

***Pethia setnai* (a fish, no common name)**

Ecological Risk Screening Summary

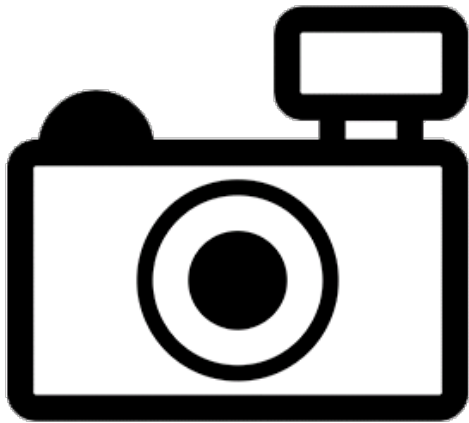
U.S. Fish & Wildlife Service, February 2013

Revised, February 2019

Web Version, 6/30/2020

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

“Asia: Goa, India.”

From Katwate et al. (2013):

“*Pethia setnai* is an endemic and threatened freshwater fish of the Western Ghats of India. It has a restricted distribution in the west flowing rivers in the states of Maharashtra, Goa and Karnataka.”

Status in the United States

No records of *Pethia setnai* in the wild or in trade in the United States were found.

Means of Introductions in the United States

No records of *Pethia setnai* in the wild in the United States were found.

Remarks

Literature searches were conducted under *Pethia setnai* and the synonym *Puntius setnai*.

From Katwate et al. (2013):

“Further, the species is also known to occur in aquarium trade under the common name Indigo Barb [Chhapgar and Sane 1992].”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2019), *Pethia setnai* (Chhapgar and Sane 1992) is the current valid name of this species. *Pethia setnai* was originally described as *Puntius setnai* Chhapgar and Sane, 1992.

From GBIF Secretariat (2019):

Kingdom Animalia
Phylum Chordata
Class Teleostei
Order Cypriniformes
Family Cyprinidae
Genus *Pethia*
Species *Pethia setnai* Chhapgar and Sane, 1992

Size, Weight, and Age Range

From Froese and Pauly (2019):

“Max length : 5.7 cm TL male/unsexed; [Menon 1999]”

Environment

From Froese and Pauly (2019):

“Freshwater; benthopelagic.”

“Found in clear streams [Menon 1999].”

Climate

From Froese and Pauly (2019):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2019):

“Asia: Goa, India.”

From Katwate et al. (2013):

“*Pethia setnai* is an endemic and threatened freshwater fish of the Western Ghats of India. It has a restricted distribution in the west flowing rivers in the states of Maharashtra, Goa and Karnataka.”

Introduced

No records of introductions of *Pethia setnai* were found.

Means of Introduction Outside the United States

No records of introductions of *Pethia setnai* were found.

Short Description

From Katwate et al. (2013):

“In life *Pethia setnai* has silvery-grey or dull golden color with three black transverse bands; anterior one situated between the dorsal profile and below the lateral line encompassing 3rd and 4th lateral line scales; middle band between the posterior half of the dorsal fin base and one scale below lateral line encompassing 9th to 11th lateral line scale; posterior band between the middle of end of dorsal fin base and caudal fin and the posterior half of the anal fin base [...]. Posterior most and anterior most bands are darker than the middle band [...]. Dorsal, ventral and anal fins are bright red in certain specimens in their natural habitat [...] but the fin colors fade rapidly in captivity [...]. Some specimens have indigo blue tinge on the dorsolateral area and therefore the species is also known as indigo barb among hobbyists.”

Biology

No information was found regarding the biology of *Pethia setnai*.

Human Uses

From Katwate et al. (2013):

“Further, the species is also known to occur in aquarium trade under the common name Indigo Barb [Chhapgar and Sane 1992]. Although no statistics is available on the extent of wild caught *Pethia setnai* in the trade, it has already been suggested that the unregulated aquarium trade is a plausible threat to the endemic and threatened species of freshwater fishes in India [Raghavan et al. 2013].”

From Ponniah and Gopalakrishnan (2000):

“Thirty ornamental species were prioritised from NBFGR [National Bureau of Fish Genetic Resources] base list to be considered for culture purpose, which included [...], *P. setnai*, [...].”

Diseases

No information on diseases of *Pethia setnai* was found. **No records of OIE-reportable diseases (OIE 2020) were found for *Pethia setnai*.**

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No records of introductions of *Pethia setnai* were found.

4 History of Invasiveness

No records of introductions of *Pethia setnai* were found, so the history of invasiveness is classified as No Known Nonnative Population.

5 Global Distribution

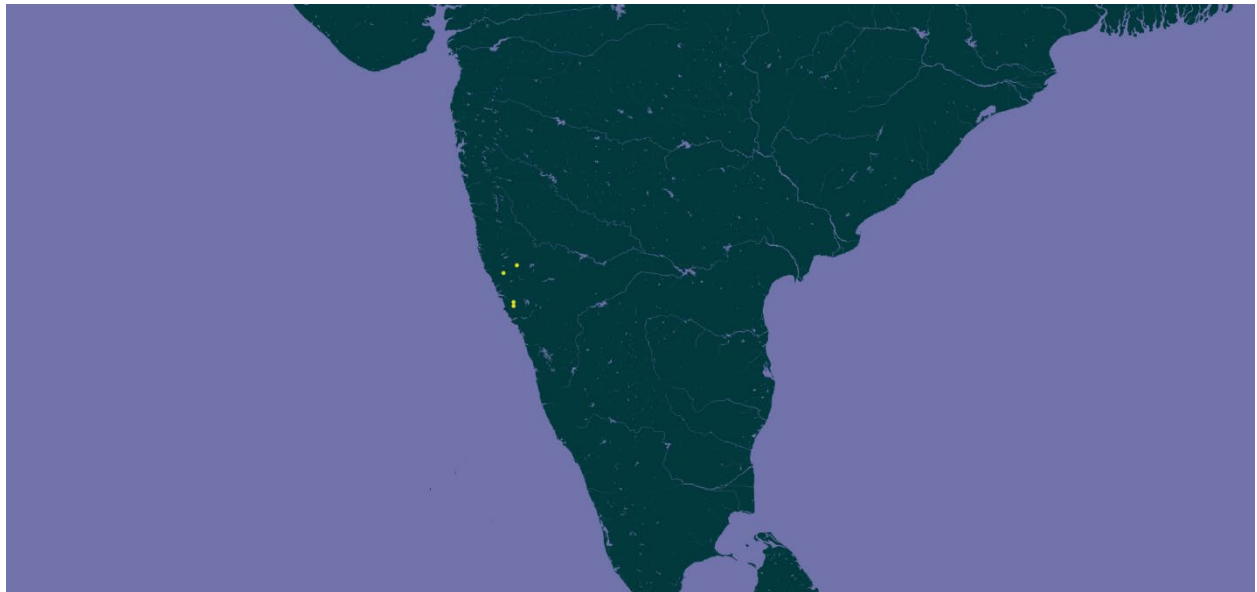


Figure 1. Known global distribution of *Pethia setnai*. Locations are in Goa, India. Map from GBIF Secretariat (2019).

6 Distribution Within the United States

No records of *Pethia setnai* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Pethia setnai* was low for the majority of the contiguous United States, however the southern portions of Texas, Arizona, and New Mexico had a medium match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had individually low climate scores.

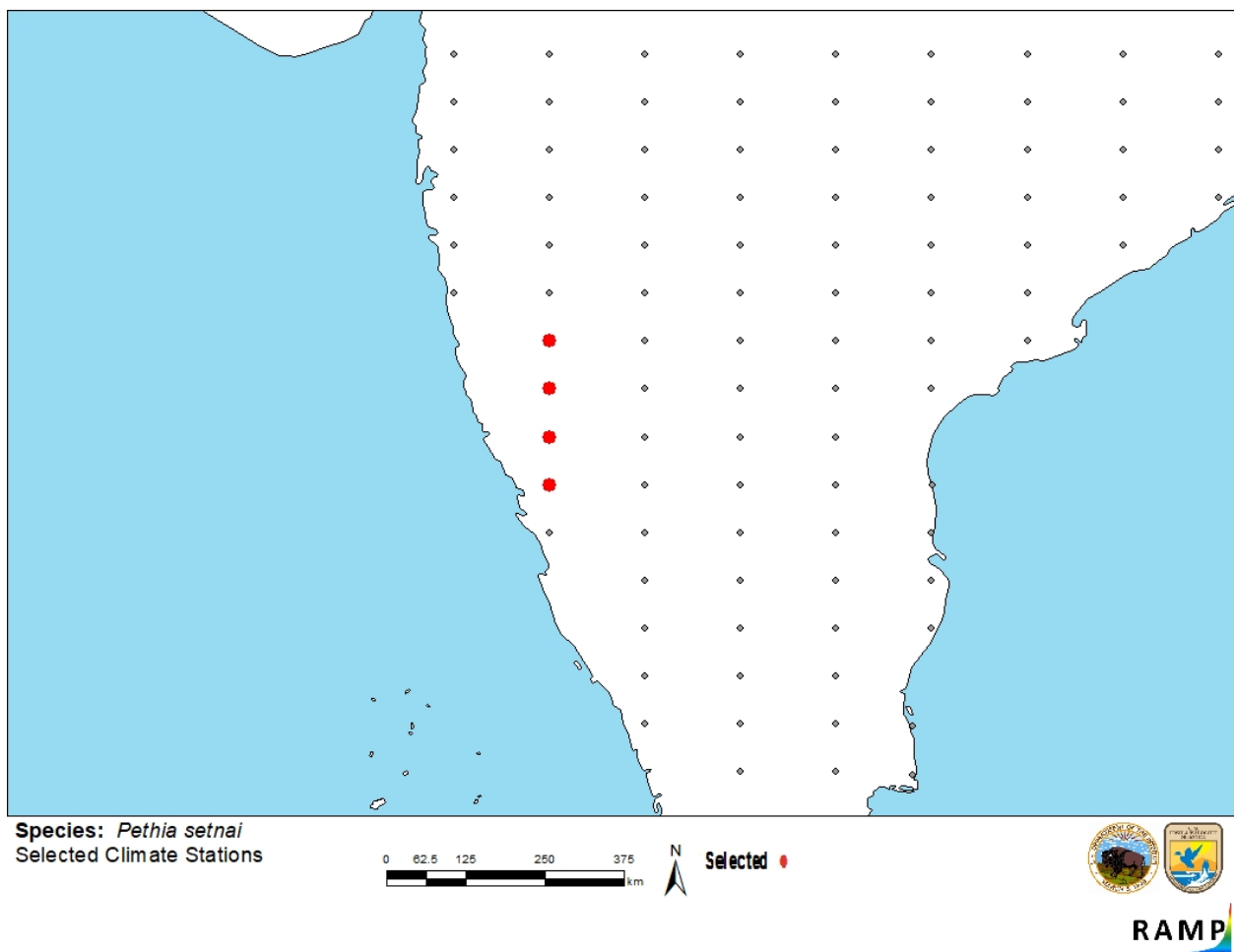


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Southern Asia selected as source locations (red; India) and non-source locations (gray) for *Pethia setnai* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

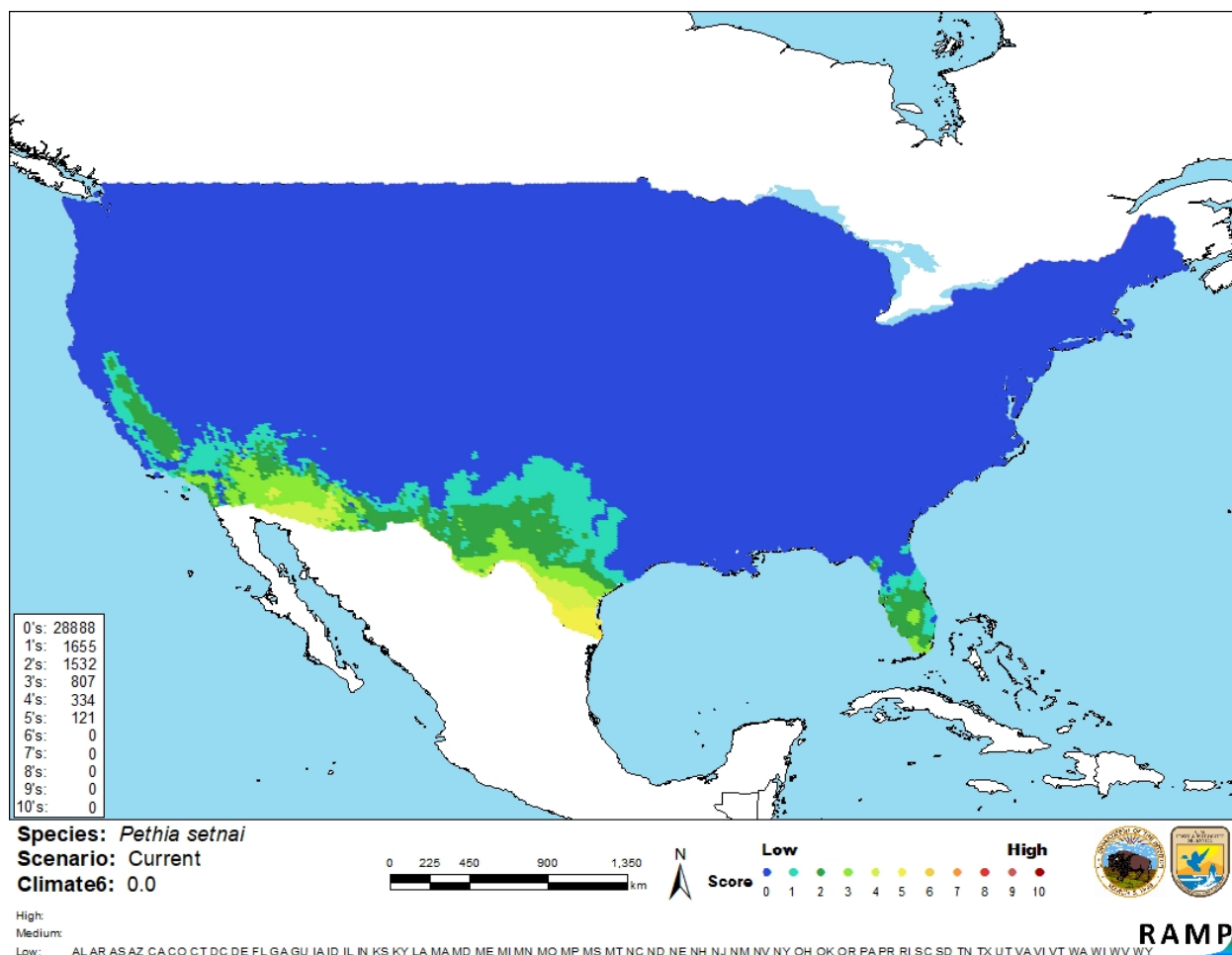


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Pethia setnai* in the contiguous United States based on source locations reported from GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

8 Certainty of Assessment

The certainty of assessment for *Pethia setnai* is low. There is minimal information available for this species. No information on introductions of *Pethia setnai* was found.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Pethia setnai is a freshwater, spotted barb endemic to southwestern India. This species is classified as threatened. *Pethia setnai* is found in the aquarium trade, however, no record of its availability in the United States was found. The history of invasiveness is classified as No Known Nonnative Population. It has not been reported as introduced or established anywhere in the world outside of the native range. The climate match for the contiguous United States was low. Areas of medium match were found along the border with Mexico. The certainty of assessment is low due to a lack of information. The overall risk assessment category for *Pethia setnai* 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: Threatened in India**
- **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.

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> (February 2019).

Froese R, Pauly D, editors. 2019. *Pethia setnai* (Chhapgar and Sane, 1992). FishBase. Available: <https://www.fishbase.de/summary/Pethia-setnai.html> (February 2019).

GBIF Secretariat. 2019. GBIF backbone taxonomy: *Pethia setnai* (Chhapgar and Sane, 1992). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/7393947> (February 2019).

Katwate U, Paingankar MS, Jadhav S, Dahanukar N. 2013. Phylogenetic position and osteology of *Pethia setnai* (Chhapgar and Sane, 1992), an endemic barb (Teleostei: Cyprinidae) of the Western Ghats, India, with notes on its distribution and threats. *Journal of Threatened Taxa* 5:5214–5227.

[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/> (June 2020).

Ponniah AG, Gopalakrishnan A. 2000. Endemic fish diversity of Western Ghats. National Bureau of Fish Genetic Resources 1–347.

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.

Chhapgar BF, Sane SR. 1992. A new fish of the genus *Puntius* Hamilton (Ostariophysi: Cyprinidae) from Goa. Journal of the Bombay Natural History Society 89:357–359.

Menon AGK. 1999. Check list - fresh water fishes of India. Zoological Survey of India 175:1–366.

Raghavan R, Dahanukar N, Tlustý M, Rhyne A, Kumar KK, Molur S, Rosser AM. 2013. Uncovering an obscure trade: threatened freshwater fishes and the aquarium pet markets. Biological Conservation 164:158–169.