



Important Amphibian and Reptile Areas Nomination Form

MER BLEUE CONSERVATION AREA

PART 1: Nomination Eligibility Criteria

Nominations for an Important Amphibian and Reptile Areas Program (IMPARA) site must be made on this Nomination Form. Please read through the IMPARA site eligibility criteria below to ensure that your nomination complies. These criteria are intended to be the first step in a dialogue between the nominator and Canadian Herpetological Society (CHS). Your nomination may not be considered if you fail to comply with this checklist.

IMPARA eligibility criteria:

- a. Site has species of conservation concern.
- b. Site has a high diversity of species.
- c. Site fulfills important life history function for gatherings of individuals or aggregations of species.

1.1 Species of Conservation Concern

A site that is nominated under this criterion must contain a significant number of individuals of a species that is of conservation concern. CHS uses the broad definition of a species used by COSEWIC, which defines species as, "Any indigenous species, subspecies, variety or geographically defined population of wild fauna and flora."

Species of conservation concern are any species with the following designations:

- Globally designated as Critically Endangered, Endangered or Vulnerable by the International Union for the Conservation of Nature ([IUCN](http://www.iucnredlist.org/search)). See (<http://www.iucnredlist.org/search>) and enter species name.
- Nationally designated as at-risk (Endangered, Threatened, and Species of Special Concern) by the Committee on the Status of Endangered Wildlife in Canada ([COSEWIC](#)) or the federal Species at Risk Public Registry ([SARA](#)).

- Provincially/territorially designated as at-risk by the provincial or territorial government or other designated group that assesses the status of species within a province, or a provincial/regional Conservation Data Centre.

Defining what is meant by a "significant" number of individuals of any species is difficult given the diversity of life histories, geographic distributions and abundances of amphibians and reptiles. Here are two suggested methods to use as a guideline to define a significant number of individuals:

- The site holds greater than or equal to 1% of a species' Canadian population.
- The site is one of 50 or fewer sites, or is one of the most important sites supporting the Canadian population of a species.

These two methods reflect the reality that a great deal is known about the occurrence of some species of amphibians and reptiles, and relatively little about the majority. Therefore, we encourage nominators to include as much information as they can in their nomination and as necessary propose the nominator's logic as to why this site is significant. For example, when it is possible to estimate the number of individuals at a site as well as in all of Canada, then method 1 should apply. Otherwise, if the total number of sites at which the species occurs is known, method 2 should apply.

Sites from which a species has been extirpated (i.e., when a species ceases to exist in a geographic area, though still exists elsewhere) may also be nominated if habitat restoration and/or re-introductions are underway or planned.

1.2 High Diversity of Species

A site that is nominated under this criterion regularly holds a large proportion of the amphibian and/or reptile species known to be present within the nation, province/territory, region, or another spatial scale. The goal of this criterion is to identify sites that contain higher than average numbers of species. Species diversity varies significantly from region to region across Canada, and lower latitudes generally have more species than higher latitudes. This means that a significant proportion of the amphibian and/or reptile species in one region may be relatively insignificant in another region, and vice versa. Therefore, it is up to the nominator to define the geographic scale (i.e. national, provincial/territorial, regional, or other) under consideration, and to demonstrate how the site's diversity is relatively high.

Nominators may also choose to make their case based on various taxonomic levels. For example, the site may hold a large proportion of the province's snake species.

1.3 Important Life History Requirements

A site that is nominated under this criterion is used by exceptionally large numbers of amphibians and/or reptiles that gather or aggregate for the purpose of completing some life history activity such as reproduction, hibernation, foraging, or thermoregulation (e.g., communal hibernation sites, vernal breeding ponds, etc.). The nominator should define the geographic

scale at which this site should be considered important. Nominators should also provide evidence supporting their claim that the congregation of a species at the site is exceptionally large.

1.4 Boundary and Area Justification

Important Amphibian and Reptile Areas must have clear boundaries (geographical or political), and must be large enough to potentially support self-sustaining populations. However, they should also be small enough that they form units amenable to local or regionally oriented conservation and restoration.

Large areas (e.g. larger than 100,000 ha) may be recommended when they are intended to cover complementary habitat types or include networks of multiple local populations that function as metapopulations or metacommunities. Large areas may also be intended to cover scattered critical habitat features such as den or breeding sites. Protecting networks of local populations spread over large areas can be important in decreasing risk of extinction. When nominating large sites, it is important that the majority of the area being nominated meets the criteria for designation; avoid nominating large areas based on existing property ownership or political boundaries if significant portions of the area are unoccupied by the species in question or if they do not meet the criterion being used for designation.

In highly human-altered landscapes, habitat patches or populations are often isolated from one another. In this case, recommending a larger mosaic enclosing multiple small, isolated sites may function best for guiding future conservation or restoration efforts to increase connectivity and total habitat area. When a large area under consideration includes highly urbanized lands such as towns or cities, the nominator(s) must decide whether to include or exclude these locations from the area. Providing some justification for nominating larger areas helps in the review process and increases designation success.

While areas that already protect amphibian and reptiles (i.e., parks and conservation areas) are obvious candidates for IMPARA designation, it is also important to nominate areas that are not currently protected.

Provide a concise explanation of the reasons or methods used for selecting and determining the boundaries of the Nomination. A verbal boundary description or a scale map precisely defining the property boundaries must also be given.

PART 2: Nomination Form

2.1 Nominator Information (repeat this section if more than one nominator)

Name: David Seburn
Organization/Affiliation: Canadian Wildlife Federation
Address: 350 Michael Cowpland Drive
City/Town: Ottawa
Province/Territory: ON
Postal Code: K2M 2W1
Telephone: 613-599-9594
Fax:
E-mail: davids@cwf-fcf.org

Name: Eva Katic
Organization/Affiliation: National Capital Commission
Address: 202 – 40 Elgin St.
City/Town: Ottawa
Province/Territory: ON
Postal Code: K10 1C7
Telephone: 613-239-5000
Fax:
E-mail: eva.katic@ncc-ccn.ca

2.2 Location

Site names: Mer Bleue Conservation Area
Province/Territory: County/Region/District(s): ON
Closest City/Town: Ottawa
UTM/Geographical Coordinates: 45.40589°N 75.49504°W
Directions to Site: Mer Bleue Bog is located in the eastern part of the City of Ottawa, north of Highway 417 and just off of Anderson Road
Maps (please attach): Figure 1
Other:

2.3 Physical Description

Area (please specify units): ~3,500 ha in total size. Wetland area: ~2,800 ha

Please describe the site, providing information of habitat type, vegetation type, presence and type of waterbodies:

The Mer Bleue Conservation Area is dominated by a large ombrotrophic bog with boreal characteristics. Such boreal peatlands are typically found well to the north of the Ottawa area. Mer Bleue Bog is the second largest bog in southern Ontario. The bog lies in a post-glacial channel system and formed over the past 8000 years. Peat depths can reach 6 m in the centre of

the bog. Mer Bleue Bog contains two main types of habitats: Black Spruce (*Picea mariana*) forest and open heath.

Black Spruce forest: dominated by Black Spruce with some Tamarack (*Larix laricina*), Trembling Aspen (*Populus tremuloides*) and various birch species (*Betula* spp.).

Open heath: Dominated by various Ericaceae species, the most common being Labrador Tea (*Rhododendron groenlandicum*), Leatherleaf (*Chamaedaphne* spp.), Small Cranberry (*Vaccinium oxycoccos*), Bog Laurel (*Kalmia polifolia*), and Sheep Laurel (*Kalmia angustifolia*). At least nine species of orchids (family Orchidaceae) are found in Mer Bleue along with a variety of cottongrasses (*Eriophorum* spp.) and sedges (*Carex* spp.). In addition, carnivorous plants such as sundews (*Drosera* spp.) and Northern Pitcher Plants (*Sarracenia purpurea*) also occur there. A large number of mosses are present across the bog including species of *Sphagnum* and *Polytrichum*.

Wetlands: Most of the area consists of bog habitat (Figure 2) and around the bog margins there is an open water lagg habitat (Figure 3). There are also small open ponds in the bog mat. At the margins of the bog there is open water, marsh habitat with common marsh species such as Cattails (*Typha* spp.), Speckled Alder (*Alnus rugosa*), and willows (*Salix* spp.).

In the centre of the bog there are a few sandy islands with an overstorey of Trembling Aspen.

2.4 Land Ownership

If there are five or fewer owners, please list them. Otherwise, an appropriate government representative, such as municipal council or regional district, is sufficient.

Name:

Organization/Affiliation: National Capital Commission

Address: 202 – 40 Elgin St.

City/Town: Ottawa

Province/Territory: ON

Postal Code: K10 1C7

Telephone: 613-239-5000

Fax:

E-mail: eva.katic@ncc-ccn.ca

Local community support:

- Are the land owners/managers/stewards aware of the importance of the site to amphibian and reptile conservation? YES
- Are they aware of this site nomination, and if so did they participate in the process? YES

The following guidelines for Nominations have been created to help you complete the nomination process. They are somewhat flexible, depending on the specifics of the site.

2.5 Species Diversity and Status

In the table provided, please: 1) list all species of amphibians and reptiles recorded at the site, estimated numbers of individuals of each species (if known), and any citations from which information was obtained (include the name of an observer if information is not published). Provide a Literature Cited section at the end of the nomination; and 2) list status designations for species of conservation concern based on applicable categorization processes listed in Section 1.1.

Quantifying the number of individuals at the proposed IMPARA site for all of the listed reptile and amphibian species can be challenging. Quantitative information may be available for some species based on population estimates. If these exist please enter the estimate, along with confidence intervals if generated, in the column for No. of individuals. For many species population estimates will not exist. We suggest two alternative methods of estimating abundance rather than leaving the column blank.

1. Numerical estimates, for when you have a general idea of numbers:
 - a. 1-100 (or tens)
 - b. 101-1000 (or hundreds)
 - c. 1001+ (or thousands)

2. Relative Abundance based on encounters or reports:
 - a. **Rare:** restricted to specialized habitat which is a small proportion of site and/ or occurs at low density. Rarely encountered or reported, i.e., only once or twice per year, not necessarily every year.
 - b. **Uncommon:** Usually encountered over long (several day) surveys; typically encountered or reported on a monthly basis.
 - c. **Common:** Usually encountered during surveys of high quality habitat; typically widespread and occurs in a variety of habitats at the site. Encountered or reported on a weekly basis.
 - d. **Abundant:** Many individuals encountered during surveys, especially in high quality habitats (i.e., leopard frogs along a shoreline), widespread and in many habitats in the site. Reported or encountered on an almost daily basis.

Species	COSEWIC Status	No. of Individuals	References
Frogs & Toads			
<u>Treefrogs</u> Spring Peeper (<i>Pseudacris crucifer</i>)	Not assessed	Common/Abundant	Personal observation, iNaturalist
Western Chorus Frog (<i>Pseudacris triseriata</i>)	Threatened	Historical records, but no recent observations	Ont Herpetofaunal Summary; Seburn 2014
Gray Treefrog (<i>Hyla versicolor</i>)	Not assessed	Common/Abundant	iNaturalist
<u>Toads</u> American Toad (<i>Anaxyrus americanus</i>)	Not assessed	Common/Abundant	Personal observation, iNaturalist
<u>True Frogs</u> American Bullfrog (<i>Lithobates catesbeianus</i>)	Not assessed	Common/Abundant	iNaturalist
Green Frog (<i>Lithobates clamitans</i>)	Not assessed	Common/Abundant	Personal observation, iNaturalist
Northern Leopard Frog (<i>Lithobates pipiens</i>)	Not at Risk	Common/Abundant	iNaturalist
Wood Frog (<i>Lithobates sylvaticus</i>)	Not assessed	Common/Abundant	Personal observation, iNaturalist
Salamanders			
Eastern Red-backed Salamander	Not assessed	Uncommon	iNaturalist
Snakes			
Eastern Gartersnake (<i>Thamnophis sirtalis</i>)	Not assessed	Common/Abundant	Personal observation, iNaturalist
Red-bellied Snake (<i>Storeria occipitomaculata</i>)	Not assessed	Common/Abundant	Personal observation, iNaturalist

Turtles			
Snapping Turtle (<i>Chelydra serpentina</i>)	Special concern	Common/Abundant	Personal observation, iNaturalist
Painted Turtle (<i>Chrysemys picta</i>)	Special concern	Common/Abundant	Personal observation, iNaturalist
Spotted Turtle (<i>Clemmys guttata</i>)	Endangered	>30 adults	Chippindale 1984, Seburn 2003
Blanding's Turtle (<i>Emydoidea blandingii</i>)	Endangered	Uncommon	Personal observation

Other Species

Please list other significant non-amphibian and non-reptile species (e.g. rare or endemic) that are present at the site and describe the importance of the site to these species.

Statuses provided are the listing on Schedule 1 of the federal Species at Risk Act. No in-depth studies on any of these SAR have been conducted at Mer Blue.

Species	Status	Importance of Site	References
Birds			
Barn Swallow	Threatened	Confirmed breeding	NCC database
Bobolink	Threatened	Confirmed breeding	NCC database
Canada Warbler	Threatened	Confirmed breeding	NCC database
Eastern Meadowlark	Threatened	Confirmed breeding	NCC database
Eastern Whip-poor-will	Threatened	Confirmed breeding	NCC database
Eastern Wood-pewee	Special Concern	Confirmed breeding	NCC database
Least Bittern	Threatened	Confirmed breeding	NCC database
Wood Thrush	Threatened	Confirmed breeding	NCC database
Plants			
Butternut	Endangered	Confirmed in a few locations	NCC database
Invertebrates			
Monarch	Special Concern	Breeding habitat	NCC database

2.6 Site Criteria

Under each category, please provide a description of how this site fulfills the Important Amphibian and Reptile Areas criteria (see Part 1). If a category does not apply to this site then simply leave it blank (e.g., if there are no species of conservation concern present then leave the “Species of Conservation Concern” category blank).

1. Species of Conservation Concern:

Mer Bleue is home to five nationally-listed species at risk amphibians and reptiles: one frog species and four turtle species.

Turtles. Two nationally endangered turtle species occur at Mer Bleue: the Blanding’s Turtle and the Spotted Turtle (Figure 4). Both of these species are also listed by the IUCN as globally endangered. While the Blanding’s Turtle is widespread in Ontario, the Spotted Turtle has a limited distribution. Two species nationally designated as special concern also occur at Mer Bleue: Painted Turtle (Midland subspecies) and Snapping Turtle.

Based on the IMPARA criteria, Mer Bleue Bog qualifies as an IMPARA site in two ways under species of conservation concern: 1) “The site holds greater than or equal to 1% of a species’ Canadian population” and 2) “The site is one of 50 or fewer sites, or is one of the 50 most important sites supporting the Canadian population”.

The total Canadian population of Spotted Turtles is estimated to be 2000-3000 adults (COSEWIC 2014). Using the upper population estimate of 3000 adults, 1% of the Canadian population would be 30 adults. The most recent Spotted Turtle population estimate at Mer Bleue Bog was 45 adults, with 95% confidence limits of 34-78 adults (Seburn 2003). Even the lower population limit of 34 adults is greater than 1% of the Canadian population.

The Spotted Turtle is currently known from only 25 locations in the Canada (COSEWIC 2014). Although some historical locations may still contain a few Spotted Turtles, the status report suggests there is likely no more than 30 sites with Spotted Turtles in Canada (COSEWIC 2014) and hence Mer Bleue Bog is “one of 50 or fewer sites” in Canada. Many locations with Spotted Turtles in Ontario are small and the wetland habitat is degraded. In contrast, Mer Bleue Bog provides a large bog habitat that buffers Spotted Turtles from threats at the edges of the bog. Even if there are many additional Spotted Turtle sites in Canada, Mer Bleue Bog would clearly be in the “50 most important sites” given the thousands of hectares of wetland habitat.

Frogs. The Western Chorus Frog has been reported from Mer Bleue a number of times from the 1950s to the 1980s (Ontario Herpetofaunal Summary data). More recent surveys in the 2000s failed to detect the Western Chorus Frog from Mer Bleue or the area immediately around the conservation area (Seburn et al. 2014). There have been no major changes to the habitat since the 1980s so habitat for the Western Chorus Frog presumably still occurs at Mer Bleue.

2. High Species Diversity: Mer Bleue is home to a wide range of amphibians and reptiles. Compared with the numbers of species found in the region, Mer Bleue supports 53% (9 of 17) of the regional pool of amphibians, and 43% (6 of 14) of the region's reptiles present. It is also possible that other species are present but have not yet been confirmed yet, such as some other species of salamanders or snakes.
3. Important Life History Requirements: Mer Bleue provides important breeding, foraging, and overwintering habitat for a variety of amphibians and reptiles. Considering the large size of Mer Bleue many species found there likely spend their entire lives on the site.

2.7 Human Impacts

Please describe how human activities are impacting the site and the immediately surrounding areas in the following ways:

- Current site usage (if any), e.g., industrial, residential, farming, logging, camping, recreation, etc. (please indicate relative importance):

Mer Bleue Bog is owned by the National Capital Commission and it is a public conservation area. There are limited trails in the area and most of the bog is off limits to the public to protect the sensitive bog habitat. The conservation area is very popular but most visitors stick to the well-maintained trails and a short boardwalk.

- Pollution (air, water, light, noise):

Overall, Mer Bleue has limited effects from pollution. Given the large size of the bog, the core area is more than 2 km from any major road or sources of air, light or noise pollution. Run-off from Anderson Road in the western portion of the conservation area contributes pollution to the marsh areas adjacent to the road, but those marsh areas do not drain into the bog.

- Threats to habitat (e.g., development, habitat loss or degradation, succession, fire)

Mer Bleue Bog is owned and protected by the federal government's National Capital Commission. Development in the conservation area is limited to the maintenance of trails, rest rooms, and the construction of a few picnic shelters. Development outside of the conservation area is certainly possible as the site is in the City of Ottawa and further housing developments will occur. In the past, the site was used for bombing practice by the Royal Canadian Air Force (NCC 2007) and ponds in the bog mat created by the bombing are still present.

Future road construction could lead to greater isolation of the Mer Bleue site, increased pollution from run-off, and an increased risk of road mortality for amphibians and reptiles that range outside the bog habitat. The City of Ottawa is currently proposing a new major

road north of Mer Bleue, but this is outside the protected area. It should be stressed that the core area of the bog is more than 1.5 km from any road, including the proposed road. Fire could be a risk to upland areas of the conservation area, but the bog mat is wet and is at a low risk from a wildfire. Succession in a bog is normal and to be expected. Over hundreds of years the Sphagnum-dominated bog will transition to dryer conditions dominated by shrubs and trees. Exotic species are always a potential threat and species like Purple Loosestrife, Phragmites, Japanese Knotweed, Silver Birch, and Glossy Buckthorn are all present in or around the edge of the conservation area. To date, the core area of the bog has few exotic species.

- Past or current habitat conservation or restoration efforts:

Mer Bleue Bog was designated a Wetland of International Importance under the Ramsar Convention in 1995. A management plan for the bog has been prepared (NCC 2007) with a primary strategic goal being to “Maintain the ecological character of the Mer Bleue wetland, focusing on those features for which it was designated a Ramsar Site.” Restoration efforts have included efforts to reduce and eliminate Japanese Knotweed.

2.8 Recommended Conservation Actions

Please describe any conservation actions that are needed/recommended for this area:

Continued monitoring of the habitat and the populations of species at risk at Mer Bleue Bog is required. A drain exists in the eastern portion of the bog and additional work could be conducted to reduce outflow of water and to encourage restoration of the bog habitat.

2.9 Other Concerned Organizations

Please provide contact information for organizations or individuals that are involved in protection/conservation of this site, i.e., World Wildlife Fund Canada, Nature Conservancy Canada, Ducks Unlimited, Federation of Nova Scotia Naturalists, etc.

Ottawa Field-Naturalists' Club
President: Jakob Mueller
ofnc@ofnc.ca

2.10 Previous Work

Please list studies/documents/papers that have been derived from this site. If possible, include the documents with the submission or provide enough information so that the sources can be retrieved by CHS.

Mer Bleue Bog has been the focus of scientific work for more than a century (Eifrig 1911). The Spotted Turtle population at Mer Bleue has been the focus of a long-term monitoring project (Chippindale 1984, 1989; Seburn 2003, 2018). Paul Chippindale began a mark-recapture project on the Spotted Turtle population at Mer Bleue in 1983. He marked 39 Spotted Turtles over the course of two years. David Seburn began a follow-up project in 1999 and caught 32 Spotted Turtles from 1999-2001 (Seburn 2003). Fourteen of the turtles caught by Seburn had been marked by Chippindale in the 1980s. Based on the capture data from 1999-2001, the adult population size was estimated to be 45 (95% confidence interval: 34-78). Limited radio tracking was undertaken in 1999. All captures and all radio tracking locations were in the core area of the bog, more than 1.5 km from any road. Nesting has only been observed once at Mer Bleue Bog. A female nested in a sphagnum hummock in the core area of the bog (Chippindale 1989). Given the fact that all observations have been in the core area of the bog, it is likely that females typically nest in the sphagnum hummocks in this area. Hence it is quite likely that Spotted Turtles in this population face virtually no risk of road mortality. In addition, no predated nests have been found, suggesting that nest predation rates are low. Only five juveniles have been caught at Mer Bleue since 1999, but low capture rates for juvenile turtles are not uncommon. Overall, there are no obvious threats to this population given the large size of the protected area and the large amount of protected habitat that buffers the core area of the bog where the Spotted Turtles occur. Occasional surveys have been undertaken since 2001 but no new population estimate has been calculated given the few captures that have been made. In 2017, during the last survey at Mer Bleue, an adult Spotted Turtle first marked by Paul Chippindale in 1983 was recaptured. Based on the number of growth lines on the plastron and the time since its first capture, the turtle had to be at least 51 years old, making it the oldest documented Spotted Turtle in the wild (Seburn 2018). To date, 10 Spotted Turtles first marked in 1983 were at least 30 years old at their last capture suggesting that adults are living for decades at Mer Bleue.

Other wildlife related research has focused on insect pollinators (Small 1976), beavers (Adamowicz 1980), birds (Picman 1988), burying beetles (Beninger 1994) spiders (Dondale and Redner 1994), and orchids (Reddoch and Reddoch 2009).

There has also been extensive work on CO₂, energy, and water fluxes at Mer Bleue (<https://carleton.ca/cubiomet/research/mer-bleue/>). Only a selection of papers on these climate-related topics have been included in the list of previous studies.

Adamowicz, S.J. 1980. A study of the effects of beaver activity on bog vegetation in an area of the Mer Bleue Bog near Ottawa, Canada and an analysis of some of the factors that control bog plant distribution and abundance. Master's Thesis. Carleton University, Ottawa. <https://curve.carleton.ca/92fa391d-d78f-489c-a96a-d4dc3a4b4241>

Arroyo-Mora, J. P., M. Kalacska, R. J. Soffer, T. R. Moore, N. Roulet, S. Juutinen, et al. 2018. Airborne hyperspectral evaluation of maximum gross photosynthesis, gravimetric water content, and CO₂ uptake efficiency of the Mer Bleue Ombrotrophic Peatland. *Remote Sensing* 10: 565. <https://doi.org/10.3390/rs10040565>

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<https://doi.org/10.1002/hyp.6805>
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<https://doi.org/10.1016/j.soilbio.2012.04.023>
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- Chippindale, P. 1989. Courtship and nesting records for Spotted Turtles, *Clemmys guttata*, in the Mer Bleue Bog, southeastern Ontario. *Canadian Field-Naturalist*. 103: 289-291.
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- Elliott, S. M., H. M. Roe, and R. T. Patterson. 2012. Testate amoebae as indicators of hydroseral change: an 8500 year record from Mer Bleue Bog, eastern Ontario, Canada. *Quaternary International* 268: 128-144. <https://doi.org/10.1016/j.quaint.2011.08.020>

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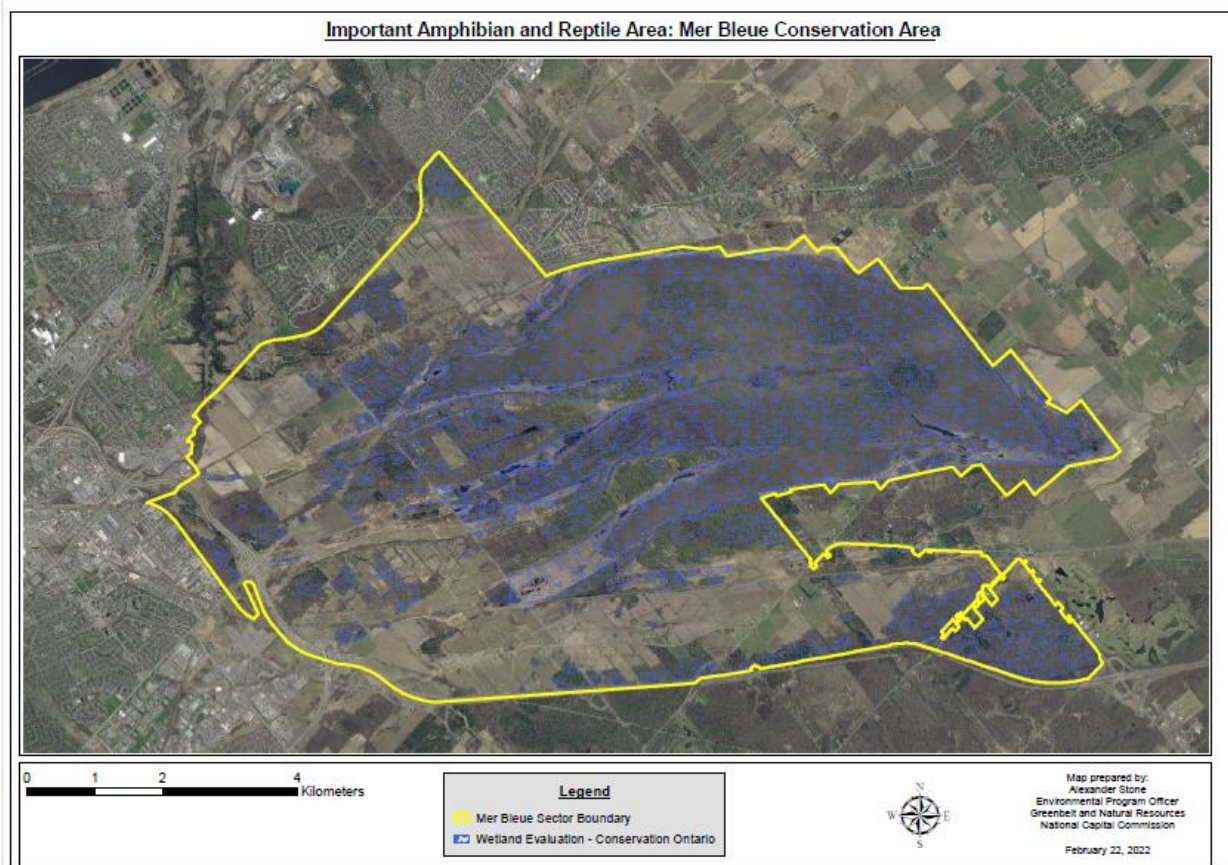


Figure 1. Mer Bleu Conservation Area. Yellow line represents boundary of conservation area. Blue patterning indicates wetland habitat. Map prepared by Alexander Stone, National Capital Commission.



Figure 2. Aerial image of the bog mat. Photo credit: Alex Plakov.



Figure 3. Wetland habitats in the Mer Bleue Conservation Area. Clockwise from top left: bog mat, bog mat and open water, boardwalk around marsh habitat, open water marsh habitat. Photo credits: top left: David Seburn; all others: Alexander Stone.



Figure 4. Adult female Spotted Turtle from Mer Bleue Bog. Photo credit: David Seburn.

Mer Bleue Conservation Area, Ottawa, Ontario was designated as an IMPARA in June 2022.