

***Mayaheros amarus* (a cichlid, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2011

Revised, October 2012, August 2018

Web Version, 9/12/2018



Photo: Wikimedia Commons. Licensed under: CC BY-SA 3.0. Available: <http://eol.org/pages/219841/overview>. (August 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Central America: Caribbean coast, Isla Mujeres, off the eastern coast of Yucatán Peninsula. Mexico.”

Status in the United States

This species has not been reported as introduced or established in the United States. This species does not appear to be present 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.

Remarks

From Eschmeyer et al. (2018):

“*amarum*, *Cichlasoma urophthalmus* [...] Current status: Valid as *Mayaheros amarum* [...]”

Froese and Pauly (2018) and Eschmeyer et al. (2018) are the only websites that list this species' valid name as *Mayaheros amarum*. Many sites, such as ITIS (2018) and GBIF Secretariat (2017), list the valid name as *Cichlasoma amarum*. Both names were used to search for information for this report.

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 Acanthopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Genus *Cichlasoma* Swainson, 1839
Species *Cichlasoma amarum* Hubbs, 1936”

From Eschmeyer et al. (2018):

“*amarum*, *Cichlasoma urophthalmus* [...] Current status: Valid as *Mayaheros amarum* [...]”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 15.8 cm SL male/unsexed; [Kullander 2003]”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2018):

“Subtropical”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Central America: Caribbean coast, Isla Mujeres, off the eastern coast of Yucatán Peninsula. Mexico.”

Introduced

No known introductions.

Means of Introduction Outside the United States

No known introductions.

Short Description

No information available.

Biology

No information available.

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 known introductions.

4 Global Distribution

No georeferenced occurrences were found from GBIF Secretariat (2017). Distribution estimated based on information provided by Froese and Pauly (2018).



Figure 1. Known global distribution of *Mayaheros amarus*. Mexico outline map: Ahoerstemeier. Licensed under CC BY-SA 3.0. Available: https://commons.wikimedia.org/wiki/File:Mexico_template.png. (August 2018). Red point was added to show Isla Mujeres, Mexico, where *M. amarus* is established according to Froese and Pauly (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 0.01, which indicates a medium climate match. The range for a medium climate match is between 0.005 to 0.103. There was a high match in southern Florida; a medium match in northern peninsular Florida, coastal Georgia and coastal Texas; and a low match elsewhere in the contiguous United States. Every state had a low score except Florida, which had a high score. The highest match was 8 out of 10 which was recorded in southern Florida. The majority of the United States recorded 0 out of 10.

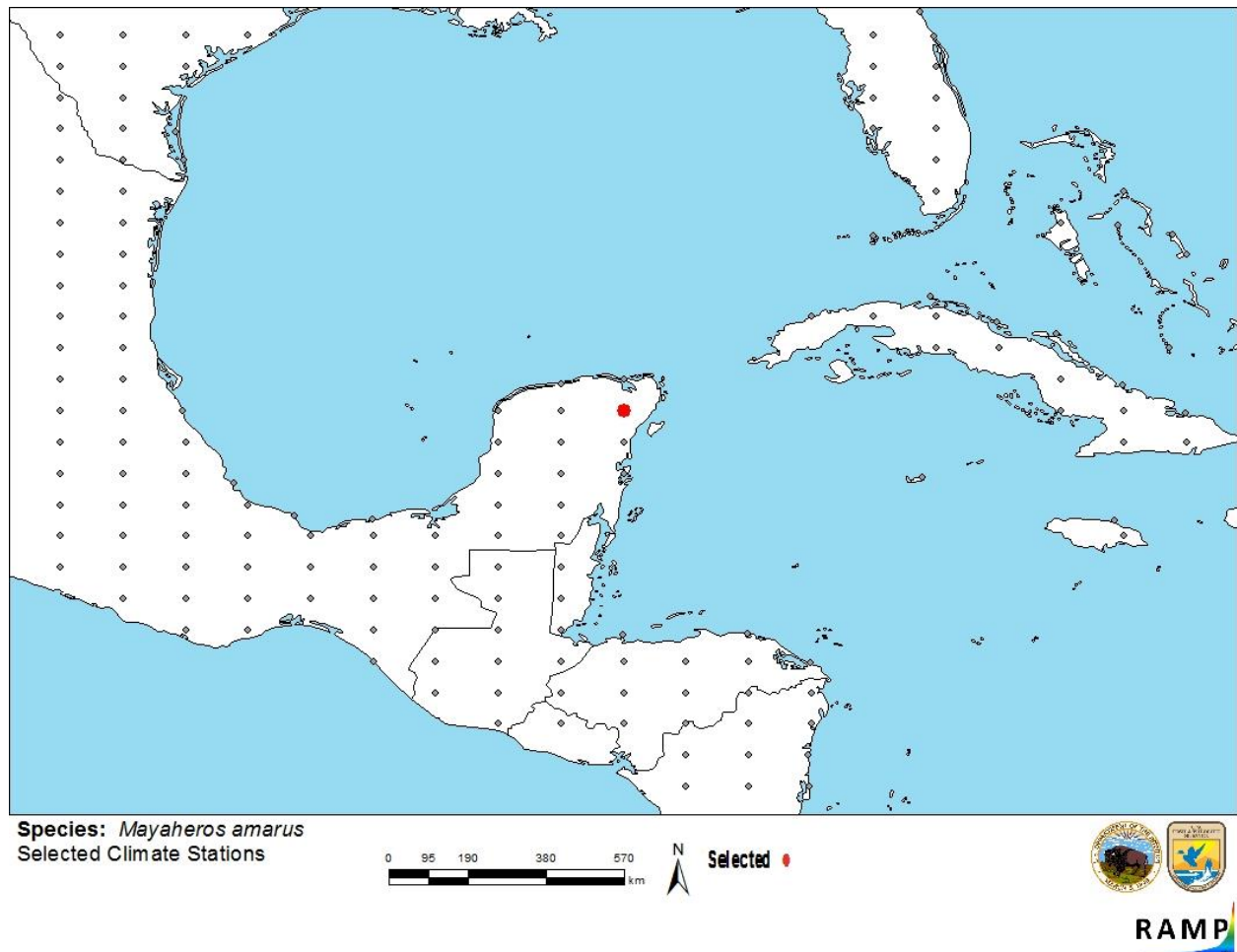


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source location (red; Mexico) and non-source locations (gray) for *Mayaheros amarus* climate matching. Source locations from Froese and Pauly (2018).

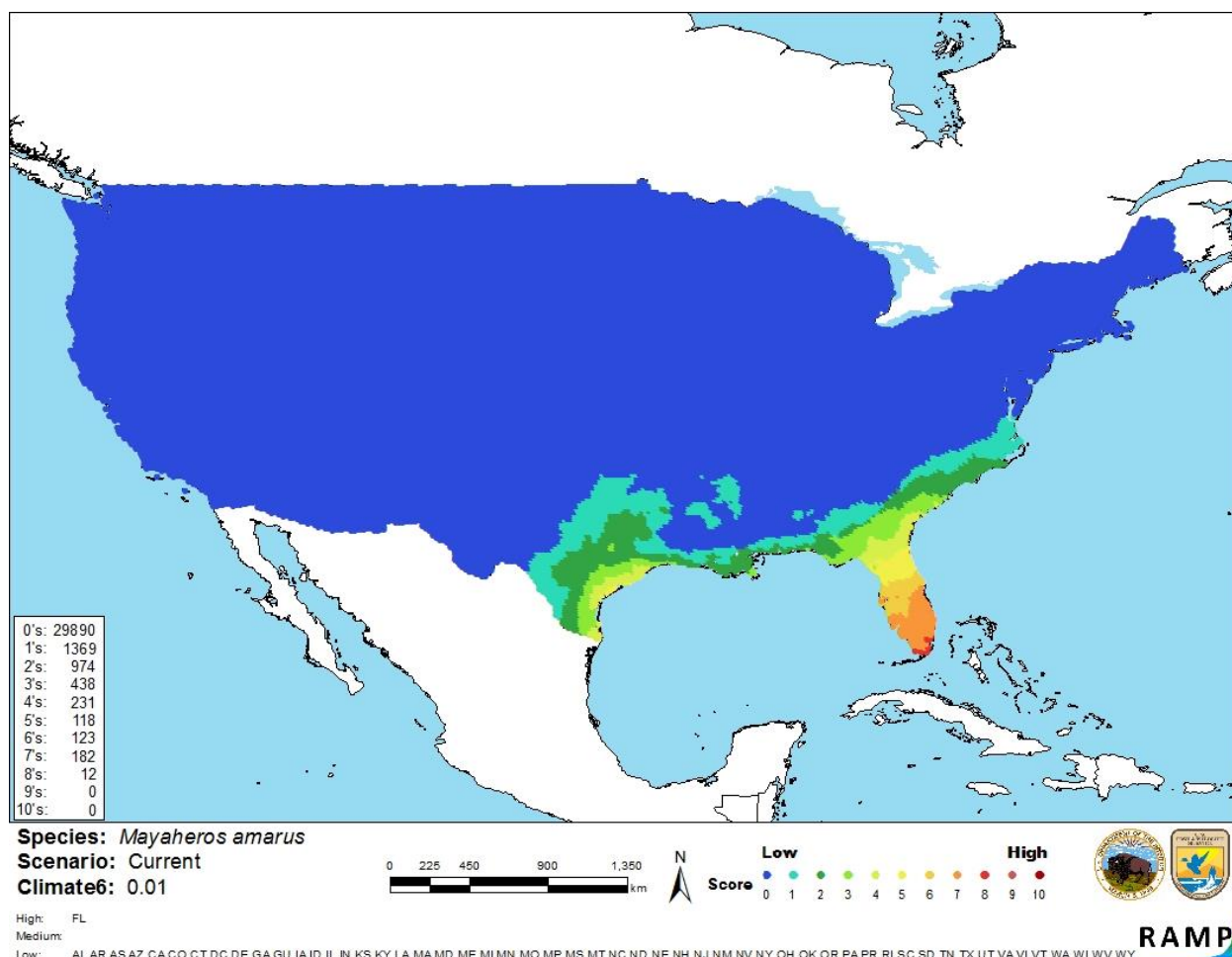


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Mayaheros amaratus* in the contiguous United States based on source locations reported by Froese and Pauly (2018). 0= Lowest match, 10= Highest match.

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 *Mayaheros amaratus*. No georeferenced occurrences were available and occurrences for climate matching had to be estimated based on a verbal description of its range. This fish has not been reported as introduced and no information is available on impacts if introduced. 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

Mayaheros amarus is a cichlid native to Isla Mujeres off the Yucatán Peninsula, Mexico. Little information is available about this species. *M. amarus* has not been reported as introduced outside of its native range, therefore no information is available on potential impacts of an introduction. History of invasiveness is uncertain. This species does not appear to be in trade in the United States or elsewhere. The climate match with the contiguous United States is medium, with the highest match in southern Florida. All states recorded a low score except Florida, which recorded a high score. Due to lack of information about potential negative impacts from introduction, the certainty is low; the overall risk for this species is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Medium**
- **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.

- Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?spid=52327>. (August 2018).
- Froese, R., and D. Pauly, editors. 2018. *Mayaheros amarus* (Hubbs, 1936). FishBase. Available: <https://www.fishbase.de/summary/Mayaheros-amarus.html>. (August 2018)
- GBIF Secretariat. 2017. GBIF backbone taxonomy: *Cichlasoma amarum* (Hubbs, 1936). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2371884>. (August 2018).
- ITIS (Integrated Taxonomic Information System). 2018. *Cichlasoma amarum* (Hubbs, 1936). Integrated Taxonomic Information System, Reston, Virginia. Available: https://itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648363#null. (August 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.

Kullander, S.O. 2003. Cichlidae (Cichlids). Pages 605-654 *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, Brazil.