

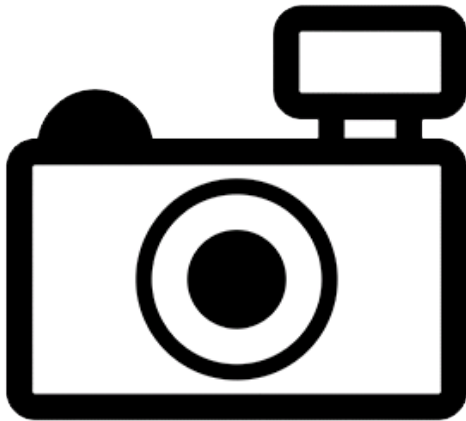
***Puntius madhusoodani* (a fish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2013

Revised, July 2018

Web Version, 6/25/2019



No Photo Available

1 Native Range and Status in the United States

Native Range

From Krishna Kumar et al. (2011):

“*Puntius madhusoodani* sp. nov. is currently known only from the Manimala River [...] in Kerala state, India”

Krishna Kumar et al. (2011) describes the type locality of *Puntius madhusoodani* as “Thirumoolapuram, Thiruvalla, Manimala river (9.36 N, 76.58 E)” in a map showing its location.

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 madhusoodani* Krishnakumar, Benno Pereira & Radhakrishnan, 2012”

From Eschmeyer et al. (2018):

“Current status: Valid as *Puntius madhusoodani* Kumar, Benno Pereira & Radhakrishnan 2012.
Cyprinidae: Smiliogastrinae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 9.1 cm SL male/unsexed; [Krishna Kumar et al. 2011]”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Kumar et al. (2011):

“*Puntius madhusoodani* sp. nov. is currently known only from the Manimala River [...] in Kerala state, India”

Krishna Kumar et al. (2011) describe the type locality of *Puntius madhusoodani* as “Thirumoolapuram, Thiruvalla, Manimala river (9.36 N, 76.58 E)” in a map showing its location.

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 Krishna Kumar et al. (2011):

“*Puntius madhusoodani* can be distinguished from all its congeners by the combination of following characters: presence of one pair of short maxillary barbels less than eye diameter and 4.39% in SL, absence of spots on the body except at the caudal fin base (unlike *P. chola* and *P. dorsalis*), a smaller snout forming 8.06% in SL, and 25-26 lateral line scales; dorsal fin inserted nearer to tip of snout than to caudal fin base; absence of spot on the dorsal fin base; paired fins hyaline, branched rays of the dorsal and anal fin tinted with black.”

“In life [...], adults dusky black dorsally and silvery-white ventrally. A diffused, dark band about two scales width extends from the 22nd to the 24th lateral line scale. Fins dusky to dirty yellow. In formalin, head and body dorsally brownish olive, laterally creamy white; lower body, belly and chest pale cream-yellow. Paired fins hyaline/creamish. A faint dark-brown blotch is visible at the caudal base in all the specimens.”

Biology

No information available.

Human Uses

No information available.

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

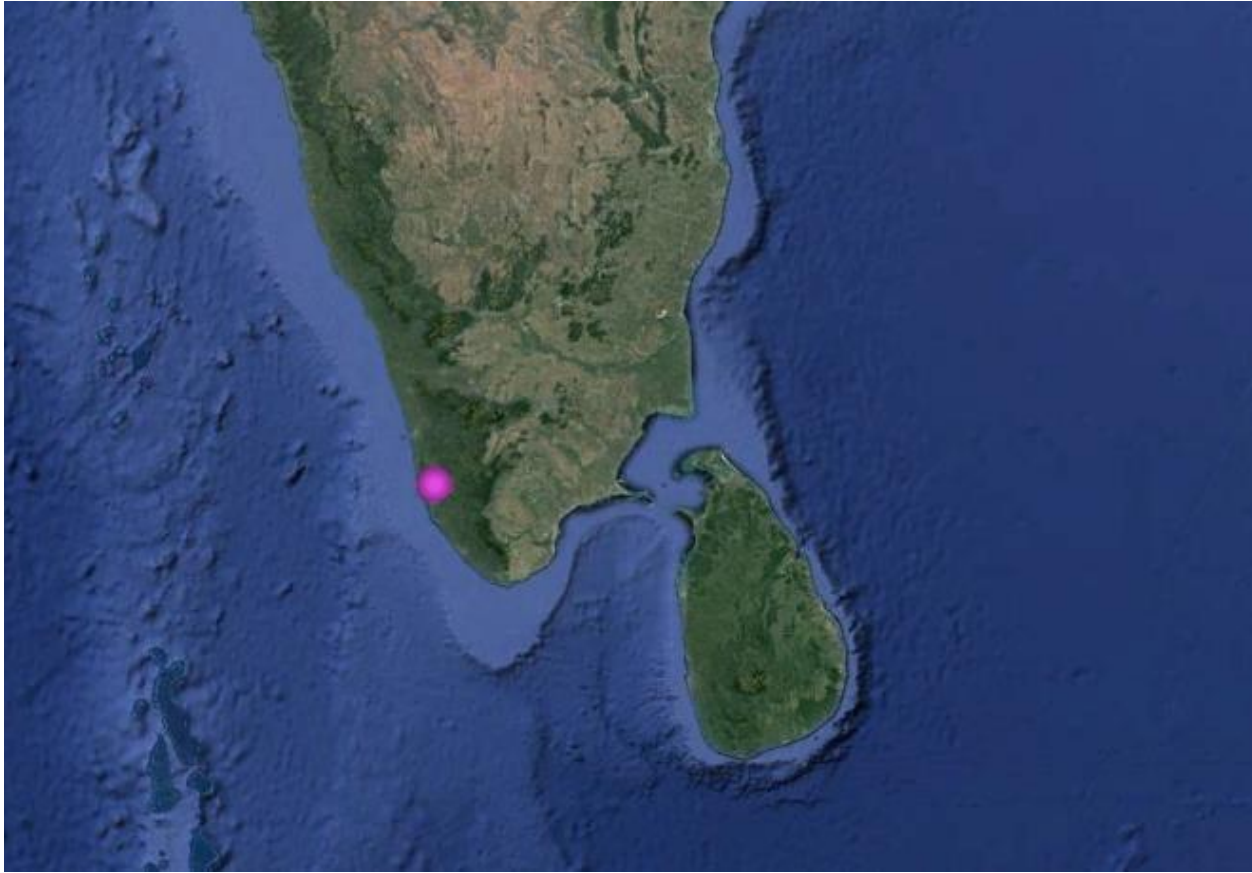


Figure 1. Known global distribution of *Puntius madhusoodani* as reported from southern India by Krishna Kumar et al. (2011) based on coordinates given in the map of the type locality. Map made with Google Earth Pro 7.3.1.4507 (Google LLC, Mountain View, California).

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. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.0, which is a low climate match. Scores between 0.000 and 0.005, inclusive, are classified as low. The climate match was very low across the entire contiguous United States except for southern peninsular Florida and southern Texas, where there was a medium to medium-low climate match. All states had a low climate score.

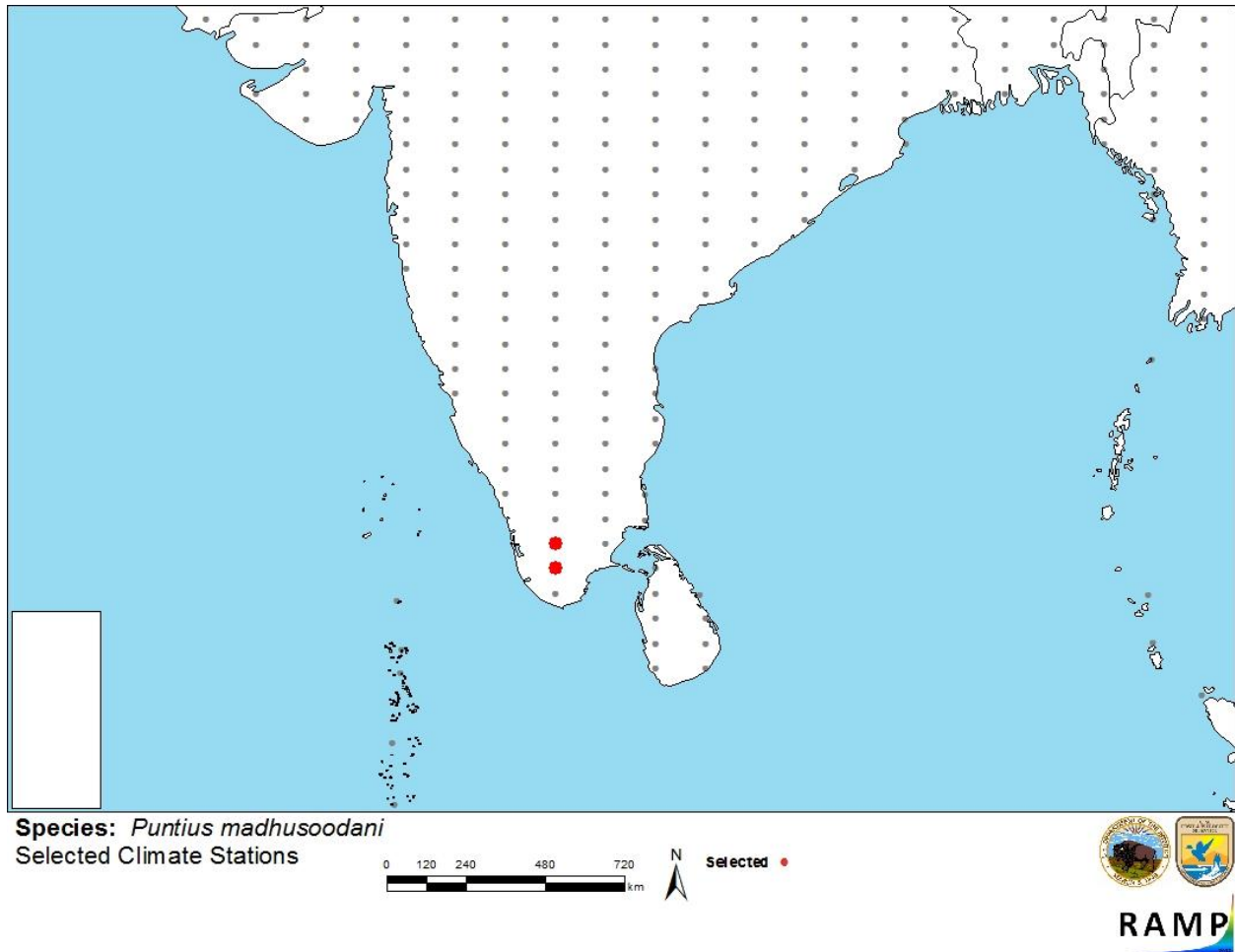


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; India) and non-source locations (gray) for *Puntius madhusoodani* climate matching. Source locations from Krishna Kumar et al. (2011).

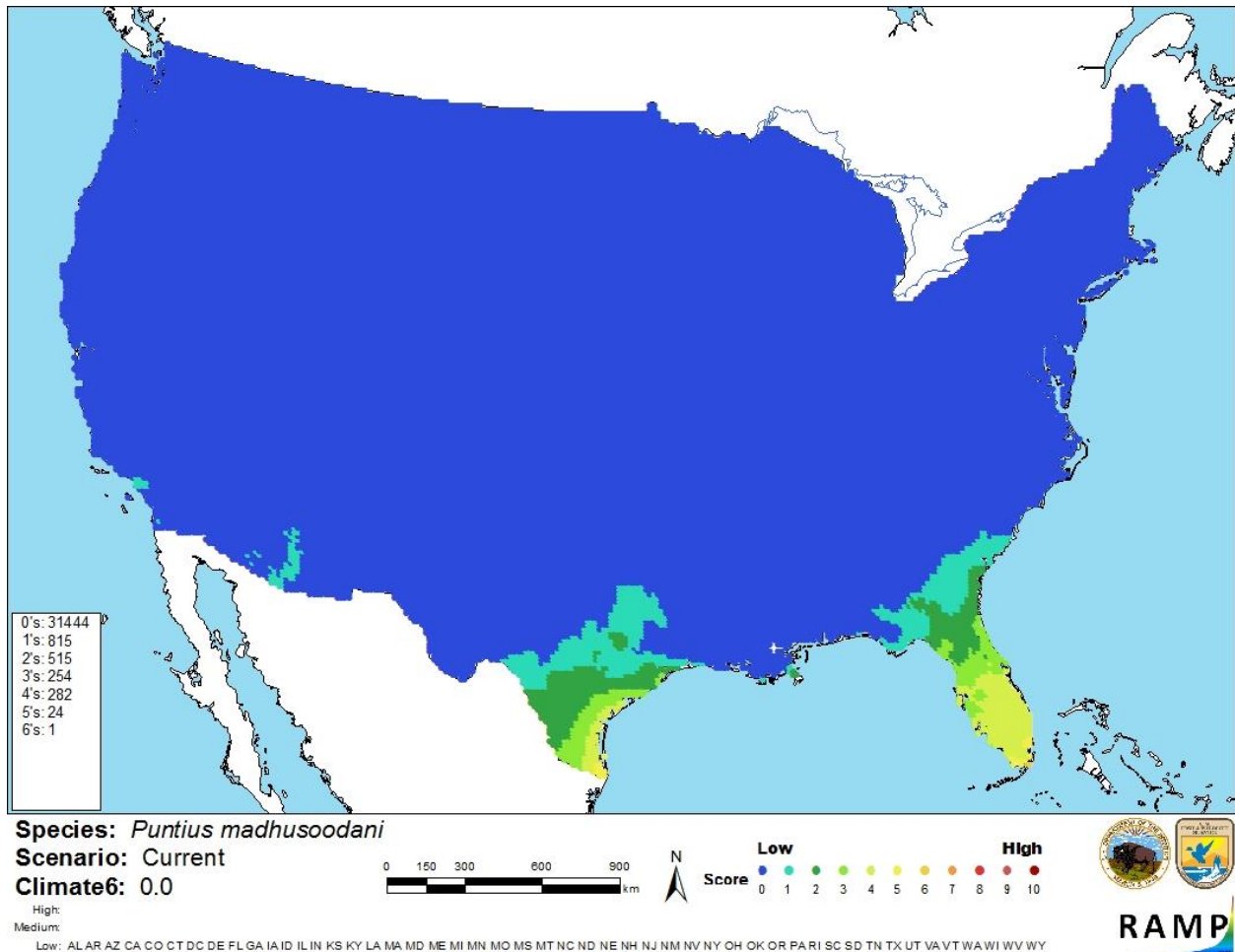


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Puntius madhusoodani* in the contiguous United States based on source locations reported by Krishna Kumar et al. (2011). 0=Lowest match, 10=Highest match.

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

7 Certainty of Assessment

There is very little information available about *Puntius madhusoodani*. It is only known from one location, and there is no information available about its biology. No introductions of this species outside of its native range have been reported. Therefore there is no information on impacts of introductions. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Puntius madhusoodani is a small freshwater cyprinid fish known only from the Manimala River in southern India. This species has never been reported as introduced or established outside of its native range. History of invasiveness is uncertain. *P. madhusoodani* has low climate match with the contiguous United States. Because further information on this species' biology and invasive potential is needed to adequately assess the risk it poses to the contiguous United States, 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.

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>. (July 2018).

Froese, R., and D. Pauly, editors. 2018. *Puntius madhusoodani* (Krishnakumar, Benno Pereira & Radhakrishnan, 2012). FishBase. Available: <https://www.fishbase.de/summary/Puntius-madhusoodani.html>. (July 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Puntius madhusoodani*, Krishnakumar, Benno Pereira & Radhakrishnan, 2012. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/7193684>. (July 2018).

Krishna Kumar, K., F. G. Benno Pereira, and K. V. Radhakrishnan. 2011. *Puntius madhusoodani* (Teleostei: Cyprinidae), a new species of barb from Manimala River, Kerala, South India. *Biosystematica* 5(2):31-37.

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/>. (June 2019).

Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.