

Khavli barb (*Puntius sahyadriensis*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, February 2013

Revised, April 2019

Web Version, 8/8/2019



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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

“Asia: Yenna River in Satara District, Maharashtra, India.”

From Patil et al. (2015):

“From study sites, *Puntius sahyadriensis*, *Nemacheilus anguilla*, *Pterocryptis wynaadensis* and *Glyptothorax trewavasae* are first time recorded [*sic*] from rivers of Kolhapur district [India] [...]”

Status in the United States

No records of *Puntius sahyadriensis* in trade or in the wild in the United States were found.

Means of Introductions in the United States

No records of *Puntius sahyadriensis* in the wild in the United States were found.

Remarks

From Ali and Raghavan (2011):

“*P. sahyadriensis* is Least Concern [IUCN Red List status] due to its wide distribution and lack of serious overall threats.”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

“**Current status:** Valid as *Puntius sahyadriensis* Silas 1953.”

From ITIS (2019):

“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 sahyadriensis* Silas, 1953”

Size, Weight, and Age Range

From Mercy et al. (2007):

“It attains a maximum size of 10cm.”

Environment

From Froese and Pauly (2019):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2019):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2019):

“Asia: Yenna River in Satara District, Maharashtra, India.”

From Patil et al. (2015):

“From study sites, *Puntius sahyadriensis*, *Nemacheilus anguilla*, *Pterocryptis wynaadensis* and *Glyptothorax trewavasae* are first time recorded [*sic*] from rivers of Kolhapur district [India] [...]”

Introduced

No records of introductions were found for *Puntius sahyadriensis*.

Means of Introduction Outside the United States

No records of introductions were found for *Puntius sahyadriensis*.

Short Description

From Patil et al. (2015):

“*Puntius sahyadriensis* [...]: Body short, compressed, head is more or less blunt, eyes large situated more towards the anterior half of the head. The barbels are absent. Body with seven vertical black bands. Pelvic fin shows black and white colouration.”

From Mercy et al. (2007):

“**Distinguishing characters:** A small well-built carp, its depth 2.6 to 3 times in standard length. Head rather blunt, its length 3 to 4 times in standard length. Eyes large, its diameter 2.75 to 3.5 times in head length. Mouth small; lips fleshy and continuous at angles; barbels absent. Dorsal fin inserted nearer to tip of snout than to base of caudal fin, its last unbranched ray non-osseous, weak and articulated. Scales large; lateral line complete, with 23 or 24 scales; lateral transverse scale-rows 5/4; predorsal scales 8. Males with numerous tubercles on snout, lower sides of head and ventral surface of body as far back as pelvic-fins.

Colour and size: Silvery with seven vertical dark blotches on flank; scales generally with a darker margin. During breeding season both the males and females show brighter colouration. In addition, the females are reddish-brown, being darker in the anterior and upper half of the body. Pelvic fins black.”

Biology

From Froese and Pauly (2019):

“Inhabits hill streams [Menon 1999].”

From Ali and Raghavan (2011):

“Known to occur in hill streams (Menon 1999) and rivers. Prefers shallow water pool or run.”

Human Uses

From Froese and Pauly (2019):

“Fisheries: of no interest; aquarium: commercial”

From Ali and Raghavan (2011):

“The collection of fingerlings and juveniles of *P. sahyadriensis* for the international aquarium pet trade could lead to future population declines if not regulated.”

“*P. sahyadriensis* is a popular ornamental fish collected and exported to the international aquarium pet trade (Mercy et al. 2007). It is also a minor food fish in Maharashtra (N. Dahanukar pers. comm.)”

From Mercy et al. (2007):

“The species enjoys a good market as aquarium species outside India.”

Diseases

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

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

No records of introductions were found for *Puntius sahyadriensis*, therefore there is no information on impacts of introduction.

4 Global Distribution



Figure 1. Known global distribution of *Puntius sahyadriensis*. Locations are in India. Map from GBIF Secretariat (2019).

5 Distribution Within the United States

No records of *Puntius sahyadriensis* in the wild in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Puntius sahyadriensis* was low for the contiguous United States with a medium match in southern Arizona, Texas, and California. 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 low individual Climate 6 scores.

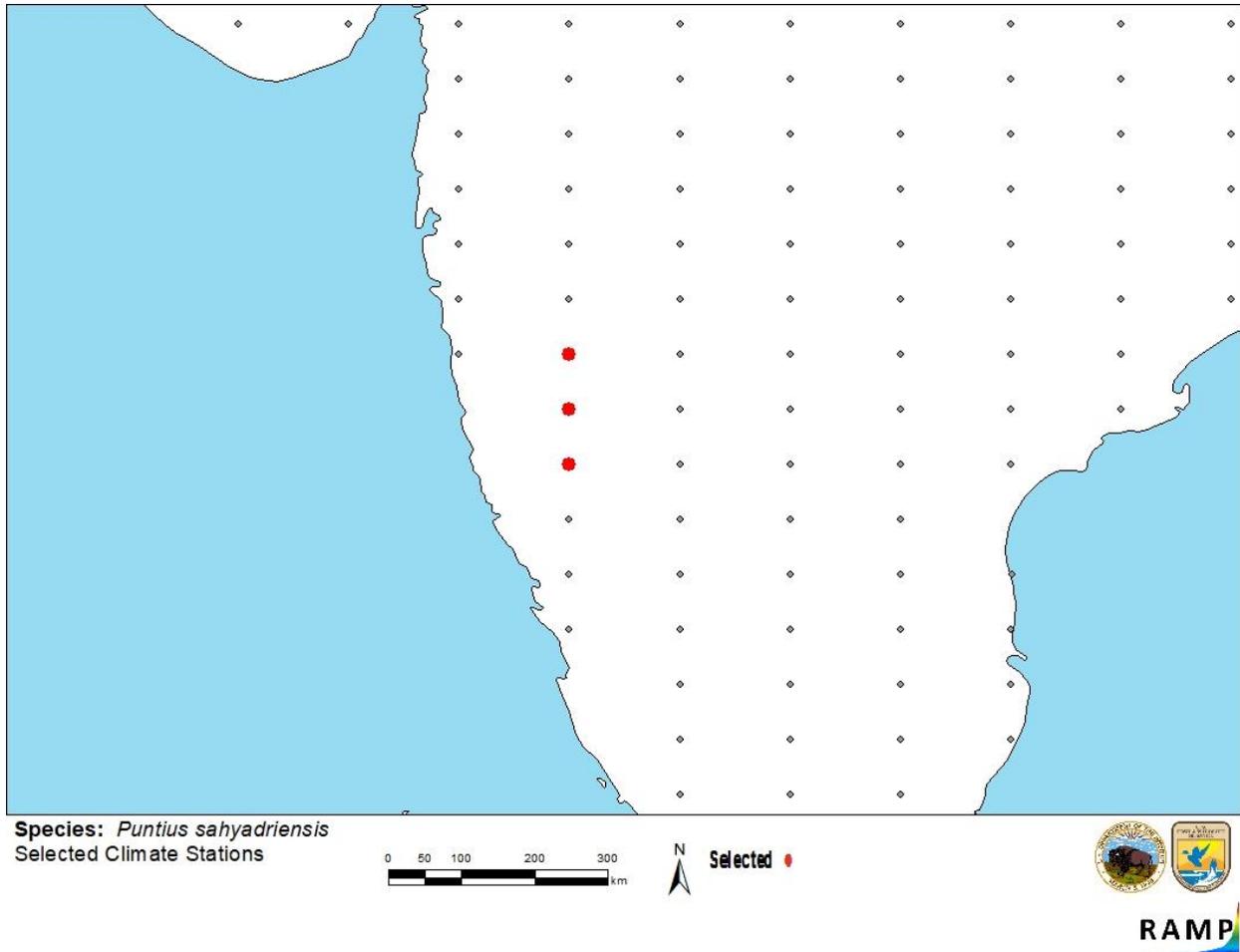


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; India) and non-source locations (gray) for *Puntius sahyadriensis* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species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

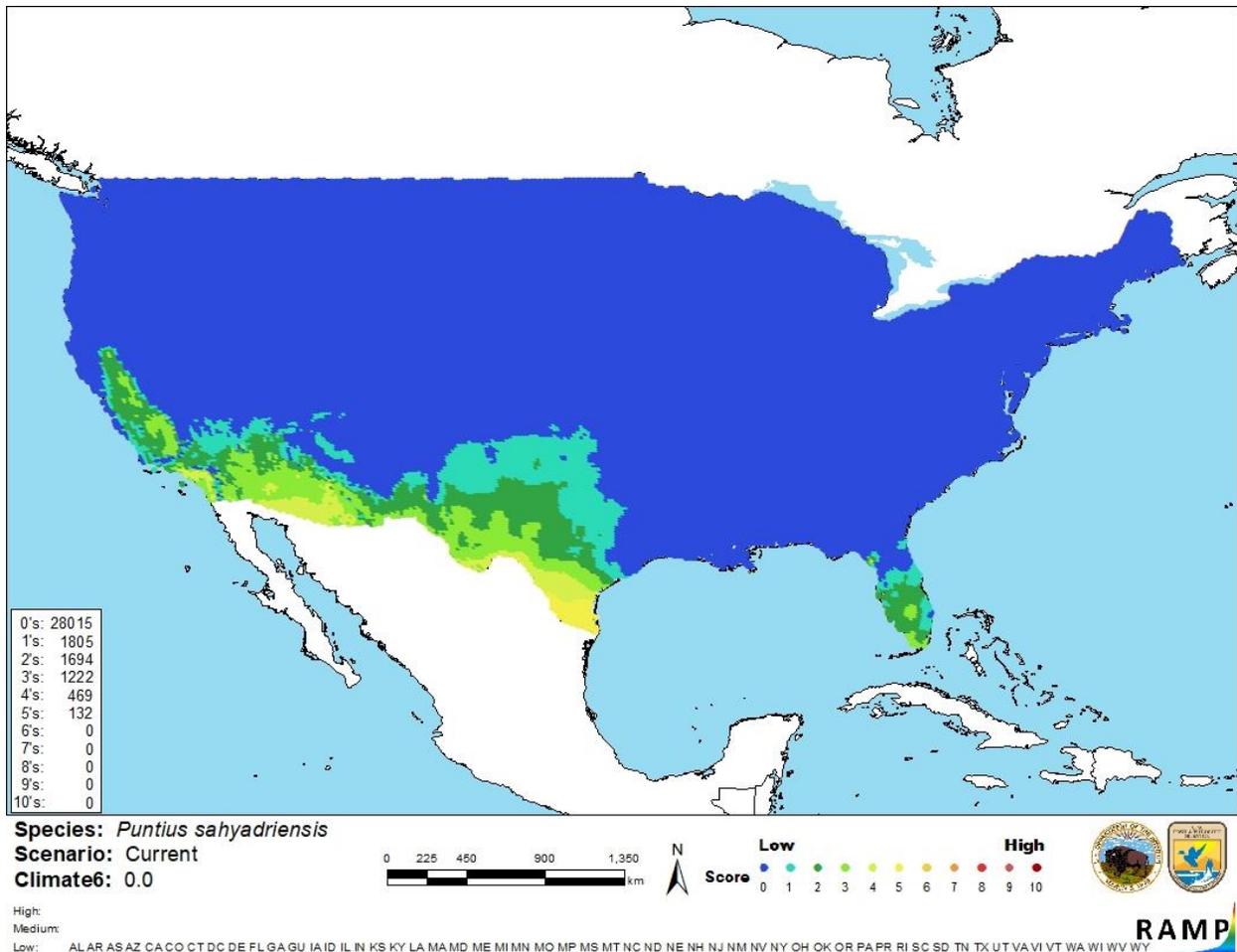


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Puntius sahyadriensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). 0 = Lowest match, 10 = Highest match.

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

The certainty of this assessment is low. There was minimal biological information available for this species. There were no records of introductions found, so impacts of introduction are unknown.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Puntius sahyadriensis is a fish native to India. Little information is available about the biology and ecology of this species. Although not found for sale in the United States, it is sold as an aquarium fish in the international pet trade. The history of invasiveness is uncertain because no records of introductions were found. The climate match is low for the contiguous United States, with areas of medium match in southern Arizona, California, and Texas. 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**
- **Remarks/Important additional information:** No additional information.
- **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.

- Ali, A., and R. Raghavan. 2011. *Puntius sahyadriensis*. The IUCN Red List of Threatened Species 2011: e. T172394A6883015. Available: <https://www.iucnredlist.org/species/172394/6883015>. (April 2017).
- Fricke, R., W. N. Eschmeyer, and R. van der Laan, editors. 2019. Eschmeyer's catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (April 2019).
- Froese, R., and D. Pauly, editors. 2019. *Puntius sahyadriensis* Silas, 1953. FishBase. Available: <https://www.fishbase.in/summary/Puntius-sahyadriensis.html>. (April 2019).
- GBIF Secretariat. 2019. GBIF backbone taxonomy: *Puntius sahyadriensis* Silas, 1953. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2363903>. (April 2019).
- ITIS (Integrated Taxonomic Information System). 2019. *Puntius sahyadriensis* Silas, 1953. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=689846#null. (April 2019).
- Mercy, T. V. A., A. Gopalakrishnan, D. Kapoor, and W. S. Lakra. 2007. Ornamental fishes of the Western Ghats of India. NBFGR, Lucknow, India.

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/>. (April 2019).

Patil, T. S., A. R. Bhosale, R. B. Yadav, R. S. Khandekar, and D. V. Muley. 2015. Study of endemic and threatened fish species diversity and its assemblage structure from Northern Western Ghats, Maharashtra, India. *International Journal of Zoological Research* 11(3):116–126.

Sanders, S., C. Castiglione, and M. Hoff. 2018. Risk assessment mapping program: RAMP, version 3.1. U.S. 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.

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

Silas, E. G. 1953. Notes on fishes from Mahabaleshwar and Wai (Satara district, Bombay state). *Journal of the Bombay Natural History Society* 51(3):579–589.