

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

Ecological Risk Screening Summary

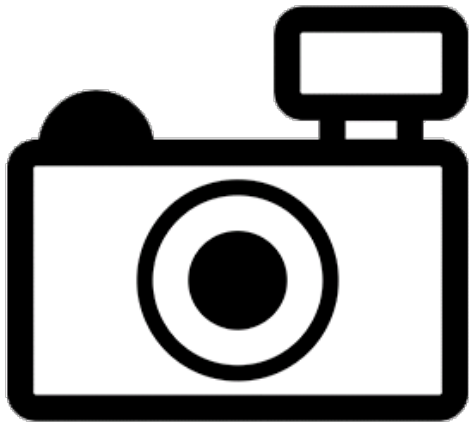
U.S. Fish & Wildlife Service, February 2013

Revised, April 2019

Web Version, 7/13/2020

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: India.”

From Singh (2015):

“*Pethia yuensis* is known only from the Yu River system of Manipur at the lower zones of Maklang River and Lokchao River near Moreh, Manipur, India.”

Status in the United States

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

Means of Introductions in the United States

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

Remarks

From Singh (2015):

“*Pethia yuensis* has a restricted range of less than 7,000 km² and is known only from two locations in Manipur, in north eastern India. The species is under threat in one location from urban development, while threats to hill stream fishes from habitat quality decline is another threat. It is therefore assessed as Vulnerable with a recommendation that more surveys are conducted to understand the distribution and the populations are monitored.”

“The species is threatened from decline in habitat quality in [*sic*] due to sedimentation from deforestation and agricultural practices around hill streams.”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2019), *Pethia yuensis* (Arunkumar and Tombi Singh 2003) is the current and valid name of this species.

From Singh (2015):

“Kingdom Animalia
Phylum Chordata
Class Actinopterygii
Order Cypriniformes
Family Cyprinidae
Genus *Pethia*
Scientific name *Pethia yuensis*
Authority (Arunkumar & Tombi Singh 2003)”

Size, Weight, and Age Range

From Froese and Pauly (2019):

“Max length : 5.5 cm SL male/unsexed; [Kullander 2008]”

From Singh (2015):

“This species attains a length of 6.8 cm SL (standard length);”

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: India.”

From Singh (2015):

“*Pethia yuensis* is known only from the Yu River system of Manipur at the lower zones of Maklang River and Lokchao River near Moreh, Manipur, India.”

Introduced

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

Means of Introduction Outside the United States

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

Short Description

From Pethiyagoda et al. (2012):

“*Pethia* differs from all South and Southeast Asian genera of Cyprinidae by the combination of the following characters and character states: small adult size (usually less than 50 mm SL, exceptionally to 80 mm SL); rostral barbels absent; maxillary barbels usually absent, minute if present; last unbranched dorsal-fin ray stiff, serrated [...]; 3 or 4 unbranched and 8 branched dorsal-fin rays, 3 unbranched and 5 branched anal-fin rays; gill rakers simple, acuminate (not branched or laminate); no antrorse predorsal spinous ray; infraorbital 3 deep, partially overlapping the cheek and preoperculum [...]; free uroneural absent [...]; 4 supraneurals; 11-13 precaudal and 13-16 caudal vertebrae; post-epiphysial fontanelle absent [...]; lateral line complete, interrupted or incomplete (usually incomplete), with 19-24 scales on body in lateral series; and colour pattern consisting of a black blotch on caudal peduncle and frequently also other black blotches, spots or bars on side of body.”

Biology

From Froese and Pauly (2019):

“This species inhabits mountain streams and rivers.”

Human Uses

According to Sarma et al. (2018), *Pethia yuensis* is an economically significant ornamental fish.

From Singh (2015):

“Sold in the Moreh Market, Manipur, India in very small scale [...] of no interest to fisheries. However, the fish may be used as a good aquarium fish.”

Diseases

No records of OIE-reportable diseases (OIE 2019) were found for *Pethia yuensis*. No information on diseases was found.

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

Pethia yuensis has not been introduced anywhere outside of its native range; therefore, there is no information on impacts of introductions.

4 History of Invasiveness

Pethia yuensis 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 Manipur Province, India. According to Singh (2015), *Pethia yuensis* is known from Maklang River and Lokchao River in Manipur. Map from Google Maps (2019).

6 Distribution Within the United States

Pethia yuensis 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 low. There are no areas of medium or high 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 received low individual climate scores. No georeferenced observations were available to use in selecting source points for this climate match. The source points selected represent the described range of the species.

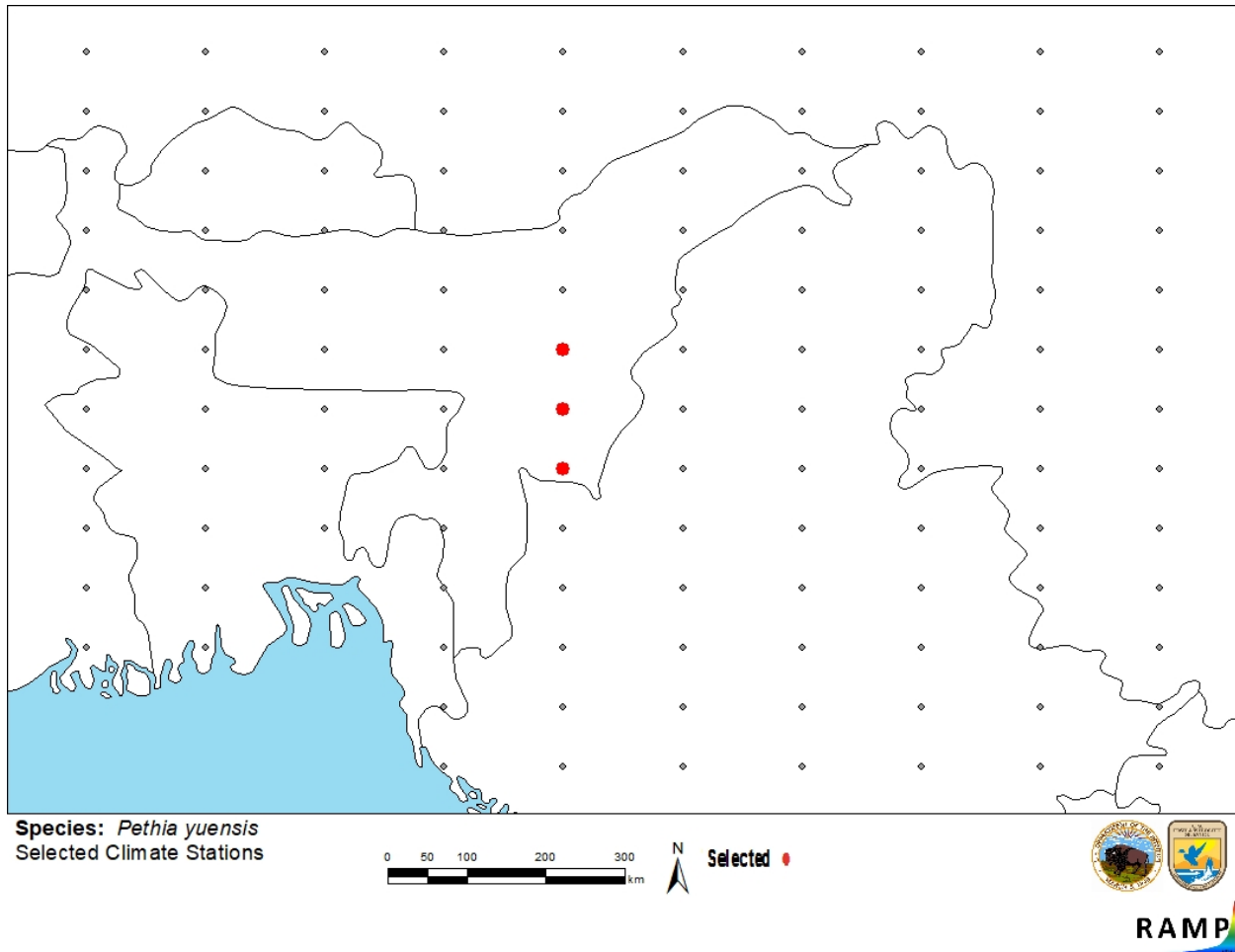


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in northeastern India selected as source locations (red; India) and non-source locations (gray) for *Pethia yuensis* climate matching. Selected source locations represent the described range of the species in Singh (2015).

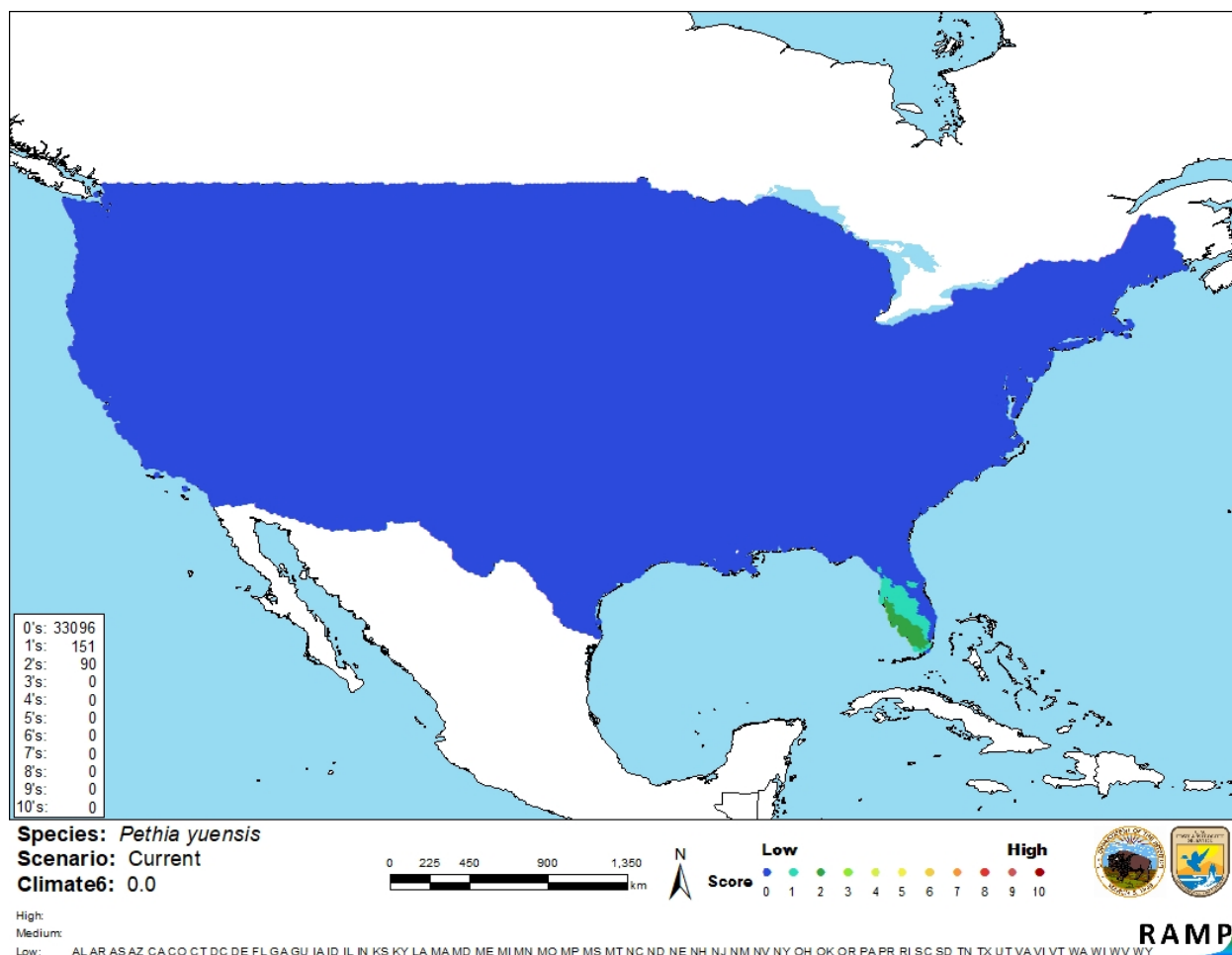


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Pethia yuensis* in the contiguous United States based on source locations reported by Singh (2015). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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
$0.000 \leq X \leq 0.005$	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 yuensis*. This species has not been reported as introduced anywhere outside of its native range. There were no georeferenced observations available to use in selecting source points for the climate match.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Pethia yuensis is a freshwater fish endemic to Manipur, India. This species is only known from two locations in northeast India where they inhabit streams and rivers. This fish may be economically important to the area as an aquarium fish. *Pethia yuensis* is listed as “Vulnerable” by the IUCN Red List due to the threat of urbanization. This species has not been introduced anywhere outside of its native range. Therefore 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. The climate match is based on a description of the range as there were no georeferenced points available to use in selecting source points for the climate match. The certainty of this assessment is low due to lack of information. The overall risk assessment category for *Pethia yuensis* 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: Listed as Vulnerable by the IUCN Red List.**
- **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> (April 2019).

Froese R, Pauly D, editors. 2019. *Pethia yuensis* (Arunkumar, Tombi and Singh, 2003). FishBase. Available: <https://www.fishbase.de/summary/Pethia-yuensis.html> (April 2019).

Google Maps. 2019. Map of Manipur, India. Available: <https://www.google.com/maps/place/Manipur,+India/@24.2921837,92.3420573,7.25z/data=!4m5!3m4!1s0x3749265bf16390db:0x8cc1691ae0a829af!8m2!3d24.6637173!4d93.9062688> (April 2019).

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

Pethiyagoda R, Meegaskumbura M, Maduwage K. 2012. A synopsis of the south Asian fishes referred to *Puntius* (Pisces: Cyprinidae). Ichthyological Explorations of Freshwaters 23:69–95.

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

Sarma D, Singh AK, Baruah D. 2018. Checklist of endemic ichthyofauna of North-east India. Indian Journal of Fisheries 65:1–15.

Singh L. 2015. Ngakha-Hangampal, *Pethia yuensis*. The IUCN Red List of Threatened Species 2015: e.T168523A70461992. Available: <http://dx.doi.org/10.2305/IUCN.UK.2015-1.RLTS.T168523A70461992.en> (April 2019).

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.

Kullander SO. 2008. Five new species of *Puntius* from Myanmar (Teleostei: Cyprinidae). Ichthyological Explorations of Freshwaters 19:59–84.