Puntius masyai (a fish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2013
Revised, August 2018
Web Version, 6/25/2019

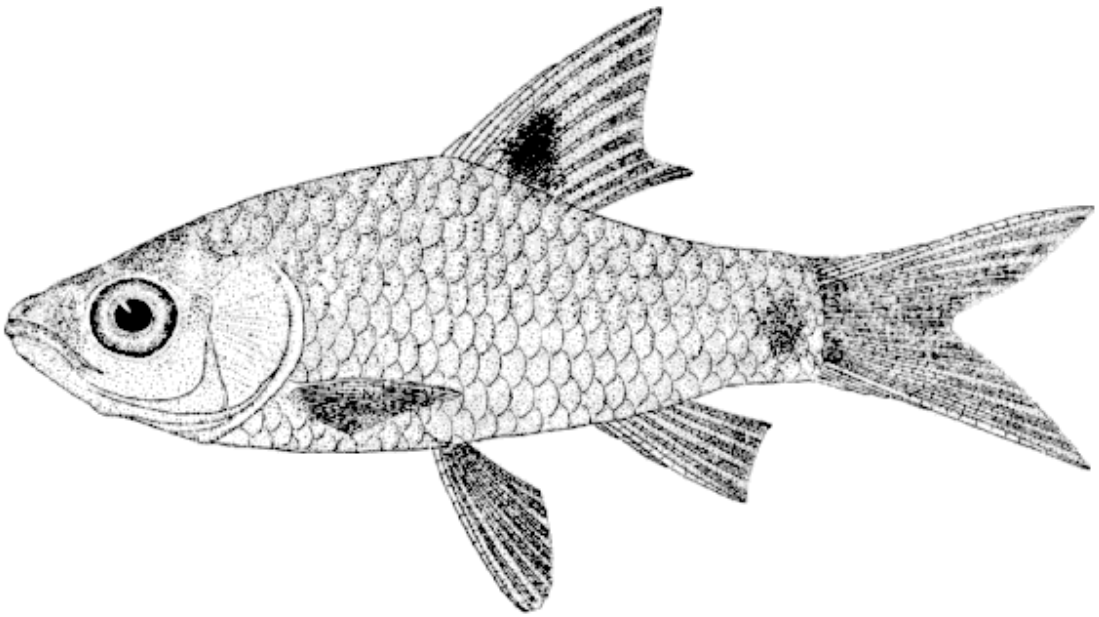

Image: W. J. Rainboth. Licensed under CC BY-NC 3.0. Available: http://www.fishbase.se/photos/PicturesSummary.php?StartRow=0&ID=27128&what=species&TotRec=2. (August 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"Asia: Mekong basin."

From Rainboth (1996):

"Known from […] the Mekong of Thailand, and probably also of Cambodia."

Choi et al. (2005) report *P. masyai* from the Maeklong basin of central Thailand.

Status in the United States

This species has not been reported as introduced or established in the United States. There is no indication that this species is in trade in the United States.

Means of Introductions in the United States

This species has not been reported as introduced or established in the United States.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From GBIF Secretariat (2018):

"Kingdom Animalia
Phylum Chordata
Class Actinopterygii
Order Cypriniformes
Family Cyprinidae
Genus *Puntius* Hamilton, 1822
Species *Puntius masyai* Smith, 1945"

From Eschmeyer et al. (2018):

"Current status: Valid as *Puntius masyai* Smith 1945. Cyprinidae: Smiliogastrinae."

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 2.5 cm TL male/unsexed; [Rainboth 1996]"

Environment

From Froese and Pauly (2018):

"Freshwater; benthopelagic."

Climate/Range

From Froese and Pauly (2018):

"Tropical"

Distribution Outside the United States

Native

From Froese and Pauly (2018):

"Asia: Mekong basin."

From Rainboth (1996):

"Known from […] the Mekong of Thailand, and probably also of Cambodia."

Choi et al. (2005) report *P. masyai* from the Maeklong basin of central Thailand.

Introduced

This species has not been reported as introduced or established outside of its native range.

Means of Introduction Outside the United States

This species has not been reported as introduced or established outside of its native range.

Short Description

From Froese and Pauly (2018):

"Lateral line incomplete, with pores only on first 10 scales; a discrete black spot at base of anterior dorsal-fin rays [Rainboth 1996]."

Biology

From Froese and Pauly (2018):

"Found in small streams and weedy lakes. Occurs from midwater to bottom levels in shallow water. Feeds on small crustaceans, worms and zooplankton [Rainboth 1996]."

Human Uses

From Rainboth (1996):

"Caught with seines, cast-nets, and traps."

Diseases

No information available. No OIE-reportable diseases (OIE 2019) have been documented for this species.

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

This species has not been reported as introduced or established outside of its native range.

4 Global Distribution

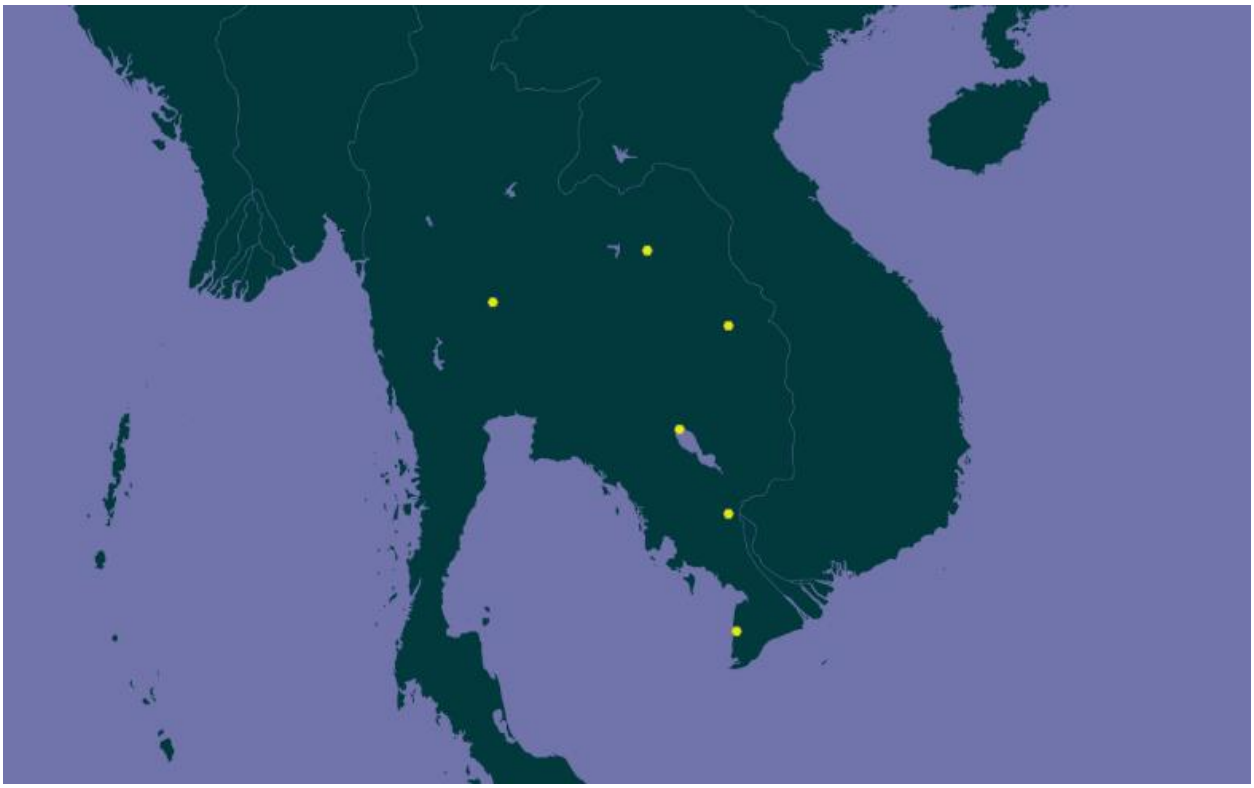

Figure 1. Known global distribution of *Puntius masyai*, reported from Thailand, Cambodia, and Vietnam. Map from GBIF Secretariat (2018). The occurrence in southern Vietnam was excluded from the climate matching analysis because the geographic coordinates do not match the verbal description of the occurrence location.

5 Distribution Within the United States

This species has not been reported as introduced or established in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.0, which indicates a low climate match. Scores between 0.000 and 0.005, inclusive, are classified as low. The climate score was low in all States in the contiguous United States. However, there were small areas of medium-low climate match in southern Texas and Florida.

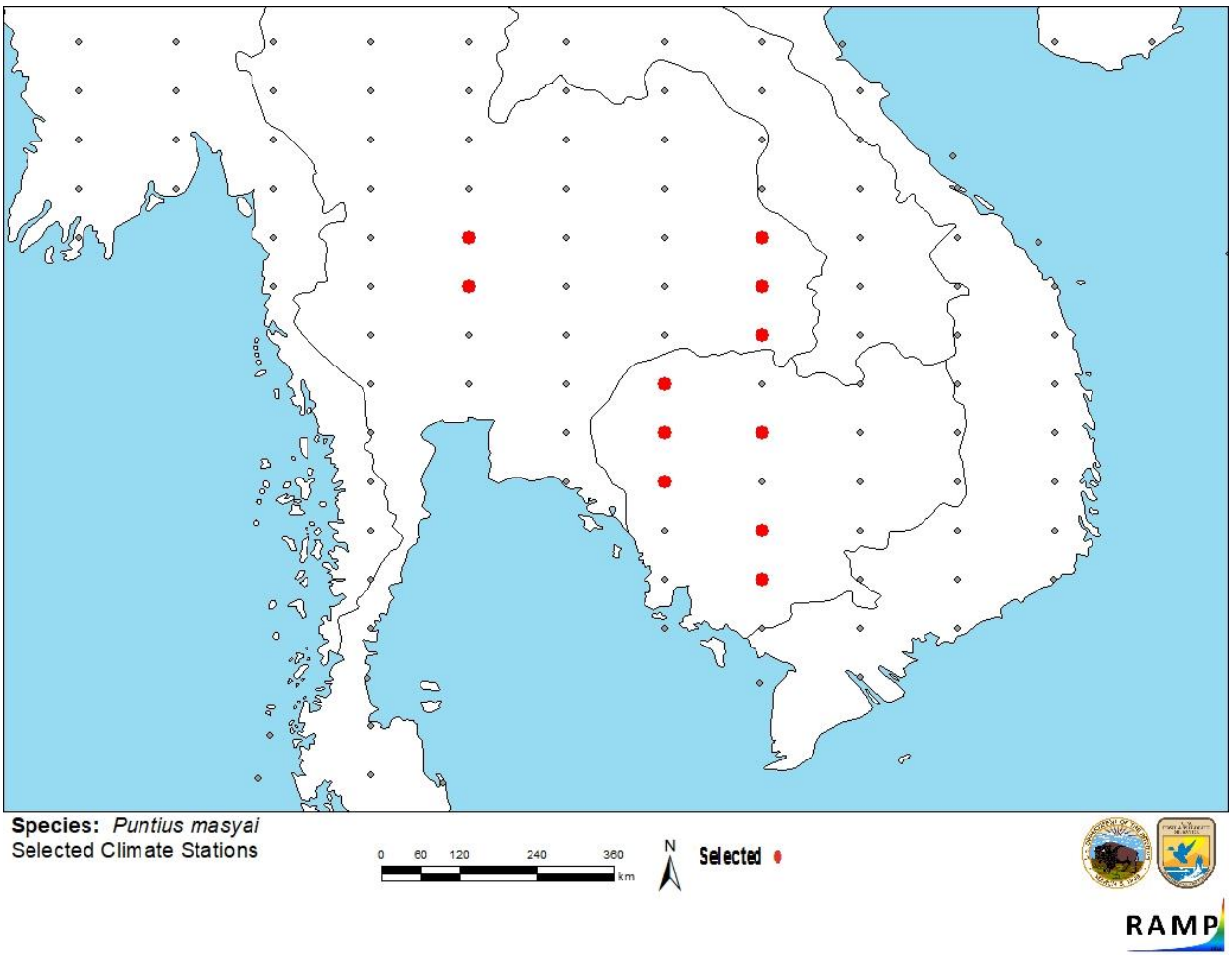

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Cambodia, Thailand) and non-source locations (gray) for *Puntius masyai* climate matching. Source locations from GBIF Secretariat (2018).

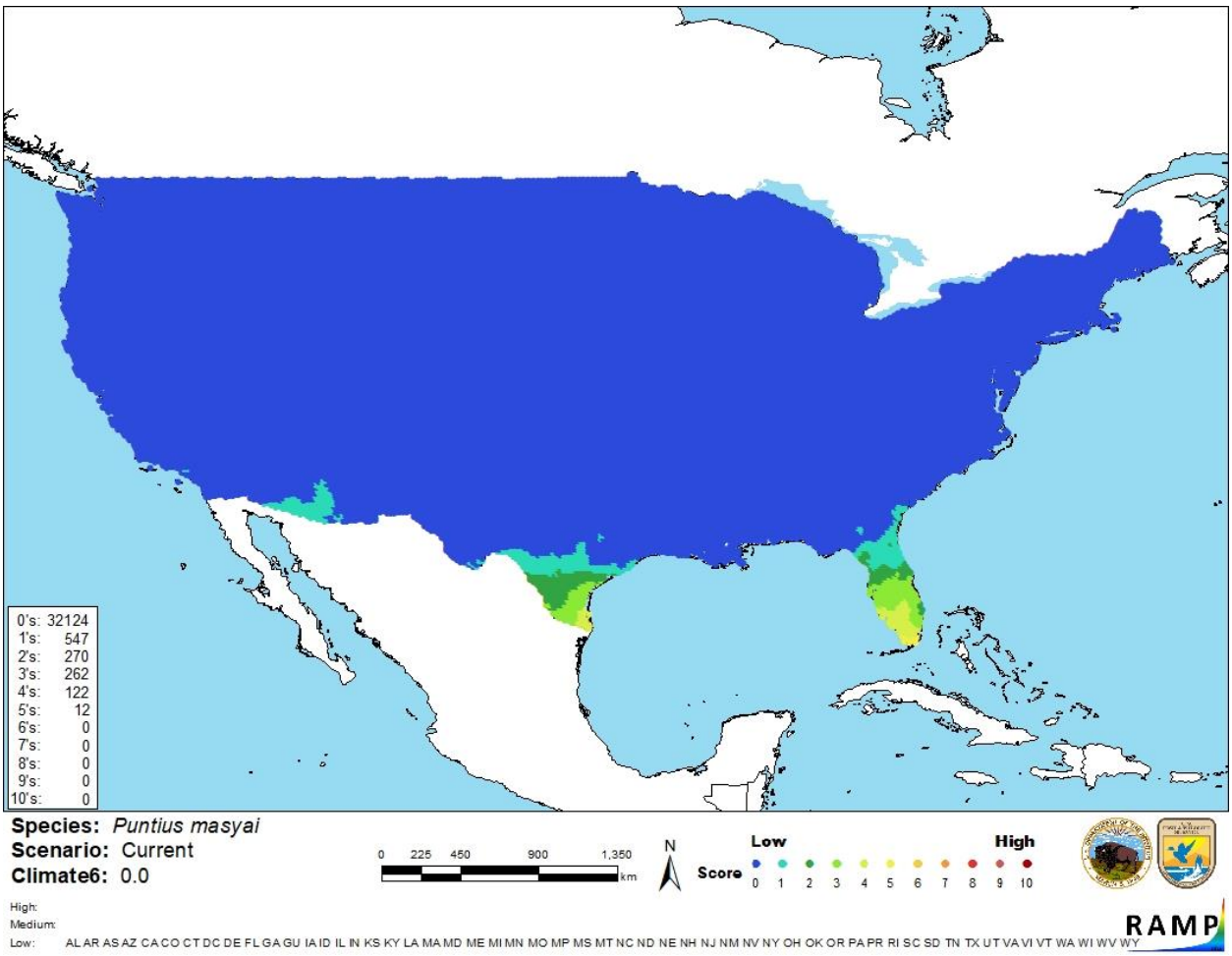

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Puntius masyai* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0= Lowest match, 10= Highest match.

The "High", "Medium", and "Low" climate match categories are based on the following table:

Climate 6: Proportion of (Sum of Climate Scores 6-10) / (Sum of total Climate Scores)	Climate Match Category
0.000≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

7 Certainty of Assessment

There is little information available about *Puntius masyai*. There have been no documented introductions of this species outside of its native range. Because of this, there is no information available on impacts of introduction of this species from which to base an assessment of risk. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Puntius masyai is a small fish native to the Mekong River basin in Southeast Asia. It is caught locally by fishermen. History of invasiveness is uncertain. This species has never been reported as introduced or established outside of its native range. *P. masyai* has a low climate match with the contiguous United States, with areas of slightly higher match in southern Texas and Florida. Because there is no information on introductions of *P. masyai* outside of its native range from which to assess the invasive potential of this species, the certainty of this assessment is low. The overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **Certainty of Assessment (Sec. 7): Low**
- **Overall Risk Assessment Category: Uncertain**

9 References

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.

Choi, J. K., J. S. Choi, and F. W. Beamish. 2005. Tropical freshwater fish fauna of central Thailand. The Korean Journal of Systematic Zoology 21(2):207-217.

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (August 2018).

Froese, R., and D. Pauly, editors. 2018. *Puntius masyai* (Smith, 1945). FishBase. Available: https://www.fishbase.de/summary/Puntius-masyai.html. (August 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Puntius masyai*, Smith, 1945. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/2364000. (August 2018).

OIE (World Organisation for Animal Health). 2019. OIE-listed diseases, infections and infestations in force in 2019. World Organisation for Animal Health, Paris. Available: http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2019/.

Rainboth, W. J., 1996. Fishes of the Cambodian Mekong. FAO species identification field guide for fishery purposes. FAO, Rome, 265 pages.

Sanders, S., C. Castiglione, and M. H. Hoff. 2018. Risk Assessment Mapping Program: RAMP, version 3.1. U.S. Fish and Wildlife Service.