

***Labeo dussumieri* (a carp, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, May 2012

Revised, April 2018 and June 2018

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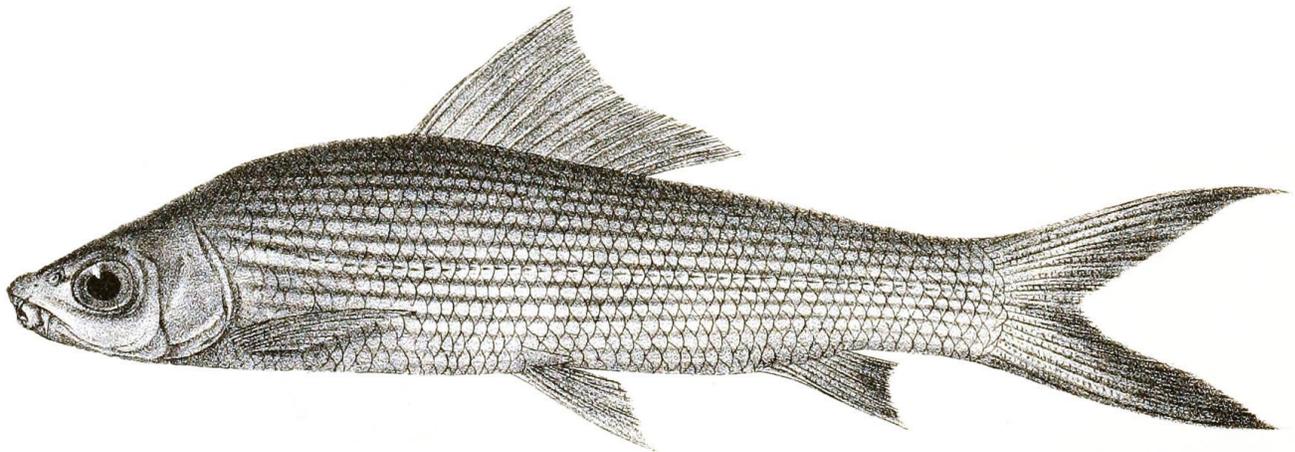


Photo: F. Day and R. Mintern. Public domain. Available:
https://en.wikipedia.org/wiki/Labeo_dussumieri#/media/File:Labeo_dussumieri_Day_Mintern_126.jpg. (April 2018).

1 Native Range and Status in the United States

Native Range

From Raghavan and Ali (2011):

“*Labeo dussumieri* is endemic to southern Kerala [India] and Sri Lanka. In Kerala, it is known from four rivers, Pampa, Achenkovil, Manimala and Meenachil (Kurup 2000), the southern tip of Vembanad Lake (Narayanan et al. 2005; Kurup 2000), and Periyar (Gopalakrishnan et al. 2009). In Sri Lanka they have been recorded from various rivers (Smith 1991) and reservoirs (Amarasinghe and Pitcher 1986, De Silva 1998).”

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.

Remarks

From Raghavan and Ali (2011):

“*Labeo rajasthanicus* from Jaisamand Lake in Udaipur has been found to be the same as *L. dussumieri* and therefore needs to be synonymised (Gopalakrishnan pers. comm.). The record from Alibagh, Maharashtra by Jayram (2010) needs verification. The Sri Lankan population needs taxonomic verification as it may be a different species.”

From Lal et al. (2015):

“The present report redescribes the species *L. rajasthanicus* based on the specimen collected from its type and other adjoining localities, with confirmation of its taxonomic status as valid species [...] Genetic and morphological evidences support the distinction of *L. rajasthanicus* as a separate species from all related congeners [...]”

From Gopalakrishnan et al. (2009):

“In spite of the Indian and Sri Lankan land masses having been connected terrestrially from time to time upto [sic] the Holocene, the separation [sic] of biotas of India and Sri Lanka in many cases is much more ancient (Silas, 1953; Bossuyt et al., 2004) and it would not be surprising [sic] if further research were to show the mainland and insular populations of *L. dussumieri* to be genetically distinct.”

In this report, *L. rajasthanicus* was not treated as a synonym of *L. dussumieri* based on the more recent study confirming its species status. Also in this report, the Sri Lankan population was treated as belonging to *L. dussumieri* because the suggestion that the Sri Lankan population is a separate species appears without supporting evidence.

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 dussumieri* (Valenciennes in Cuvier and Valenciennes, 1842)”

From Eschmeyer et al. (2018):

“Current status: Valid as *Labeo dussumieri* (Valenciennes 1842). Cyprinidae: Labeoninae.”

Size, Weight, and Age Range

From Froese and Pauly (2018)

“Max length : 50.0 cm TL male/unsexed; [Kurup 2000]; common length : 40.0 cm TL male/unsexed; [Pethiyagoda 1991]; max. published weight: 2.0 kg [Kurup 2000]”

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 Golpalakrishnan et al. (2009):

“[...] endemic to the west flowing rivers originating from the southern part of Western Ghats, India and lowlands of Sri Lanka (Day 1878; Silas, 1953; Smith and Jiffry, 1986; Talwar and Jhingran, 1991; Pethiyagoda, 1991; Jayaram and Dhas, 2000).”

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 Günther (1868):

“Mouth of moderate width. Lips moderately thick, fringed, with a very distinct inner fold above and below. Snout rather obtuse, depressed, scarcely swollen, with numerous pores in front, without lateral lobe. Four minute barbels, the upper of which are sometimes absent. Eye of

moderate size, situated somewhat before the middle of the length of the head. There are five longitudinal series of scales between the lateral line and the ventral fin. Upper margin of the dorsal fin slightly concave. Body moderately compressed, its depth being one-fourth of the total length (without caudal). Coloration uniform; a silvery streak along each series of scales. Young examples with a large blackish spot on the end of the tail.”

Biology

From Smith (1991):

“Seasonal changes in several lotic variables were measured in an attempt to correlate changes in environmental conditions to reproduction and growth in *L. dussumieri*. The onset of gonad recrudescence and spawning were synchronized with the increased river discharge during the S.W. and N.E. monsoons: gonad development followed one monsoonal discharge peak and spawning took place at the beginning of the other. Most fish spawned at the beginning of the major discharge peak in October and November, following the September dry season. Increased discharge was concomitant with a fall in temperature, light intensity, pH and conductivity. Growth was shown to be seasonal, exhibiting an annual bimodal pattern with peaks coincident with S.W. and N.E. monsoonal rains.”

From Raghavan and Ali (2011):

“Known to inhabit streams above the tidal reach (Kurup 2000), flood plain areas (Smith 1991), backwaters (Kurup 2000) and reservoirs (De Silva 1998). On the basis of the feeding ecology and diurnal migrations *L. dussumieri* has been identified as litoral aufwuchs (periphyton) feeder (De Silva 1998). In Kerala, *L. dussumieri* migrates massively during the monsoon – a phenomenon known as the 'Thooliyilakkam' in vernacular (Shaji and Easa 2003). Spawning season extends from June to August with peak activity during June and July (Kurup 2000).”

Human Uses

From Froese and Pauly (2018):

“Fisheries: commercial; aquaculture: experimental”

From Golpalakrishnan et al. (2009):

“In India, the species is one of the highly esteemed food fishes and commands a higher price as compared to the Indian major carps, especially in Kerala State (Padmakumar et al., 2004).”

From Smith (1991):

“In common with other labeo carp throughout Africa and Asia, *L. dussumieri* is the dominant catch of the lowland riverine fisheries in Sri Lanka. Their contribution to the total freshwater catch is certainly underestimated as official statistics are limited to lacustrine fisheries.”

Diseases

No information available. 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 dussumieri*, reported from India and Sri Lanka. Map from GBIF Secretariat (2018). The occurrence reported from Myanmar was excluded from the climate matching analysis because the location was a fish market, not a natural habitat. The occurrence reported from Mumbai was excluded from the climate matching analysis because the geographic coordinates are for an urban, terrestrial location outside the species established range (described in Distribution Outside the United States).

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 low across the contiguous U.S. except for medium matches in peninsular Florida and southern coastal Texas.

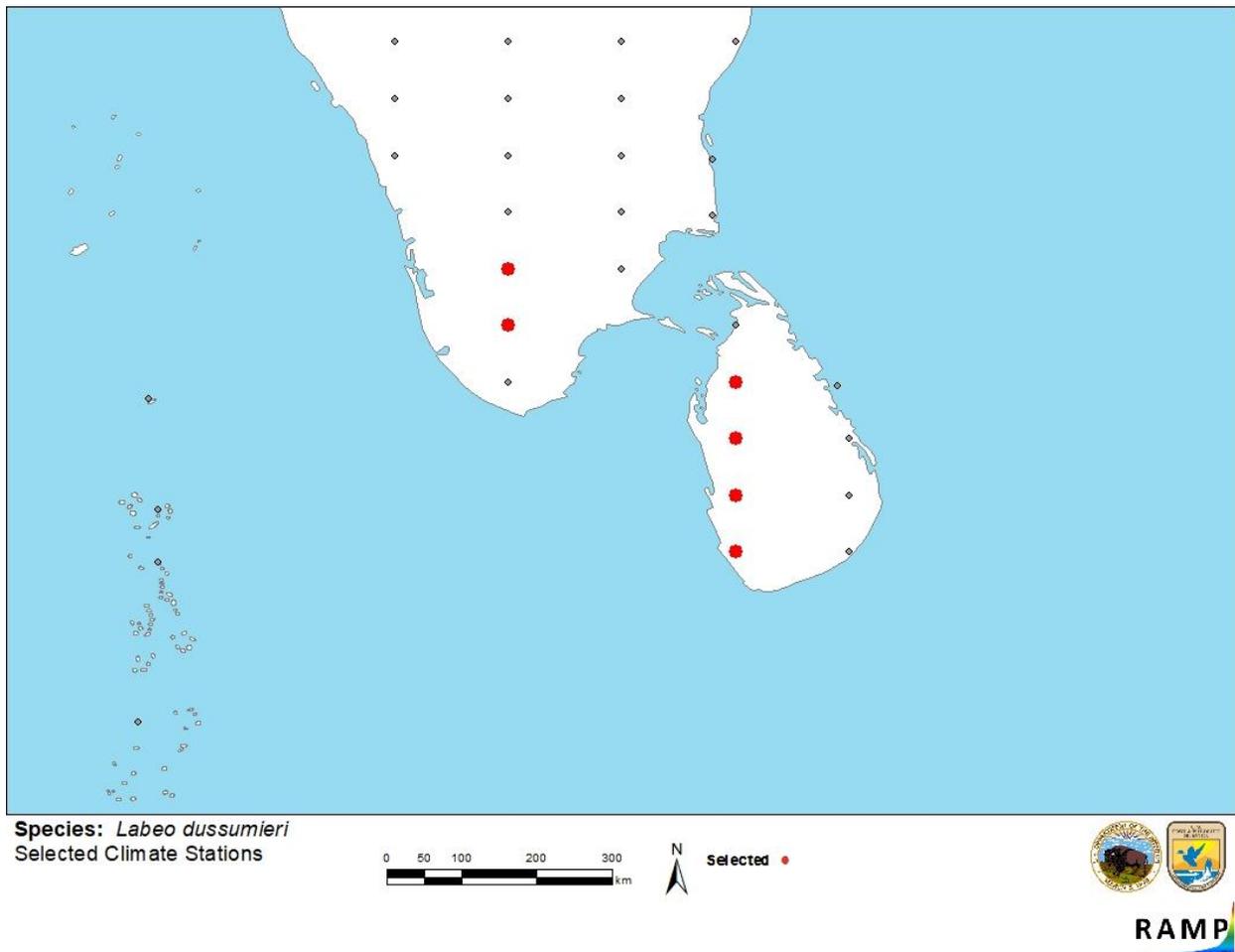


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; India, Sri Lanka) and non-source locations (gray) for *Labeo dussumieri* climate matching. Source locations from GBIF Secretariat (2017). Additional locations from Gopalakrishnan et al. (2009; Kerala, India).

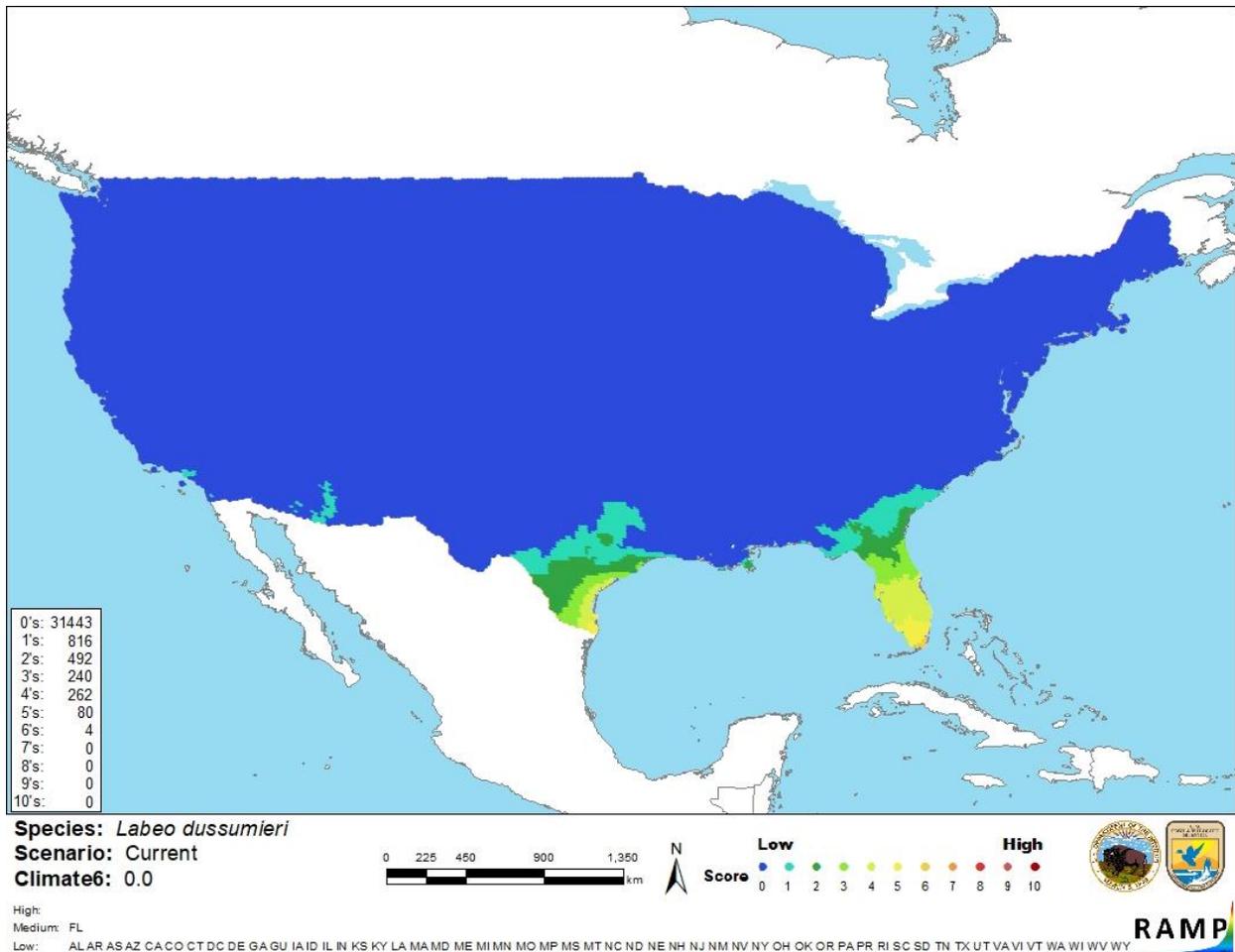


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Labeo dussumieri* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match.

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
$0.000 < X < 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

Information is available on the biology and ecology of *Labeo dussumieri*. Some authors have raised questions about taxonomic relationships among populations of *L. dussumieri* as currently defined that could affect the defined species range. No information is available on impacts of introductions of this species, as no introductions have been reported. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Labeo dussumieri is a species of carp native to southern India and Sri Lanka. It is prized as a food fish. No introductions of this species have been reported in the United States or elsewhere outside the native range. Climate match to the contiguous United States was low overall, with medium matches in parts of Florida and Texas. Without a history of introduction from which to learn, overall risk posed by *L. dussumieri* 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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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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