

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

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, February 2012

Revised, July 2018

Web Version, 8/1/2018

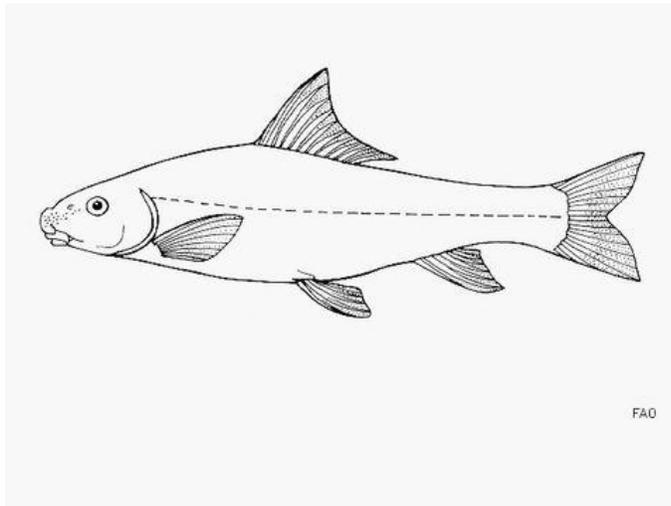


Image: FAO. Licensed under CC BY-NC 3.0. Available: <http://eol.org/pages/213831/overview>. (July 2018)

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Africa: Endemic to Lake Malawi [Malawi, Mozambique, Tanzania].”

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 Introductions in the United States

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

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 worthingtoni* Fowler, 1958”

“Taxonomic status:

Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 26.0 cm TL male/unsexed; [Lévêque and Daget 1984]”

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):

“Africa: Endemic to Lake Malawi [Malawi, Mozambique, Tanzania].”

Introduced

No known introductions.

Means of Introduction Outside the United States

No known introductions.

Short Description

No information found.

Biology

From Froese and Pauly (2018):

“Inhabits lakes [Eccles 1992].”

Human Uses

No information found.

Diseases

No OIE reportable diseases. No information found.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No known introductions.

4 Global Distribution

GBIF Secretariat (2017) reports only one occurrence for this species, located in the Democratic Republic of Congo. This location is outside the known established range of *L. worthingtoni*, so it is not shown here or used in the climate matching analysis.



Figure 1. Location of Lake Malawi (also known as Lake Nyasa) on the border of Tanzania, Mozambique, and Malawi. Froese and Pauly (2018) report that *Labeo worthingtoni* is endemic to Lake Malawi. The pale area to the west of the lake is the country of Malawi. Image: Bemoeial2. Public domain. Available: <https://commons.wikimedia.org/wiki/File:Malawi-map-blank.png#/media/File:Malawi-map-blank.png>. (August 2018).

5 Distribution Within the United States

No known occurrences.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, which is a low score. The range for a low climate match is from 0.0 to 0.005, inclusive. No state recorded above a low match. The highest match was 3 out of 10 which was located in southwestern Florida. The majority of the contiguous United States recorded 0 out of 10.

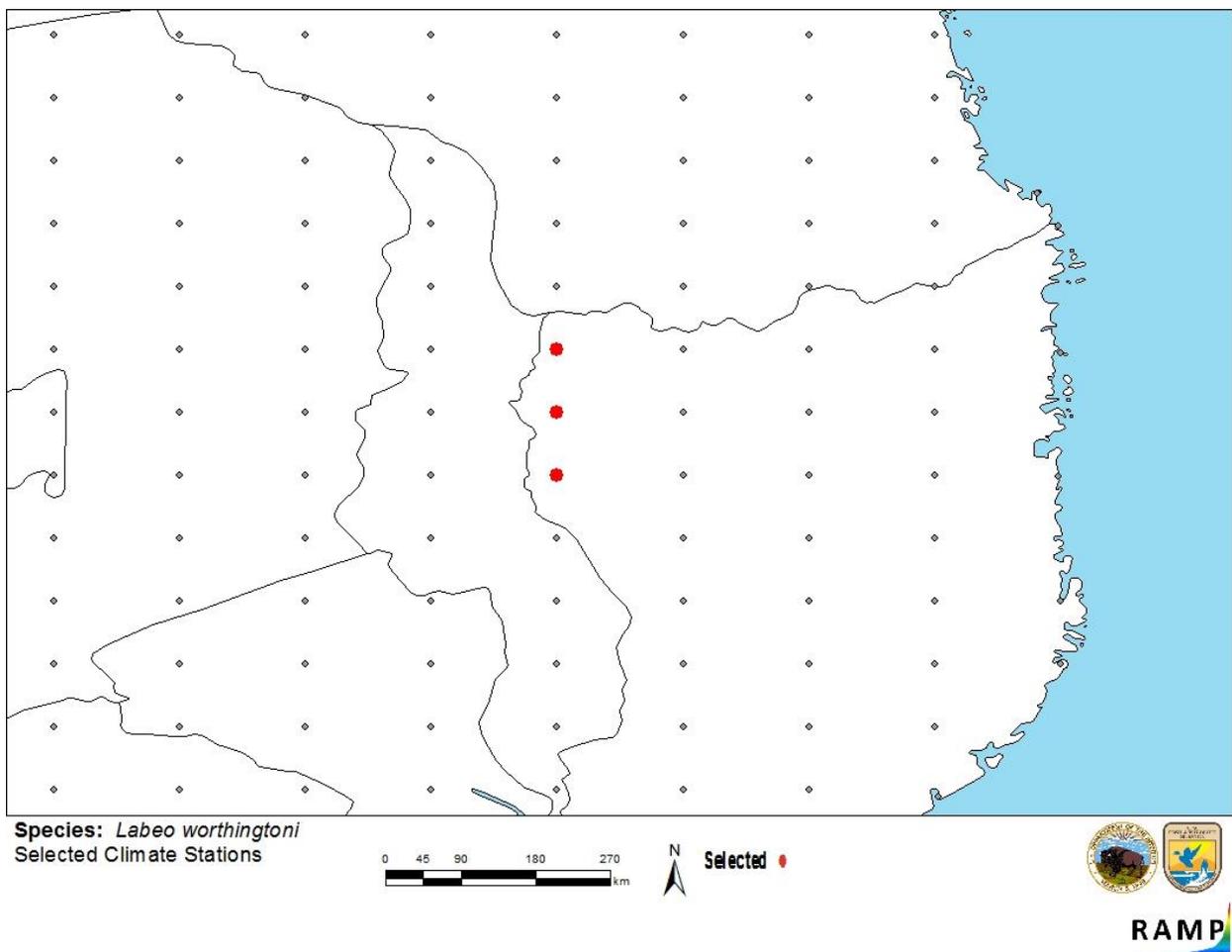


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southeastern Africa selected as source locations (red; Mozambique) and non-source locations (gray) for *Labeo worthingtoni* climate matching. Source locations based on verbal description in Froese and Pauly (2018).

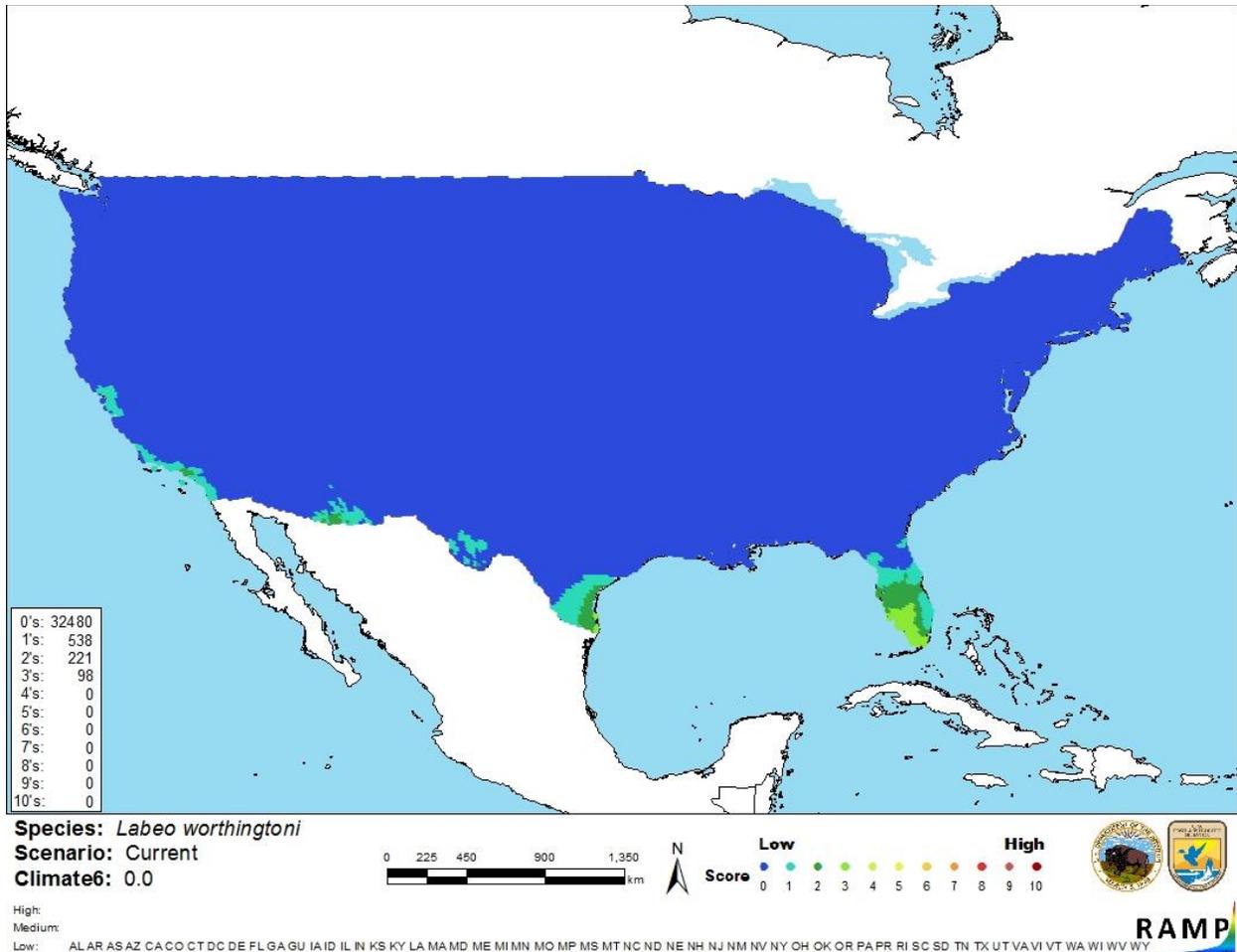


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Labeo worthingtoni* in the contiguous United States based on source locations reported by Froese and Pauly (2018). 0=Lowest match, 10=Highest match.

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

Little information is known about the biology and ecology of *Labeo worthingtoni*. No georeferenced occurrences were found within the species established range. There are no records showing introductions of this species outside of its native range so impacts of introductions are unknown. Due to lack of information, the certainty of assessment is low. More information is needed to increase the assessment certainty.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Labeo worthingtoni is a fish endemic to Lake Malawi in southeastern Africa. There are no records of this species being introduced outside of its native range or information about potential impacts if it were introduced. Certainty of assessment is low. Climate match with the contiguous United States is low with the highest match a 3 out of ten in Florida. Due to lack of information and introduction, the risk for *L. worthingtoni* 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.

Froese, R., and D. Pauly, editors. 2018. *Labeo worthingtoni* Fowler, 1958. FishBase. Available: <https://www.fishbase.de/summary/Labeo-worthingtoni.html>. (July 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Labeo worthingtoni* Fowler, 1958. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5206211>. (July 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Labeo worthingtoni* Fowler, 1958. Integrated Taxonomic Information System, Reston, Virginia. Available: https://itlis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=689351#null. (July 2018).

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

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.

Eccles, D. H. 1992. FAO [Food and Agriculture Organization of the United Nations] species identification sheets for fishery purposes. Field guide to the freshwater fishes of Tanzania. Prepared and published with the support of the United Nations Development Programme (project URT/87/016). FAO, Rome.

Lévêque, C., and J. Daget. 1984. Cyprinidae. Pages 217-342 *in* J. Daget, J.-P. Gosse, and D. F. E. Thys van den Audenaerde, editors. Check-list of the freshwater fishes of Africa (CLOFFA), volume 1. ORSTOM, Paris, and MRAC, Tervuren, Belgium.