Labeo caeruleus (a carp, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, May 2012
Revised, March 2018 and June 2018
Web Version, 6/6/2018

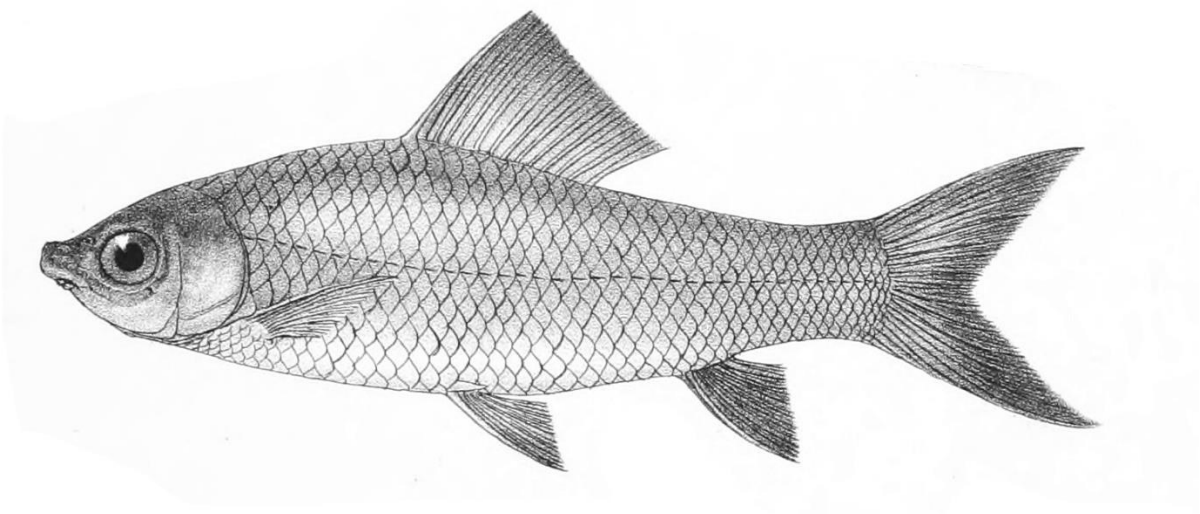

Photo: R. Mintern. Public domain. Available: https://commons.wikimedia.org/wiki/File:Labeo_caeruleus_Mintern_129.jpg. (March 2018).

1 Native Range and Status in the United States

Native Range

From Eschmeyer et al. (2018):

"Distribution: Nepal, India, Sri Lanka, Pakistan and Bangladesh."

Status in the United States

This species has not been reported as introduced or established in the U.S.

Means of Introductions in the United States

This species has not been reported as introduced or established in the U.S.

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 *Labeo*
Species *Labeo caeruleus* Day, 1877"

From Eschmeyer et al. (2018):

"Current status: Valid as *Labeo caeruleus* Day 1877. Cyprinidae: Labeoninae."

Size, Weight, and Age Range

From Froese and Pauly (2017):

"Max length : 35.0 cm TL male/unsexed; [Talwar and Jhingran 1991]"

Environment

From Froese and Pauly (2017):

"Freshwater; benthopelagic."

Climate/Range

From Froese and Pauly (2017):

"Subtropical"

Distribution Outside the United States

Native

From Eschmeyer et al. (2018):

"Distribution: Nepal, India, Sri Lanka, Pakistan and Bangladesh."

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 Day (1878):

"Length of head 4 ¾, of caudal 4 ½, height of body 4 in the total length. Eyes—4 diameters in the length of head, 1 diameter from the end of snout, and 2 apart. Interorbital space slightly convex. The greatest width of the head equals its length excluding the snout. Mouth narrow, its width equaling 2/7 of the length of the head. Snout overhanging the mouth: no lateral lobe. Lips continuous, and having a distinct inner fold in their entire circumference: both lips fringed. A horny inner covering to either lip. Barbels—no rostral ones, a short pair to the maxilla. Fins—dorsal arises anterior to the ventral, and slightly nearer to the end of the snout than the base of the caudal fin, anteriorly 2/3 as high as the body, its upper edge concave. Pectoral as long as the head excluding the snout, it does not reach the ventral nor the latter the anal. Anal when laid flat reaches the base of the caudal which is deeply forked. Lateral-line—6 rows of scales between it and the base of the ventral fin. Colours—bluish with a yellowish tinge on the sides and beneath. Outer half of anal nearly black, and a blackish lunule on the caudal."

Biology

No information available.

Human Uses

From Froese and Pauly (2017):

"Fisheries: minor commercial"

Diseases

No information available. No OIE-reportable diseases have been documented for this species.

Threat to Humans

From Froese and Pauly (2017):

"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 *Labeo caeruleus*, reported from India and Nepal. Map from GBIF Secretariat (2017). There were no georeferenced occurrences of *L. caeruleus* in Pakistan, Sri Lanka, or Bangladesh available from GBIF Secretariat (2017).

5 Distribution Within the United States

This species has not been reported as introduced or established in the U.S.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.0, which indicates a low climate match overall. The climate match was medium in much of peninsular Florida, coastal Georgia, part of coastal North Carolina, and southern Texas. The climate match was low across the remainder of the contiguous United States.

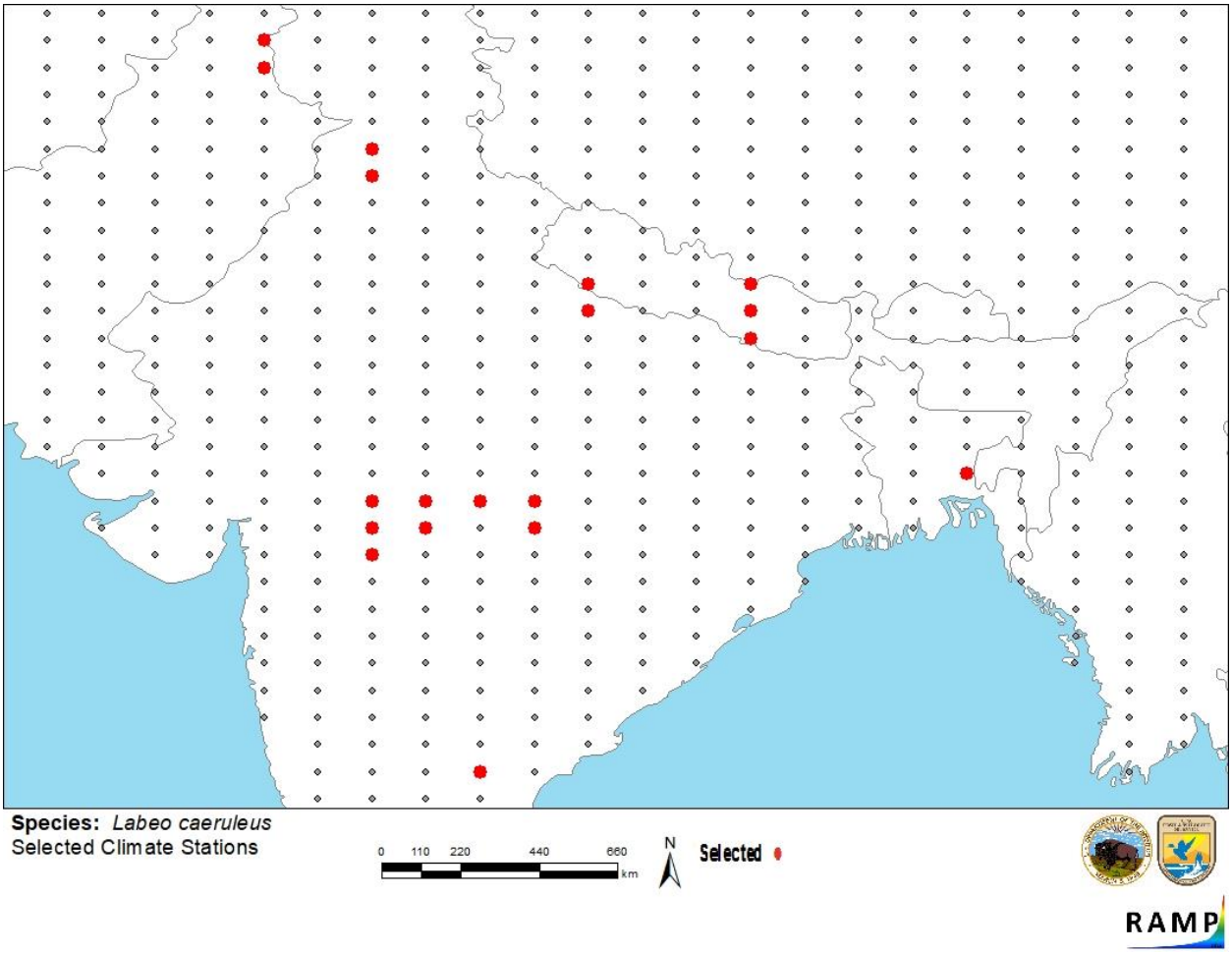

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Pakistan, India, Nepal, Bangladesh) and non-source locations (gray) for *Labeo caeruleus* climate matching. Source locations from GBIF Secretariat (2017). Additional source locations from Kar et al. (2010; Bangladesh-India border), Dua and Parkash (2009; northern India), Laxmappa et al. (2015; southern India), and Usman et al. (2017; Pakistan).

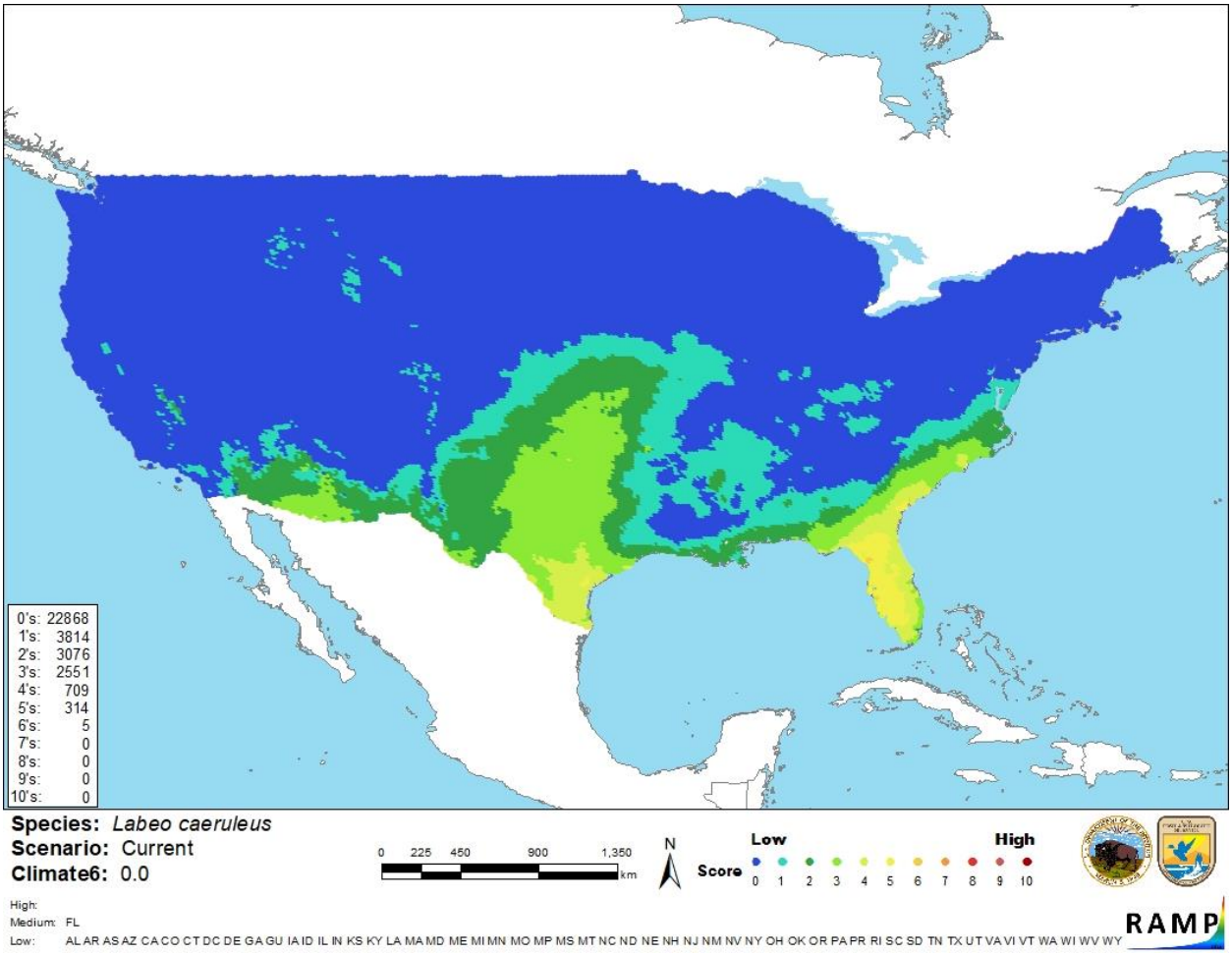

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Labeo caeruleus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017), Kar et al. (2010), Dua and Parkash (2009), Laxmappa et al. (2015), and Usman et al. (2017). 0=Lowest match, 10=Highest match.

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 very little information available about *Labeo caeruleus*. No introductions of this species outside of its native range have been documented. Because of this, no impacts of introductions have been documented, so the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Labeo caeruleus is a carp native to Pakistan, India, Nepal, Bangladesh, and Sri Lanka. This species has never been reported as introduced outside of its native range. *L. caeruleus* has a low climate match with the contiguous United States. Because of a lack of information from which to base an assessment of invasive potential, 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.

Day, F. 1878. The fishes of India; being a natural history of the fishes known to inhabit the seas and fresh waters of India, Burma, and Ceylon. B. Quaritch, London.

Dua, A., and C. Parkash. 2009. Distribution and abundance of fish populations in Harike wetland-a Ramsar site in India. Journal of Environmental Biology 30(2):247-251.

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. (March 2018).

Froese, R., and D. Pauly, editors. 2017. *Labeo caeruleus* (Day, 1877). FishBase. Available: http://www.fishbase.org/summary/Labeo-caeruleus.html. (March 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Labeo caeruleus*, Day, 1877. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/5206127. (March 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Labeo caeruleus* (Day, 1877). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=689274#null. (March 2018).

Kar, D., A. H. Barbhuiya, and B. Das. 2010. Ecology and fish diversity of the rivers in Tripura. Pages 155-162 *in* S. N. Dwivedi, P. Tamot, and A. M. Yasin, editors. Proceedings of

national seminar on “Integrated management of water resources with reference to biodiversity and livelihood” held on 16th-17th January, 2010 at Bhopal. Academy of Science, Engineering & Technology, Bhopal, India.

Laxmappa, B., R. R. Bakshi, and D. V. S. Narayana. 2015. Studies on ichthyofaunal diversity of Krishna River in Mahabubnagar district, Telangana, India. International Journal of Fisheries and Aquatic Studies 2(5):99-104.

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

Usman, K., H. U. Rehman, R. Gul, K. Parvaiz, and H. Khan. 2017. Fish fauna of in [*sic*] River Harrow at Dhara Site Khyber Pakhtunkhwa, Pakistan. Journal of Entomology and Zoology Studies 5(4):1578-1581.

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.

Talwar, P. K., and A. G. Jhingran. 1991. Inland fishes of India and adjacent countries, volume 1. A. A. Balkema, Rotterdam, The Netherlands.