

Deccan Labeo (*Labeo potail*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, January 2012

Revised, June 2018

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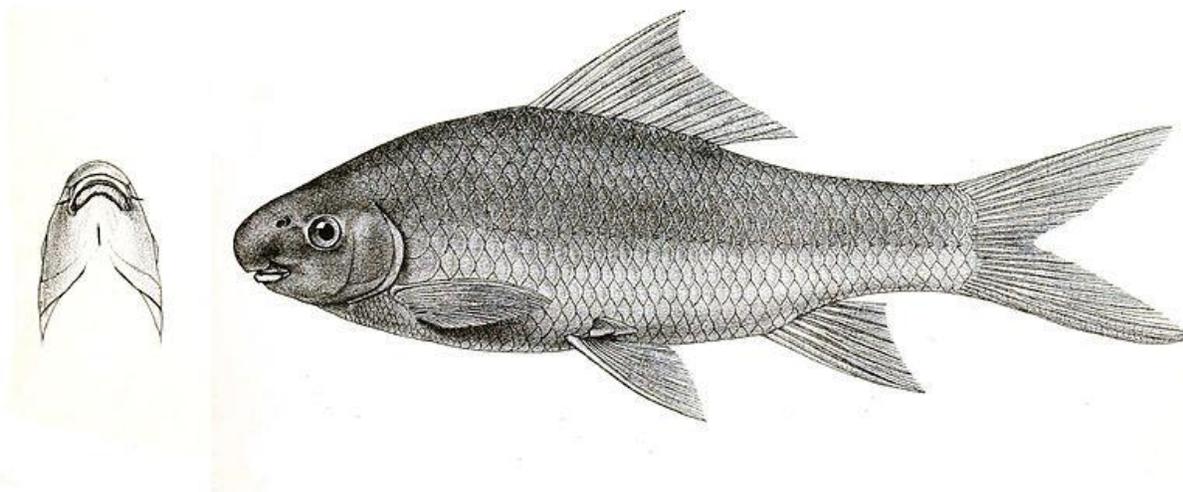


Image: C.L. Griesbach, in *The Fishes of India*, volume 2, by F. Day. Public domain. Available: https://eu.wikipedia.org/wiki/Fitxategi:Labeo_potail_Griesbach_127.jpg.

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Asia: Maharashtra, the Deccan and the Cauvery river system in India.”

From Dahanukar (2011):

“*Labeo potail* is endemic to the Western Ghats of India (Dahanukar *et al.* 2004). This species occurs in tributaries of Krishna River system namely Bhima River and its tributaries (Sykes 1841, Fraser 1942, Sarwade and Khillare 2010, Neelesh Dahanukar pers. obs.), Krishna River (Jayaram and Dhas 2000) and Tungabhadra River (David 1956, Shahnawaz and Venkateshwarlu 2009, Shahnawaz *et al.* 2010). The species has also been recorded from Kaveri Rver [*sic*] system (Shaji and Easa 1995, Rajeev Raghavan and Anvar Ali pers. obs.). David (1963) suggests that the species also occurs in Godavari, however, there are no reliable records. Menon (1999)

suggests that the species occurs only in Krishna river system and excludes Kavery River system. Thus, it is essential to evaluate the taxonomic status of the fish from Kavery River system. Report of the species from Hyderabad (Chandras[ekhar] 2004) needs more support and the paper also does not mention the exactly [*sic*] locality from where the species was collected.”

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 Introduction into the United States

This species has not been reported as introduced or established in the United States.

Remarks

From Dahanukar (2011):

“Menon (1999) suggests that the species occurs only in Krishna river system and excludes Kavery River system. Thus, it is essential to evaluate the taxonomic status of the fish from Kavery River system.”

“*Labeo potail* was originally described as *Cyprinus potail* Sykes (1839) from Temburni on Bhima river, Maharashtra.”

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 Ostariophysii
Order Cypriniformes
Superfamily Cyprinoidea
Family Cyprinidae
Genus *Labeo*
Species *Labeo potail* (Sykes, 1839)”

“Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 30.0 cm TL male/unsexed [Talwar and Jhingran 1991]

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Asia: Maharashtra, the Deccan and the Cauvery river system in India.”

From Dahanukar (2011):

“*Labeo potail* is endemic to the Western Ghats of India (Dahanukar *et al.* 2004). This species occurs in tributaries of Krishna River system namely Bhima River and its tributaries (Sykes 1841, Fraser 1942, Sarwade and Khillare 2010, Neelesh Dahanukar pers. obs.), Krishna River (Jayaram and Dhas 2000) and Tungabhadra River (David 1956, Shahnawaz and Venkateshwarlu 2009, Shahnawaz *et al.* 2010). The species has also been recorded from Kaveri Rver [*sic*] system (Shaji and Easa 1995, Rajeev Raghavan and Anvar Ali pers. obs.). David (1963) suggests that the species also occurs in Godavari, however, there are no reliable records. Menon (1999) suggests that the species occurs only in Krishna river system and excludes Kavery River system. Thus, it is essential to evaluate the taxonomic status of the fish from Kavery River system. Report of the species from Hyderabad (Chandras[ekhar] 2004) needs more support and the paper also does not mention the exactly [*sic*] locality from where the species was collected.”

Introduced

No introductions of this species have been reported.

Means of Introduction Outside the United States

No introductions of this species have been reported.

Short Description

From Day (1876):

“Length of head 5, of caudal 4; height of body $3\frac{1}{2}$ in the total length. *Eyes*—diameter $\frac{1}{6}$ of length of head, 3 diameters from the end of snout. Dorsal profile much elevated, the abdominal nearly horizontal; snout overhanging the mouth, which is inferior and has a slight lateral lobe; lower labial fold distinct. Fine pores on the upper surface of the head, snout, and along the cheeks, being most developed on the snout. A pair of maxillary barbels of medium length. *Fins*—dorsal commences midway between the snout and the posterior extremity of the base of the anal fin, its upper edge concave, the height of the fin two thirds of that of the body; pectoral nearly as long as the head, its length equaling [*sic*] that of the ventral; anal much highest [*sic*] anteriorly; caudal deeply forked, the upper lobe the longer. *Lateral line*, $5\frac{1}{2}$ rows between it and the base of the ventral. *Colours*—greyish, each scale with a red lunule; fins stained grey along their edges, and dorsal also along its centre.”

Biology

From Froese and Pauly (2018):

“Inhabits rivers and streams in the upper reaches [Menon 1999].”

Human Uses

From Froese and Pauly (2018):

“Fisheries: commercial”

From Dahanukar (2011):

“*Labeo potail* is caught and sold in the local markets. Harvesting of the fish could be a threat to the species (Kharat *et al.* 2000, 2003).”

Diseases

Kaur and Singh (2011) list *L. potail* as a host of *Myxobolus potaili*, a parasite of the liver and intestine.

No OIE-reportable diseases have been documented for *L. potail*.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No information available. No introductions of this species have been reported.

4 Global Distribution

No map available. The only georeferenced location reported for this species in GBIF Secretariat (2017) is noted as a fish market, rather than a natural habitat.

5 Distribution within the United States

This species has not been reported in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) was low for most of the contiguous United States. The climate match was medium in southern Texas and southern Arizona. Climate 6 score indicated that the contiguous United States has a low climate match overall. The range of scores indicating a low climate match is 0.005 and below; Climate 6 score of *L. potail* was 0.000.

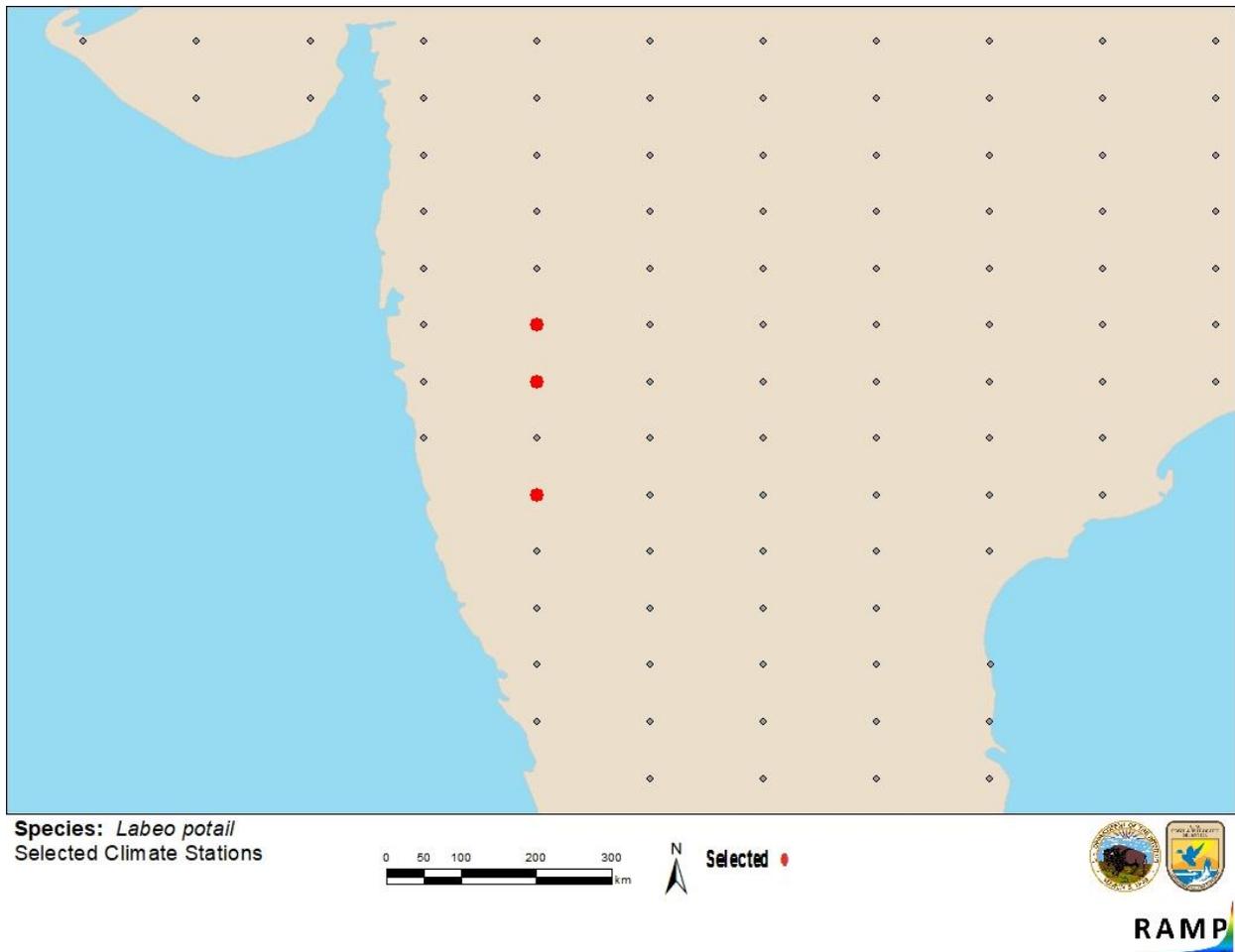


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in India selected as source locations (red) and non-source locations (gray) for *L. potail* climate matching. Source locations from Wagh and Ghate (2003), Kharat et al. (2012), and Patil (2015). Because of uncertainty over the geographic range of *L. potail*, only locations in Maharashtra, India, where the upper reaches of the Krishna River system are located, were used in the climate matching analysis.

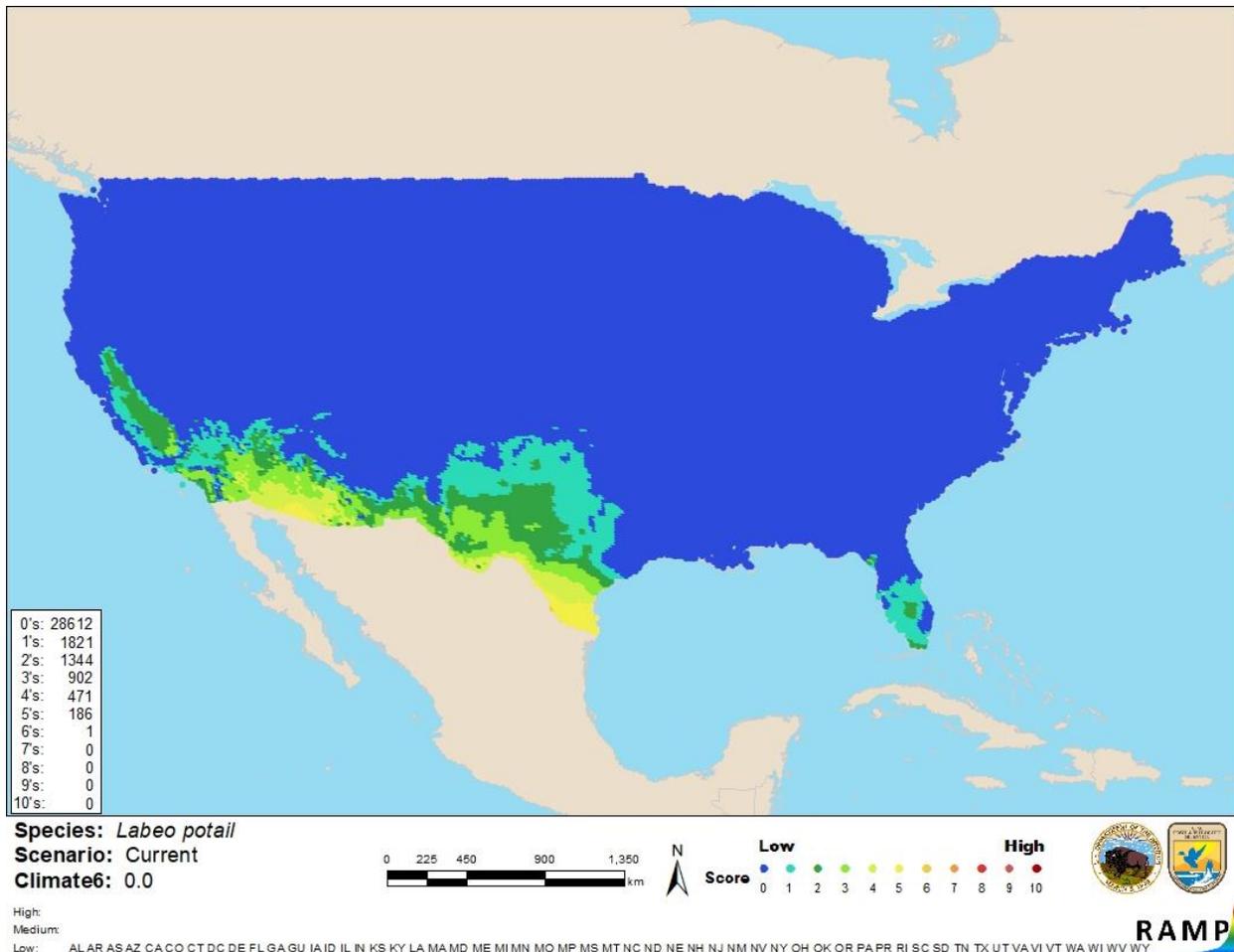


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *L. potail* in the contiguous United States based on source locations reported by Wagh and Ghate (2003), Kharat et al. (2012), and Patil (2015). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

Little information is available on the biology, ecology, and distribution of *Labeo potail*. The native range of the species is somewhat uncertain, with disagreement over whether the range extends beyond the Krishna River system. No introductions of this species have been reported, so impacts of introduction remain unknown. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Labeo potail is a species of carp native to western India. It has not been reported as introduced or established anywhere else in the world. The native range of the species is somewhat uncertain, with disagreement over whether the range extends beyond the state of Maharashtra, India. Climate match to the contiguous United States was low overall, with medium match found in Texas and Arizona. *L. potail* is harvested for local consumption. Given the lack of introduction history for *L. potail*, the overall risk posed to the contiguous United States is uncertain.

Assessment Elements

- **History of Invasiveness: Uncertain**
- **Climate Match: Low**
- **Certainty of Assessment: 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.

Dahanukar, N. 2011. *Labeo potail*. The IUCN Red List of Threatened Species 2011: e.T169627A6657573. Available: <http://www.iucnredlist.org/details/full/169627/0>. (June 2018).

Day, F. 1876. On some fishes of the Deccan. *Zoological Journal of the Linnean Society* 12(64):565-578.

Froese, R., and D. Pauly, editors. 2018. *Labeo potail* (Sykes, 1839). FishBase. Available: <https://www.fishbase.de/summary/Labeo-potail.html>. (June 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Labeo potail* (Sykes, 1839). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5206088>. (June 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Labeo potail* (Sykes, 1839). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=689330#null. (June 2018).

Kaur, H., and R. Singh. 2011. Two new species of *Myxobolus* (Myxozoa:Myxosporidia: Bivalvulida) from freshwater fishes of Punjab wetlands (India). *Journal of Parasitic Diseases* 35(1):33-41.

Kharat, S. S., M. Paingankar, and N. Dahanukar. 2012. Freshwater fish fauna of Krishna River at Wai, northern Western Ghats, India. *Journal of Threatened Taxa* 4(6):2644-2652.

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.

Wagh, G. K., and H. V. Ghate. 2003. Freshwater fish fauna of the rivers Mula and Mutha, Pune, Maharashtra. *Zoos Print Journal* 18(1):977-981.

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.

Chandrasekhar, S. V. A. 2004. Fish fauna of Hyderabad and its environs. *Zoos' Print Journal* 19(7):1530-1533.

Dahanukar, N., R. Raut, and A. Bhat. 2004. Distribution, endemism and threat status of freshwater fishes in the Western Ghats of India. *Journal of Biogeography* 31:123-136.

David, A. 1956. Studies on pollution of Bhadra river fisheries at Bhadravti (Mysore state) with industrial effluents. *Proceedings of the National Institute of Science, India* 22:132-160.

David, A. 1963. Studies on fish and fisheries of the Godavary and the Krishna river systems, part 1. *Proceedings of the National Academy of Science* 33(2):263-286.

Fraser, A. G. L. 1942. Fish of Poona, part I. *Journal of Bombay Natural History Society* 43(1):79-91.

Jayaram, K. C., and J. J. Dhas. 2000. Revision of the genus *Labeo* from Indian region with a discussion on its phylogeny and zoogeography. *Zoological Survey of India, Occasional Paper no. 183, Kolkata, India.*

Kharat, S. S., N. Dahanukar, and R. Raut. 2000. Decline of fresh-water fish of Pune urban area. *Journal of Ecological Society* 13/14:46-51.

Kharat, S., N. Dahanukar, R. Raut, and M. Mahabaleshwarkar. 2003. Long-term changes in freshwater fish species composition in northern Western Ghats, Pune District. *Current Science* 84(6):816-820.

- Menon, A. G. K. 1999. Check list - fresh water fishes of India. Records of the Zoological Survey of India, Miscellaneous Publications, Occasional Paper no. 175.
- Sarwade, J. P., and Y. K. Khillare. 2010. Fish diversity of Ujani wetland, Maharashtra, India. *The Bioscan* 1:173-179.
- Shahnawaz, A., and M. Venkateshwarlu. 2009. A checklist of fishes from the Tunga and Bhadra rivers, Karnataka, India with a special note on their biodiversity status. *Current Biotica* 3(2):232-243.
- Shahnawaz, A., M. Venkateshwarlu, D. S. Somashekar, and K. Santosh. 2010. Fish diversity with relation to water quality of Bhadra River of Western Ghats (INDIA). *Environmental Monitoring and Assessment* 161:83-91.
- Shaji, C. P., and P. S. Easa. 1995. Freshwater fish diversity in Wayanad, Kerala, South India. *Journal of Zoological Society of Kerala* 5(1&2):30-36.
- Sykes, W. H. 1841. On the fishes of the Dukhun. *Transactions of the Zoological Society of London* 2:349-378.
- Talwar, P. K., and A. G. Jhingran. 1991. *Inland fishes of India and adjacent countries, volume 1.* A. A. Balkema, Rotterdam, The Netherlands.