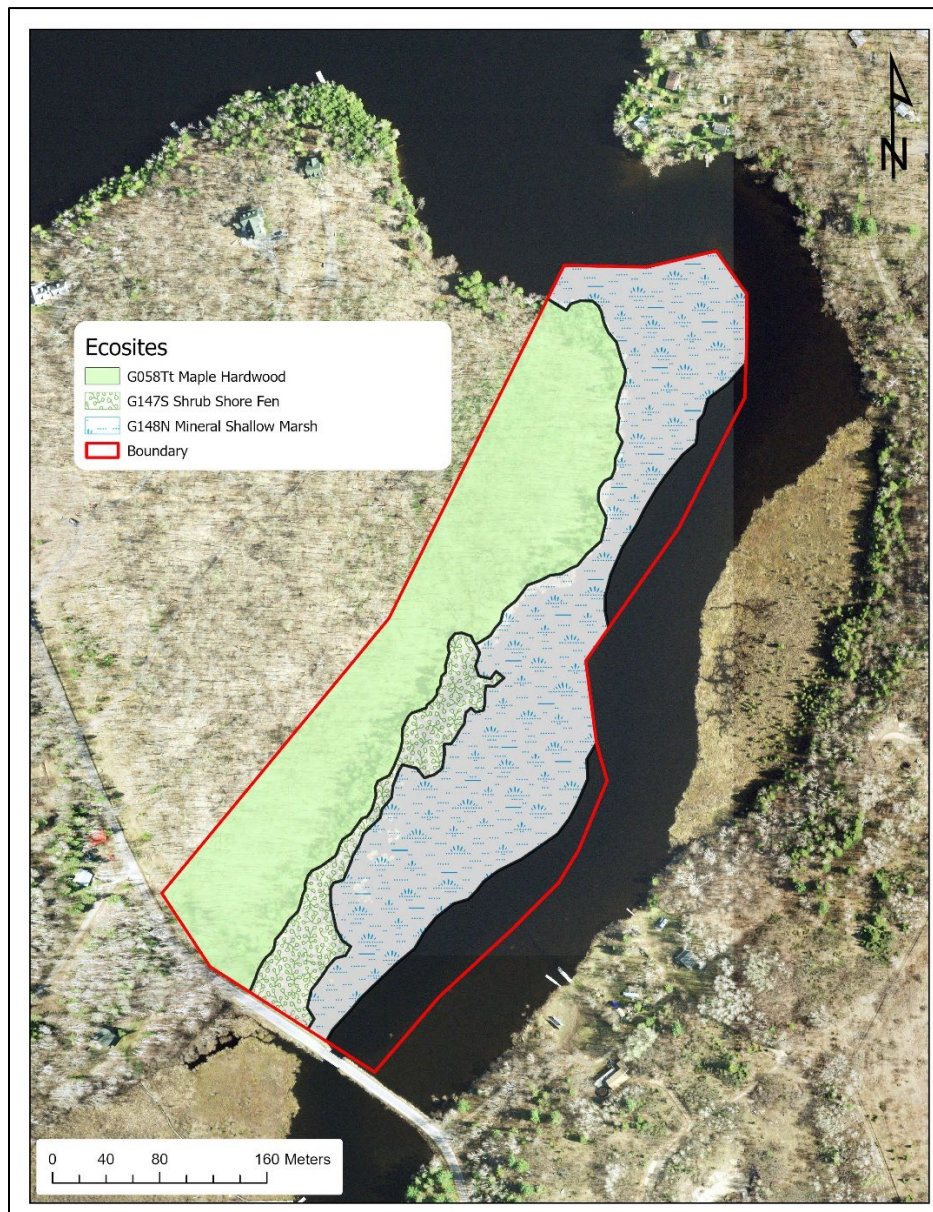
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<sup>6</sup> Crins, William J., Paul A. Gray, Peter W. C. Uhlig, and Monique C. Wester. 2009. The Ecosystems of Ontario, Part 1: Ecozones and Ecoregions. Ontario Ministry of Natural Resources, Peterborough Ontario. Inventory, Monitoring and Assessment, SIV TER IMA TR-01, 71pp.

<sup>7</sup> Ibid.

to be considered as a separate ecosite and since the soils were the same as the larger G058 ecosite, they are assumed under the G058 description.

There is an area of flooded land which represents the 'channel' between Neighick Lake and Crawford Lake downstream. This open water channel does not align with an ecosystem in the provincial framework, rather it is a watercourse.



*Figure 2: Ecosites on the subject property.*

#### Terrestrial Ecosites

- G058Tt Dry to Fresh, Coarse: Maple Hardwood

*G058Tt Dry to Fresh, Coarse: Maple Hardwood*

This upland terrestrial ecosite is represented on almost all of the non-flooded subject property, about 4.5 hectares. It is characterized by fresh mineral soils, a coarse sandy loam, with inclusions of bedrock at or near the surface. There are very occasional boulders at the surface, and a moderate understory. The canopy is dominated by sugar maple (*Acer saccharum*), with occasional yellow birch (*Betula alleghaniensis*), American basswood (*Tilia americana*) and black cherry (*Prunus nigra*).

The understory herbaceous vegetation includes young sugar maple seedlings, wood fern (*Dryopteris sp.*), wild sarsaparilla (*Aralia nudicaulis*), honeysuckle (*Lonicera sp.*), grasses (*Poa sp.*) and leaf litter. Exposed sandy loam soils were apparent in the forested ecosite. There is occasional balsam fir (*Abies balsamea*) in the understory, in particular along the shoreline.



Figure 3 & Figure 4: Coarse sandy loam soils at representative locations in the G058 maple hardwood ecosite. Note the soils over bedrock, sometimes exposed.



Figure 5: Sandy loam soils in G058 ecosite.



*Figure 6 & Figure 7: Typical tall-treed maple hardwood forest. The understory is moderately open.*



*Figure 8: Typical G058 maple hardwood showing the coarse loamy soils, understory and canopy.*



## Wetland Ecosites

- G147S Shrub Shore Fen
- G148N Mineral Shallow Marsh

### *G147S Shrub Shore Fen*

The shrub shore fen ecosite is represented in a narrow band along the shoreline – upland interface. It experiences seasonal flooding and is represented by floating mats of low shrubs about 0.8 ha in size. The size of this ecosite is influenced by water level fluctuations; the Ahmic system can fluctuate as much as 1.5 metres annually.<sup>8</sup> Species include leatherleaf (*Chamaedaphne calyculata*), sweet gale (*Myrica gale*), and occasional speckled alder and willow species. Herbaceous vegetation includes sedges (*Carex sp.*), marsh cinquefoil (*Comarum palustre*), and bluejoint grass (*Calamagrostis canadensis*).



Figure 9: (left) Shoreline with shrub shore fen in foreground, shallow marsh in background.

Figure 10: (right) Close up of shrub shore fen vegetation.



Figure 11: Organic substrate, saturated, in the G147 shrub shore fen ecosite.

<sup>8</sup> <http://www.muskokawaterweb.ca/water-101/water-quantity/operating-regime>

### *G148N Mineral Shallow Marsh*

The G148 N mineral shallow marsh is represented on approximately 4.61 ha of the subject property. It is entirely within the wetted/flooded lands along the eastern and northern boundaries. There are extensive areas of emergent aquatic vegetation including pickerelweed (*Pontederia cordata*), sedges (*Carex sp.*), rushes (*Scirpus sp.*), cattails (*Typha sp.*) and a few floating species including white-water lily (*Nymphaea alba*) and floating heart (*Nymphoides cordata*).



*Figure 12: Typical view of dense pickerelweed dominated G148 ecosite along the northern and eastern portions of the subject property.*



*Figure 13: View of the G148 ecosite in the foreground, narrow band of G147 followed by G058 upland maple hardwood ecosite on the subject property. View from the bridge on Ahmic Lake Road looking northeast from the southeast corner of the subject property.*

## Shoreline Cruise

A shoreline cruise was completed during the August 29<sup>th</sup> field investigation. Biologists walked the entire frontage of the shoreline on the subject property, with particular attention to the locations identified for both a dock and boathouse. The riparian area and substrate were assessed, the type and extent of aquatic vegetation, and the potential presence of fish habitat features.

## Existing Dock

There is an existing floating dock at the north end of the subject property. It is a small floating dock with two sections. The planned development includes the construction of a boathouse at this dock location, with the floating dock relocated to a different location along the shoreline.

The water depths drop quickly at this location; approximately 70 cm in depth at the shore. The substrate is mostly bedrock, with some organic accumulation but also small cobble and sand.



*Figure 14: Existing floating dock looking north; note the relative absence of floating and emergent aquatic vegetation.*



*Figure 15: View of the bedrock at shore, standing on the existing floating dock. Note the immediately deep water and relative absence of aquatic vegetation (August 29, 2023). This is an ideal location for a boathouse.*



*Figure 16: (left) View from upland toward existing floating dock; terrestrial upland is largely bedrock and elevation rise as one moves away from the lake. Figure 17: (right) View to the immediate west of the existing dock; note the bedrock shoreline and the relative absence of both floating and emergent aquatic vegetation at the dock location.*

### Proposed Boat House Location

The landowner wishes to construct a boathouse at the current dock location. According to plans provided by Custom Home Designs, the architect for the landowner, the proposed boat house will be approximately 32' by 24' or 9.75 metres by 7.3 metres.

The proposed location for the boat house coincides with the existing location of the dock and the nearshore area with the least amount of both emergent and floating aquatic vegetation. It also falls outside of the delineated 'Type 1 fish habitat'. See Figures 28 & 29 for mapping of the identified fish habitat.



Figure 18: (left) To the immediate west of the existing dock location and proposed boat house. Figure 19: (right) View to the front and west of the existing dock and proposed boat house.



Figure 20: (left) View to the front and east of the existing dock and proposed boat house. Figure 21: (right) View to the east of the existing dock and proposed boat house.

### Proposed Dock Location

The landowner is proposing a floating dock, on the east side of the subject property; specifically at a location where the upland slopes gently to the shoreline.



Figure 22: (left) View looking south to gently sloping upland and Figure 23: (right) View looking north at gently sloping upland to lake and location of proposed floating dock.



*Figure 24: View of upland area adjacent lake where floating dock is proposed.*



*Figure 25: Existing condition at proposed floating dock location. Note fluctuating water levels will result in dock sections being temporarily stranded. Any proposed in-water and nearshore works will require a Request for Review be submitted to Fisheries and Oceans.*

## Natural Heritage Considerations

The following natural heritage features were identified and addressed as directed in the pre-consultation memo from July 21, 2023.

### Environmental Protection Zoning

A large portion of the subject property is presently zoned environmental protection or EP according to the zoning bylaw schedules. Both Schedule A-1 from the 2018 Zoning By-law and the interactive municipal mapping<sup>9</sup> show more than half of the upland (unflooded lands) as 'EP'. The reason for this zoning is not entirely clear, although it is suspected that it is related to the fish habitat and wetlands in the wetted areas of the property.

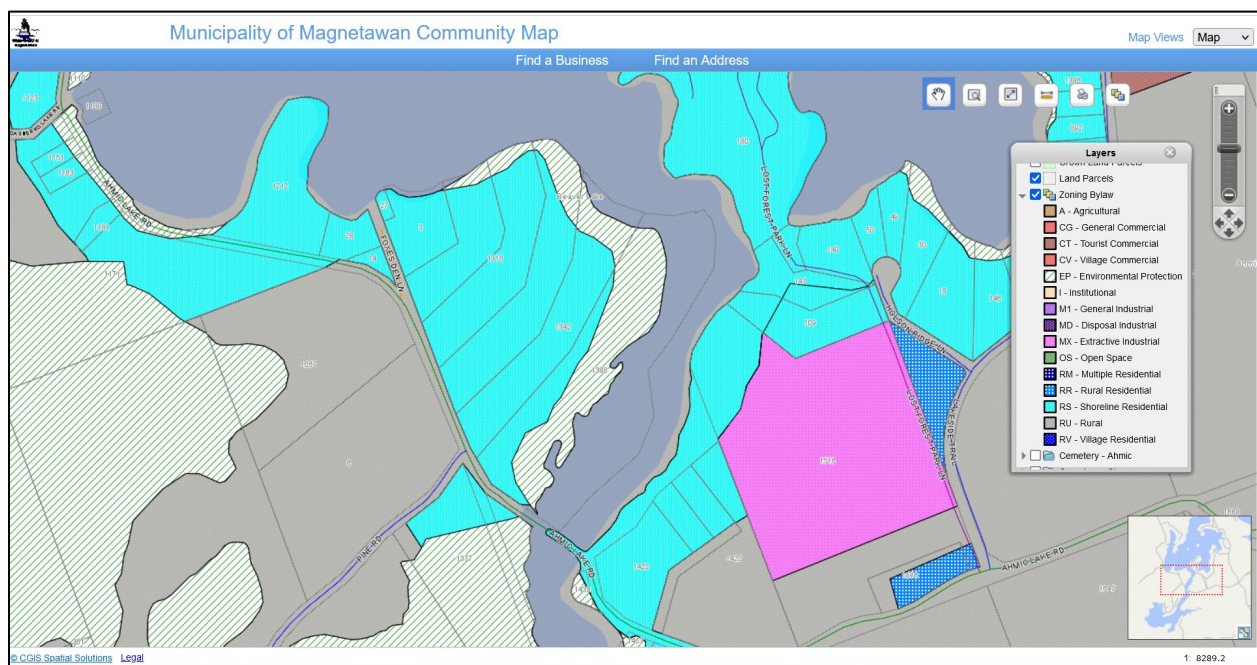


Figure 26: Zoning by-law interactive mapping showing 'EP' on a large portion of the non-wetted area of the subject property.

Field investigations confirm the absence of both wetlands and fish habitat on the subject property to the extent shown in the Zoning Bylaw mapping. It is our opinion that the EP designation for most of the terrestrial upland area is incorrect and should be adjusted to reflect the nature of the subject land. The upland area is mature maple hardwood bush and does not provide either wetland or fish habitat values.

The EP boundary should be adjusted to reflect the high-water line and known elevations based on the water control and associated fluctuations. The system is regulated, and the levels are known. Field investigations confirm the presence of this 'line' by the upland terrestrial vegetation and a

<sup>9</sup> <http://www.cgis.com/cpal/?map=Magnetawan>

clear boundary on the ground separating the upland areas from the seasonally or occasionally wetted areas. This report supports rezoning any area identified as G058 Maple Hardwood from EP (Environmental Protection) to RS (Shoreline Residential) – identified in pink hatching in Figure 26.

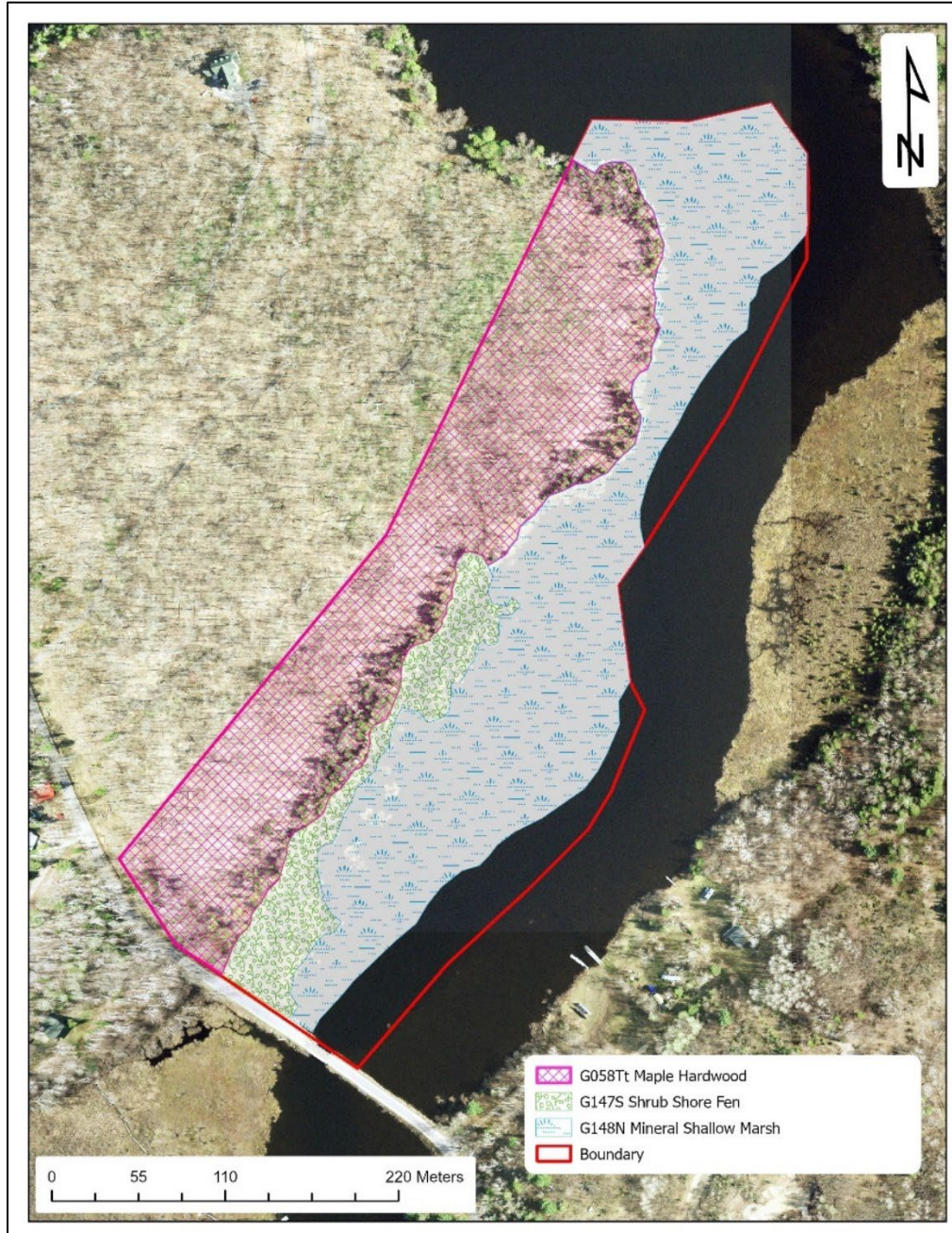


Figure 27: The pink hatching represents the upland terrestrial ‘maple hardwood’ forest on the subject property. This report supports the rezoning of this entire forested polygon to RS – Shoreline Residential – from EP – environmental protection.



The proposed cottage and accessory buildings will be entirely within the upland terrestrial area, which will be appropriately zoned to RS (shoreline residential) accommodate the proposed development.

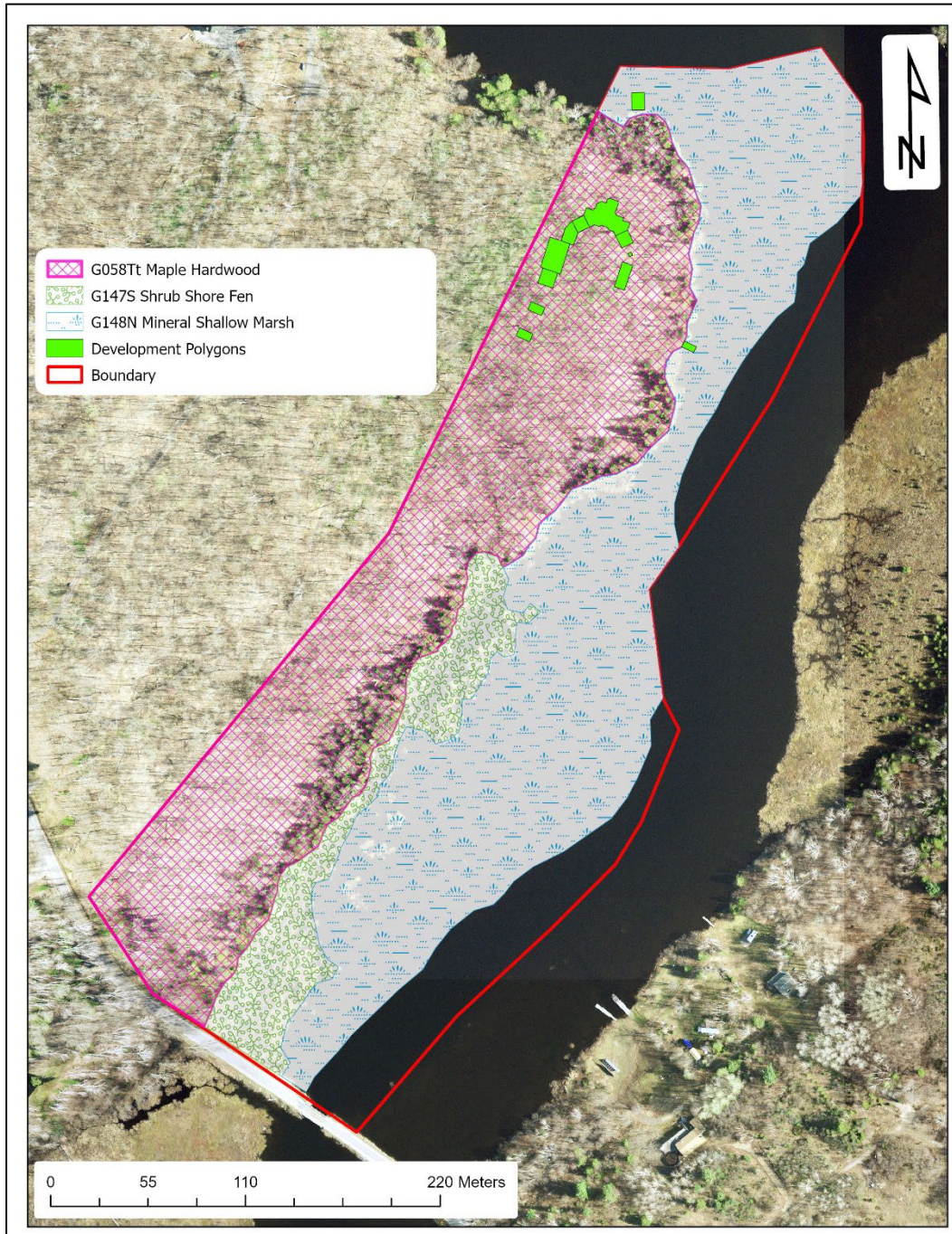


Figure 28: Location of proposed cottage development and accessory buildings; wholly within the area to be rezoned from EP to RS – which permits the planned shoreline residential development.

## Fish Habitat

Fish and fish habitat are protected under the federal *Fisheries Act*. This Act has undergone considerable changes over the past 20 years, which are not always reflected in municipal planning framework including Official Plans, Zoning and policies related to fish and fish habitat protections.

Presently, a large portion of the flooded land is identified as 'Type 1 Fish Habitat'. The remaining wetted areas along the shoreline of the property are identified as Type 2 Fish Habitat. The Province of Ontario provided the Town with 'information identifying the location and typing of fish habitat'. Fish habitat typing is an historic approach to fish habitat management dating back to the 1990's. The province has certain delegated responsibilities assigned by the federal government under the *Fisheries Act* e.g., Fishing Regulations, but the province is not directly responsible for fish habitat protection. This falls under the purview of the federal government. The federal *Fisheries Act* is the legislation which provides protection provisions for fish and their habitat.

The recently revised *Fisheries Act* (1985) prohibits activities that 'result in the death of fish' or 'result in the harmful alteration, disruption or destruction of fish habitat'. The Act has exceptions to these prohibitions which include authorizations and prescribed work (detailed in the Regulations).

Sections 34.4 and 35 of the *Fisheries Act* represent the current legislative framework that protects fish and their habitat. These sections include prohibitions on activities which 'result in the death of fish' or 'result in the harmful alteration, disruption or destruction of fish habitat' (HADD). Fish habitat 'typing' is irrelevant to inform the sensitivity of a fish habitat since the Act prohibits both the death of fish and the harmful alteration, disruption or destruction of fish habitat. The Act treats all fish and fish habitat equally – it does not differentiate or assign levels of sensitivity based on the thermal regime or species of fish present in a watercourse.

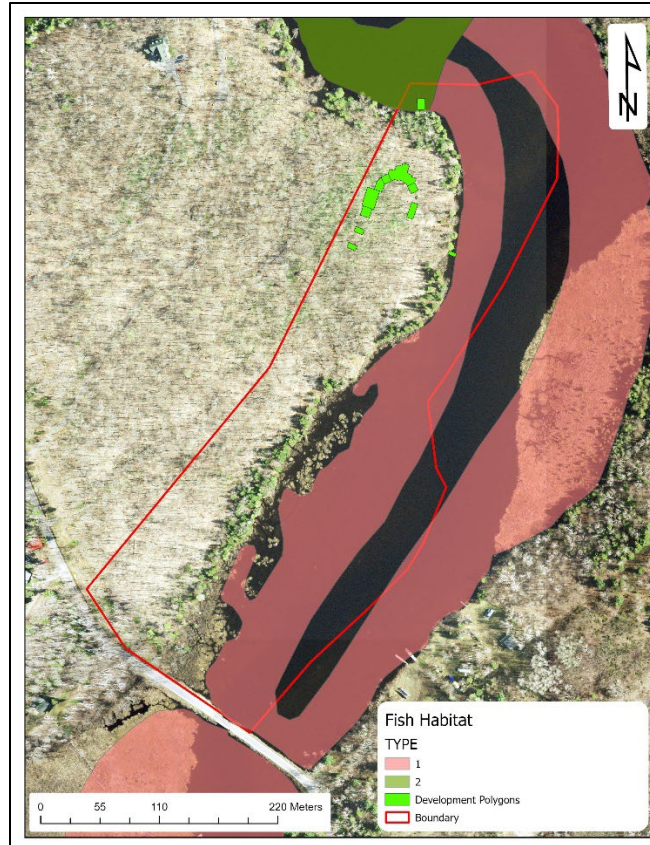


Figure 29: Overview of fish habitat ‘typing’ fronting the subject property. Note the majority of the shoreline is designated ‘type 1’; however, the location of the existing dock and proposed boat house are wholly within Type 2 fish habitat.

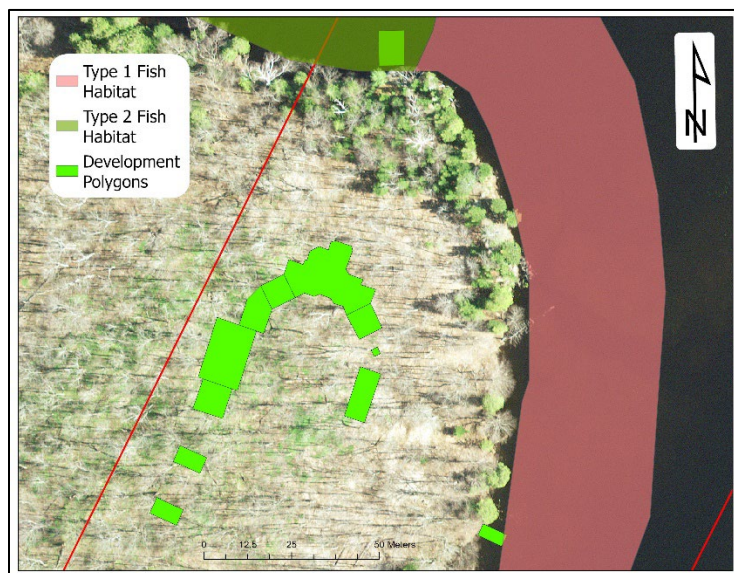


Figure 30: Zoomed in view of the proposed development polygons and the fish habitat typing. Note that the entire upland cottage and associated development envelopes are outside of any identified fish habitat.

The proposed boat house is situated entirely outside of the identified Type 1 fish habitat. This meets any natural heritage considerations from the municipal planning perspective. The federal Fisheries Act protects fish and fish habitat and provides a self-assessment tool for which proponents can assess whether their project avoids harm to fish and/or fish habitat. FRI recommends the landowner complete a self-assessment and Request for Review, if necessary, in advance of boat house construction. If a Request for Review is necessary, Fisheries and Oceans (DFO) will review the work and provide either a letter of advice to proceed or recommendations to seek an authorization. Regardless, the process will ensure the municipality has met their listed requirements under the Provincial Policy Statement and their Official Plan.

### Deer Wintering Area

The subject property is overlapped by Stratum II deer wintering area, specifically the Oranmore Deer Yard. These areas are identified by the Ministry of Natural Resources and Forestry and are reflected in municipal planning documents.

The Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E<sup>10</sup> (SWHCS) and the Significant Wildlife Habitat Mitigation Support Tool<sup>11</sup> (SWHMiST) provide details on the function and composition of winter concentration areas for white-tailed deer. Deer wintering or yarding areas are areas where deer move to at the onset of colder temperatures and snow. The 'yard' is described as two distinct stratum, referred to as Stratum I and Stratum II.

Stratum I represents the 'core' of the yard, areas where deer will concentrate during the winter when snow depths reach 30+ cm. Stratum I areas are critical for survival during the winter and are primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%.

Stratum II is typically a deciduous or mixed forest with abundant woody browse available for food. Deer move into Stratum II areas in the fall and early winter, usually when snow depths reach 20 cm. Deer use the Stratum II habitat to move to Stratum I habitats during winters with heavier snowfalls; Stratum II functions as a staging and movement area.

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<sup>10</sup> Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E, January, 2015, Ontario Ministry of Natural Resources and Forestry. 46 pp.

<sup>11</sup> Significant Wildlife Habitat Mitigation Support Tool, Version 2014. Ontario Ministry of Natural Resources and Forestry. 533 pp.

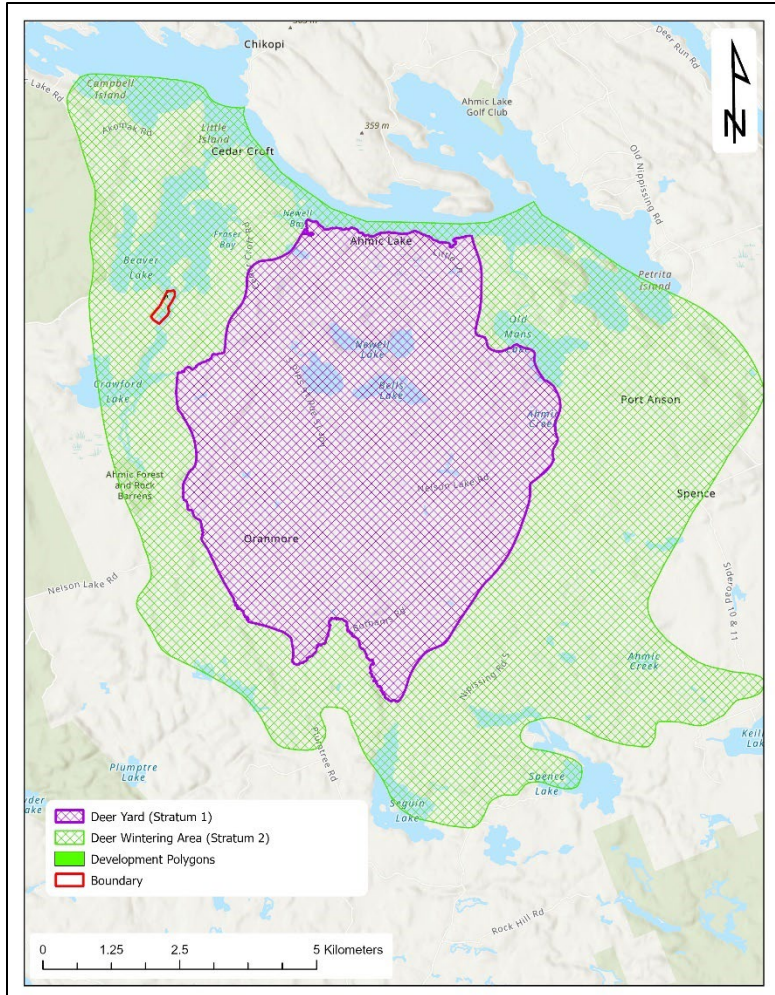


Figure 31: Oranmore deer yard; stratum I in purple, stratum II in green. The subject property is wholly overlapped by stratum II deer wintering habitat.

In Northern Ontario, Stratum II habitat staging areas are on lands surrounding core wintering areas. According to the SWHMIST, single-lot development is not expected to have significant or serious impacts on deer wintering habitat and its function. However, the guide cautions that the practice of depositing food for deer to enhance viewing opportunities by people should be discouraged. The practice of winter-deer feeding affects the animal’s normal migration to a deer wintering area and concentrates deer in areas where they would not normally spend the winter. Supplemental feeding can also contribute to localized traffic hazards and negative human-wildlife interactions.

FRI recommends that landowners refrain from supplemental feeding of white-tailed deer in the winter. This will ensure deer continue to follow their natural migration patterns. The proposed small-scale cottage development should not negatively impact the ability of white-tailed deer to move through the identified Stratum II habitat to the ‘core’ yard during the winter months.

## Proposed Development

### Cottage and Accessory Buildings

The proposed cottage and accessory buildings including the septic system are situated in mature maple hardwood forest. They exceed the minimum planning setbacks from the shoreline and adjacent properties according to the plans provided by the landowner's architect.

### Boathouse

As noted above, the best location for the proposed boathouse is the location of the existing floating dock. This location is ideal given the relative absence/minimal aquatic vegetation, the bedrock substrate and the immediately suitable water depths to accommodate watercraft. It is also entirely outside of the identified 'type 1' fish habitat.

The planned boat house should undergo a 'self assessment' following the guidance found on the Fisheries Protection website. <https://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/request-review-demande-d-examen-004-eng.html> If determined through the self-assessment process, a Request for Review may be required. Regardless, the proposed boathouse generally meets the municipality's planning requirements.

### Dock

The existing floating dock location is proposed to be replaced by a boathouse. This necessitates moving the floating dock to another suitable location. Most of the shoreline is identified 'type 1' fish habitat; however, an explanation was given, providing context in the current legislative framework. In short, a float dock will not likely negatively impact fish or fish habitat. It is assumed that the proposed dock will include a narrow footpath, not more than 3 metres wide to accommodate access to the dock.

FRi recommends the landowner submit a Request for Review to Fisheries and Oceans, requesting their review and approval of the proposed dock location. This approach is consistent with the Provincial Policy Statement (PPS) and associated municipal planning framework.

## Recommended Mitigation

The following are recommended respecting the proposed development at 1388 Ahmic Lake Road:

- Self assessment of the proposed dock and boat house following the Fisheries Protection Program guidance
  - <https://www.dfo-mpo.gc.ca/pnw-ppe/reviews-revues/request-review-demande-d-examen-004-eng.html>
- Submit a Request for Review for any in-water and riparian work e.g., boat house and dock, following self-assessment if required;
- Timing of tree clearing and vegetation removal for the development envelopes restricted to October 1<sup>st</sup> through March 31<sup>st</sup> to protect wildlife values; e.g., breeding birds;

- Delineate development areas to minimize disturbance to adjacent undeveloped areas on the subject property.
- Refrain from supplemental feeding of wildlife to discourage human-wildlife conflicts, including winter feeding of white-tailed deer.

## Summary

This report supports the rezoning of all identified terrestrial upland areas at 1388 Ahmic Lake Road from EP (environmental protection) to RS (shoreline residential). If the above noted recommendations are implemented and the suggested timing is adhered to, the proposed cottage development and associated accessory buildings including a boat house and floating dock, will not negatively impacts the natural heritage values on the subject property. This applies to those proposed development envelopes as shown in the appended sketch and reproduced in the figures in this report.

Respectfully submitted,



Rebecca Geauvreau  
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Species at Risk Biologist

