Pigmouth Carp (*Labeo kontius*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, April 2012
Revised, April 2018
Web Version, 5/16/2018

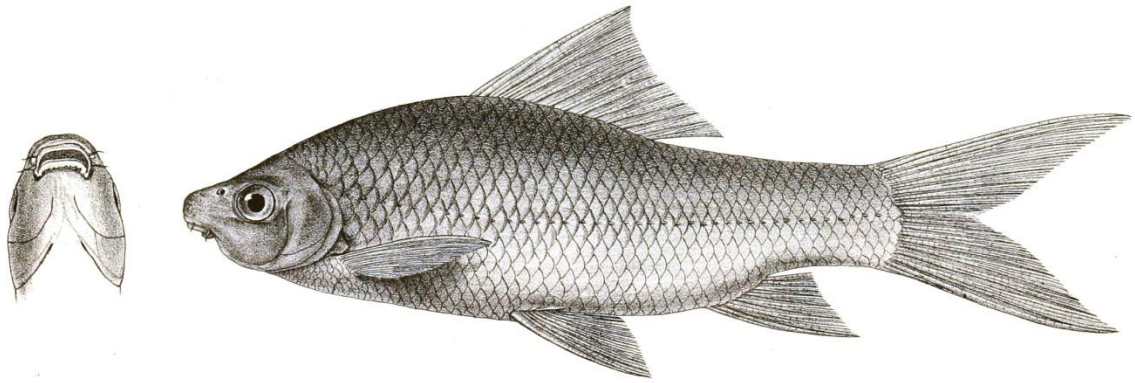

Image: F. Day. Public domain. Available: https://commons.wikimedia.org/wiki/File:Labeo_kontius_Griesbach_127.jpg. (April 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"Asia: Cauvery river system in Tamil Nadu and Karnataka, India."

From Manimekalan (2011):

"*Labeo kontius* is endemic to India. Jerdon described this species from river Cauvery and its tributaries. Rajan (1956) and Manimekalan (1998) reported this species from Bhavani and Moyar rivers and some of their tributaries. Jayaram (1982) and Jayaram and Dhas (2000) report this species from the Cauvery river."

Status in the United States

This species has not been reported as introduced or established in the U.S. There is no indication that this species is in trade 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 kontius* (Jerdon, 1849)"

From Eschmeyer et al. (2018):

"Current status: Valid as *Labeo kontius* (Jerdon 1849). Cyprinidae: Labeoninae."

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 61.0 cm TL male/unsexed; [Talwar and Jhingran 1991]"

From Mohanta et al. (2008):

"It is a slow growing fish, which can grow up to 23 –30 cm in length and 350 g in weight at the end of the first year in ponds. It becomes sexually mature at 30-35 cm length."

Environment

From Froese and Pauly (2018):

"Freshwater; benthopelagic; potamodromous [Riede 2004]."

Climate/Range
From Froese and Pauly (2018):

"Tropical"

Distribution Outside the United States
Native
From Froese and Pauly (2018):

"Asia: Cauvery river system in Tamil Nadu and Karnataka, India."

From Manimekalan (2011):

"*Labeo kontius* is endemic to India. Jerdon described this species from river Cauvery and its tributaries. Rajan (1956) and Manimekalan (1998) reported this species from Bhavani and Moyar rivers and some of their tributaries. Jayaram (1982) and Jayaram and Dhas (2000) report this species from the Cauvery river."

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 (1871):

"Length of head 1/6 to 1/7, of caudal nearly 2/9, height of body 1/4, of dorsal fin above 1/5 of the total length."

"Eyes.—Diameter nearly 1/5 of length of head; $2\frac{1}{3}$ to 3 diameters from end of snout; $2\frac{1}{4}$ diameters apart."

"Dorsal profile more convex than the abdominal. Muzzle blunt, truncated, covered with pores, and having a fleshy lateral prolongation. Lips thick, with a distinct inner fold below, whilst the lower one is fringed. Snout overhanging the mouth. Opercles narrow. Four short barbels."

"Teeth, pharyngeal, plough shaped, 5, 4, 2 – 2, 4, 5."

"Fins.—Dorsal commences above the ventral and nearer the snout than the base of the caudal; its upper margin is slightly concave. Caudal deeply lunated."

"Lateral line:—5 rows of scales between it and the base of the ventral."

“Colours.—A general reddish or fleshy tinge, darkest along the back. In most of the specimens obtained from the Coleroon river, each scale had a red centre.”

Biology

From Manimekalan (2011):

“Mostly it prefers fast flowing hill streams and rivers.”

From Froese and Pauly (2018):

“Found in large rivers, channels and culture ponds [Menon 1999].”

From Mohanta et al. (2008):

“It is predominantly herbivorous […]. It has a peculiar feeding habit, in that the adult and fingerling being bottom and column feeders, while the spawn and fry stages feed in the surface realm. The fish is found to be very active and hardy. It can jump up in the air in their attempt to negotiate the barriers found in the river and move upstream. It breeds once per year during the monsoon season in June–August. Breeding occurs during both day and night. The information regarding the fecundity of this species is lacking. Fertilized eggs are demersal, non–adhensive [*sic*], round and transparent with pale–blue colour. The fully swollen eggs are 3.5 – 4.3 mm in diameter.”

Human Uses

From Manimekalan (2011):

“A food fish that has minor fishery interest.”

From Froese and Pauly (2018):

“Fisheries: commercial; aquaculture: commercial”

From Mohanta et al. (2008):

“Commonly known as ‘pig mouth carp’, *L. kontius* is a valuable component of capture fisheries in the Cauvery River system […] It […] can be domesticated for pond culture. […] It is currently being cultivated in ponds of South India particularly in Tamilnadu and Karnataka.”

Diseases

Poelen et al. (2014) lists *Dactylogyrus kontii* and Chinese River Fluke (*Clonorchis sinensis*) as parasites of *Labeo kontius* (Strona et al. 2014).

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

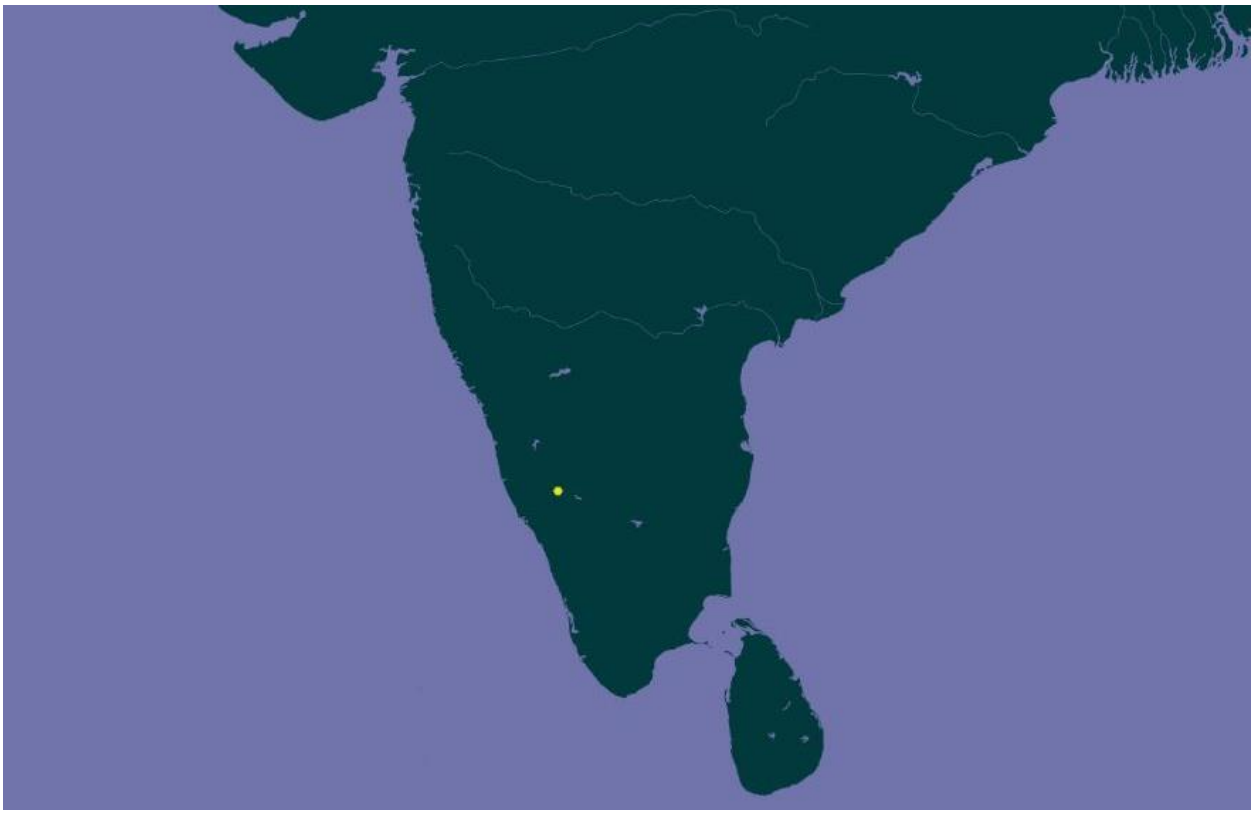

Figure 1. Known global distribution of *Labeo kontius*, reported from southwest India. Map from GBIF Secretariat (2018).

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. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.0, which is a low climate match. The climate match was very low across

most of the contiguous U.S.; however, there were areas of slightly higher match in Florida, Texas, the Southwest, and the California Coast.

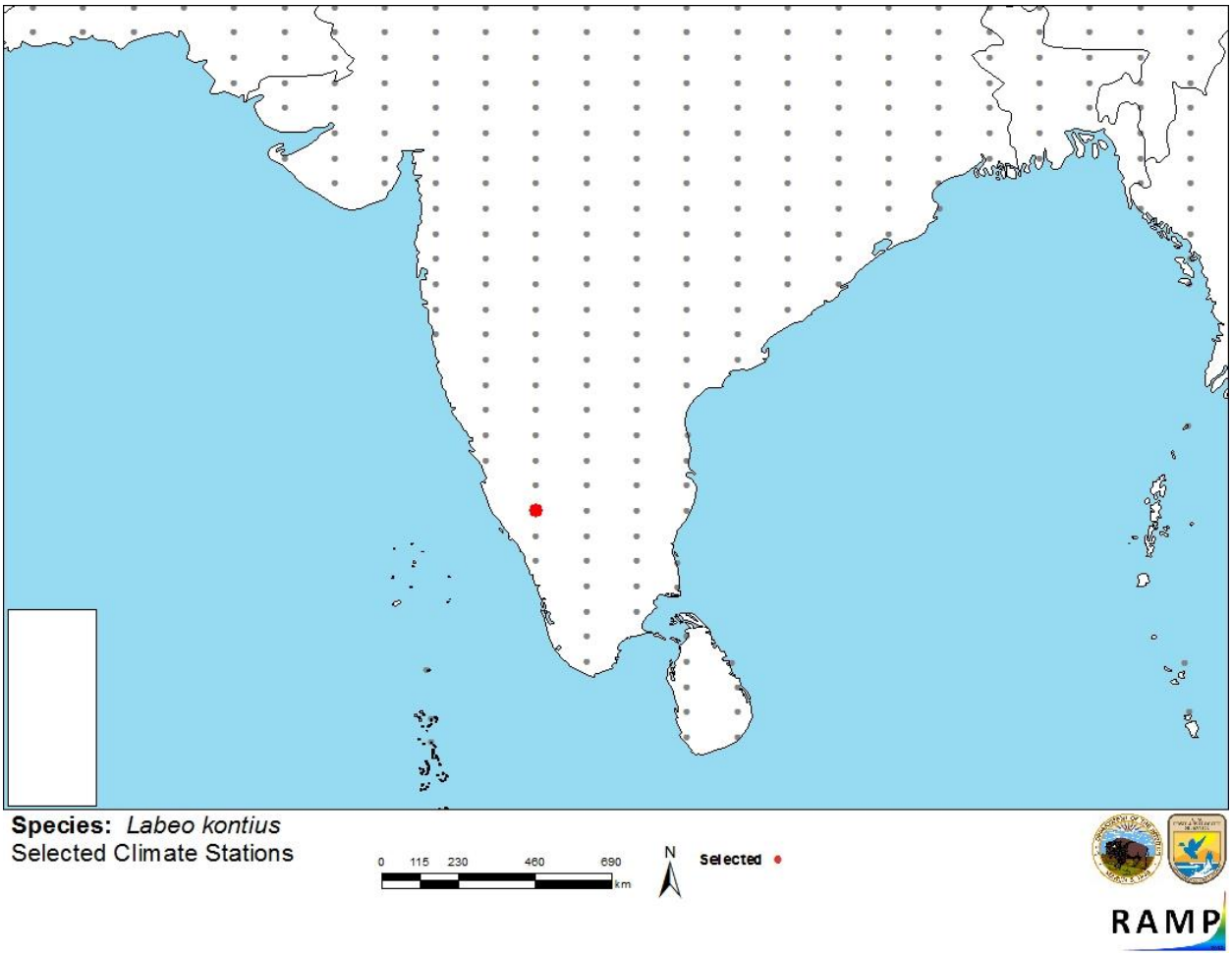

Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in southern India selected as source location (red) and non-source locations (gray) for *Labeo kontius* climate matching. Source location from GBIF Secretariat (2018).

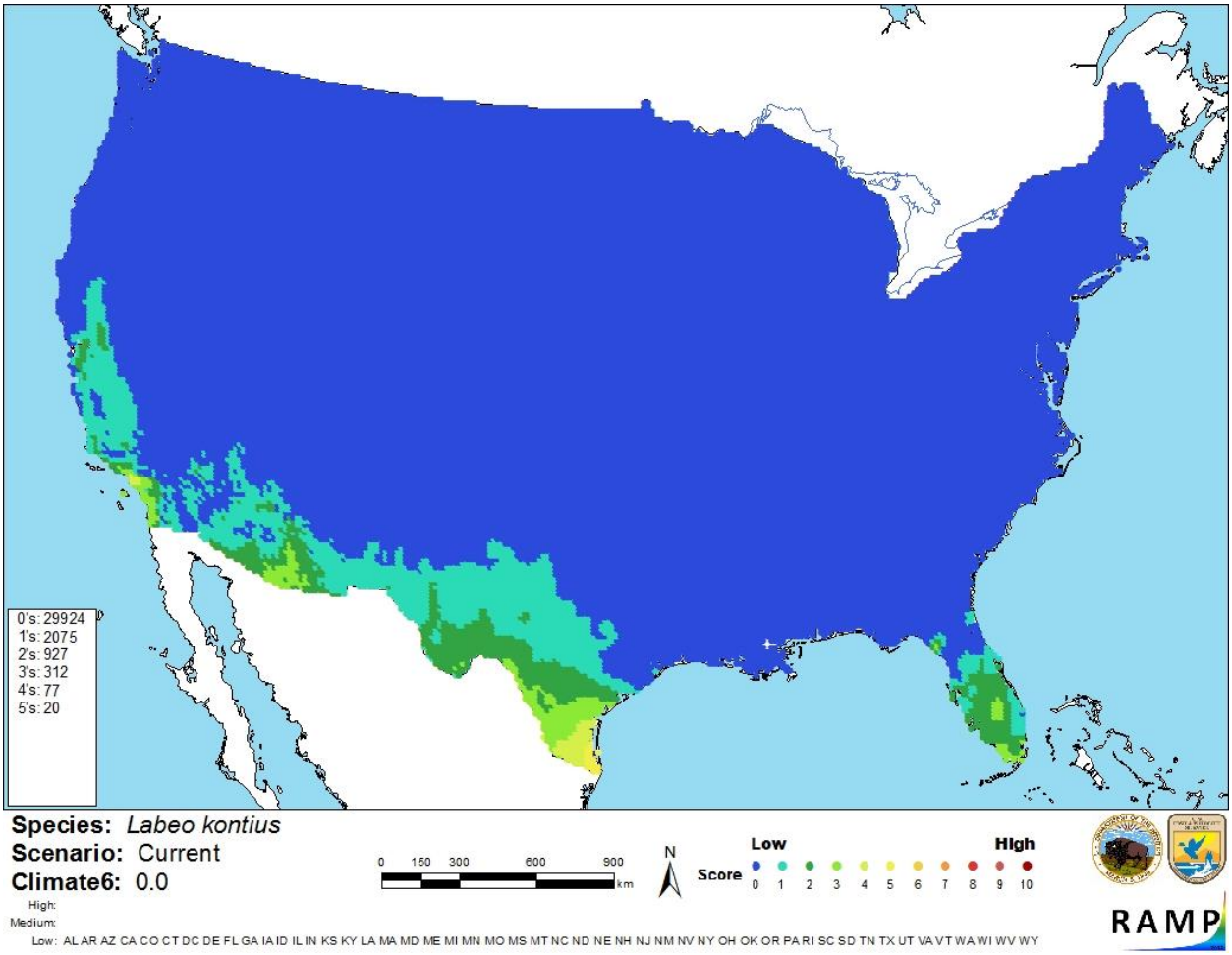

Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Labeo kontius* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0= Lowest match, 10=Highest match.

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

There is basic information available about the biology of *Labeo kontius*. There is only one species occurrence location from which to base the climate match, so the information from which the climate match was based is limited. This species has never been reported as introduced outside of its native range, so there is no information available on impacts of introductions of this species from which to base an assessment of risk. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Labeo kontius is a freshwater cyprinid native to India. This species is used in aquaculture, but it has never been reported as introduced or established outside of its native range. *L. kontius* has a low climate match with the contiguous U.S. Further information is needed to adequately assess the risk this species poses, so 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**
- **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

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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