



Proposed Risk Status: **Threatened**

Species at Risk Act

Consultation Workbook
on the proposed listing of the...



Pugnose Minnow

November 2013

Pugnose Minnow

Common Name:	Pugnose Minnow
Scientific name:	<i>Opsopoeodus emiliae</i>
SARA Status:	Special Concern (June 2004). Under consideration for new listing as Threatened
COSEWIC Status:	Threatened (May 2012)
Region:	Ontario



Figure 1. A mature Pugnose Minnow (Illustration © Joseph R. Tomelleri)

This species has recently been re-assessed as Threatened by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). It was previously listed as Special Concern in 2003 under the federal *Species at Risk Act* and a management plan was developed in 2009. If the species is listed as threatened under SARA, a recovery strategy will be developed.

GENERAL DESCRIPTION:

The Pugnose Minnow (*Opsopoeodus emiliae*) is a small, short-lived and somewhat mysterious fish in the carp and minnow family (Cyprinidae). As its name suggests, it has a tell-tale rounded snout, as well as the following other features:

- small, slender and elongated body, reaching a maximum length of about 6 cm;
- bluntly rounded snout and very small, upturned mouth;
- forked tail and short pectoral (behind the head) fins;
- silvery-coloured with a distinct, thin black line running the full length of each side of the body;
- criss-cross pattern of scaling on the upper body;
- nine dorsal rays (spines in the back fin) compared to eight dorsal rays like other Canadian minnows; and
- spawning males turn dark silver-blue and develop many small, sharp tubercles around the mouth.

Pugnose Minnow

DISTRIBUTION

In Canada, the Pugnose Minnow is only found in southwestern Ontario, where small populations are limited to Lake St. Clair and its smaller tributaries, and the Detroit and Sydenham rivers. Its small numbers have made research on this fish a challenge, and exact sizes of remaining populations in Canada are not known. However, recent monitoring suggests the Pugnose Minnow has been lost from the Thames River, and that its historical range has decreased by more than 80 per cent. In the United States, the Pugnose Minnow is common and widespread, from Texas to Wisconsin and across to South Carolina and Florida.

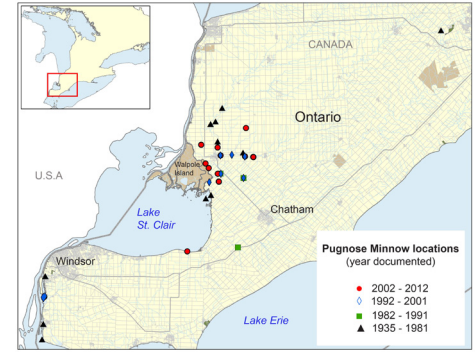


Figure 2: Map of the distribution of the Pugnose Minnow, in Canada.

HABITAT & LIFE HISTORY

More research is needed on the biology and preferred Canadian habitat of the Pugnose Minnow, as it is typically found here in areas considered less ideal than where it was historically found—possibly because its ideal habitat no longer exists. For example, Pugnose Minnow used to be found in habitats described as clear, slow-moving, heavily vegetated waters, but are now typically found in warm, turbid (murky), slow-moving waters, with little to no vegetation, over substrates (bottoms) of silt, clay or sand.

The lifespan of the Pugnose Minnow is believed to be three years, and sexual maturity is likely reached at one year of age. The spawning behaviour of this fish is unique compared to other North American cyprinids. In late spring, spawning males choose a flat surface, such as the underside of a rock, and lead females there to lay eggs. The females will lay up to 120 eggs at a time in a single layer along the flat surface and the males guard the nest and eggs from predators. Spawning is repeated many times over six to seven days and the eggs will typically hatch after six days.

DIET

The Pugnose Minnow mainly feeds on small aquatic insects such as midges, but may also eat larval fishes and eggs and small aquatic crustaceans such as water fleas. Its upturned mouth suggests this fish is a mid-water or near-surface feeder.

THREATS

The loss of clean, clear, well-vegetated stream, river, and lake habitats is the most likely threat to the survival and recovery of the Pugnose Minnow in Canada today. Wetland destruction and vegetation removal, increased sediment input, turbidity (murkiness) and nutrients (nitrates and phosphates) from urbanization and agriculture are considered the main reasons for the small size of remaining populations of this fish in Canada. Climate change and competition with invasive fish and mussel species are also possible threats to its survival and recovery.

SIMILAR SPECIES

The Pugnose Minnow most resembles the Pugnose Shiner (*Notropis anogenus*) and the Golden Shiner (*Notemigonus crysoleucas*), but is different from these fishes - and all other Canadian minnows - because of its extra ninth dorsal ray. The Golden Shiner is also deeper and thinner from side to side, and has a larger anal fin (more than 11 rays). Additionally, the black lateral line on the Pugnose Shiner runs all the way to its chin, whereas on the Pugnose Minnow, the line stops at its nose.

Socio-economic considerations

When a species is being considered for listing under the *Species at Risk Act*, an analysis of the benefits and costs of listing must be developed.

For a copy of the complete report, please contact the SARA Regional Manager.

SUMMARY OF THE COST-BENEFIT ANALYSIS

The purpose of the socio-economic analysis is to examine the incremental costs and benefits to Canadians that result from listing the Pugnose Minnow as Threatened under the federal *Species at Risk Act*.

In Canada, the Pugnose Minnow is found in southwestern Ontario. The Pugnose Minnow is currently protected under Ontario's *Endangered Species Act, 2007* (ESA 2007) as a Threatened species and a provincial recovery strategy will be developed to manage the species and prevent further decline. The ESA 2007 and the Ontario Fishery Regulations prevent the intentional harvest of Pugnose Minnow as bait, and the potential for incidental harvest of Pugnose Minnow through the baitfish industry is low. The Pugnose Minnow and its habitat are also protected under the *Fisheries Act** and Pugnose Minnow is currently listed as Special Concern under Schedule 1 of the *Species at Risk Act*. Pugnose Minnow is also included in the Sydenham River recovery plan.

When a species is listed as Threatened under the *Species at Risk Act*, the general prohibitions to protect the species take effect. Following listing, a recovery strategy and an action plan are prepared, and critical habitat is identified. The critical habitat becomes protected once a ministerial order has been put in place. Permits/agreements authorizing activities affecting a listed wildlife species can be entered into, and there can be exemptions for activities that are permitted by a recovery strategy or action plan.

As the Pugnose Minnow is not fished, the general prohibitions under the *Species at Risk Act* are not anticipated to have an impact. The Pugnose Minnow and its habitat currently receive protection under Ontario's *Endangered Species Act, 2007* and the cost of developing the federal recovery strategy is anticipated to be negligible. Consequently, listing the Pugnose Minnow as Threatened under the *Species at Risk Act* is anticipated to result in low or negligible socio-economic impacts.

* In 2012, amendments to the *Fisheries Act* were passed into law, and were in force as of November 25, 2013. As the Pugnose Minnow's distribution currently overlaps with those fisheries protected under the *Fisheries Act* (i.e., commercial, recreational or Aboriginal fisheries), its habitat is consequently protected.

Let us know what you think

This workbook is part of a public consultation process to get your feedback on whether to change the **Pugnose Minnow** from Special Concern to Threatened on the *Species at Risk Act* (SARA) List. Your answers to the following questions will help determine the federal government's decision.

It is important that you understand how the proposed listing can help to protect and recover Pugnose Minnow, and how it may impact on your activities. As a legally threatened species, automatic prohibitions of SARA would apply.

These prohibitions make it illegal to kill, harm, harass, possess, collect, buy, sell or trade an Extirpated, Endangered or Threatened species. It is also generally illegal to damage or destroy the places these species live. These prohibitions do not apply to species of Special Concern.

If a wildlife species is added to the SARA List as an Extirpated, Endangered or Threatened species, the federal government must prepare a strategy for its recovery. The recovery strategy outlines known threats to the species, identifies the habitat it needs to survive, and highlights gaps in knowledge. It also sets a goal for the species' recovery.

A recovery strategy must be completed within two years if it is listed as Threatened. Note that the recovery strategy process will also involve further consultation.

How to use this questionnaire:

Please provide your responses to the questions on the following pages. Your comments can be attached to this workbook. We welcome feedback from all individuals, regardless of whether you are involved in activities that may or may not be affected by this listing.

Please also use extra sheets to expand your answers as needed.

Please return your completed comments by **FEBRUARY 28, 2014
to the following federal Species at Risk office:**

SARA Regional Manager
Fisheries and Oceans Canada
501 University Crescent
Winnipeg, MB R3T 2N6
Email: fwisar@dfo-mpo.gc.ca
Toll-free: 1-866-538-1609

Or provide comments directly through the Species at Risk Public Registry at: www.sararegistry.gc.ca

**The information you provide is important.
We appreciate the time and effort you take to complete this questionnaire.**

Proposed SARA Listing of Pugnose Minnow

1. Are you in favour of listing the Pugnose Minnow as a Threatened species?

- Yes
- No
- Undecided

Please explain your decision.

2. The following questions provide us with information about how you value the Pugnose Minnow. Please choose the response that best describes your opinion.

a. I believe it is important to maintain the Pugnose Minnow so that future generations can enjoy them.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

b. I believe the Pugnose Minnow plays a significant role in maintaining a healthy ecosystem.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

c. I believe the Pugnose Minnow has social and/or cultural significance to my community.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

d. I believe the Pugnose Minnow is an important part of our national heritage.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

e. I believe the Pugnose Minnow is an important subsistence food source.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

f. I believe the Pugnose Minnow has economic value (recreational or commercial values).

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

g. I believe the Pugnose Minnow provides job opportunities (e.g., tourism) to the local economy.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

h. Others? *(please specify)*

Proposed SARA Listing of Pugnose Minnow

3. The following questions provide us with information about how you perceive the following threats to the Pugnose Minnow. Please choose the response that best describes your opinion.

a. Farming/Agriculture: Threats to the species include the modification of habitat (e.g., pollution, sedimentation, water turbidity, reduction in oxygen levels, drainage works, and changes in water levels due to irrigation).

- Very low Low Moderate High Very high

b. Ecosystem modification (Altered flow regimes): Water management and alteration of natural flow patterns can modify habitat areas and migration routes.

- Very low Low Moderate High Very high

c. Ecosystem modification (Urban development and land use practices): Damage to habitat and poor water quality resulting from urban development and agricultural practices.

- Very low Low Moderate High Very high

d. Invasive species: Threats to the species include competition with native wild native populations for resources and shelter.

- Very low Low Moderate High Very high

e. Climate change: Threats to the species include the modification of habitats (e.g., water temperature, breeding and feeding grounds); negative impacts on reproduction seasons; modification of food chain flows (e.g., plankton species).

- Very low Low Moderate High Very high

f. Other: Do you have any other comments about other possible threats to the Pugnose Minnow that may threaten its survival or recovery?

Proposed SARA Listing of Pugnose Minnow

4. The following questions provide us with information about how the listing of the Pugnose Minnow could impact you or your activities.

a. Based on what you have learned about the *Species at Risk Act*, do you think adding the Pugnose Minnow as a Threatened species to the SARA List would impact your activities? *Why?*

- Not at all Not much Don't know Yes, a bit Yes, a lot

b. Do you feel that the listing of the Pugnose Minnow will have economic, social and/or ceremonial impacts to you?

- Not at all Not much Don't know Yes, a bit Yes, a lot

In what way?

c. If your activity is impacted by listing the Pugnose Minnow would you be willing to change your activity?

- Not at all Not much Don't know Yes, a bit Yes, a lot

How?

d. All Canadian households, as well as industry, pay for the protection of all legally listed species under SARA. How much would you be willing to pay (in Canadian dollars) each year for the conservation, protection and recovery efforts for the Pugnose Minnow?

- \$0 \$10 \$20 \$50 \$100 more than \$100

Proposed SARA Listing of Pugnose Minnow

This last section is personal and confidential. We recognize that it is not insignificant to ask people to share personal information. To that end, we will adhere to strict ethical standards of privacy in doing further research with this information. Unless directed otherwise by the respondents, no information will be reported that can be attributed to any particular individual.

9. In what capacity are you completing this questionnaire?

- Individual - Representative of a group

10. Where do you live?

- British Columbia - Quebec
 - Alberta - Newfoundland & Labrador
 - Saskatchewan - Nova Scotia - Yukon
 - Manitoba - New Brunswick - Northwest Territories
 - Ontario - Prince Edward Island - Nunavut

11. Which sector do you represent?

- Aboriginal community - Fishing – aquaculture - Hydro-electric
 - Aboriginal organization - Fishing – commercial - Manufacturing
 - Academic community - Fishing – recreational - Oil and gas
 - Environmental organization - Forestry - Professional services
 - Farming - Government (*specify level*)
 - Other _____

12. What is your age?

- Under 20
 - 20 - 29
 - 30 - 39
 - 40 - 49
 - 50 - 59
 - 60 or over

13. What is your gender?

- Female - Male

Please add any other comments or concerns (add additional sheets if necessary) that you would like to have considered.

Thank you for taking the time to complete this survey.