

**Ontario Species at Risk Evaluation Report  
for  
Spotted Sucker (*Minytrema melanops*)**

**Committee on the Status of Species at Risk in Ontario (COSSARO)**

**Assessed by COSSARO as Special Concern**

**May 2015**

**Final**

## Meunier tacheté (*Minytrema melanops*)

Le meunier tacheté (*Minytrema melanops*), qui est bien défini sur le plan taxinomique (du point de vue de la morphométrie et de la génétique), se distingue par les rangées parallèles de taches noires qui longent ses flancs. Le meunier tacheté se trouve habituellement dans des zones à faible débit (des fosses ou des bras) dans des rivières où il n'est généralement pas en grand nombre. L'aire de répartition canadienne du meunier tacheté se limite au sud-ouest de l'Ontario, ce qui représente moins de 5 p. 100 de son aire de répartition mondiale. La taille des populations de meuniers tachetés au Canada n'est pas connue, mais un déclin a été observé dans sa zone d'occurrence et une diminution du nombre de lieux de capture (sous-populations; N = 12) a été remarquée. Les menaces connues ou présumées pour le meunier tacheté sont notamment la dégradation de l'habitat, la pollution ainsi que la turbidité ou l'atterrissement des eaux. Une immigration de source externe à partir du Michigan et de l'Ohio est possible en passant par le lac Érié et le corridor Huron-Érié. Ce poisson est vulnérable à une dégradation plus importante de son habitat et, comme il se fait rare, il est susceptible de subir d'autres pertes d'habitat (zone d'occupation réduite), mais il ne répond pas encore aux critères d'une espèce menacée ou en voie de disparition. Il est toutefois admissible au statut d'espèce préoccupante.

*Cette publication hautement spécialisée « Ontario Species at Risk evaluation report prepared under the Endangered Species Act, 2007 by the Committee on the Status of Species at Risk in Ontario », n'est disponible qu'en anglais conformément au Règlement 671/92, selon lequel il n'est pas obligatoire de la traduire en vertu de la Loi sur les services en français. Pour obtenir des renseignements en français, veuillez communiquer avec le ministère des Richesses naturelles par courriel à [recovery.planning@ontario.ca](mailto:recovery.planning@ontario.ca).*

## Executive summary

The Spotted Sucker (*Minytrema melanops*) is taxonomically well defined (morphometrically and genetically), and can be identified by parallel rows of black spots along its sides. The Spotted Sucker is usually found in low flow areas (pools or backwaters) in rivers, and is generally not found in large numbers. The Canadian range of the Spotted Sucker is restricted to southwestern Ontario which represents less than 5% of its global range. Population sizes of Spotted Sucker in Canada are unknown; however, there has been a decline in their area of occurrence, and a decline in the number of sites of capture (subpopulations; N = 12). Known or suspected threats to the Spotted Sucker include habitat degradation, pollution and water turbidity/siltation. A rescue effect from Michigan and Ohio is possible through Lake Erie and the Huron-Erie corridor. These fish are susceptible to further habitat degradation and given that they are rare and they are likely to lose additional habitat (reduced area of occupancy), but do not meet the criteria for Threatened or Endangered yet, they qualify for Special Concern status.

# 1. Background information

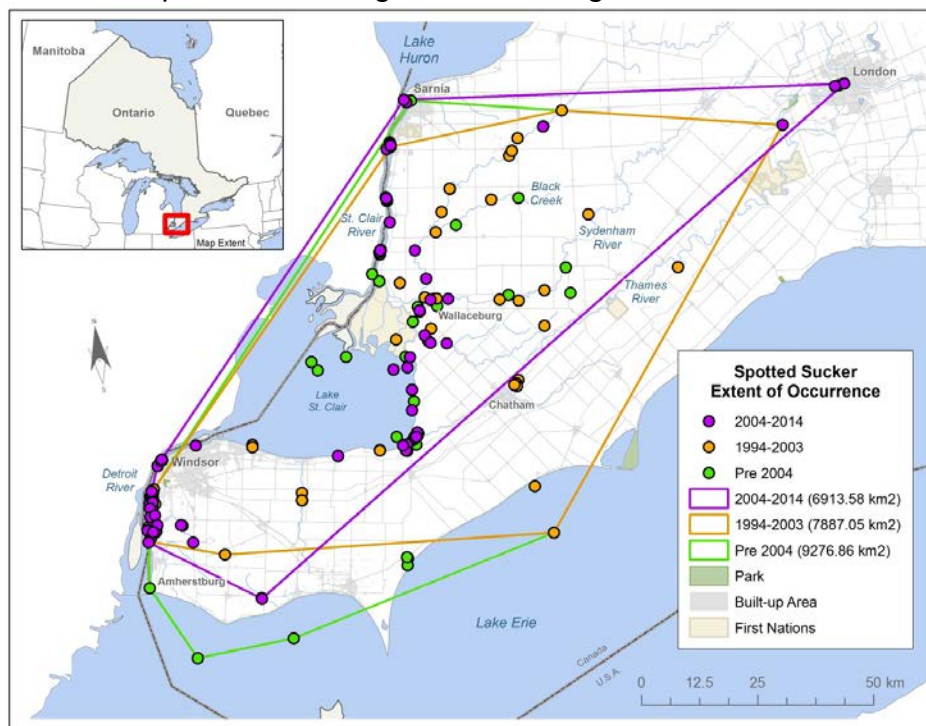
## 1.1. Current designations

- GRANK: G5 (NatureServe 2015)
- NRANK Canada: N2
- COSEWIC: Special Concern (2014)
- SARA: Special Concern (Schedule 1)
- ESA 2007: Special Concern (2000)
- SRANK: S2

## 1.2. Distribution in Ontario

The Spotted Sucker occurs in Canada only in southwestern Ontario between London in the east to Windsor in the west and from Sarnia in the north to the north shore of Lake Erie in the south (Fig. 1). The Spotted Sucker is known to occur at 12 sites, mostly in tributaries of Lake Erie and Lake St Clair (St Clair River; Lake St. Clair tributary mouths; N. Sydenham River; Sydenham River; Maxwell/Bear/Little Bear Creeks; Thames River; Pike Creek; Detroit River; Canard River; Cedar Creek; Lake Erie (western and Central basins); however they have not recently been observed in 5 of those sites.

Figure 1. Current and historical distribution (with extent of occurrence) of Spotted Sucker in Canada (COSEWIC 2014). Note pre-2004 extent of occurrence (green) includes all historical reports and thus generates a larger EO.



### 1.3. Distribution and status outside Ontario

The Spotted Sucker is found in 23 states and in Canada (only in Ontario). Their range extends from northern Michigan throughout the Mississippi drainage to tributaries of the Gulf of Mexico. Its global rank is G5, and in states bordering lakes Erie and St Clair, the Spotted Sucker is ranked S3 in Michigan, S4 in Ohio and S1 in Pennsylvania. NatureServe does not report this species from New York, however it was reported from the state in the 2000s (NYDEC 2015).

### 1.4. Ontario conservation responsibility

The Ontario Spotted Sucker range constitutes less than 5% of the species global range (Dextrase et al. 2003; COSEWIC 2005).

### 1.5. Direct threats

Although no threat calculator table has been completed for Spotted Sucker in Canada (due to lack of data on direct impacts on Spotted Sucker), water turbidity, pollution and habitat loss have been cited as being major threats for the Spotted Sucker (COSEWIC 2014; 2005). Trautman (1981) identified habitat degradation due to siltation and turbidity as a major contributor to the decline of Spotted Sucker in the US. Dextrase et al. (2003) stated that as this species is at their northern range in Canada, water temperature is likely a limiting factor; thus tributary warming may allow range expansion. As many of the known sites of Spotted Sucker occupancy are in agricultural landscapes, nutrient and sediment loading are also possible threats to the Ontario Spotted Sucker.

### 1.6. Specialized life history of habitat use characteristics

The Spotted Sucker usually occupies a variety of aquatic habitats including deep pools of small to medium-sized rivers over clay, sand or gravel substrates, large rivers, oxbows and backwater areas, impoundments and small turbid creeks – these are not limiting habitats.

## 2. Eligibility for Ontario status assessment

### 2.1. Eligibility conditions

#### 2.1.1. Taxonomic distinctness

Yes. The Spotted Sucker is taxonomically distinct from other related species based on morphometrics and mitochondrial DNA data (Harris & Mayden 2001)

#### 2.1.2. Designatable units

No. There are no spatial isolation nor genetic data to support designatable units within the area of distribution of the Ontario Spotted Sucker.

### 2.1.3. Native status

Yes. The Spotted Sucker was first identified in Ontario in 1962 in Lake St. Clair and it is listed as native to Ontario by NatureServe and Fishbase.

### 2.1.4. Occurrence

Yes. Spotted Sucker were captured in 2014 in Ontario (COSEWIC 2014)

## 2.2. Eligibility results

Spotted Sucker (*Minytrema melanops*) is eligible for status assessment in Ontario.

## 3. Ontario status assessment

### 3.1. Application of endangered/threatened status in Ontario

#### 3.1.1. Criterion A – Decline in total number of mature individuals

Insufficient information. The number of mature individuals is unknown.

#### 3.1.2. Criterion B – Small distribution range and decline or fluctuation

Does not apply. While Spotted Sucker qualify as Threatened under B1 (extent of occupancy < 5,000 km<sup>2</sup>) and as Endangered under B2 (IAO < 500 km<sup>2</sup>), they are not severely fragmented (B1a) nor do they show extreme fluctuations in any measure of population extent or numbers (B1c). Spotted Sucker do exhibit continuing decline in their extent of occupancy (B1b,i).

#### 3.1.3. Criterion C – Small and declining number of mature individuals

Insufficient information. The number of mature individuals is unknown.

#### 3.1.4. Criterion D – Very small or restricted total population

Insufficient information and does not apply. The number of mature individuals is unknown and the area of occupancy is greater than 20 km<sup>2</sup>

#### 3.1.5. Criterion E – Quantitative analysis

Insufficient information. No PVA is available for Ontario Spotted Sucker.

### 3.2. Application of Special Concern in Ontario

The Spotted Sucker is naturally a rare species and its distribution within Ontario is limited to the extreme southwest of the province. The Spotted Sucker IAO meets the Endangered criterion and the Area of Occupancy criterion meets the Threatened

criterion. While there are no data on the number of mature individuals or population size trends, area of occupancy has declined over the past 15 years. The known threats to the spotter sucker (siltation and water turbidity) have not been addressed and are likely to continue. These factors make the Spotted Sucker at high risk for eligibility for Threatened status in the near future. A potential rescue effect from Ohio and Michigan reduces the likelihood of the species qualifying for Endangered status in the near future.

### 3.3. Status category modifiers

#### 3.3.1. Ontario's conservation responsibility

Does not apply. Spotted Sucker's global rank is G5 and Ontario Spotted Sucker constitutes less than 5% of its global range.

#### 3.3.2. Rescue effect

Possible. Rescue from natural dispersal on the Spotted Sucker from Michigan (S3), Ohio (S4) is possible, especially in the western basin of Lake Erie and Huron-Erie corridor. Spotted Sucker are also present in Pennsylvania and New York\* but are unlikely to disperse into the Canadian range due to distance separating them and the lower occurrence of the species in those states. However, the natural movement of Spotted Sucker are not known.

\* NatureServe does not report this species from New York, however it was reported from the state in the 2000s (NYDEC 2015).

### 3.4. Other status categories

#### 3.4.1. Data deficient

Does not apply.

#### 3.4.2. Extinct or extirpated

Does not apply.

#### 3.4.3. Not at risk

Does not apply.

## 4. Summary of Ontario status

Spotted Sucker (*Minytrema melanops*) is classified as Special Concern in Ontario.

The Ontario Spotted Sucker qualifies for Threatened or Endangered status under B1 and B2 criteria respectively; however, they fail to meet B1a, B1c, B2a and B2c and thus do not qualify for either status. The Spotted Sucker qualifies for Special Concern because they are near to qualifying for Threatened and Endangered status, they inhabit

a narrow geographical range and are susceptible to threats that are likely increasing and are not being managed.

## 5. Information sources

[COSEWIC 2005](#) COSEWIC assessment and update status report on the spotted sucker *Minytrema melanops* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. vi + 16 pp.

COSEWIC 2014. In Press. COSEWIC status appraisal summary on the Spotted Sucker *Minytrema melanops* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xvi pp.

Dextrase, A.J, S.K. Staton, J.L. Metcalfe-Smith. 2003. National Recovery Strategy for Species at Risk in the Sydenham River: An Ecosystem Approach. National Recovery Plan No. 25. Recovery of Nationally Endangered Wildlife (RENEW). Ottawa, Ontario. 73 pp.

Harris, P. M., and R. L. Mayden. 2001. Phylogenetic relationships of major clades of *Catostomidae* (Teleostei: Cypriniformes) as inferred from mitochondrial SSU and LSU rDNA sequences. *Molecular Phylogenetics and Evolution* 20:225-237.

[NatureServe](#). 2015. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. [website accessed 20 May 2015].

[NYDEC](#). 2015.

Trautman, M.B. 1981. The fishes of Ohio with illustrated keys. Ohio State University Press, Columbus, Ohio. Revised Edition. 782 pp.



## Appendix 1: Technical summary for Ontario

Species: Spotted Sucker (*Minytrema melanops*)

### Demographic information

Demographic attribute	Value
Generation time. Based on average age of breeding adult: age at first breeding = X year; average life span = Y years.	3 years
Is there an observed, inferred, or projected continuing decline in number of mature individuals?	Unknown
Estimated percent of continuing decline in total number of mature individuals within 5 years or 2 generations.	Unknown
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over the last 10 years or 3 generations.	Unknown
Projected or suspected percent reduction or increase in total number of mature individuals over the next 10 years or 3 generations.	Unknown
Observed, estimated, inferred, or suspected percent reduction or increase in total number of mature individuals over any 10 years, or 3 generations, over a time period including both the past and the future.	Unknown
Are the causes of the decline a. clearly reversible and b. understood and c. ceased?	N/A
Are there extreme fluctuations in number of mature individuals?	Unknown

### Extent and occupancy information in Ontario

Extent and occupancy attribute	Value
Estimated extent of occurrence. (Request value from MNRF or use <a href="http://geocat.kew.org/">http://geocat.kew.org/</a> )	6913 km <sup>2</sup>
Index of area of occupancy (IAO). (Request value from MNRF or use <a href="http://geocat.kew.org/">http://geocat.kew.org/</a> )	159 km <sup>2</sup>
Is the total population severely fragmented? (i.e. is >50% of its total area of occupancy is in habitat patches that are (a) smaller than would be required to support a viable population, and (b) separated from other habitat patches by a distance larger than the species can be expected to disperse?)	No

Number of locations ( <i>as defined by COSEWIC</i> ).	Unknown but likely >10
Number of NHIC Element Occurrences ( <i>Request data from MNR</i> )	23
Is there an observed, inferred, or projected continuing decline in extent of occurrence?	Yes (observed)
Is there an observed, inferred, or projected continuing decline in index of area of occupancy?	No
Is there an observed, inferred, or projected continuing decline in number of populations?	Yes
Is there an observed, inferred, or projected continuing decline in number of locations?	No (number of locations difficult to determine)
Is there an observed, inferred, or projected continuing decline in [area, extent and/or quality] of habitat?	Yes (continuing decline)
Are there extreme fluctuations in number of populations?	No
Are there extreme fluctuations in number of locations?	Unknown
Are there extreme fluctuations in extent of occurrence?	No
Are there extreme fluctuations in index of area of occupancy?	No

## Rescue effect

<b>Rescue effect attribute</b>	<b>Likelihood</b>
Is immigration of individuals and/or propagules between Ontario and outside populations known or possible?	Probably
Would immigrants be adapted to survive in Ontario?	Yes
Is there sufficient suitable habitat for immigrants in Ontario?	Yes
Is the species of conservation concern in bordering jurisdictions?	No
Is rescue from outside populations reliant upon continued intensive recovery efforts?	No

## Appendix 2: Adjoining jurisdiction status rank and decline

Information regarding status rank and decline for Spotted Sucker

<b>Jurisdiction</b>	<b>Subnational rank</b>	<b>Population trend</b>	<b>Sources</b>
Ontario	S2	Likely decline	COSEWIC 2014
Quebec	Not present	n/a	n/a
Manitoba	Not present	n/a	n/a
Michigan	S3	Unknown	NatureServe 2015
Minnesota	SNR	Unknown	NatureServe 2015
Nunavut	Not present	n/a	n/a
New York	Not ranked but present	Expanding?	NYDEC 2015
Ohio	S4	Unknown	NatureServe 2015
Pennsylvania	S1	Unknown	NatureServe 2015
Wisconsin	S4	Unknown	NatureServe 2015

### Acronyms:

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

COSSARO: Committee on the Status of Species at Risk in Ontario

ESA: Endangered Species Act

GRANK: global conservation status assessments

IAO: index of area of occupancy

MAC: Minimum animal counts

MNRF: Ministry of Natural Resources and Forestry

NHIC: Natural Heritage Information Centre

NRANK: National conservation status assessment

PVA: Population viability analysis

SARA: Species at Risk Act

SNR: Unranked

SRANK: subnational conservation status assessment

S1: Critically imperiled

S2: Imperiled

S3: Vulnerable

S4 : Apparently secure