

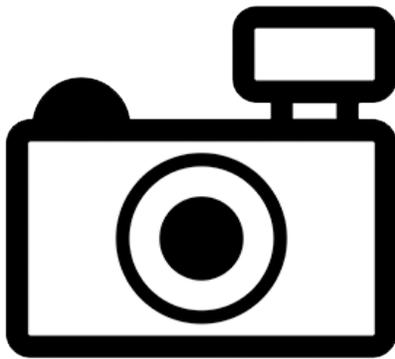
***Hoplias microcephalus* (a fish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2011

Revised, September 2018

Web Version, 1/28/2019



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“South America: São Francisco River basin in Brazil.”

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.

The Florida Fish and Wildlife Conservation Commission has listed *Hoplias microcephalus* as a prohibited species. Prohibited nonnative species “are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities” (FFWCC 2018).

Means of Introduction into 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 Characiformes
Family Erythrinidae
Genus *Hoplias*
Species *Hoplias microcephalus* (Agassiz in Spix and Agassiz, 1829)”

“Current Standing: valid”

From Fricke et al. (2019):

“**Current status:** Valid as *Hoplias microcephalus* (Agassiz 1829). Erythrinidae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 35.6 cm SL male/unsexed; [Oyakawa 2003]”

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):

“South America: São Francisco River basin in Brazil.”

Introduced

No introductions of this species have been reported.

Means of Introduction Outside the United States

No introductions of this species have been reported.

Short Description

No information available.

Biology

Meschiatti and Arcifa (2009) report that *H. microcephalus* is a piscivore and has only been found in lakes.

Human Uses

No information available.

Diseases

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

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No information available. No introductions of this species have been reported.

The Florida Fish and Wildlife Conservation Commission (2018) has listed *H. microcephalus* as a prohibited species.

4 Global Distribution



Figure 1. Known global distribution of *H. microcephalus*, reported from southeastern Brazil. Map from GBIF Secretariat (2017).

5 Distribution within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) was medium in southwestern Florida and far southern Texas, and low throughout the remainder of the contiguous United States. The Climate 6 score indicated that the contiguous United States has a low climate match overall. Scores of 0.005 and below are classified as a low match; the Climate 6 score for *H. microcephalus* was 0.000. All states had a low climate score.



Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Brazil) and non-source locations (gray) for *Hoplias microcephalus* climate matching. Source locations from GBIF Secretariat (2017).

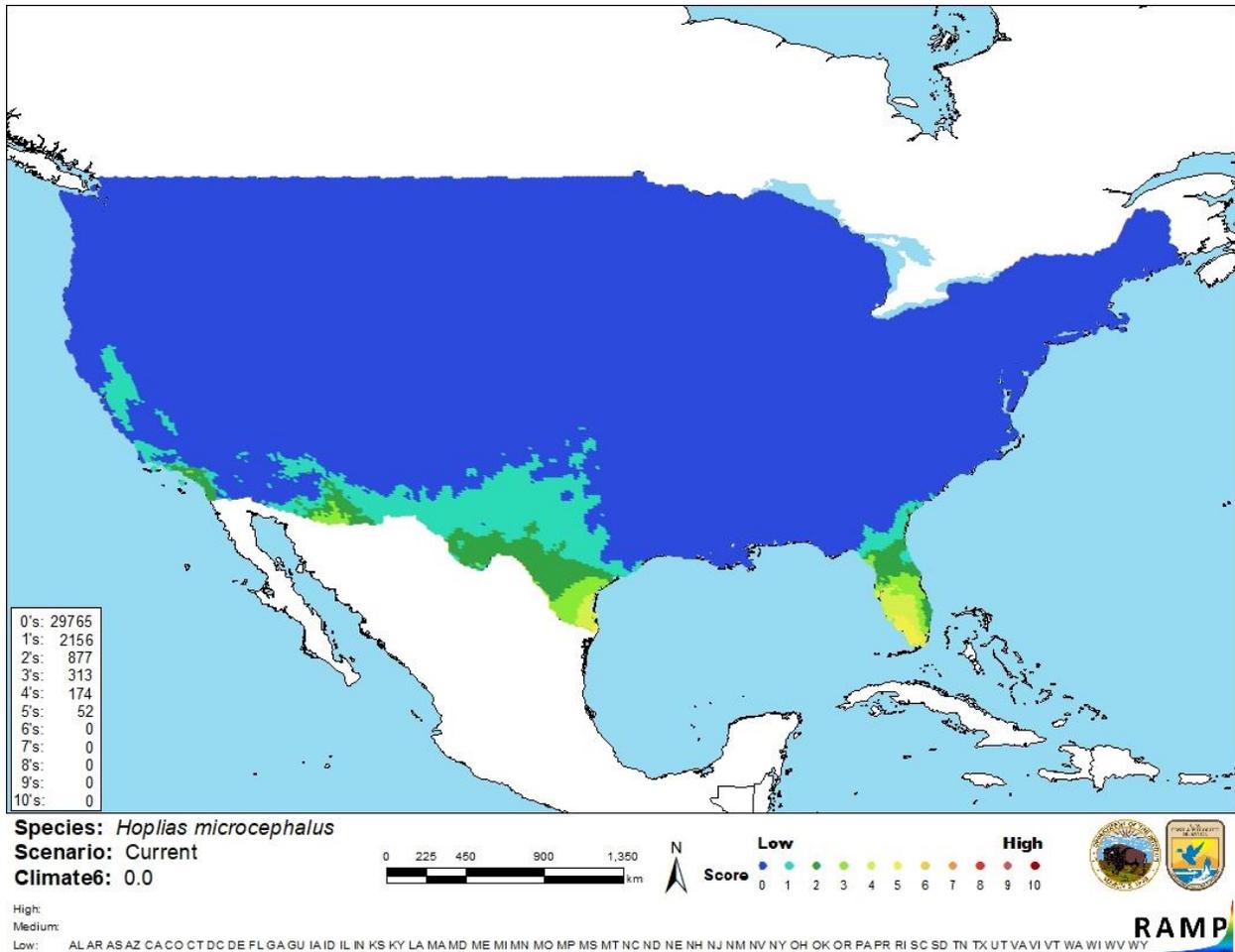


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Hoplias microcephalus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10= Highest match.

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

7 Certainty of Assessment

Very limited information is available on the biology, ecology, and distribution of *H. microcephalus*. No introductions of this species have been documented, so any impacts of introduction remain unknown. Certainty of this assessment is low; further information would be needed to increase the certainty.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Hoplias microcephalus is a species of characiform fish native to the São Francisco River basin in Brazil. Very little information is available on the species, although it is known to be a piscivore that lives in lake environments. No introductions of *H. microcephalus* have been reported. It is listed as a prohibited species in the State of Florida. Climate match to the contiguous United States is low overall, with medium matches in southwestern Florida and southern Texas. Because of the lack of introduction history, history of invasiveness is uncertain and certainty of the assessment is low. Overall risk posed by *H. microcephalus* is classified as “Uncertain”.

Assessment Elements

- **History of Invasiveness: Uncertain**
- **Climate Match: Low**
- **Certainty of Assessment: 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.

FFWCC (Florida Fish and Wildlife Conservation Commission). 2018. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/>. (September 2018).

Fricke, R., W. N. Eschmeyer, and R. van der Laan, editors. 2019. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (January 2019).

Froese, R., and D. Pauly, editors. 2018. *Hoplias microcephalus* (Agassiz, 1829). FishBase. Available: <https://www.fishbase.de/summary/Hoplias-microcephalus.html>. (September 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Hoplias microcephalus* (Agassiz, 1829). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2352241>. (September 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Hoplias microcephalus* (Agassiz in Spix and Agassiz, 1829). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=641096#null. (September 2018).

Meschiatti, A. J., and M. S. Arcifa. 2009. A review on the fishfauna of Mogi-Guaçu River basin: a century of studies. *Acta Limnologica Brasiliensia* 21(1):135-159.

Sanders, S., C. Castiglione, and M. 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.

Oyakawa, O. T. 2003. Erythrinidae (trahiras). Pages 238-240 *in* R. E. Reis, S. O. Kullander, and C. J. Ferraris, Jr., editors. Checklist of the freshwater fishes of South and Central America. EDIPUCRS, Porto Alegre, Brasil.