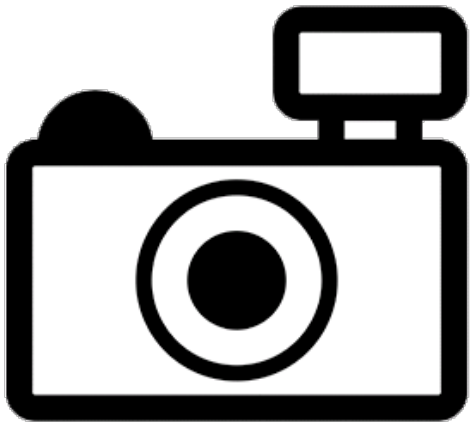
Pethia sharmai (a fish, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, February 2013
Revised, April 2019
Web Version, 7/1/2020

Organism Type: Fish
Overall Risk Assessment Category: Uncertain



1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

"Asia: Tamil Nadu, India."

From Dahanukar (2015):

"*Pethia sharmai* is endemic to Tamil Nadu and currently it is known from two localities, namely Mogappair and Kunrathur, from its original description (Menon and Rema Devi 1993), Chengalpet, Chembarambakkam Lake and most of the water bodies in Chennai (K.R. Devi pers. comm)."

Status in the United States

Pethia sharmai has not been reported in the wild or in trade in the United States.

Means of Introductions in the United States

Pethia sharmai has not been reported in the wild in the United States.

Remarks

From Dahanukar (2015):

"*Pethia sharmai* is currently known only from two localities and the extent of occurrence (EOO), even after considering inferred basins, range between 2,500 to 3,000 km². Furthermore, the species is recorded from freshwater ponds in urban areas so increasing urbanization leading to habitat degradation, which is ongoing in the given area, could be a threat to the species. Thus, *Pethia sharmai* is assessed as Endangered."

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

"**Current status:** Valid as *Pethia sharmai* (Menon & Rema Devi 1993)."

From Dahanukar (2015):

"Kingdom Animalia
Phylum Chordata
Class Actinopterygii
Order Cypriniformes
Family Cyprinidae
Genus *Pethia*
Scientific name *Pethia sharmai*
Authority (Menon & Rema Devi, 1993)"

Size, Weight, and Age Range

From Froese and Pauly (2019):

"Max length : 2.7 cm SL male/unsexed; [Menon 1999]"

From Dahanukar (2015):

"[…] its standard length is 2.7 cm (Menon 1999) and up to 4 cm (R. Kumar pers. comm)."

Environment

From Froese and Pauly (2019):

"Freshwater; benthopelagic."

Climate
From Froese and Pauly (2019):

"Tropical"

Distribution Outside the United States
Native
From Froese and Pauly (2019):

"Asia: Tamil Nadu, India."

From Dahanukar (2015):

"*Pethia sharmai* is endemic to Tamil Nadu and currently it is known from two localities, namely Mogappair and Kunrathur, from its original description (Menon and Rema Devi 1993), Chengalpet, Chembarambakkam Lake and most of the water bodies in Chennai (K.R. Devi pers. comm)."

Introduced
Pethia sharmai has not been reported as introduced anywhere outside of its native range.

Means of Introduction Outside the United States
Pethia sharmai has not been reported as introduced anywhere outside of its native range.

Short Description
From Katwate et al. (2014):

"*Pethia longicauda* differs greatly from *Pethia sharmai* in two most prominent characters: by having fewer scales in lateral series (22-24 vs. more than 42) and absence of barbels (vs. pair of maxillary barbels) (Menon & Rema Devi 1993)."

Biology
From Froese and Pauly (2019):

"Occurs in ponds [Menon 1999]."

Human Uses
No information was found on human uses.

Diseases
No OIE-reportable diseases (OIE 2020) were found to be associated with *Pethia sharmai*.
No information on diseases was found.

Threat to Humans

From Froese and Pauly (2019):

"Harmless"

3 Impacts of Introductions

Pethia sharmai has not been introduced anywhere outside of its native range.

4 History of Invasiveness

Pethia sharmai has not been introduced anywhere outside of its native range, therefore the history of invasiveness is classified as No Known Nonnative Population.

5 Global Distribution

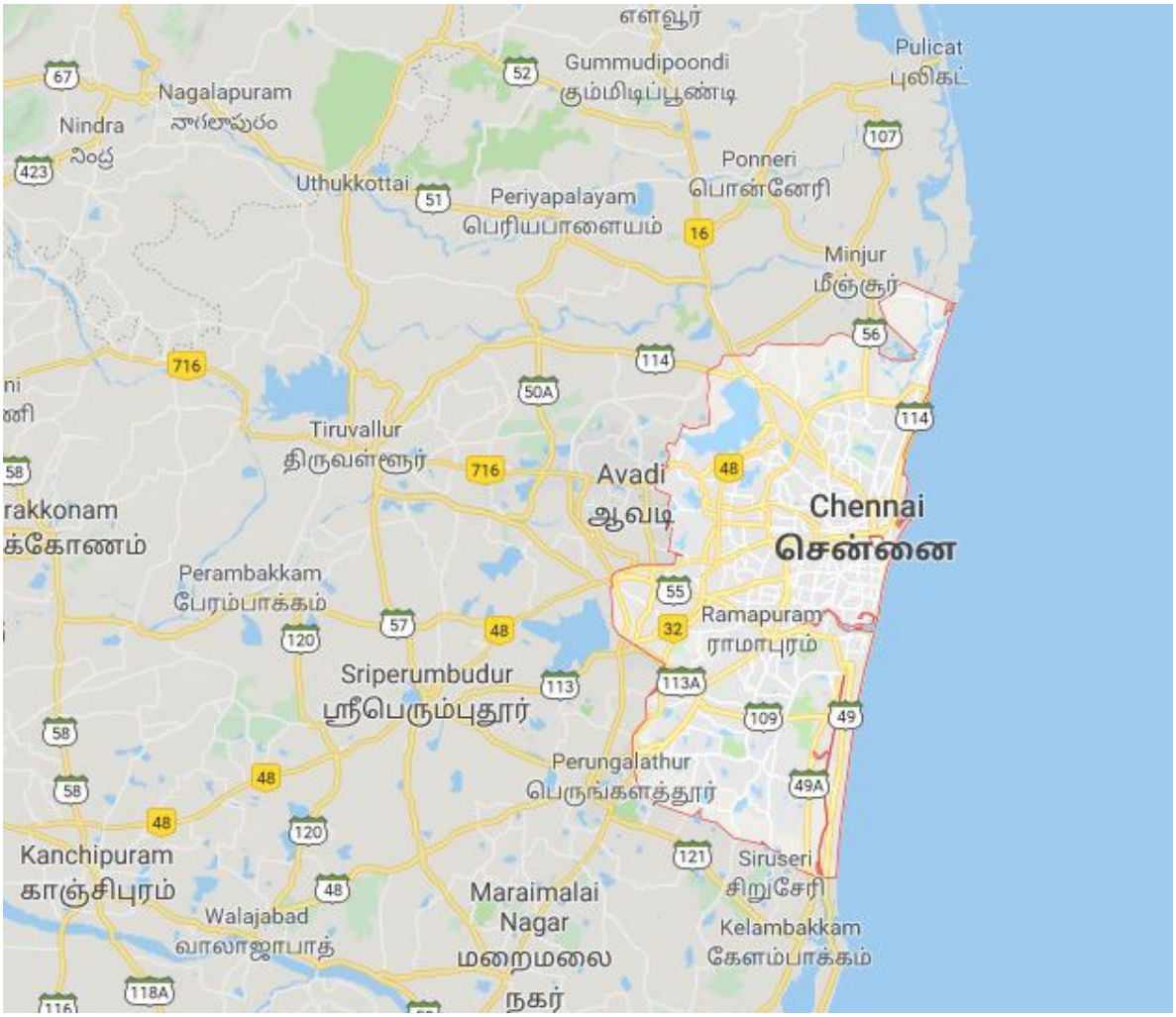


Figure 1. Map of Chennai, in southeast India. According to Dahanukar (2015), *P. sharmai* is known from most waterbodies in Chennai. Map from Google Maps (2019).

6 Distribution Within the United States

Pethia sharmai has not been reported anywhere within the United States.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for the contiguous United States is consistently low. There are no areas of medium or high match. There are two small areas in southeastern Texas and southern Florida with medium-low match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for contiguous United States was 0.000, low (scores between 0.000 and 0.005, inclusive are classified as low). All States received low individual climate scores. No georeferenced observations were available to use in selecting source points for the climate match; source points selected represent the described range of the species.

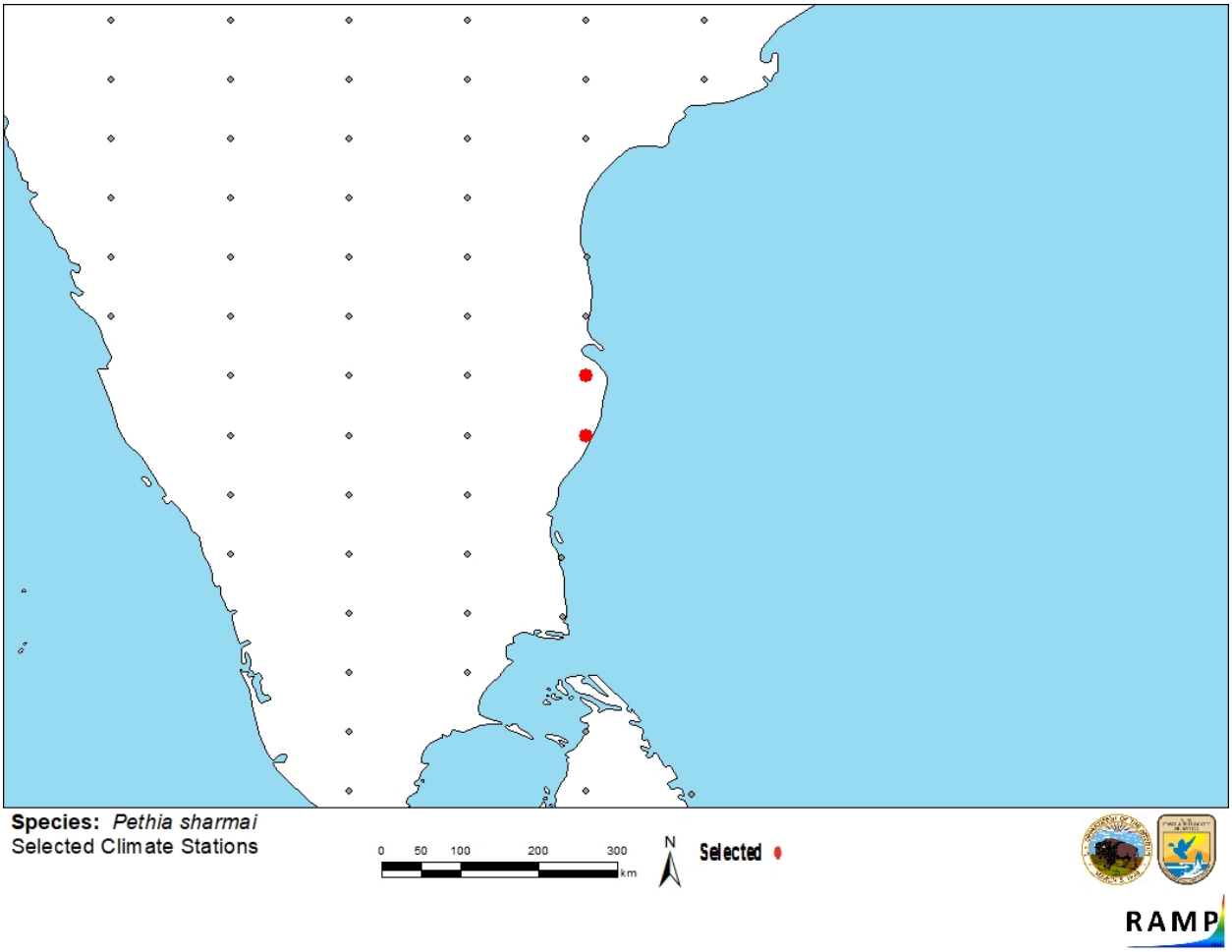


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southern India selected as source locations (red) and non-source locations (gray) for *Pethia sharmai* climate matching. Source locations selected to represent the species range as described in Dahanukar (2015).

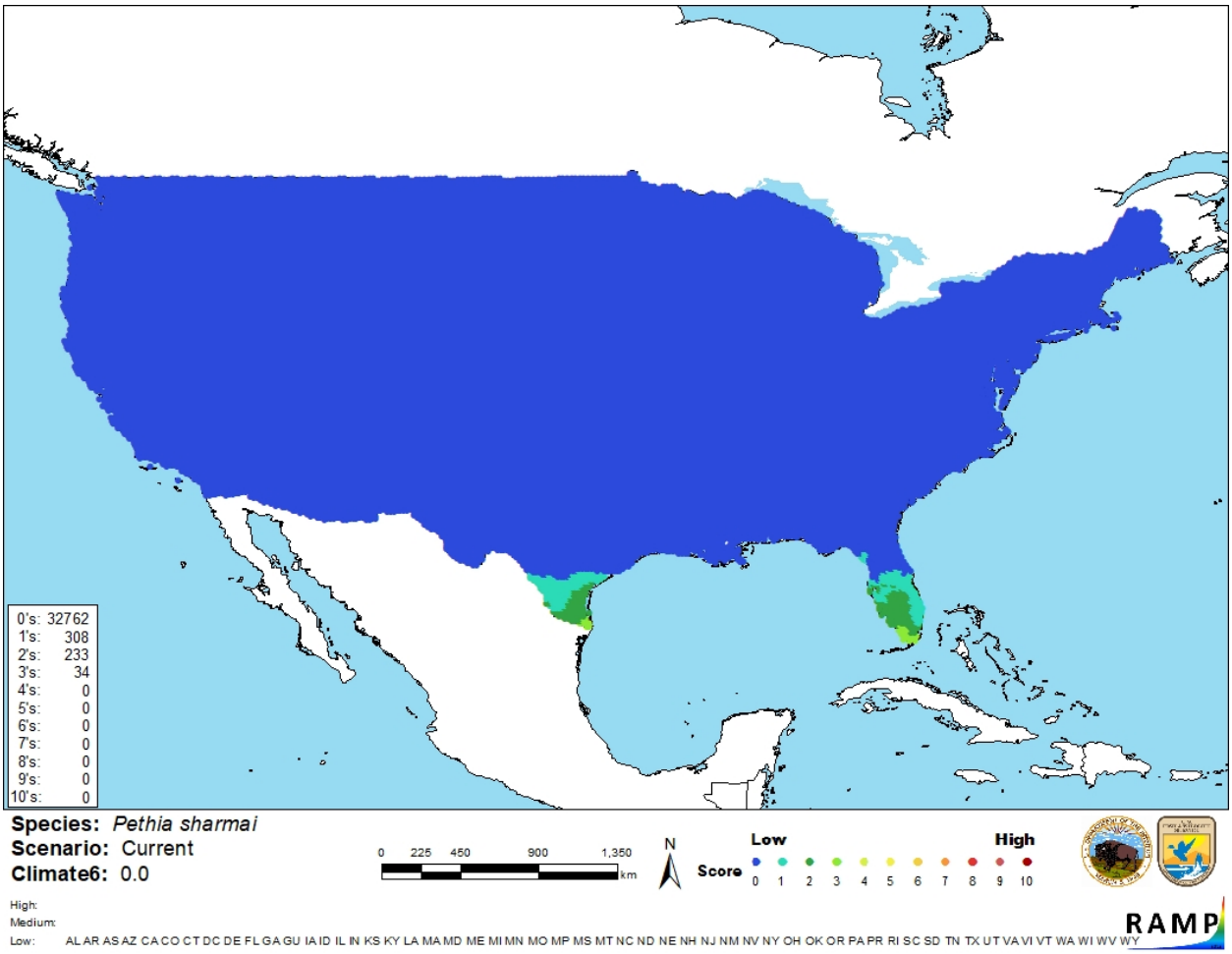


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Pethia sharmai* in the contiguous United States based on the described range in Dahanukar (2015). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
0.000≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

8 Certainty of Assessment

The certainty of this assessment is low. Limited information is available on *Pethia sharmai*. This species has not been reported as introduced anywhere outside of its native range. Further, no georeferenced locations were available for the climate match. The range was estimated based on the verbal description in Dahanukar (2015).

9 Risk Assessment

Summary of Risk to the Contiguous United States

Pethia sharmai is a freshwater fish endemic to Tamil Nadu, India. This species is often found in ponds in urbanized areas. *Pethia sharmai* is listed as Endangered by the IUCN due to habitat degradation. This species has not been introduced anywhere outside of its native range. History of invasiveness is classified as No Known Nonnative Population. The climate match for the contiguous United States was low, with no areas of medium or high match. No georeferenced points were available for the climate match, so source points were estimated based on a verbal description of the limited range of *Perthia sharmai*. The certainty of assessment is low due to a lack of information. The overall risk assessment category for *Pethia sharmai* is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: Classified by IUCN as Endangered**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

Dahanukar N. 2015. *Pethia sharmai*. The IUCN Red List of Threatened Species 2015: e.T172505A70416691. Available: https://www.iucnredlist.org/species/172505/70416691 (April 2019).

Fricke R, Eschmeyer WN, van der Laan R, editors. 2019. Eschmeyer's catalog of fishes: genera, species, references. California Academy of Science. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp (April 2019).

Froese R, Pauly D, editors. 2019. *Pethia sharmai* (Menon, Rema and Devi, 1993). FishBase. Available: https://www.fishbase.de/summary/Pethia-sharmai.html (April 2019).

Google Maps. 2019. Map of Chennai, India. Available: https://www.google.com/maps/place/Chennai,+Tamil+Nadu,+India/@13.1038799,79.6428198,10z/data=!4m5!3m4!1s0x3a5265ea4f7d3361:0x6e61a70b6863d433!8m2!3d13.0826802!4d80.2707184 (April 2019).

Katwate U, Paingankar MS, Raghavan R, Dahanukar N. 2014. *Pethia longicauda*, a new species of barb (Teleostei: Cyprinidae) from the northern Western Ghats, India. Zootaxa 3846:235–248.

[OIE] World Organisation for Animal Health. 2020. OIE-listed diseases, infections and infestations in force in 2020. Available: http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2020/ (July 2020).

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

11 Literature Cited in Quoted Material

Note: The following references are cited within quoted text within this ERSS, but were not accessed for its preparation. They are included here to provide the reader with more information.

Menon AGK. 1999. Check list - fresh water fishes of India. Records of the Zoological Survey of India. Miscellaneous Publications, Occasional Papers 175.

Menon AGK, Rema Devi K. 1993. *Puntius sharmai*, a new cyprinid fish from Madras. Journal of the Bombay Natural History Society 89:353–354.