

Dharna Barb (*Puntius fraseri*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, July 2013

Revised, July 2018

Web Version, 6/25/2019



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https://commons.wikimedia.org/wiki/File:Puntius_fraseri_2016.jpg. (July 2018).

1 Native Range and Status in the United States

Native Range

From Dahanukar (2011):

“*Puntius fraseri* is endemic to the Western Ghats of India (Dahanukar et al. 2004). It is found in Darna river, an upper tributary of the Godavari river system, in Deolali, Nashik (Hora and Misra 1939).”

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.

Remarks

From Dahanukar (2011):

“*Puntius fraseri* was originally described as *Barbus fraseri* by Hora and Misra (1939) from Darna river, Deolali, Nashik, Maharashtra.”

“[IUCN] Red List Category & Criteria: Endangered [...]”

“Kalawar and Kelkar (1956) reported the species from Panchaganga river, an upper tributary of the Krishna river system, in Kolhapur. Even though, Kalawar and Kelkar (1956) have given detailed taxonomic comment in support of their report, presence of this species in Krishna river system is highly unlikely. An extensive survey of the Krishna river system by Jayaram (1995) could not report this species. Furthermore, the species has not been recorded by any other study in Krishna river system. A more detailed investigation is required to conform [*sic*] the presence of the species in the Krishna river system. Both Jayaram (1991) and Talwar and Jhingran (1991) have restricted the species only to the Darna river.”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Cypriniformes
Superfamily Cyprinoidea
Family Cyprinidae
Genus *Puntius*
Species *Puntius fraseri* (Hora and Misra, 1938)”

From Eschmeyer et al. (2018):

“Current status: Valid as *Puntius fraseri* (Hora & Misra 1938). Cyprinidae: Smiliogastrinae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 4.6 cm TL male/unsexed; [Menon 1999]”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Dahanukar (2011):

“*Puntius fraseri* is endemic to the Western Ghats of India (Dahanukar et al. 2004). It is found in Darna river, an upper tributary of the Godavari river system, in Deolali, Nashik (Hora and Misra 1939).”

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 Menon and Devi (1992):

“The new species [*Puntius sharmai*] is closely allied to *Puntius fraseri* Hora and Misra (1938, JBNHS 40: 20-38), described from Darna river, Deolali, Maharashtra, but can be easily distinguished by its more streamlined body, the depth of body — is 4.78 (4.67-4.96) in TL, 3.48 (3.38-3.59) in SL, (4.3-4.4 in TL and 3.2 in SL in *P. fraseri*) — and smaller head, 4.89 (4.78-5.04) in TL, 3.56 (3.51-3.62) in SL, (5.4 in TL and 4 in SL in *P. fraseri*). The fins are greatly prolonged in the new species; the pectoral reaches pelvic origin whereas in *P. fraseri* it is separated by a considerable distance; the anal rays are prolonged and extend close to the caudal base while in the latter it is shorter and separated from caudal base, by a considerable distance.

The lateral line pores extend up to the seventh scale in *P. sharmai* (up to the eighth to tenth scales in *P. fraseri*).”

From Beevi and Ramachandran (2005):

“[...] Barbels (one pair of maxillary) present [...]”

“— Body depth 4 times in SL; no black spot over anterior part of anal base *P. fraseri* Hora & Misra”

Biology

From Froese and Pauly (2018):

“Occurs in hill streams [Menon 1999].”

Human Uses

From Dahanukar (2011):

“*Puntius fraseri* is of no interest to fisheries (Talwar and Jhingran 1991). The species is, however, caught by natives and soled [sic] in local markets.”

Diseases

No information available. No OIE-reportable diseases 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. Map showing the location of the town of Deolali, located on the Darna River in western India. The Darna River in Deolali is the type locality of *Puntius fraseri* given by Hora and Misra (1939), as reported by Dahanukar (2011). Map made with Google Earth Pro 7.3.1.4507 (Google LLC, Mountain View, California).



Figure 2. Known global distribution of *Puntius fraseri*, reported from India and Bangladesh. Map from GBIF Secretariat (2019). Neither reported occurrence represents a known established population, so they were not included in the climate matching analysis.

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 score was categorically low in every state in the contiguous United States. There were areas of medium to medium-low climate match in southern Arizona and Texas. The only georeferenced occurrences reported for this species did not represent established populations, so the climate match is based on the type locality of the species described in the literature.

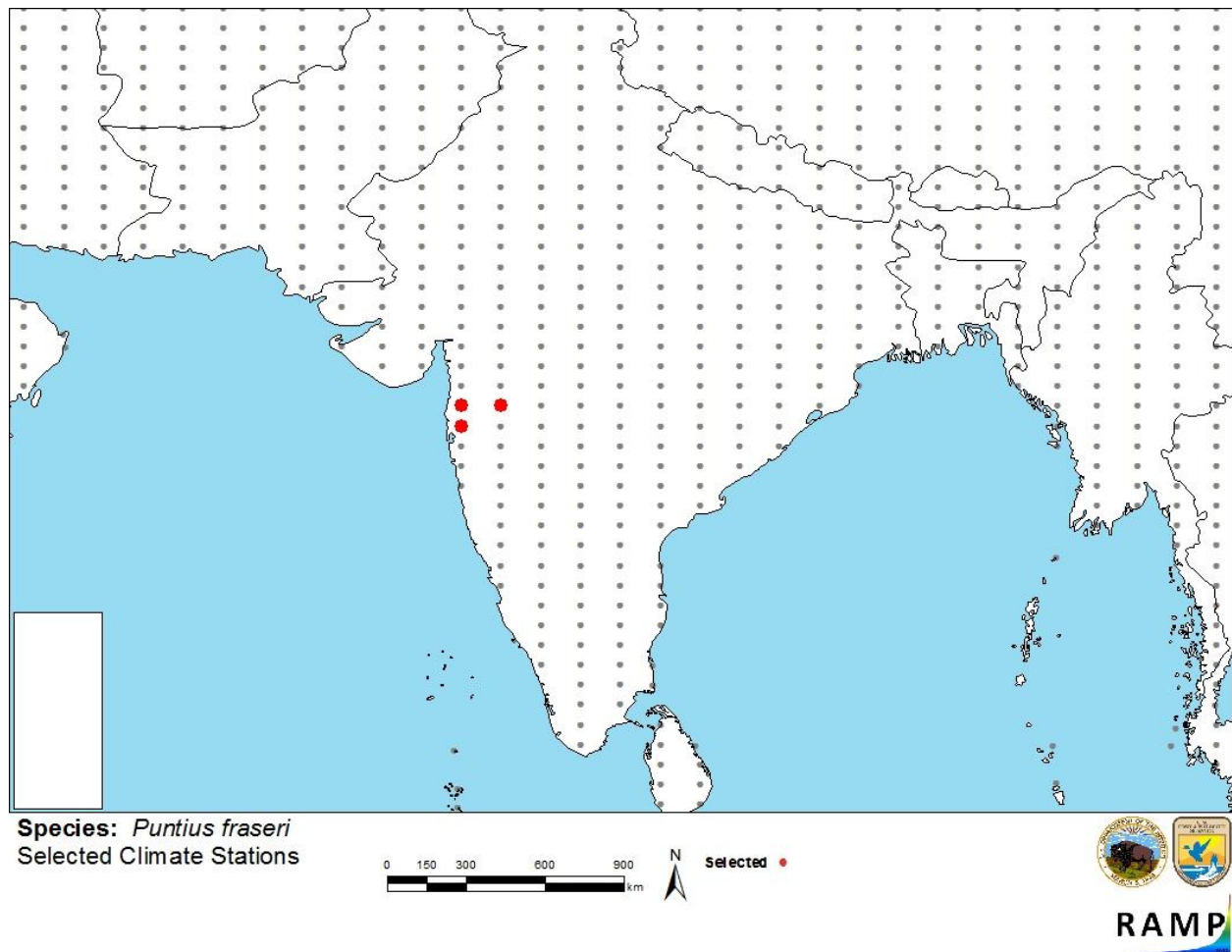


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; India) and non-source locations (gray) for *Puntius fraseri* climate matching. Source locations based on Dahanukar (2011).

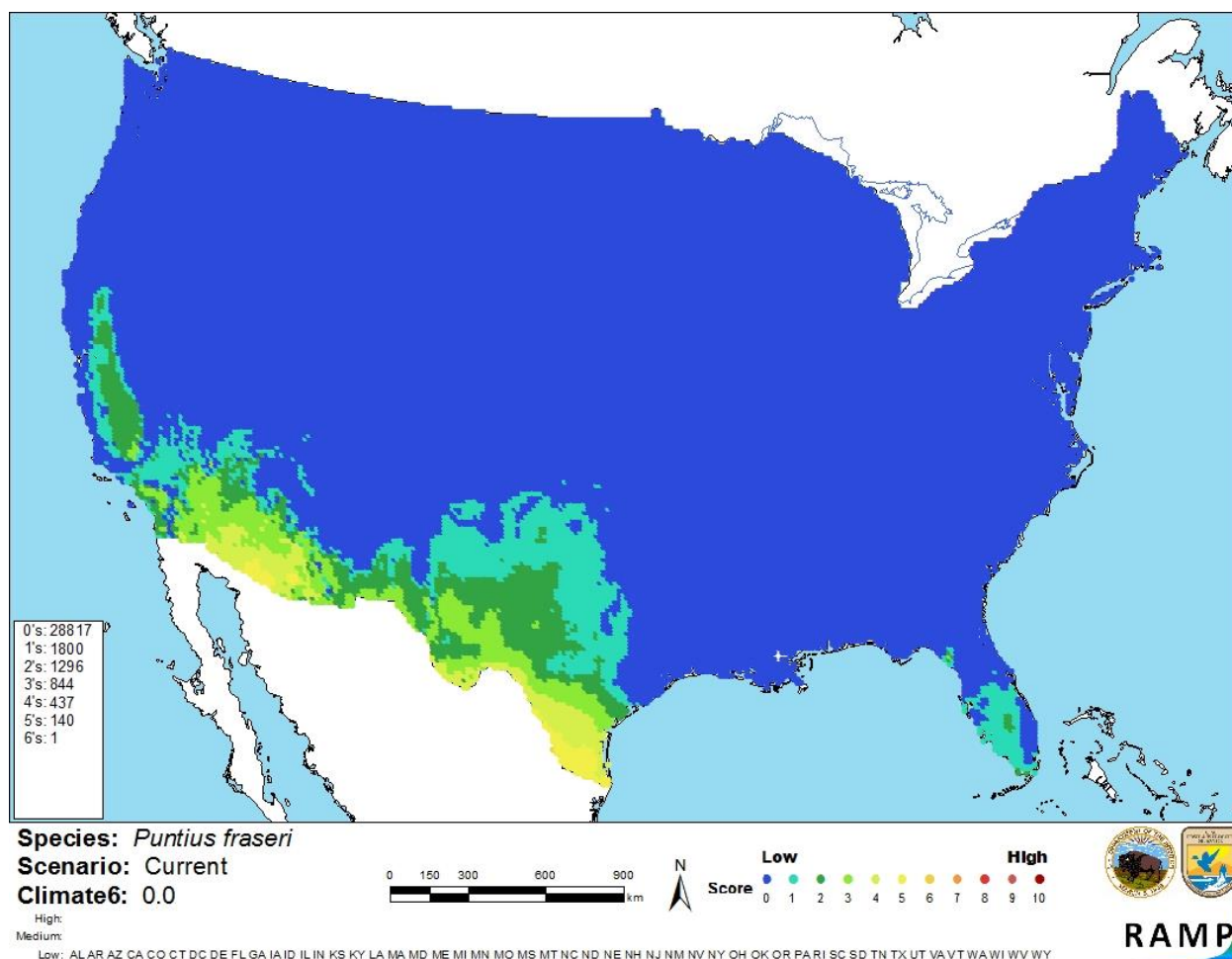


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Puntius fraseri* in the contiguous United States based on source location reported by Dahanukar (2011). 0= Lowest match, 10=Highest match.

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

7 Certainty of Assessment

There is limited information available about the biology and distribution of *Puntius fraseri*. Climate matching was based on only one occurrence point: the approximate location of the type locality. There are no documented introductions of this species outside of its native range. Therefore there is no information on impacts of introductions. Because of these factors, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Puntius fraseri, the Dharna Barb, is a small cyprinid fish native to India. It is sometimes available for sale in local markets. History of invasiveness is uncertain. This species has not been reported as introduced or established outside of its native range. *P. fraseri* has a low climate match with the contiguous United States based on a climate match using only its type locality. Because little information is known about the biology and range of this species, and because no introductions of this species outside of its native range have been documented, 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**
- **Important additional information: The species is listed as endangered on the IUCN Red List.**
- **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.

- Beevi, K. S. J., and A. Ramachandran. 2005. A new species of *Puntius* (Cyprinidae, Cyprininae) from Kerala, India. *Journal of the Bombay Natural History Society* 102(1):83-85.
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Menon, A. G. K., and R. Devi. 1992. *Puntius sharmai*, a new cyprinid fish from Madras. Journal of the Bombay Natural History Society 89(3):353-354.

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

10 References Quoted But Not Accessed

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.

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Hora, S. L., and K. S. Misra. 1939. Fish of Deolali, Part III. Journal of the Bombay Natural History Society 40(1):20-38.

Jayaram, K. C. 1991. Revision of the Genus *Puntius* Hamilton from the Indian region (Pisces: Cypriniformes, Cyprinidae, Cyprininae). Records of the Zoological Survey of India Occasional Paper 135.

Jayaram, K. C. 1995. The Krishna river system bioresources study. Records of the Zoological Survey of India, Occasional Paper 160.

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Menon, A. G. K. 1999. Check list - fresh water fishes of India. Records of the Zoological Survey of India, Miscellaneous Publications, Occasional Paper 175.

Talwar, P. K., and A. G. Jhingran. 1991. Inland Fishes of India and adjacent countries. Oxford-IBH Publishing Company Private Limited, New Delhi, India.