

Calbasu (*Labeo calbasu*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, April 2011
Revised, May 2018
Web Version, June 2018



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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Asia: Pakistan, India, Bangladesh, Myanmar, Nepal, Thailand [...]”

“Found in Choto Jamuna river [Bangladesh] [Galib et al. 2013]. Abundant in beels and haors of Mymensingh and Sylhet [Bangladesh].”

“Occurs throughout India [Menon 1999; Kapoor et al. 2002]. Present in Bhimtal and Naukuchiatal lakes [Pal and Kundu 2011], Buxa, Adma and Jayanti rivers [Ray and Mishra 2011], Tungabhadra River, Tambraparani river system, Chalakkudy river system and Nilgiri Biosphere reserve [Radhakrishnan et al. 2012]. Reported from Tripura [Lipton 1983].”

“Found in Irrawaddy basin [Myanmar] [Vidthayanon et al. 2005]. Introduced elsewhere in the country [Vidthayanon et al. 2005].”

“Occurs in Bheri, Kosi and Sagarmatha zones at altitudes of 76-190 m [Nepal]. Also found in Bagmati, Kamala, Gandaki, Karnali, Mahakali rivers [Nepal] [Shrestha 2008].”

“Found throughout the plains of Pakistan. Distributed in North West Frontier Province, Punjab and Sindh [Mirza 2003].”

“Known from Salween river (Mae Hong Son) [Thailand] [Monkolprasit et al. 1997].”

Status in the United States

No records were found of *Labeo calbasu* in the United States. No records of *L. calbasu* in trade in the United States were found.

Means of Introductions in the United States

No records were found of *Labeo calbasu* in the United States.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Labeo calbasu* (Hamilton 1822) is the current valid name for this species. *Labeo calbasu* was originally described as *Cyprinus calbasu* Hamilton 1822 and has been previously known as *Morulius calbasu*.

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 calbasu* (Hamilton, 1822)”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Maturity: Lm 32.8 [...]

Max length : 90.0 cm TL male/unsexed; [Menon 1999]”

Environment

From Froese and Pauly (2018):

“Freshwater; brackish; [...]; depth range 10 - 10 m [*sic*] [Ahmad and Niazi 1988].”

Climate/Range

From Froese and Pauly (2018):

“Tropical; 25°N - 16°N”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Asia: Pakistan, India, Bangladesh, Myanmar, Nepal, Thailand [...].”

“Found in Choto Jamuna river [Bangladesh] [Galib et al. 2013]. Abundant in beels and haors of Mymensingh and Sylhet [Bangladesh].”

“Occurs throughout India [Menon 1999; Kapoor et al. 2002]. Present in Bhimtal and Naukuchiatal lakes [Pal and Kundu 2011], Buxa, Adma and Jayanti rivers [Ray and Mishra 2011], Tungabhadra River, Tambraparani river system, Chalakkudy river system and Nilgiri Biosphere reserve [Radhakrishnan et al. 2012]. Reported from Tripura [Lipton 1983].”

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Introduced

Froese and Pauly (2018) list *Labeo calbasu* as introduced and established in China.

Means of Introduction Outside the United States

Xiong et al. (2015) lists aquaculture as the reason for introduction in China.

Short Description

From Froese and Pauly (2018):

“Dorsal soft rays (total): 16; Anal soft rays: 8. Has a small, inferior mouth surrounded by fleshy lips.”

Froese and Pauly (2018) also list *Labeo calbasu* as having 19 pectoral rays and 9 pelvic rays.

From Anna Mercy et al. (2007):

“Body stout and rather deep. Head fairly large and conical, its length less than body depth. Snout depressed and fairly pointed, devoid of lateral lobe, studded with pores. Eyes moderate, not visible from underside of head, the diameter about 3.3 times in head. Mouth inferior; lips thick and conspicuously fringed, both lips with a distinct inner fold. Barbels two pairs (rostral and maxillary). Dorsal fin with a fairly long base, inserted midway between snout-line with 40 to 44 scales; lateral transverse scale-rows 5 to 6 between lateral line and pelvic fin base; predorsal scales 15 to 18.”

“Blackish-green, lighter below; flanks buff pink or with scarlet spots with dark edges which may form stripes. Fins black; upper lobe of caudal fin usually tipped with white.”

Biology

From Froese and Pauly (2018):

“[...]; demersal; potamodromous [Riede 2004]; [...]”

“Adults occur in rivers and ponds [Talwar and Jhingran 1991]; in slow-moving waters of rivers and feed on plants [Ahmad and Niazi 1988], filamentous algae and diatoms [Arunachalam et al. 2000]. Fecundity of 2 specimens (38.8-40.5 cm) ranged between 193,000 and 238,000 [Rahman 1989].”

“Juveniles nurse in floodplains and marshlands [Vidthayanon et al. 2005].”

Human Uses

From Froese and Pauly (2018):

“Fisheries: commercial; aquaculture: commercial”

From Dahanukar (2010):

“It is an important food fish and at several places is referred to as the "Black Rohu". It is an important game fish in the tanks where it is stocked and is cultivated along with other species. It

thrives better in tanks and lakes than in running waters; can tolerate slightly brackish water also. It does not normally breed in ponds; induced bred by hypophysation.”

Diseases

No records of OIE-reportable diseases were found for *Labeo calbasu*.

Poelen et al. (2014) list *Breviscolex arangabadensis*, *Dactylogyrus calbasi*, *D. catlaius*, *D. fotedari*, *D. labei*, *D. vicinus*, *Helostomatis sakrei*, *Ligula intestinalis*, *Lytocestoides aurangabadensis*, and *Neodactylogyrus calbasi* as parasites of *Labeo calbasu*.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No information on impacts from the single introduction recorded was available.

4 Global Distribution

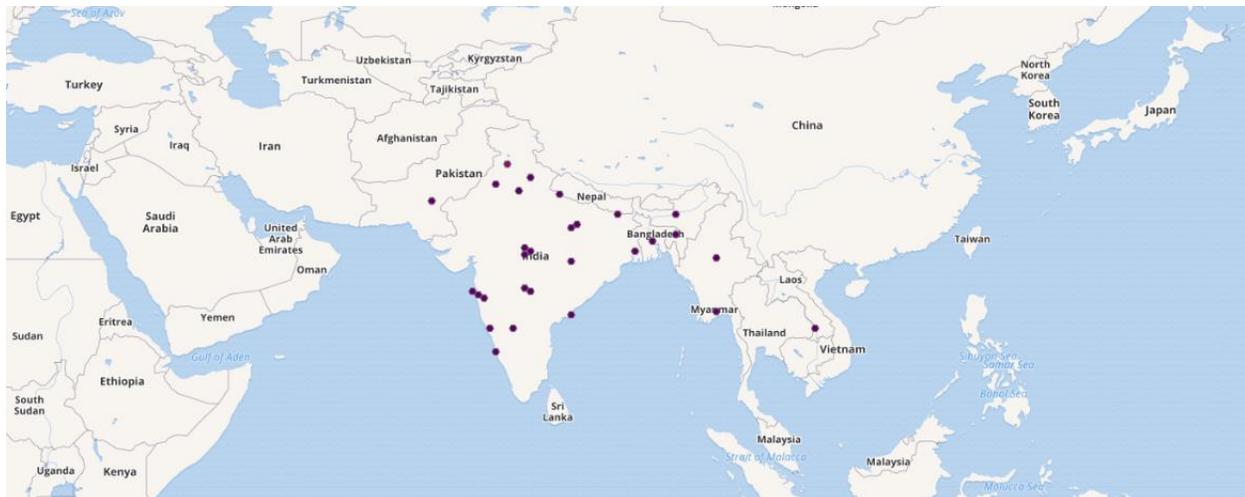


Figure 1. Known global distribution of *Labeo calbasu*. Locations are in Pakistan, India, Nepal, Bangladesh, Myanmar, and Thailand. Map from GBIF Secretariat (2018).

5 Distribution Within the United States

No records were found of *Labeo calbasu* in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Labeo calbasu* was generally low across most of the contiguous United States. There were areas of medium match in southern Florida and Texas and an area of high match in southwestern Arizona. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.008, medium. Arizona had a high individual climate score.

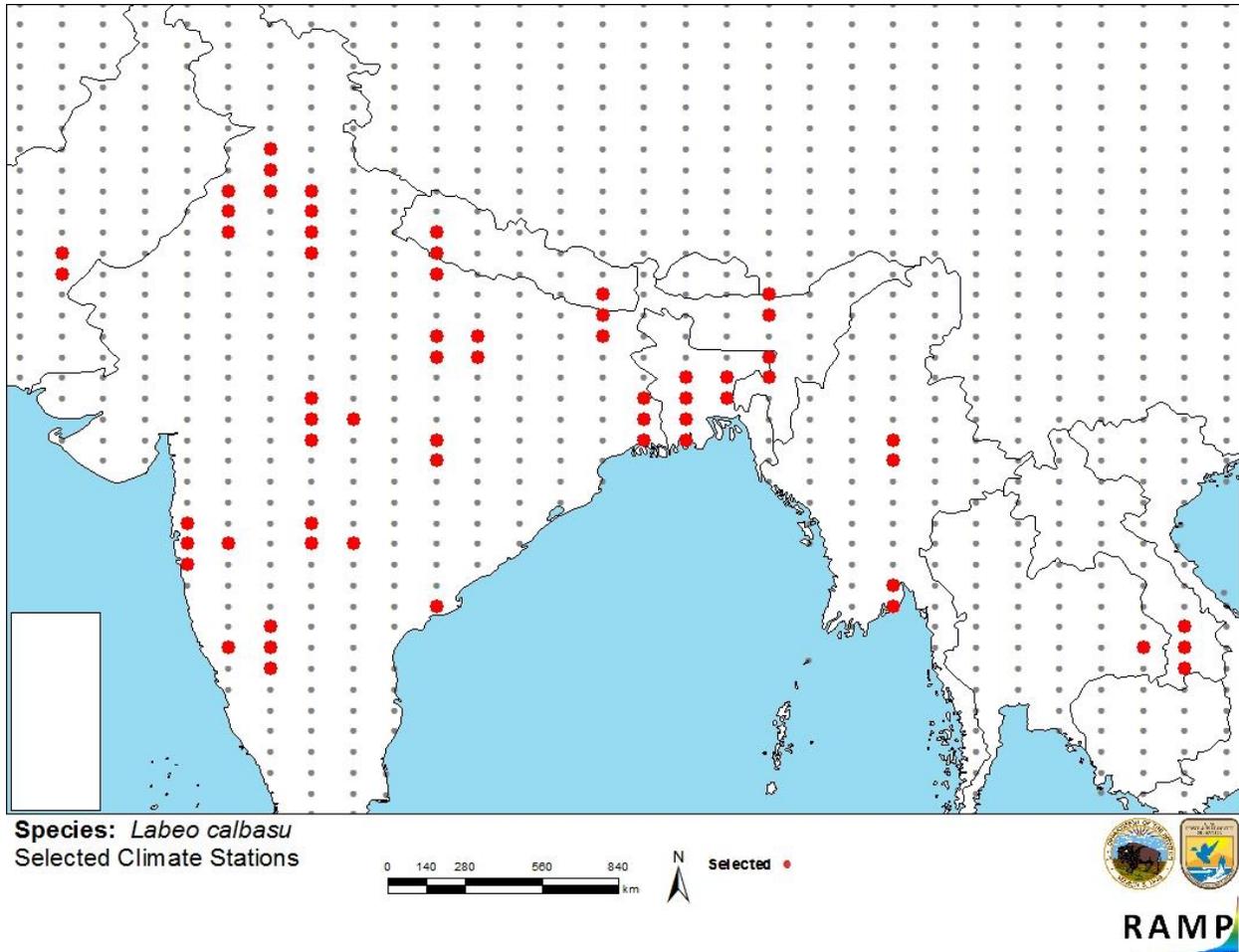


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in Pakistan, India, Nepal, Bangladesh, China, Myanmar, Thailand, and Laos selected as source locations (red) and non-source locations (gray) for *Labeo calbasu* climate matching. Source locations from GBIF Secretariat (2018).

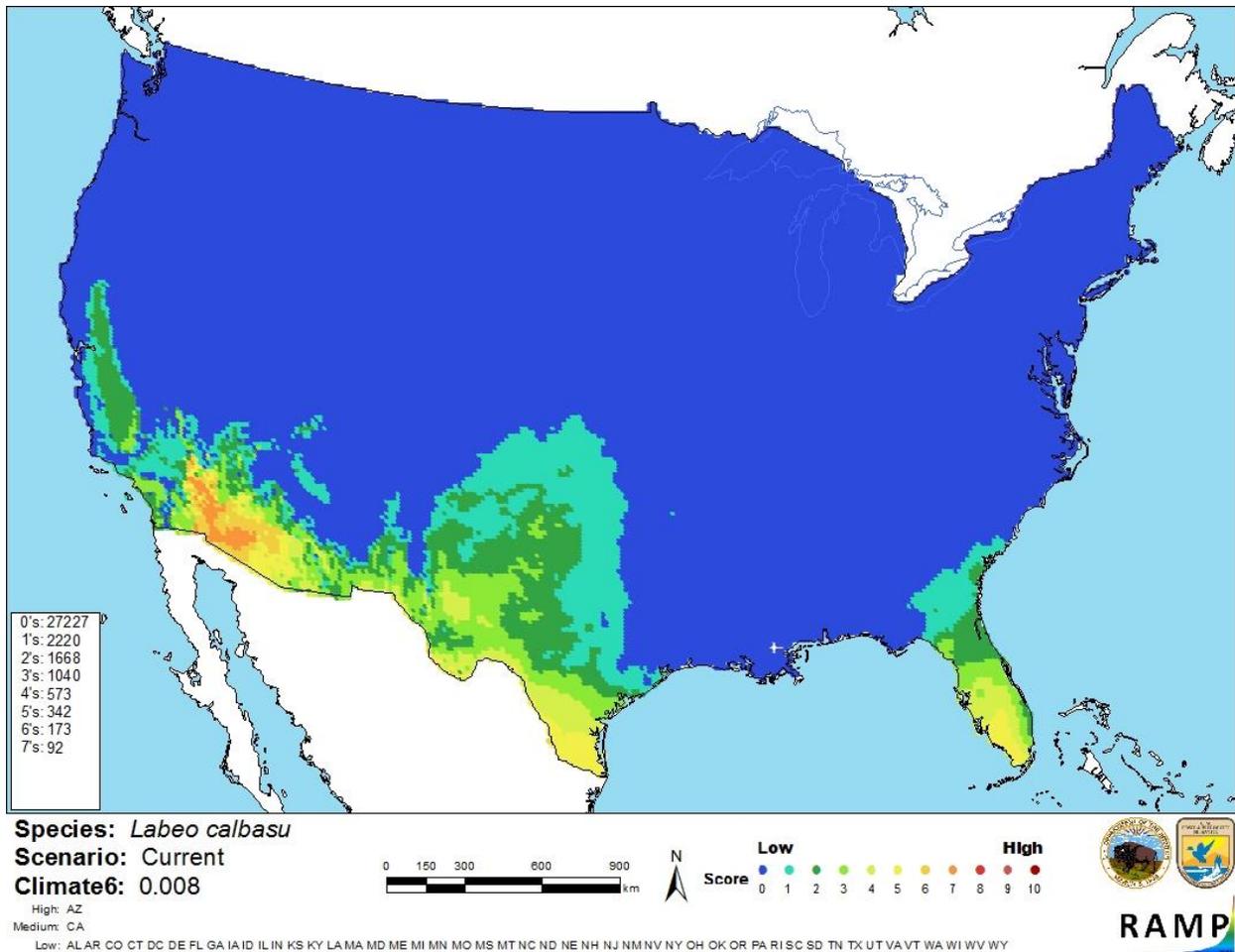


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Labeo calbasu* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0 = Lowest match, 10 = Highest match.

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 assessment for *Labeo calbasu* is low. There is some information on the biology and ecology of *L. calbasu* available. A single record of introduction was found but no details about the introduction or any impacts were available.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Calbasu (*Labeo calbasu*) is a freshwater fish native to Southern Asia. It is an important food and game species in its native range. *L. calbasu* is cultivated through aquaculture. It can be host to a number of parasites. The history of invasiveness is not documented. A single record of introduction to China was found but no further information was available. The climate match was medium. There were areas of high climate match in the southwest. The certainty of assessment is low. The overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): None Documented**
- **Climate Match (Sec. 6): Medium**
- **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.

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10 References Quoted But Not Accessed

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