

# Aquatic (fish/mussel) Species at Risk in Eastern Ontario

## Guidance and Resources

Fisheries and Oceans Canada  
*Species at Risk Program*

Ontario East Municipal Conference (Kingston, ON)  
September 14, 2016



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

# Aquatic Species at Risk (SAR)

## Aquatic (fish/mussel) SAR in eastern Ontario

- What are they?
- Where are they?
- How are they protected?

## Critical habitat

- How to find SAR critical habitat in your area

## DFO's permitting and regulatory role for projects in-or-near water

- Regulatory role is referenced in PPS, 2014
- DFO web resources for working around water

## SAR guidance for municipal Official Plans

- Updating your Official Plan? Add suggested DFO SAR guidance!



# What are Aquatic Species at Risk?

- Aquatic species (fishes and mussels) assessed to be at risk of extinction or extirpation (*i.e. lost from the wild in Canada*)
- Status recommended by Committee on the Status of Endangered Wildlife in Canada (COSEWIC)
- Species listed under Schedule 1 of the *Species at Risk Act* (SARA)

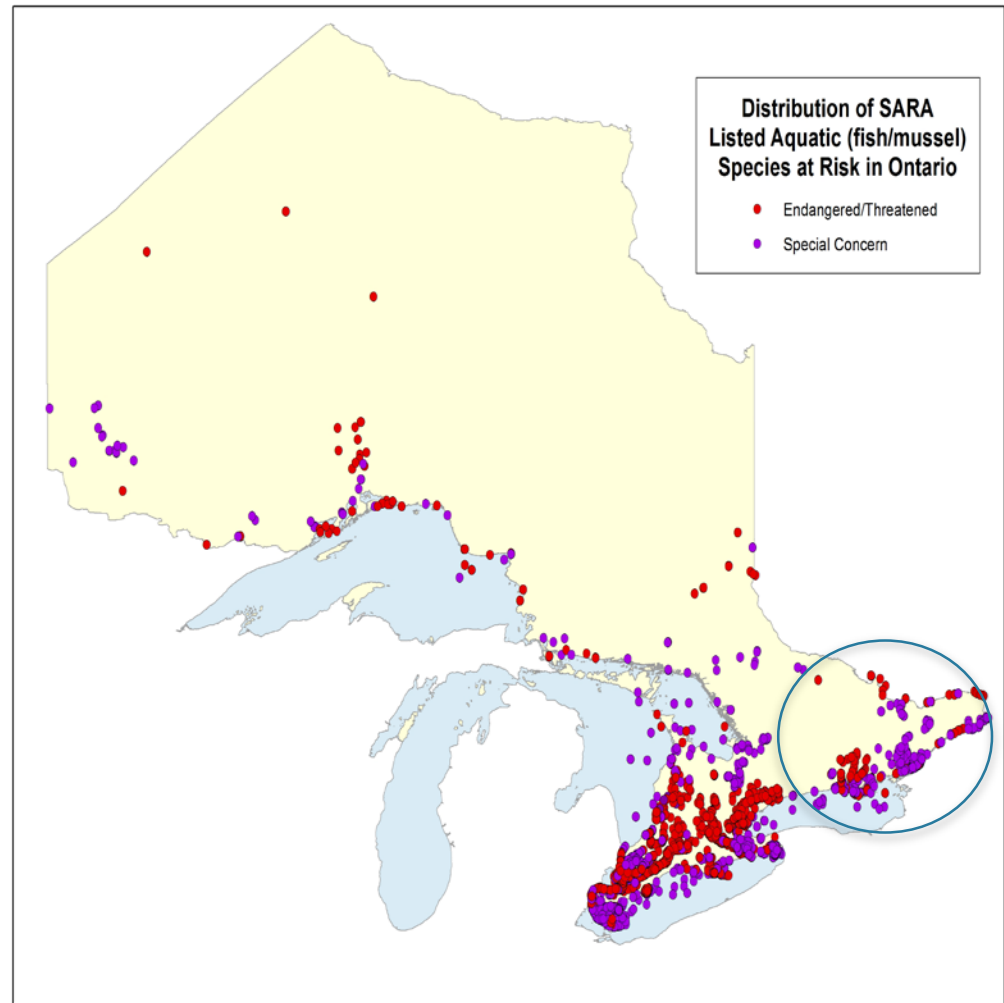


Illustration by Ellen Edmonson (NYSDEC)

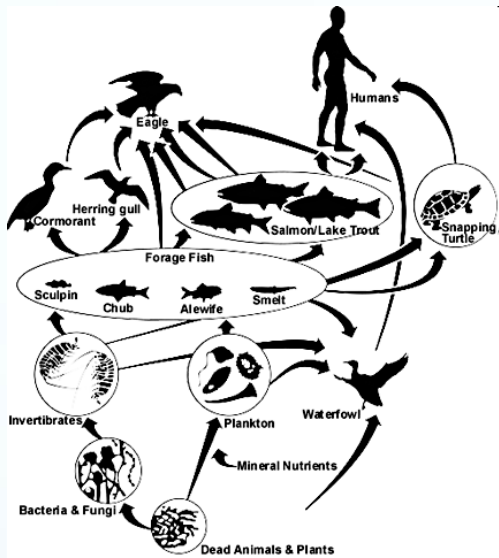
# Where are they?

## Distribution of federally Listed Aquatic SAR in Ontario

- Currently 32 SARA-listed, aquatic species at risk in Ontario
  - 21 fishes
  - 11 mussels
- 27 located within southwestern Ontario
- Concentration of SAR in eastern Ontario



# Why protect SAR?



- International commitments to protect biodiversity
- Natural biodiversity supports ecosystem health
- Economic and cultural value
- Indicator of healthy local environment / communities



Photo courtesy of Hudson's Bay Archives of Manitoba



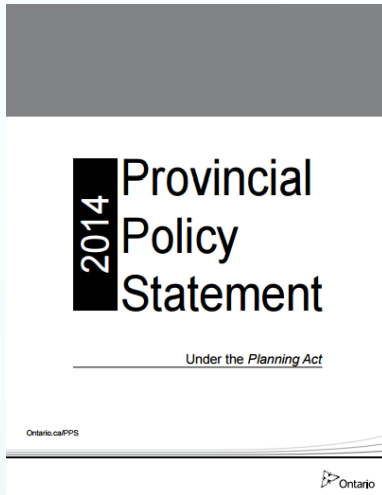
# Natural Fishing Lure – Lampsilis Mussel and Bass

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# *What can municipalities do...?*

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## Provincial Policy Statement (2014)

### 2.1 Natural Heritage

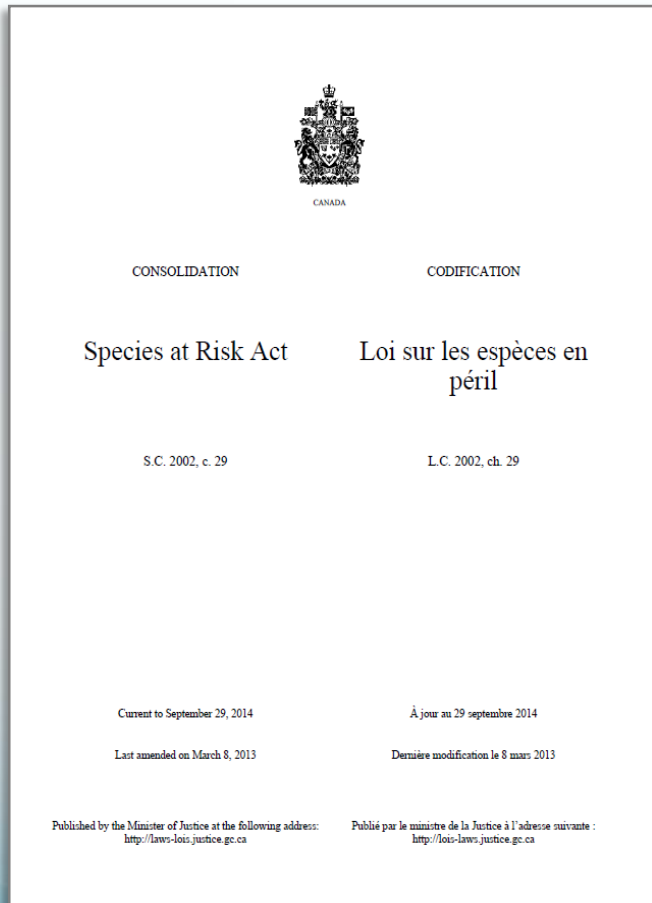
2.1.6. *Development and site alteration shall not be permitted in **fish habitat** except in accordance with provincial and federal requirements.*

*[e.g. Fisheries Act]*

2.1.7 *Development and site alteration shall not be permitted in **habitat of endangered species and threatened species**, except in accordance with provincial and federal requirements.*

*[e.g. Species at Risk Act]*

# Species at Risk Act (SARA)



## SARA was created to:

- prevent species of plants and wildlife from being lost from areas in Canada
- help recover plant and wildlife species that have been lost or are in danger of being lost as a result of human activity.



*Species at Risk Act*



# Species at Risk Act

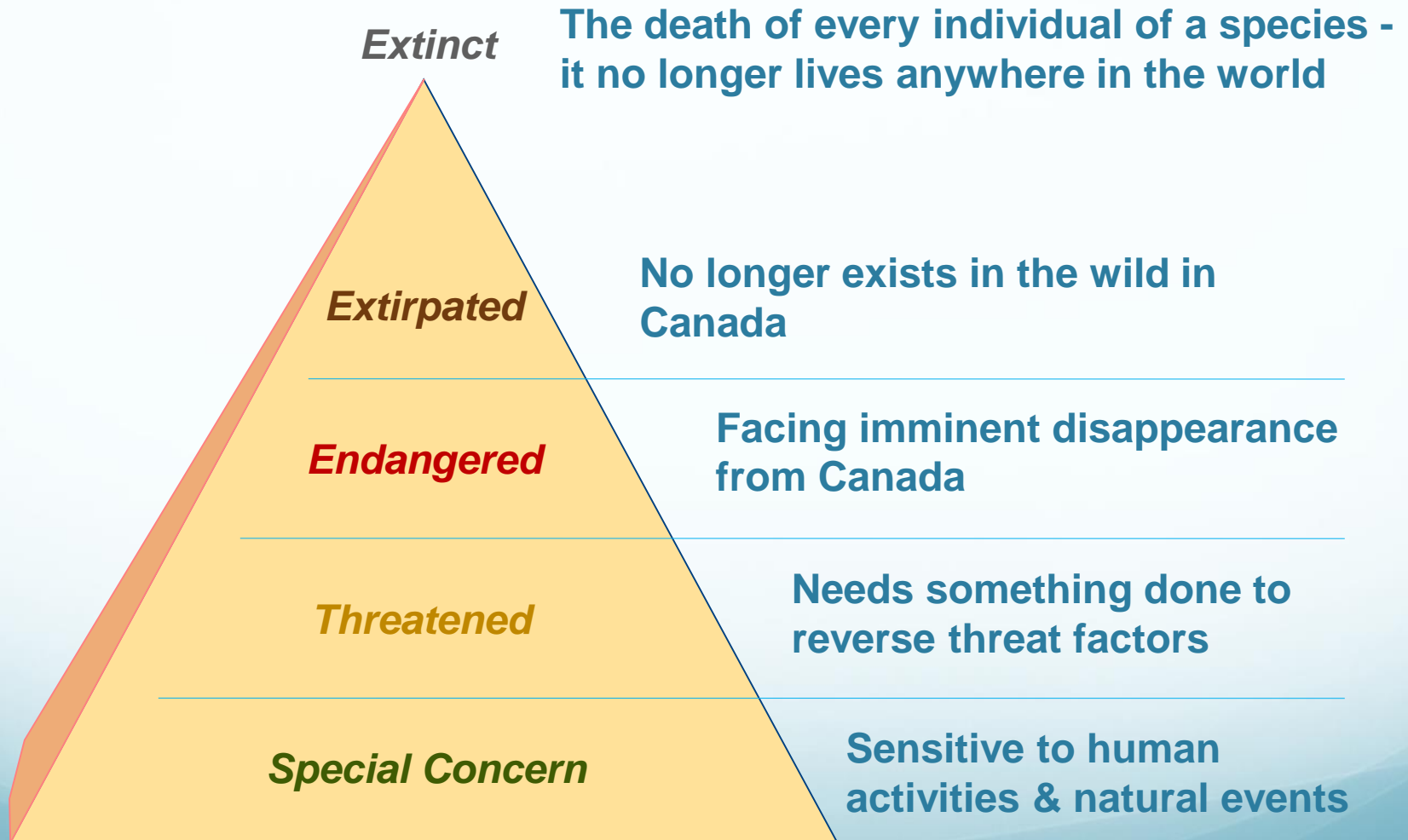


SARA came into force June 1, 2004

Lead Agency	Responsibility	
Fisheries and Oceans Canada	All aquatic species (fishes and mussels as defined in the <i>Fisheries Act</i> , except in National Parks)	
Environment Canada	Canadian Wildlife Service	Migratory birds and terrestrial species (except on Parks Canada lands)
	Parks Canada Agency	All SARA species on Parks Canada lands (including Trent-Severn and Rideau Canal waterways)

# Species Status

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# Key SARA protection clauses

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## SARA Prohibitions

### Sec. 32. Individual Organisms

- No **killing, harming, harassing, buying, collecting, selling** of extirpated, endangered or threatened species (Schedule 1)

### Sec. 33. Residences

- Only for species to which the concept of residence applies
- Not yet defined for any aquatic species in Ontario

### Sec. 58. Critical Habitat

- Prohibits **destruction of Critical Habitat** once defined in a recovery strategy or action plan



# 'Schedule 1' protected (listed) Aquatic Species at Risk in Ontario

## Extirpated

## Endangered

## Threatened

## Special Concern

### FISH (21)

Gravel Chub  
Paddlefish

Lake Chubsucker  
Northern Madtom  
**Pugnose Shiner**  
Shortnose Cisco

**Channel Darter**  
**Eastern Sand Darter**  
**Spotted Gar**

Blackstripe Topminnow  
**Bridle Shiner**  
**Deepwater Sculpin**  
**Grass Pickerel**  
Kiyi (Upper Great Lakes)  
**Northern Brook Lamprey**  
Pugnose Minnow  
**River Redhorse**  
Silver Chub  
Spotted Sucker  
Warmouth

### MUSSELS (11)

**Eastern Pondmussel**  
Kidneyshell  
Mudpuppy Mussel  
Northern Riffleshell  
Rayed Bean  
**Rainbow**  
Round Hickorynut  
Round Pigtoe  
Snuffbox

Mapleleaf

Wavy-rayed Lampmussel



© Shawn K. Staton / National Water Research Institute

Fisheries and Oceans Canada

# Under Consideration for SARA Listing

## Endangered/Threatened\*

## Special Concern\*

### FISH

14

American Eel \*\*

Lake Sturgeon

*DU8- Great Lakes, Upper St. Lawrence*

Pugnose Minnow \*\*

Redside Dace \*\*

Shortjaw Cisco

Silver Chub \*\*

*(Great Lakes, Upper St. Lawrence)*

Silver Shiner

Cutlip Minnow

Deepwater Sculpin

Lake Sturgeon

*DU6 - Lake of the Woods, Rainy R.*

*DU7 - S. Hudson Bay, James Bay*

Silver Lamprey

*(Great Lakes-Upper St. Lawrence)*

### MUSSEL

4

Fawnsfoot

Hickorynut

Lilliput

Threehorned Wartyback

*\*Already listed under Ontario's Endangered Species Act;*

*\*\*Under consideration for SARA up-listing to END/ THR*

# What federal SAR are in my area?

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DFO has developed screening maps & guide

- fish species at risk maps in Ontario
- mussel species at risk maps in Ontario

[dfo-mpo.gc.ca/Library/356763.pdf](https://dfo-mpo.gc.ca/Library/356763.pdf)

*Provincially listed endangered species can be searched at:  
[www.ontario.ca/environment-and-energy/species-risk-area](http://www.ontario.ca/environment-and-energy/species-risk-area)*





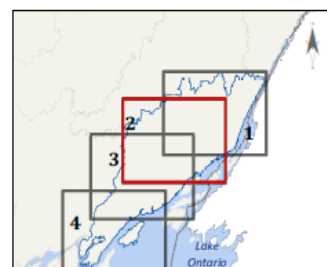
# Distribution of Fish Species at Risk

Cataraqui Region  
Conservation Authority  
(Map 2 of 4)

- Protected under SARA (Extirpated, Endangered, Threatened)
- Under consideration for listing (Endangered, Threatened)
- Special Concern Species (including under consideration for listing)
- Area within which Critical Habitat is found or proposed\*

\* Note: Within the delineated areas, only those areas that meet the functional habitat requirements of one or more life stages of the species are considered Critical Habitat. For more information on Critical Habitat please refer to the Reference Guide and the species-specific Recovery Strategies. Species are listed with "I" in table below.

- River/Stream
- Conservation Authority Boundary
- Wetland
- First Nations Land Claim
- Urban Area



## Conservation Authority Fish SAR Listing

Common Name (Population)	Colour
*Pugnose Shiner	Red
*Spotted Gar	Red
American Eel	Orange
Lake Sturgeon (DU & Grt Lakes/Upper St. Lawrence)	Orange
Silver Lamprey (Grt Lakes/Upper St. Lawrence)	Purple
Bridle Shiner	Purple
Grass Pickerel	Purple
Cutline Minnow	Purple

0 2.5 5 10 km

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Map produced May 2016. Valid until May 2018.







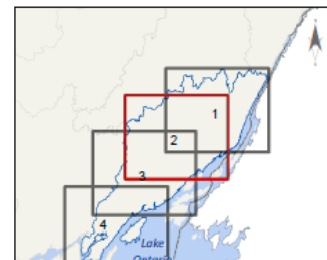
# Distribution of Mussel Species at Risk

Catawaqui Region  
Conservation Authority  
(Map 2 of 4)

- Protected under SARA (Extirpated, Endangered, Threatened)
- Under consideration for listing (Endangered, Threatened)
- Special Concern Species (including under consideration for listing)
- Area within which Critical Habitat is found or proposed

\* Note: Within the delineated areas, only those areas that meet the functional habitat requirements of one or more life stages of the species are considered Critical Habitat. For more information on Critical Habitat please refer to the Reference Guide and species-specific Recovery Strategies. Species are listed with \* in table below.

- River/Stream
- Conservation Authority Boundary
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- Urban Area



Conservation Authority Mussel SAR Listing

Common Name (Population)	Colour
Eastern Pondmussel	Red

0 2.5 5 km

Disclaimer: The information on this map is provided for general mapping purposes only. Fisheries and Oceans Canada does not warrant the quality, accuracy or completeness of any information contained or depicted herein and that this information is provided "as is" without warranty or condition of any nature, including fitness for a particular purpose. Fisheries and Oceans Canada will not be liable or held responsible for the use or misuse of information or material depicted on this map, or any loss or damage resulting therefrom. © Her Majesty the Queen in Right of Canada. Fisheries & Oceans Canada. All rights reserved. 2015. Base Map Source: Ontario Ministry of Natural Resources, Natural Resources Canada, Conservation Ontario. Aerial photography from 2015. Map produced May 2015. Valid until May 2016.



# Management Plans

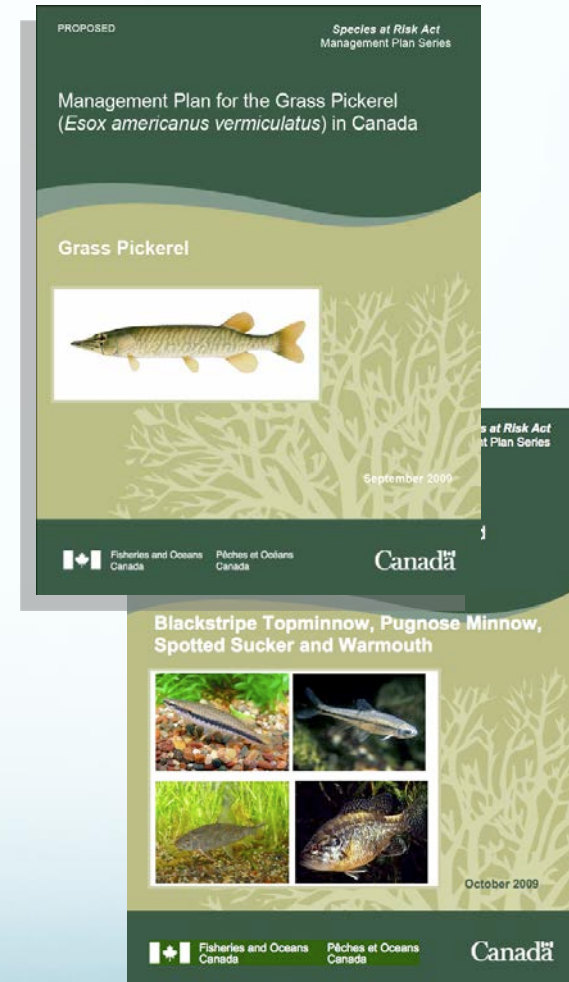
(prepared for Special Concern species)

- Blackstripe Topminnow
- Bridle Shiner
- Deepwater Sculpin\*
- Grass Pickerel
- Kiyi (Upper Great Lakes)
- Northern Brook Lamprey\*
- Pugnose Minnow\*\*
- River Redhorse\*
- Silver Chub\*\*
- Spotted Sucker
- Warmouth
- Wavy-rayed Lampmussel\*

Available on [Species at Risk Public Registry](#)

\*Under development or awaiting final posting on SARA Registry

\*\* Under consideration for SARA up-listing to more imperiled status

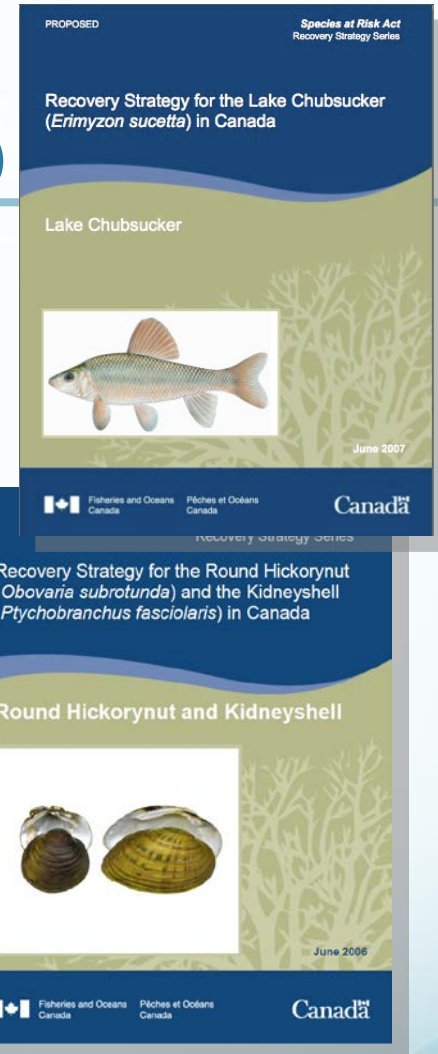




# Recovery Strategies

(prepared for Endangered/Threatened species)

- Channel Darter
- Eastern Sand Darter
- Gravel Chub
- Lake Chubsucker
- Pugnose Shiner
- Spotted Gar
- Northern Madtom
- Paddlefish
- Shortnose Cisco
- Round Hickorynut
- Kidneyshell
- Mapleleaf (Gr. Lakes, Upr. St. Lawr.)\*
- Mudpuppy Mussel\*
- Northern Riffleshell
- Rayed Bean
- Round Pigtoe
- Snuffbox
- Eastern Pondmussel\*
- Rainbow\*



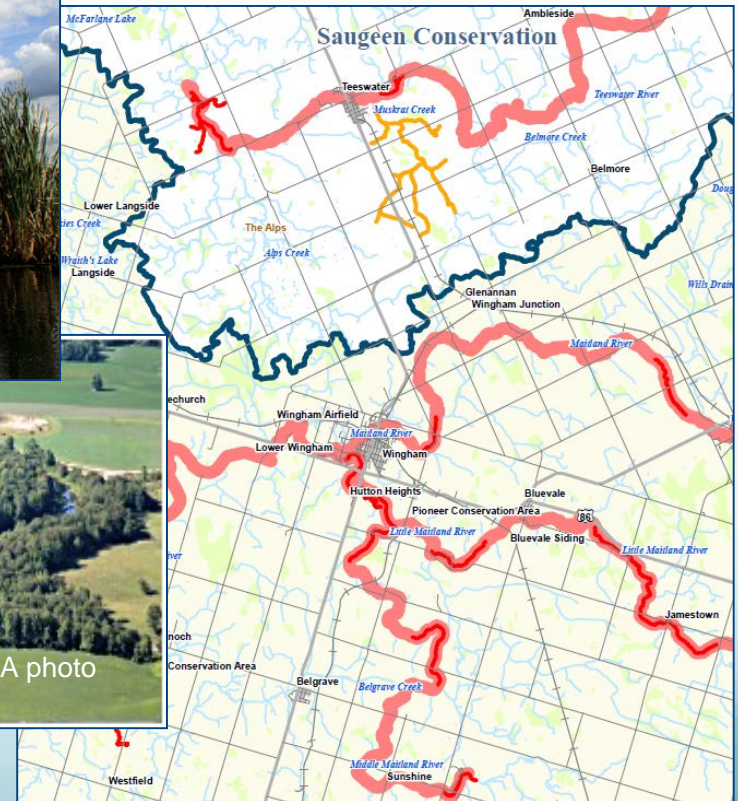
Include species-specific information and critical habitat.

Available on [Species at Risk Public Registry](#)

# What is Critical Habitat?



MVCA photo





# Critical Habitat

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- Defined in SARA as:

***“Habitat necessary for the survival or recovery of a listed endangered, threatened or extirpated species.”***

- Includes important **breeding, feeding, and/or nursery** habitat for aquatic species at risk
- Any activity that degrades or destroys critical habitat can lead to further demise of species at risk

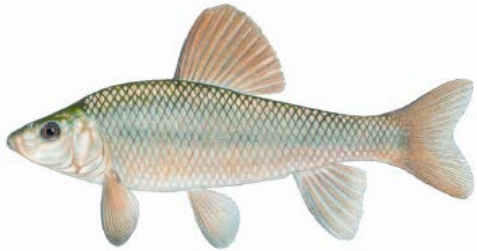




# Fish Critical Habitat in Ontario

Critical Habitat has been identified for 6 fish species

Lake Chubsucker



© Joseph R. Tomelleri

Channel Darter



Photo by G. Coker

Pugnose Shiner



Illustration by Ellen Edmonson (NYSDEC)

Northern Madtom



© Joseph R. Tomelleri

Eastern Sand Darter



Photo by A. Dextrase, OMNRF

Spotted Gar\*



© Joseph R. Tomelleri

# Mussel Critical Habitat in Ontario

Critical Habitat has been identified for 10 mussel species

- Round Hickorynut, Kidneyshell



Photo by A. Dextrase

- Northern Riffleshell, Snuffbox, Round Pigtoe, Mudpuppy Mussel, Rayed Bean



(Images courtesy of Environment Canada)

# Mussel Critical Habitat – cont'd

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- Eastern Pondmussel
- Mapleleaf (ON populations)
- Rainbow



Photo by A. Dextrase



Photo by G. Coker



Photo by G. Coker

# *How do I know...* if critical habitat is present?

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- Critical habitat (CH) is identified in a **recovery strategy** or **action plan** and posted on the [SARA Public Registry](#)
- Critical Habitat is established by a Minister's order once identified in a recovery strategy or action plan
- DFO has developed 1-page aquatic species at risk guidance municipalities can use in Official Plan updates (*copies available*)
- Watershed-based species at risk distribution and critical habitat maps can be referenced and are available online





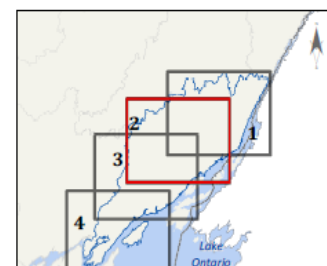
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Catawaqui Region  
Conservation Authority  
(Map 2 of 4)

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## Conservation Authority Fish SAR Listing

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Grass Pickerel	Purple
Cutline Minnow	Purple

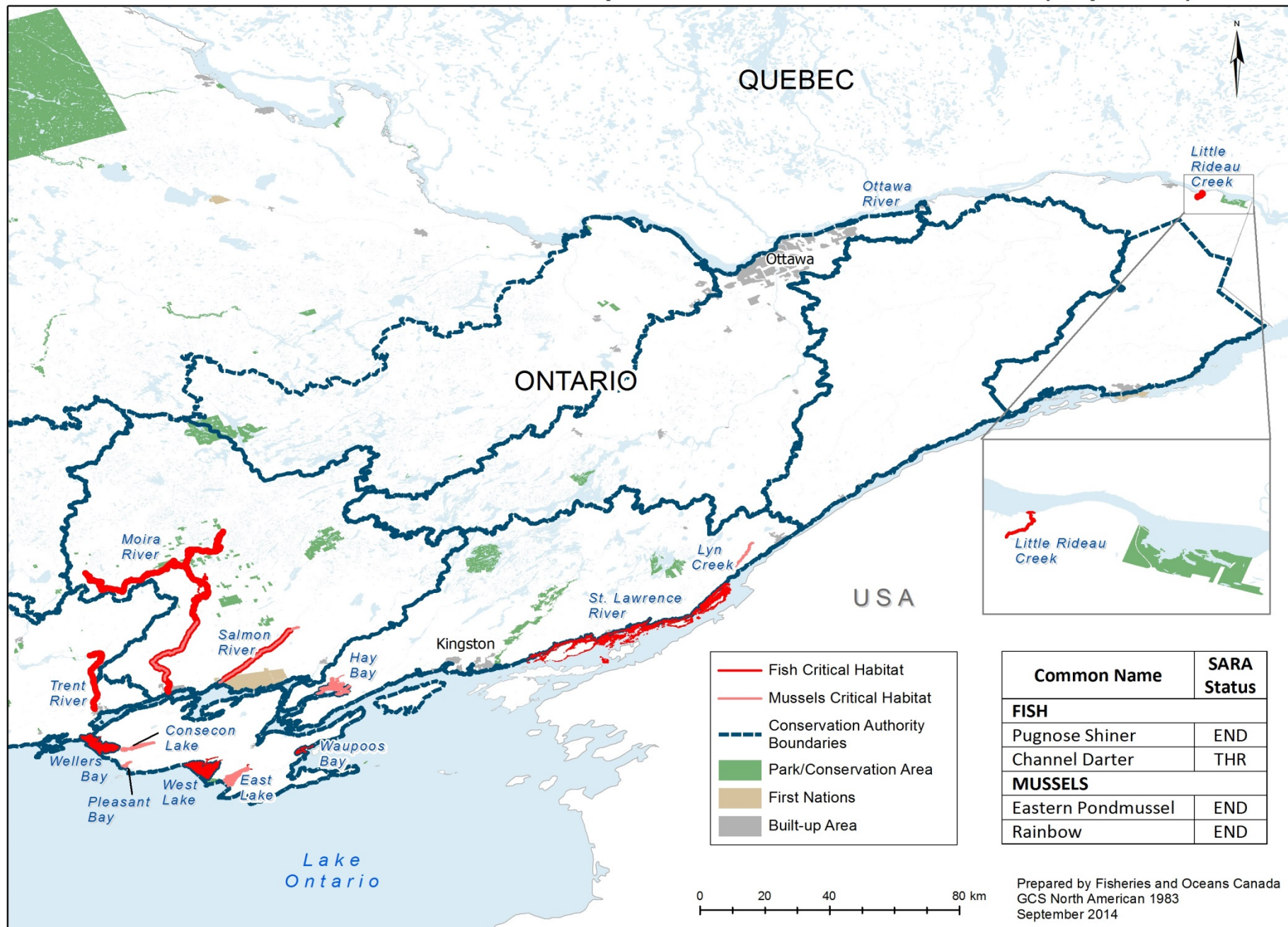
0 2.5 5 10 km

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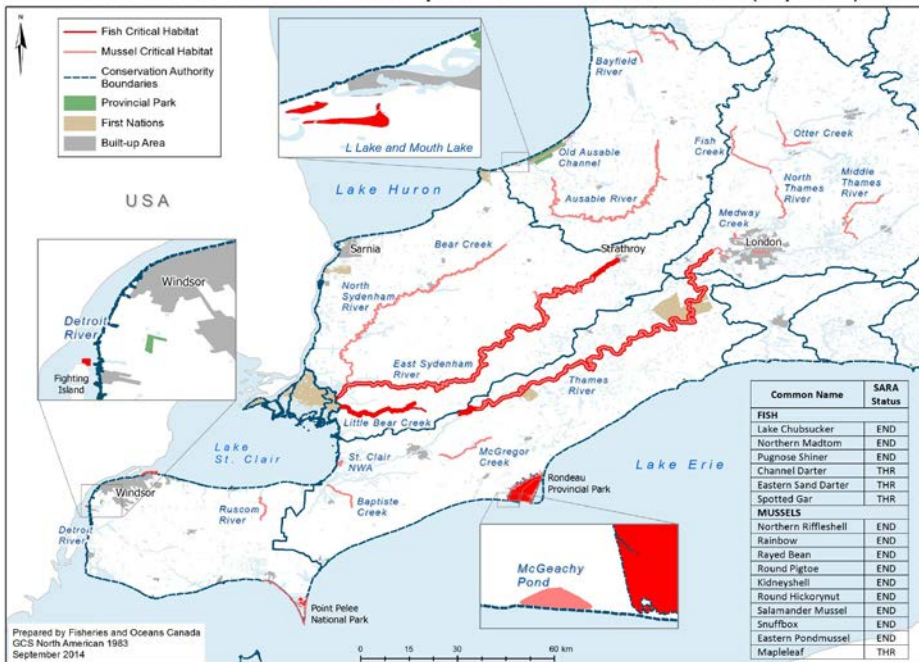
# Critical Habitat for Fish and Mussel Species at Risk in Eastern Ontario (Map 4 of 4)



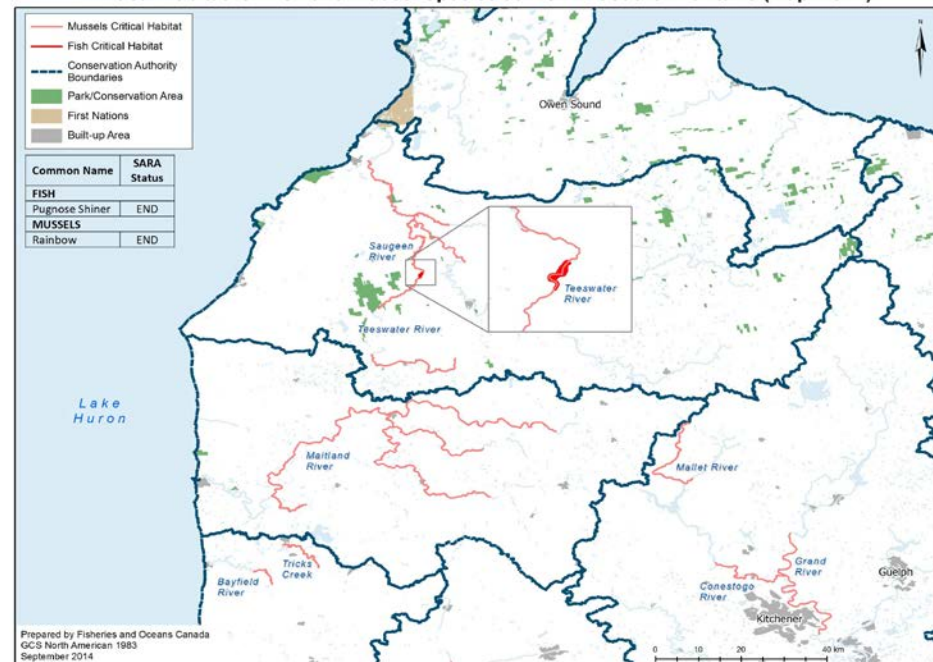
Common Name	SARA Status
<b>FISH</b>	
Pugnose Shiner	END
Channel Darter	THR
<b>MUSSELS</b>	
Eastern Pondmussel	END
Rainbow	END



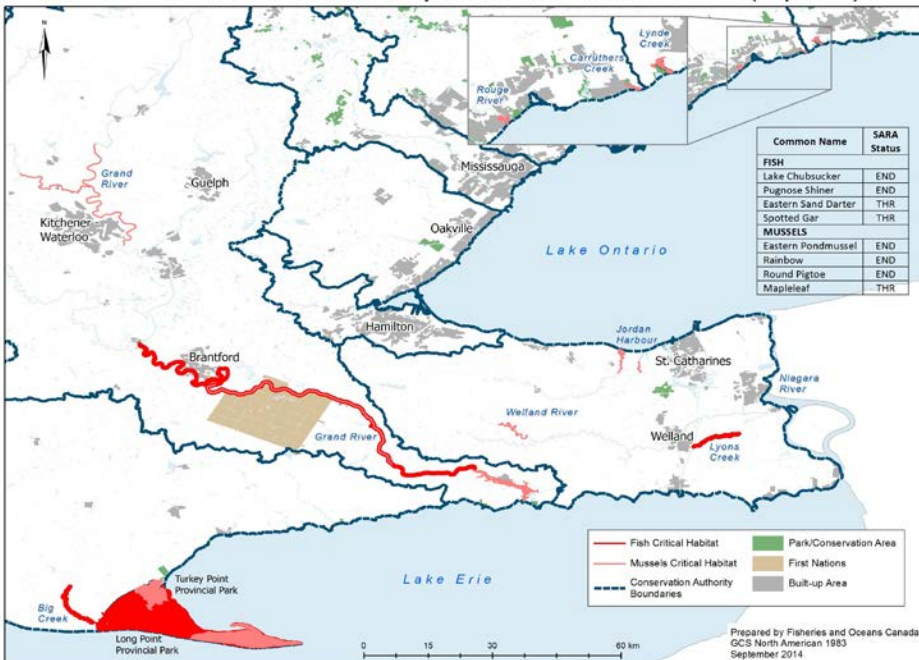
Critical Habitat for Fish and Mussel Species at Risk in Southern Ontario (Map 1 of 4)



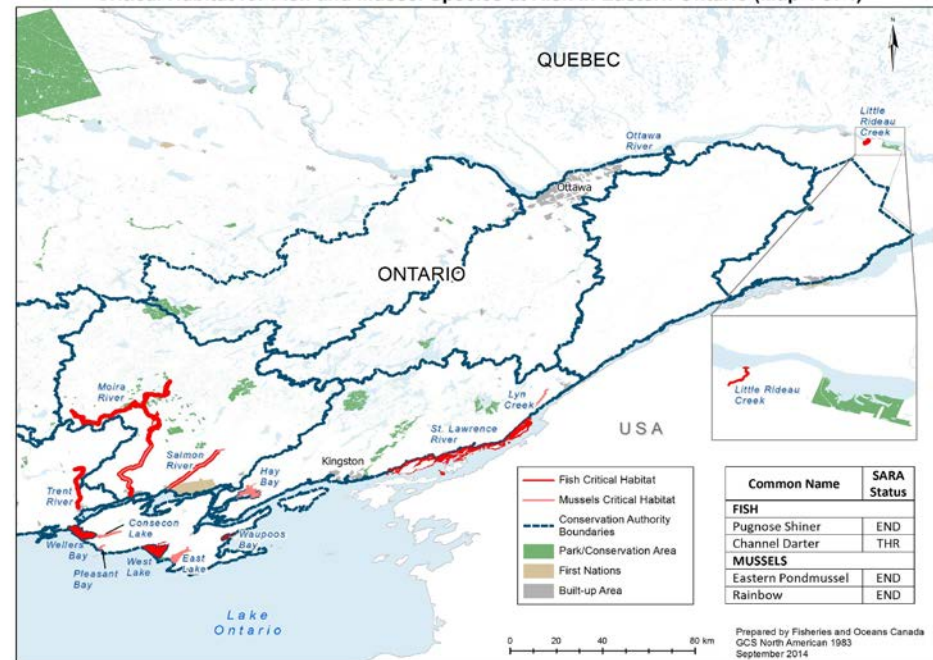
Critical Habitat for Fish and Mussel Species at Risk in Southern Ontario (Map 2 of 4)



Critical Habitat for Fish and Mussel Species at Risk in Southern Ontario (Map 3 of 4)



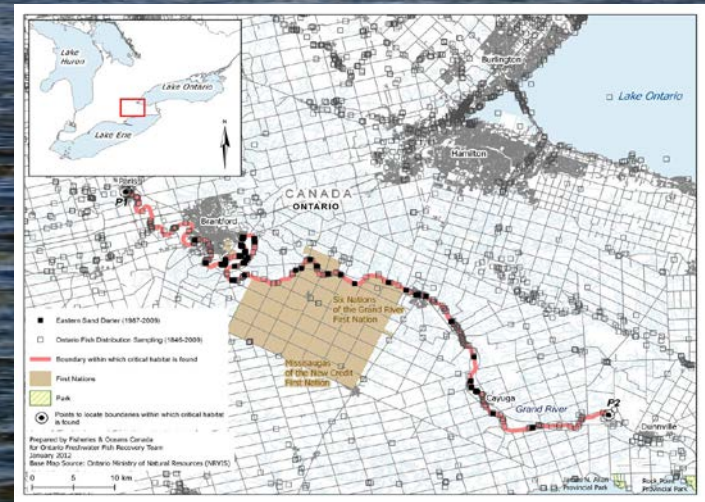
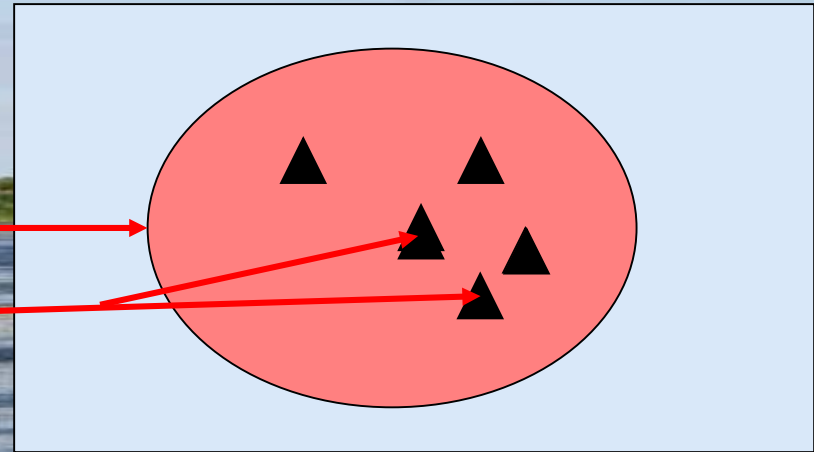
Critical Habitat for Fish and Mussel Species at Risk in Eastern Ontario (Map 4 of 4)





# Site specific review is required in Critical Habitat areas...

- Two components used to identify Critical Habitat:
  - Geo-spatial (extent)
  - Biophysical (features)
- Site assessment determines if habitat contains the necessary biophysical features within identified critical habitat areas
- Recovery Strategies & Action Plans contain detailed critical habitat maps and descriptions



Example from Eastern Sand Darter Recovery Strategy 2012

# Fish Mitigation Guide & Mussel Relocation Protocol

**Mitigation Guide for the Protection of Fishes and Fish Habitat to Accompany the Species at Risk Recovery Potential Assessments Conducted by Fisheries and Oceans Canada (DFO) in Central and Arctic Region**

**Version 1.0**

G.A. Coker, D.L. Ming, and N.E. Mandrak

Ontario Great Lakes Area  
Fisheries and Oceans Canada  
PO Box 5050, 867 Lakeshore Rd.  
Burlington, Ontario  
L7R 4A6

2010

**Canadian Manuscript Report of  
Fisheries and Aquatic Sciences 2904**

**PROTOCOL FOR THE DETECTION AND RELOCATION OF FRESHWATER MUSSEL SPECIES AT RISK IN ONTARIO-GREAT LAKES AREA (OGLA)**

G. Mackie<sup>1</sup>, T.J. Morris<sup>2</sup>, and D. Ming<sup>3</sup>

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50 Stone Road East  
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<sup>2</sup> Fisheries and Oceans Canada  
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Ontario-Great Lakes Area  
PO Box 5050, 867 Lakeshore Rd.  
Burlington, Ontario, L7R 4A6

2008

**Canadian Manuscript Report of  
Fisheries and Aquatic Sciences 2790**

# How is Critical Habitat protected?

- **PRIORITY** ➡ design projects to **avoid work in critical habitat & mitigate** any potential harmful impacts
- **Check SAR distribution and critical habitat maps when planning a project:** available as appendices to the *Guide for interpreting fish & mussel species at risk maps in Ontario* (<http://www.dfo-mpo.gc.ca/Library/356763.pdf>)
- Some activities *may* be permitted, but will be assessed on a case-by-case basis
- If work *must* be carried out that may destroy CH, it must be approved by way of an **agreement or a SARA permit with specific pre-conditions**





# SARA Permitting

- A SARA permit will be required for project activities that may cause incidental harm to a SAR – or any contravention of the SARA prohibitions (S. 32, 33, or 58)

This may include:

- any in / near water works, including vegetation removal
- field surveys or research to detect SAR fish and/or mussels



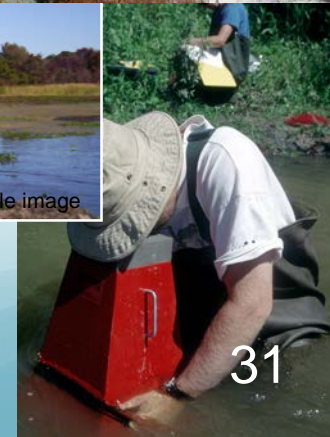
Photo: DFO



Photo: tullock.ca



Photo: google image



- Contact DFO FPP early if you suspect a SAR permit may be required  
[FisheriesProtection@dfo-mpo.gc.ca](mailto:FisheriesProtection@dfo-mpo.gc.ca)

# When may SARA Permits be issued?

**SARA section 73.** (1) The competent minister **may enter into an agreement** with a person, **or issue a permit** to a person, authorizing the person to engage in an activity affecting a listed wildlife species, any part of its critical habitat or the residences of its individuals.

## Purpose

(2) The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that

- ✓ (a) the activity is **scientific research relating to the conservation of the species** and conducted by qualified persons;
- ✓ (b) the activity **benefits the species or is required to enhance its chance of survival** in the wild; or
- ✓ (c) **affecting the species is incidental** to the carrying out of the activity.

## Pre-conditions

(3) The agreement may be entered into, or the permit issued, only if the competent minister is of the opinion that

- ✓ (a) **all reasonable alternatives** to the activity that would reduce the impact on the species have been considered and the best solution has been adopted;
- ✓ (b) **all feasible measures will be taken to minimize the impact** of the activity on the species or its critical habitat or the residences of its individuals; and
- ✓ (c) the **activity will not jeopardize the survival or recovery** of the species.



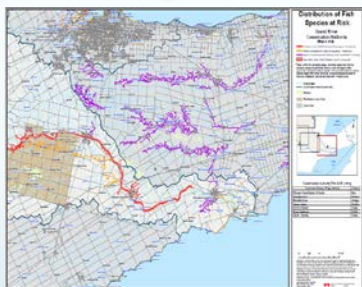
# DFO One-Window Project Review Process

Integrated 'one-window' project reviews under *FA* & *SARA*



Visit Fisheries Protection Program (FPP) website  
<http://www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html>

☒ self-assess – is a *Fisheries Act* review needed?



Check [DFO SAR guide](#) to see if END or THR species or CH are present at or near site

☒ SARA permit may be required

If *Fisheries Act* (FA) review or SARA permit may be required

☒ submit a '[Request for Review](#)' form to FPP to [fisheriesprotection@dfo-mpo.gc.ca](mailto:fisheriesprotection@dfo-mpo.gc.ca)



Permits may be required for inventory work



Notify DFO of any SAR findings - Follow protocol for voucher photos



# Project review & Permits

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A permit under SARA and/or a SARA compliant *Fisheries Act* Authorization *does not* meet the needs of Ontario's *Endangered Species Act*

- *a separate permit may be required from MNRF*

Proponents are advised to

- check DFO and MNRF **self-assessment processes online**

AND

- *if you cannot meet the self-screening criteria, send information and a request for review early in the planning stages*



# Updating your Official Plan?

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Use suggested 1-page DFO guidance to add clarity around federal aquatic species at risk (fish and mussel) protection within planning documents (e.g. City of London)

- No new legislative requirement; simply highlights processes that are already in place and supports *Provincial Policy Statement* (2014) and the *Natural Heritage Reference Manual* requirements.

Early notification in planning stages can help prevent unexpected delays and unplanned project costs.

# Summary...Design Projects to Protect SAR

Review distribution and critical habitat maps in DFO's online library at:

<http://www.dfo-mpo.gc.ca/Library/356763.pdf>

- Determine which aquatic SAR are present
- SARA status & whether critical habitat is present

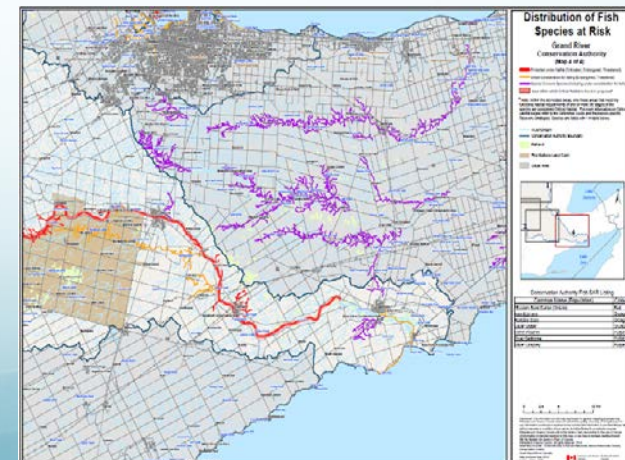
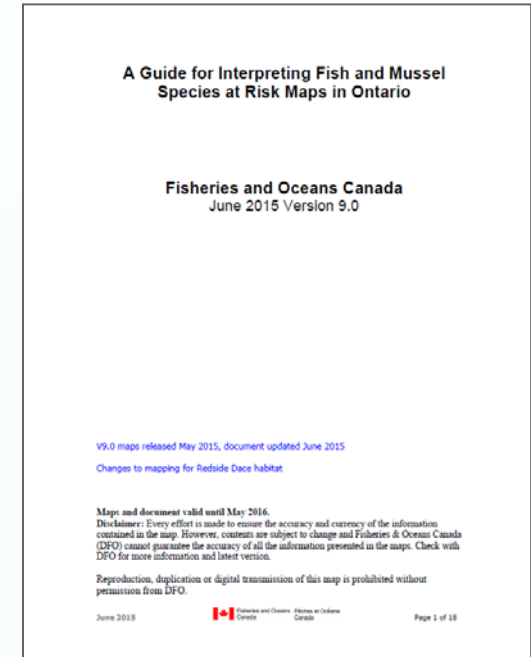
Review corresponding Recovery Strategies or Management Plans

- Species of interest can be searched on the SAR Public Registry's [A to Z species index](#)

Target mitigation at the site and within the zone of project influence

- consider species' habitat and life history requirements throughout ALL project stages
- Use SAR [Fish](#) & [Mussel](#) sampling & mitigation guides

Protect Listed Species - Ensure project activities will not contravene [SARA prohibitions](#)







# Report illegal activities in sensitive habitat

**Contact Fisheries Protection Program**

**Telephone: 1-855-852-8320**

**Email: [FisheriesProtection@dfo-mpo.gc.ca](mailto:FisheriesProtection@dfo-mpo.gc.ca)**



# Species at Risk & Fisheries Protection Websites & Contacts

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- Websites



- [www.cosewic.gc.ca](http://www.cosewic.gc.ca)
- [www.sararegistry.gc.ca](http://www.sararegistry.gc.ca)
- [www.dfo-mpo.gc.ca](http://www.dfo-mpo.gc.ca)
- DFO Aquatic Species at Risk  
([www.dfo-mpo.gc.ca/species-especes/](http://www.dfo-mpo.gc.ca/species-especes/))

- For SARA permit applications visit

[www.dfo-mpo.gc.ca/species-especes/permits-permis/permits-eng.htm](http://www.dfo-mpo.gc.ca/species-especes/permits-permis/permits-eng.htm)

- For SARA screening maps/guidance document

<http://www.dfo-mpo.gc.ca/Library/356763.pdf>

**For further information, you may wish to contact:**

- **DFO's Fisheries Protection Program**
  - 1-855-852-8320
  - [fisheriesprotection@dfo-mpo.gc.ca](mailto:fisheriesprotection@dfo-mpo.gc.ca)



# Questions?

