Canadian Herpetological Society
Société d'Herpétologie du Canada

Important Amphibian and Reptile Areas Nomination Form

Part 1: IMPARA Criteria:

The Important Amphibian and Reptile Areas Program (IMPARA) Site Criteria are intended to be guidelines for identifying the importance of a site, and are somewhat flexible, depending on the specifics of the site. These criteria are intended to be the first step in a dialogue between the nominator and CHS.

Sites may be nominated based on one or more of the following criteria:

1. Sites containing species of conservation concern
2. Sites containing a high diversity of species
3. Sites that fulfill important life history function for congregations of species

1. Species of Conservation Concern

A site that that is nominated under this criterion must contain a significant number of individuals of a species that is of conservation concern at one or more of the following levels:

- Globally designated as Critically Endangered, Endangered or Vulnerable by the International Union for the Conservation of Nature (IUCN).
- Nationally designated as at-risk (Endangered, Threatened, and Species of Special Concern) by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC)
- Provincially/territorially designated as at-risk by: COSEWIC, a provincial 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 methods 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 50 most important sites supporting the Canadian population of a species.

These three methods require different qualities and quantities of information. They reflect the reality that a great deal is known about 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. 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 may also be nominated if habitat restoration and/or re-introductions are underway or planned.

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."

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 herpetofauna 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.

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 congregate for the purpose of completing some life history activity such as reproduction, hibernation, or thermoregulation (e.g. communal hibernation sites, vernal breeding ponds). 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.

Other Considerations
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 locally-oriented conservation and restoration. 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.

Part 2: Nomination Form

Personal Information

Names: [1]Jonathan Choquette, B.Sc., MLA, and [2]Dr. Stephen J. Hecnar, FLS
[1]Organization/Affiliation: SCC Ecological
Address: PO Box 221, Stn. A,
City/Town: Windsor
Province/Territory: Ontario
Postal Code: N9A 6K1
Telephone: 519-731-3479
E-mail: jchoquet@alumni.uoguelph.ca

[2]Organization/Affiliation: Department of Biology, Lakehead University
Address: 955 Oliver Road
City/Town: Thunder Bay
Province/Territory: Ontario
Postal Code: P7B 6H9
Telephone: 807-343-8250
Fax: 807-346-7796
E-mail: shecnar@lakeheadu.ca

Location

Site names: Ojibway Prairie Complex and Greater Park Ecosystem (OPCGPE)
Province/Territory: Ontario
County/Region/District(s): Essex County
Closest City/Town: City of Windsor and Town of LaSalle
UTM/Geographical Coordinates: 330419 E 4680461 N / 42.257019 ºN, -83.067391 ºW (approximate centre of Ojibway Prairie Provincial Nature Reserve)
Directions to Site: The OPCGPE is a park system consisting of closely situated protected areas on the boundary of the City of Windsor and Town of LaSalle. Central to the site is the Ojibway Prairie Provincial Nature Reserve, with main access from Matchette Road and Malden Road, in the City of Windsor.
Maps: see Figure 1 and Figure 2

Physical Description

Area: OPC and Greater Park Ecosystem = ~23.5 km^2 ; Ojibway Prairie Complex = ~400.0 ha;
Site Description (e.g., habitat type, vegetation type, presence and type of water bodies, etc.):

The Ojibway Prairie Complex and Greater Park Ecosystem is a park system consisting of closely situated protected areas in the southernmost portion of Canada's Carolinian Zone (Figure 1, 2). The Ojibway Prairie Complex is best known for its remnant parcels of Tallgrass Prairie and Oak Savanna (Figure 3). In fact, one of the largest remnants of Tallgrass Prairie in Ontario is protected within its boundaries. The OPCGPE is characterized by a very flat topography and poorly drained sandy soils overlaying a thick bed of clay. The area is very wet and flooded in the spring and very hot a dry in the summer, a regime better suited to prairie vegetation than trees. In addition, a portion of the prairie and savanna habitat at the site is maintained by occasional prescribed burns that mimic the original natural disturbance regime and prevents forest encroachment. Other habitat types found within the OPCGPE include deciduous forest, cultural meadow, deciduous thicket, marsh wetland, swamp wetland, old fields, ponds, and drains (Figure 3). The entire OPCGPE lies within the Detroit River watershed, with a large portion of the site draining into the latter via Turkey Creek. Finally, the site is an example of some of the original late post-Pleistocene habitat that dominated southern

Ontario before European colonization, and its subsequent land use transformations. A variety of land uses are present within the OPCGPE including: residential, commercial, agricultural and industrial, as well as an extensive transportation network (e.g., road, rail and water) and utility network (e.g., high-voltage hydro and natural gas).

A number of distinct natural areas occur within the Ojibway Prairie Complex and Greater Park Ecosystem, including (Figure 2, 4):

- Ojibway Prairie Complex (City of Windsor)
  - Black Oak Heritage Park
  - Ojibway Park
  - Ojibway Prairie Provincial Nature Reserve
  - Spring Garden Natural Area
  - Tallgrass Prairie Heritage Park
- Greater Park Ecosystem (Town of LaSalle)
  - Detroit River Provincially Significant Wetlands
  - LaSalle Conservation Lands
  - LaSalle Woods Environmentally Significant Area
  - Reaume Prairie Environmentally Significant Area
  - Turkey Creek Provincially Significant Wetland

Several other important natural areas occur in close vicinity to the IMPARA site, including: Canard River Marsh Provincially Significant Wetlands, Detroit River Islands (Fighting Is., Peche Is. Boisblanc Is., Turkey Is., Grassy Is., and Crystal Bay Is.), Detroit River Provincially Significant Wetlands, General Chemical Marshes, Oakwood Park, St. Clair Prairie Environmentally Significant Area, and other Candidate Natural Heritage Sites in both the City of Windsor and Town of LaSalle. Additional details about the Ojibway Prairie Complex can be found at: http://www.ojibway.ca.

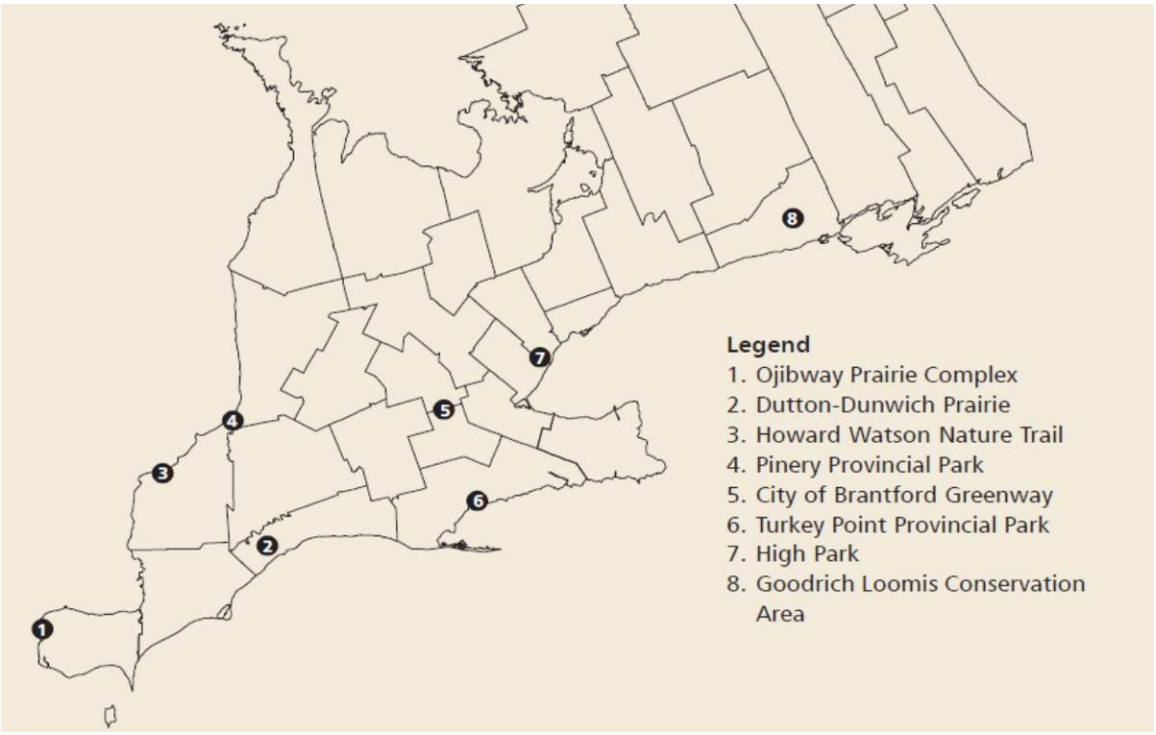

Figure 1: Location of the Ojibway Prairie Complex and Greater Park Ecosystem relative to other prairie sites in southern Ontario (Amended from Tallgrass Ontario 2004).

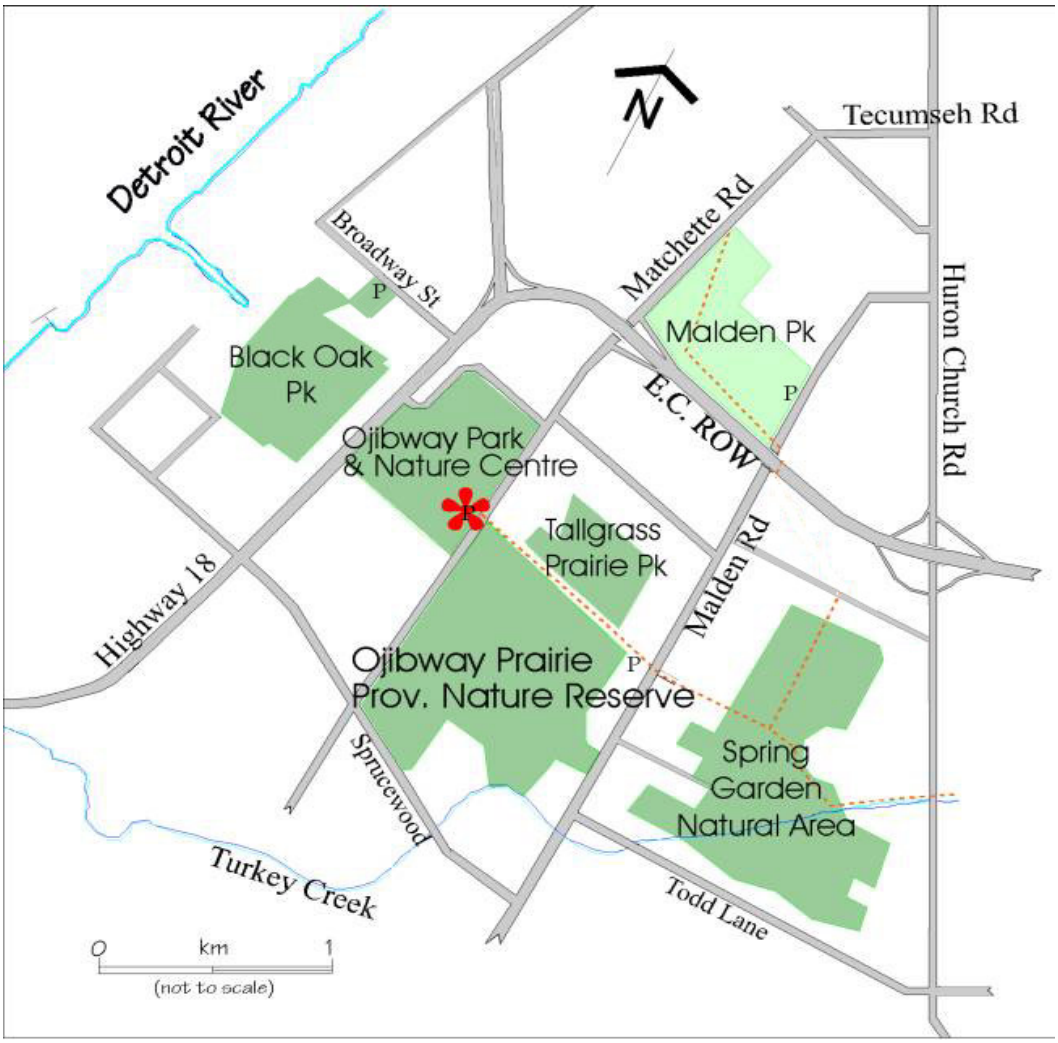

Figure 2: Approximate boundaries of the Ojibway Prairie Complex in Windsor, Ontario. The OPC consists of: Black Oak Heritage Park, Ojibway Park, Ojibway Prairie Provincial Nature Reserve, Spring Garden Natural Area, and Tallgrass Prairie Heritage Park (Image from www.ojibway.ca).

Figure 3: Examples of several habitat types found within the Ojibway Prairie Complex and Greater Park Ecosystem: Tallgrass prairie and oak savanna (top left), meadow marsh (top right), deciduous swamp forest (bottom left), and deciduous forest with trail (bottom right) (photos courtesy of Russ Jones, Christine Cooper, and Jonathan Choquette).

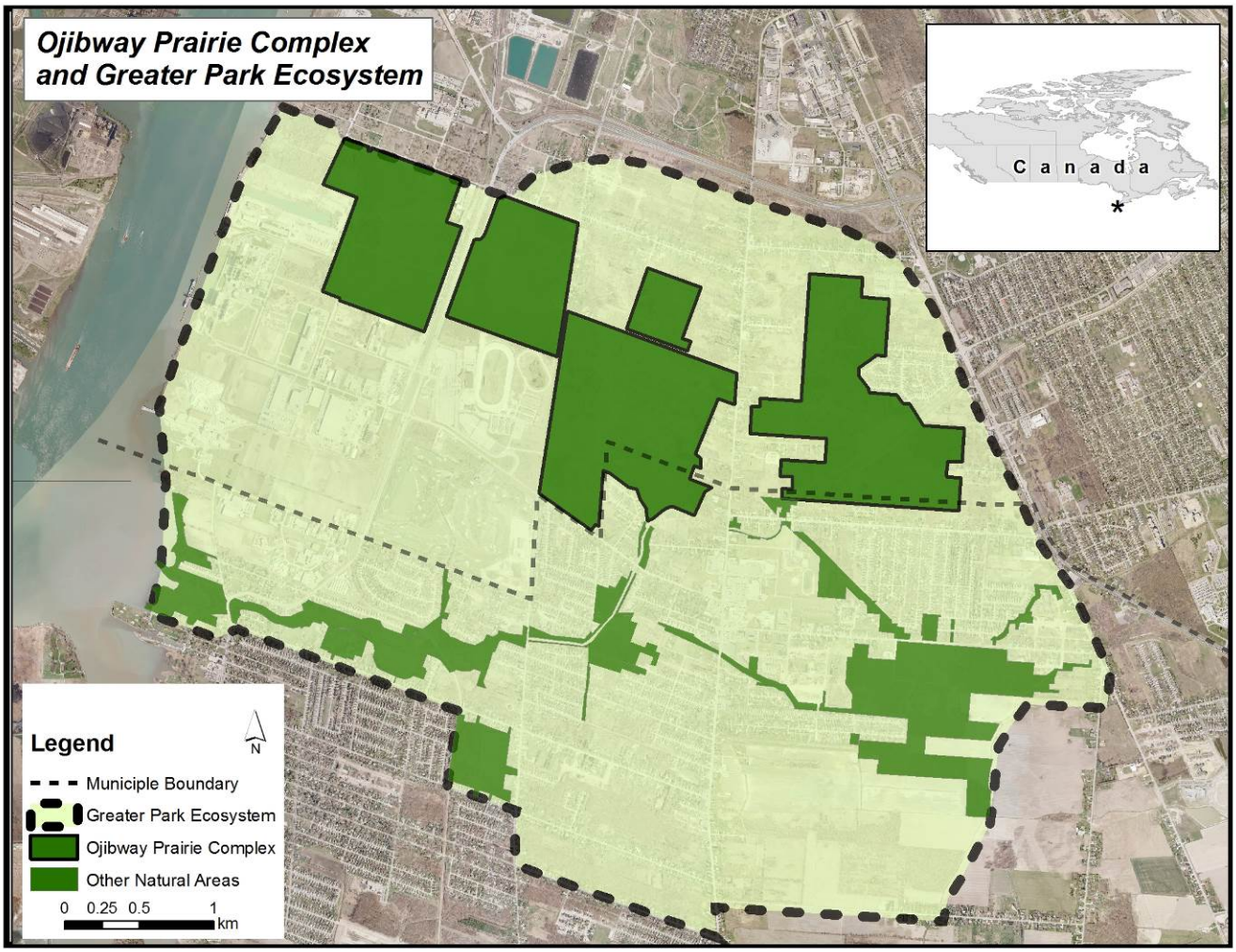

Figure 4: Approximate boundary of the Ojibway Prairie Complex and Greater Park Ecosystem, in Windsor and LaSalle, Ontario. 'Other Natural Areas' includes land designated as either 'recreational', 'wetland' or 'natural environment' by the Town of LaSalle. Note that unprotected natural habitats within the OPCGOE are not displayed.

Land Ownership

Name: Ministry of Natural Resources and Forestry (Ontario)
Organization/Affiliation: Owner and manager of Ojibway Prairie Provincial Nature Reserve
Address: 21116 Klondyke Road, P.O. Box 640, Wheatley,
City/Town: Wheatley
Province/Territory: Ontario
Postal Code: N0P 2P0
Telephone: 519-825-4659
E-mail: jim.wigle@ontario.ca

Name: City of Windsor
Organization/Affiliation: Owner and manager of Ojibway Park, Tallgrass Prairie Heritage Park, Black Oak Heritage Park, and Spring Garden Natural Area.
Address: Ojibway Nature Centre, 5200 Matchette Road
City/Town: Windsor
Province/Territory: Ontario
Postal Code: N9C 4E8
Telephone: 519-966-5852
E-mail: ojibway@citywindsor.ca

Name: Town of LaSalle
Organization/Affiliation: Owner of LaSalle Woods ESA, Reaume Prairie ESA and other natural areas within the Greater Park Ecosystem.
Address: 5950 Malden Road
City/Town: LaSalle
Province/Territory: Ontario
Postal Code: N9H 1S4
Telephone: 519-969-7770
Fax: 519-969-4469
E-mail: tfink@town.lasalle.on.ca

Name: Essex Region Conservation Authority
Organization/Affiliation: Manager of LaSalle Woods ESA, Reaume Prairie ESA and other natural areas within the Greater Park Ecosystem.
Address: 360 Fairview Avenue West, Suite 311
City/Town: Essex
Province/Territory: Ontario
Postal Code: N8M 1Y6
Telephone: 519-776-5209
Fax: 519-776-8688
E-mail: dlebedyk@erca.org

Are the land owners/managers 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, owners/managers are aware but they did not participate in the nomination process.

Amphibian and Reptile Species

Species[1]	Status	No. of Individuals	References
Snakes and Lizards (*Squamata)*			
Eastern Hognose Snake *Heterodon platyrhinos*	Historical observation(s). COSEWIC Threatened.	Presumed locally extirpated.	Pratt 1979; Oldham 1983; Pratt 2010
Milksnake *Lampropeltis triangulum triangulum*	Historical observation(s). COSEWIC Special Concern.	Presumed locally extirpated.	Pratt 2010
Northern Watersnake *Nerodia sipedon sipedon*	Data deficient, however, potential habitat is present and species last sighted in 2014 within 1 km of site. Presumed restricted occupancy.	Unknown.	Pratt 1979; Oldham 1983; Pratt 2010; Ontario Nature 2015
Smooth Greensnake *Opheodrys vernalis*	Historical observation(s).	Presumed locally extirpated.	Oldham 1983; Pratt 2010
Eastern Foxsnake *Pantherophis vulpinus*	Last sighted 2015. Widespread occupancy. COSEWIC Endangered.	Likely hundreds.	Planck and Planck 1977; Pratt 2010; Gardner-Costa et al. 2014; Choquette and Valiant 2016
Common Five-Lined Skink *Plestiodon fasciatus*	Historical observation(s). COSEWIC Endangered.	Presumed locally extirpated.	Oldham 1983; Pratt 2010
Queensnake *Regina septemvittata*	Data deficient, however, potential habitat is present and species last sighted in 2012 within 5 km of site. Presumed restricted occupancy. COSEWIC Endangered.	Unknown.	Ontario Nature 2015

1 **Common and scientific names follow Crother et al. (2012).**

Eastern Massasauga *Sistrurus catenatus catenatus*	Last sighted 2015. Restricted occupancy. Only location in Essex County and one of only two locations in Carolinian Zone. COSEWIC Endangered	12 (9-29) adults and sub-adults.	Pratt 1979; Oldham 1983; Pratt 2010; Choquette 2015; Choquette and Valiant 2016
Northern Brownsnake *Storeria dekayi dekayi*	Last sighting 2015. Widespread occupancy.	Hundreds.	Planck and Planck 1977; Pratt 1979; Oldham 1983; Pratt 2010; Choquette and Valiant 2016
Red Bellied Snake *Storeria occipitomaculata occipitomaculata*	Last sighting 2015. Widespread occupancy. One of only two locations in Essex County.	Tens to hundreds.	Planck and Planck 1977; Pratt 1979; Oldham 1983; Pratt 2010; Choquette and Valiant 2016
Butler's Gartersnake *Thamnophis butleri*	Last sighting 2015. Widespread occupancy. COSEWIC Endangered.	Hundreds to thousands.	Planck and Planck 1977; Oldham 1983; Pratt 2010; Gardner-Costa et al. 2014; Choquette and Valiant 2016; EC 2016
Eastern Gartersnake (including melano type) *Thamnophis sirtalis sirtalis*	Last sighting 2015. Widespread occupancy.	Hundreds.	Planck and Planck 1977; Oldham 1983; Pratt 2010; Choquette and Valiant 2016
Turtles (*Tesdudines)*			
Eastern Spiny Softshell *Apalone spinifera spinifera*	Last sighting 2015. Restricted occupancy. COSEWIC Threatened.	Possibly tens.	Pratt 2010; Ontario Nature 2015
Snapping Turtle *Chelydra serpentina*	Last sighted 2015. Widespread Occupancy. COSEWIC Special Concern.	Tens to hundreds.	Pratt 2010; Gardner-Costa et al. 2014; Choquette and Valiant 2016
Midland Painted Turtle *Chrysemys picta marginata*	Last sighted 2015. Widespread Occupancy.	Tens to hundreds.	Pratt 2010; Choquette and Valiant 2016
Red-Eared Slider *Chrysemys scripta elegans*	Last sighted 2015. Restricted occupancy. Escaped	Possibly tens.	Oldham 1983; Pratt 2010; Choquette and Valiant 2016

	or released captives, evidence of a breeding population.		
Spotted Turtle *Clemmys guttata*	Last sighted 2006. Restricted occupancy. COSEWIC Endangered.	Unknown, possibly extirpated.	Pratt 1979; Pratt 2010; Jones pers. comm. 2016
Blanding's Turtle *Emydoidea blandingi*	Last sighted 2015. Restricted occupancy. COSEWIC Threatened.	Possibly tens.	Pratt 1979; Oldham 1983; Pratt 2010; Gardner-Costa et al. 2014; Choquette and Valiant 2016
Northern Map *Turtle Graptemys geographica*	Last sighting 2013. Restricted occupancy. COSEWIC Special Concern.	Possibly tens.	Pratt 2010; Gardner-Costa et al. 2014; Choquette and Valiant 2016
Eastern Musk Turtle *Sternotherus odoratus*	Last sighting 2015. Restricted occupancy. COSEWIC Special Concern.	Possibly tens.	Pratt 2010; Choquette and Valiant 2016
Frogs and Toads (*Anura)*			
American Toad *Anaxyrus americanus*	Last sighting 2015. Widespread occupancy.	Likely hundreds to thousands.	Pratt 2010; Hecnar 2015; Choquette and Valiant 2016
American Bullfrog *Lithobates catesbeianus*	Last sighting 2010-2013. Restricted occupancy.	Unknown	Pratt 2010; Choquette and Valiant 2016
Green Frog *Lithobates clamitans*	Last sighting 2015. Widespread occupancy.	Likely hundreds to thousands.	Pratt 2010; Choquette and Valiant 2016
Northern Leopard Frog *Lithobates pipiens*	Last sighting 2015. Widespread occupancy.	Likely hundreds to thousands.	Pratt 2010; Hecnar 2015; Choquette and Valiant 2016
Western Chorus Frog *Pseudacris triseriata*	Last sighting 2015. Widespread occupancy.	Likely hundreds to thousands.	Pratt 2010; Hecnar 2015
Salamanders (*Caudata)*			

Common Mudpuppy *Necturus maculosus maculosus*	Data deficient, however, potential habitat is present and species last sighted 2003-2013 within 1 km of site. Presumed restricted occupancy.	Unknown.	Pratt 2010; Craig et al. 2015; Ontario Nature 2015

Other Species

Species	Status	Importance of Site	References
Rare Plants: 119 provincially rare plant species have been recorded, 18 of which are COSEWIC-listed	Endangered or Threatened (COSEWIC Status): 1. American Chestnut (*Castanea dentata*) 2. Butternut *(Juglans cinerea)* 3. Colicroot (*Aletris farinosa*) 4. Dense Blazing Star *(Liatris spicata)* 5. Dwarf Lake Iris *(Iris lacustris)* 6. Eastern Prairie White-fringed Orchid (*Platanthera leucophaea*) 7. Kentucky Coffee Tree *(Gymnocladus dioica)* 8. Pale Purple False Foxglove aka Skinner's Agalinis (*Agalinis skinneriana*) 9. Pink Milkwort (*Polygala incarnata*) 10. Purple Twayblade Orchid (*Liparis lilifolia*) 11. Red Mulberry (*Morus rubra*) 12. Scarlet Ammania (*Ammannia robusta*) 13. Slender Bush Clover *(Lespedeza virginica)* 14. Willowleaf Aster *(Symphyotrichum (Aster) praealtus)* Special Concern (COSEWIC status): 1. Prairie Rose (*Rosa*	Site is only known location in Canada for: 1. Arrow Feather Three-awn (*Aristida purpurascens*) 2. Long-awned Bracted Sedge (*Carex gravida*) 3. Crossleaf Milkwort (*Polygala cruciata*) 4. Few-flowered Nut-rush *(Scleria pauciflora)* 5. Orange Grass (*Hypericum gentianoides*) 6. Sessile-leaved Tick-trefoil *(Desmodium sessilifolium)* 7. Short-fruited Rush *(Juncus brachycarpus)* 8. Slender Bush Clover *(Lespedeza virginica)* 9. Small Pinweed (*Lechea minor*) 10. Tall Green Milkweed (*Asclepias hirtella*) Site is one of less than three locations in Canada for: 1. Pale Purple False Foxglove aka Skinner's Agalinis (*Agalinis skinneriana*) 2. Pink Milkwort	Pratt 2012

	setigera) 2. Riddell's Goldenrod *(Solidago riddellii)* 3. Shumard Oak (*Quercus shumardi*) 4. Swamo Rose Mallow (*Hibiscus moscheutos*)	(*Polygala incarnata*)	
Rare Birds: 252 birds species have been recorded from the OPR area; 14 of which are COSEWIC-listed species	Endangered or Threatened (COSEWIC Status): 1. Acadian Flycatcher (*Empidonax virescens*) 2. Bank Swallow (*Riparia riparia*) 3. Barn Swallow (*Hirundo rustica*) 4. Bobolink (*Dolichonyx oryzivorus*) 5. Chimney Swift (*Chaetura pelagica*) 6. Common Nighthawk (*Chordeiles minor*) 7. Eastern Meadowlark (*Sturnella magna*) 8. Hooded Warbler (*Wilsonia citrina*) 9. Northern Bobwhite (*Colinus virginianus*) 10. Red-headed Woodpecker (*Melanerpes erythrocephalus*) 11. Wood Thrush (*Hylocichla mustelina*) 12. Yellow-breasted Chat (*Icteria virens*) Special Concern (COSEWIC status): 1. Bald Eagle (*Haliaeetus leucocephalus*) 2. Eastern Wood-pewee (*Contopus virens*)		Pratt 2012
Rare insects:	Special Concern (COSEWIC status): 1. *Danaus plexippus (*Monarch) *Approximately 30 provincially rare species (S1, S2, and S3) are listed by Pratt 2012.*	"Insect diversity is very high at Ojibway (likely over 3000 species!)" "One of richest sites for butterflies anywhere in Canada (up to 49 species in a single day)"	Pratt 2006; Paiero et al. 2008; Pratt 2012

		Site is only known location in the world for: 1. *Loxocera ojibwayensis* (A fly) Site is only known location in Canada for: *1.* *Archilestes grandis* (Giant Spreadwing) *2.* *Neokolla lugubris* (A leafhopper) 3. *Delphacodes waldeni* (A leafhopper) Site is only known location in Ontario for: **1.** *Cuerna fenestell (*A leafhopper)	
Rare Mammals: Two COSEWIC-listed species	Endangered or Threatened (COSEWIC Status): *1.* Little Brown Bat *(Myotis lucifugus)* *2.* Gray Fox *(Urocyon cinereoargenteus)*		Pratt 2012

Site Criteria

1. Species of Conservation Concern:

- The site supports eight to ten reptile species nationally and provincially designated 'At Risk' by COSEWIC (Environment Canada) and COSSARO (Ministry of Natural Resources and Forestry), respectively: Blanding's Turtle, Butler's Gartersnake, Eastern Foxsnake, Eastern Musk Turtle, Eastern Spiny Softshell Turtle, Spotted Turtle, Massasauga, Northern Map Turtle, Snapping Turtle and Queensnake.
- The site holds significant numbers of Massasauga. For example: 1) The site is one of the last two remaining subpopulations of Massasauga within the Canadian Carolinian population, 2) the site holds approximately 40-50% of the total adult population size of the Canadian Carolinian population, 3) the site supports the only example of a Tallgrass Prairie population of Massasauga in Canada, and 4) the species has been reliably documented at the site in 2015.
- The site holds significant numbers of Butler's Gartersnakes. For example, 1) the site is the second or third largest publicly-owned protected area in Canada supporting the species, 2) the site most likely holds greater than 1% of the total Canadian population, 3) the site is one of 42 locations in Canada which supports this species, and 4) the species has been reliably documented at the site in 2015.
- The site holds significant numbers of Eastern Foxsnake, For example, 1) the site is one of ~50 locations for this species within the Canadian Carolinian population, 2) the site most likely holds greater than 1% of the total Canadian Carolinian population, 3) the site is one of the largest publicly-owned protected areas in Essex County supporting the species, and 4) the species has been reliably documented in 2015.

Figure 5: Snake species at risk encountered at the Ojibway Prairie Complex and Greater Park Ecosystem: Eastern Massasauga (top left), Eastern Foxsnake (right), and Butler's Gartersnake (bottom left) (photos courtesy of Eric Primeau, Lindsey Valliant, and Louis Gagnon).

2. High Species Diversity

- The site itself supports a total of 18-22 species of extant reptiles and amphibians (uncertainty exists in the true number of reptiles and amphibians present due to four species that may occur at the site based on presence of suitable habitat and confirmed recent observations within 5 km). Species diversity at the site represents approximately 58-71% (18-22 of 31) of the regional species pool, a high level considering that the site is in one of the most heavily urbanized areas of Essex County. Including historical observations and locally extirpated species, a total of 26 species of herpetofauna have been observed at the site and within 5km.
- The site most likely supports one of the highest local species diversities of reptiles and amphibians in Essex County and all of Canadian Carolinian Zone.
- This is the only site in Canada where the following snake species occur sympatrically: Massasauga, Eastern Foxsnake and Butler's Gartersnake.

3. Important Life History Requirements

- This site includes breeding and hibernation habitat used by a significant proportion of the Carolinian population of Massasaugas (i.e. the Ojibway Prairie population).

Human Impacts

Human Impact to the Site and the Immediately Surrounding Areas:

- Ongoing habitat loss and degradation for residential, infrastructure and commercial development is occurring adjacent to the majority of protected areas within the complex (see below).
- The threat of road mortality to amphibians and reptiles, including several SAR, at the IMPARA site has been known for a considerable length of time (M'Closkey and Hecnar 1995; Choquette and Valiant 2016). Results from ongoing road ecology research have confirmed that seven SAR reptiles are being killed on major roads within the OPCGPE. Species at risk reptiles observed dead on roads include: Blanding's Turtle, Butler's Gartersnake, Eastern Foxsnake, Eastern Massasauga, Eastern Musk Turtle, Northern Map Turtle, and Snapping Turtle (Choquette and Valliant 2016).
- Multi-use pathways intersect most protected areas, placing herpetofauna at risk from human disturbance.
- Poaching is suspected to have occurred in the past and continues to be a potential threat.
- Intentional killing of snakes is ongoing.

Current site usage (e.g. industrial, residential, farming, logging, camping, recreation, etc.):

The site is used for various purposes, including recreation, scientific research, education, and farming. There has been a long history of site use by researchers from the University of Windsor and other institutions, naturalists, and local school boards. The Ojibway Nature Centre's facilities provide infrastructure for public education and a variety of meetings. Outdoor laboratories/field trips by the university and local elementary and secondary school boards make the site an important outdoor laboratory.

Pollution (e.g., air, water, light, noise, etc.):

The IMPARA site lies directly adjacent to the Detroit River Bi-national Area of Concern (Green *et al. 2010).* Areas of Concern (AOC) have been identified across the Great Lakes Basin (n=43) based on their having relatively degraded environmental quality. Several Beneficial Use Impairments have been identified for the Detroit River AOC due to a history of landscape modification and pollution from industrial, urban and agricultural sources, including: restrictions on fish consumption, degraded fish and wildlife populations, fish tumours and other deformities, bird or animal deformities or other reproductive problems, degradation of benthos, restrictions on dredging activities, beach closings, and loss of fish and wildlife habitat. This IMPARA site is also subject to noise, light and air pollution from adjacent roads and industry.

Threats to Habitat (e.g. development, habitat loss or degradation, succession, fire, etc.):

Over the past half century, what began as a small parcel of natural land donated to the City of Windsor (Yawkey Bush) has grown into a 400 ha complex of natural habitat that supports a rich but isolated herpetofauna community. Progress has been made through municipal and provincial efforts to procure, protect and restore the area to its provincially and nationally significant original state. In spite of successes thus far, over a hundred hectares of natural areas within the OPCGPE remain unprotected from development. For example, Parks Canada identified 413 ha of Massasauga Critical Habitat within the OPCGPE, of which only 350ha are within protected area boundaries (Choquette et al. 2015). The prevalence of a dense network of roads and urban development has also resulted in extensive fragmentation of remaining natural areas (Choquette and Valliant 2016).

The long-term collective goal of municipal and provincial government agencies, non-governmental organizations, residents, and citizens groups is to further expand, connect and protect important natural habitats within the Ojibway Prairie Complex and Greater Park Ecosystem. This goal is being threatened, however, by ongoing commercial, residential and infrastructure developments. For example, several Candidate Natural Heritage Sites are zoned residential and many of these are being rapidly diminished in size by encroaching residential development, especially in the Town of LaSalle. Also, the recently completed Herb-Gray Parkway resulted in the destruction of dozens of hectares of Butler's Gartersnake habitat (Choquette 2011; but see 'Habitat Conservation or Restoration' below). Furthermore, the recent Ontario Municipal Board ruling to allow a large commercial "box store" development on a portion of the of the former Windsor Raceway property will destroy habitat for SAR reptiles and increase the threat of road mortality from increased traffic flow.

Habitat Conservation or Restoration Efforts:

The Ojibway Prairie Complex has been designated as an Area of Natural and Scientific Interest and a Carolinian Canada Signature Site. Several wetlands within the OPCGPE have been identified as Provincial Significant (PSW): Ojibway Prairie Wetland Complex, Turkey Creek PSW, and Detroit River PSW. Finally, the importance of the natural features of the Western Lake Erie area (which includes the proposed IMPARA site) was established via the announcement of the "Western Lake Erie Watersheds Priority Natural Area", which is a partnership between the U.S. Fish and Wildlife Service, Canadian government, Ontario government, Nature Conservancy of Canada, Ducks Unlimited Canada, and Essex Region Conservation Authority.

Mitigation efforts for the Herb-Gray Parkway have resulted in dozens of hectares of habitat protection in the form of land purchase, in addition to the linkage of SAR reptile habitat via the construction of a large ecopassage overpass. Management of tallgrass prairie is occurring through the use of fire at OPPNR and manual removal of woody vegetation at LaSalle Woods. Wildlife Preservation Canada has been conducting monitoring and recovery work targeting the Ojibway population of Eastern Massasauga since 2013; Recovery actions include habitat enhancement, road mortality mitigation and public outreach to reduce the threat of persecution.

Recommended Conservation Actions for the Site

Several conservation actions are recommended for this IMPARA site in order to contribute to the recovery of SAR reptiles, including:

- Population augmentation of Eastern Massasaugas.
- Enhancement of Massasauga gestation and foraging habitat.
- Installation of permanent barrier fencing and ecopassages in key locations.
- Increased habitat protection outside of protected areas.
- Linkage of protected areas via habitat corridors.
- Education and outreach of local residents, park users and medical community.
- Continued partnerships among government agencies and non-governmental areas to acquire adjacent habitat as it becomes available (e.g., former Windsor Raceway Lands, Ojibway Shores, etc.).

Other Concerned Organizations

There are several organizations that are involved with the expansion, connection and protection of the Ojibway Prairie Complex and Greater Park Ecosystem:

- Citizen's Environment Alliance (ceaadmin@cogeco.net)

- Detroit River Canadian Cleanup (sanders@detroitriver.ca)
- Essex County Field Naturalists' Club (gardnee@uwindsor.ca)
- Essex Region Conservation Authority (dlebedyk@erca.org)
- Friends of Ojibway Prairie (ojibway@citywindsor.ca)
- Making Waves Windsor Essex (Ken.LewenzaJr@unifor.org)
- Ministry of Transportation of Ontario (Barbara.Macdonell@ontario.ca)
- Ojibway Defence (lynnm@cogeco.ca)
- Ojibway Nature Centre (ojibway@citywindsor.ca)
- Ontario Parks (jim.wigle@ontario.ca)
- Save Ojibway (nancy.pancheshan@gmail.com)
- Town of LaSalle (tfink@town.lasalle.on.ca),
- Unifor, Windsor Office (mbartlett@uni444.ca)
- Wildlife Preservation Canada (admin@wildlifepreservation.ca)

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