

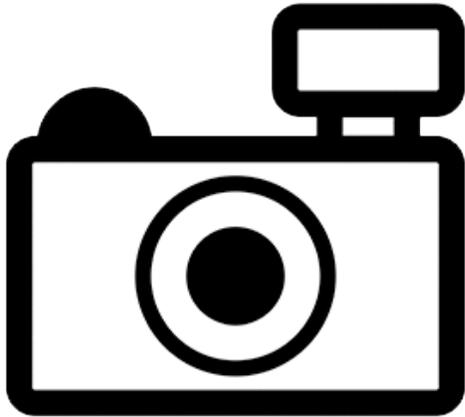
***Mayaheros aguadae* (a cichlid, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2010

Revised, October 2012, August 2018

Web Version, 9/12/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Central America: Atlantic slope, Tuxpeña, Mexico.”

From Kullander (2003):

“Type locality: Aguada at Tuxpeña, interior Campeche, about 90 km. south, and 40 km. east of Champoton.”

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.

Remarks

From Eschmeyer et al. (2018):

“*aguadae*, *Cichlasoma urophthalmus* [...] Current status: Valid as *Mayaheros aguadae* (Hubbs 1936).”

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

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 aguadae* Hubbs, 1936”

From Eschmeyer et al. (2018):

“*aguadae*, *Cichlasoma urophthalmus* [...] Current status: Valid as *Mayaheros aguadae* (Hubbs 1936).”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 9.5 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: Atlantic slope, Tuxpeña, Mexico.”

From Kullander (2003):

“Type locality: Aguada at Tuxpeña, interior Campeche, about 90 km. south, and 40 km. east of Champoton.”

Introduced

No known introductions.

Means of Introduction Outside the United States

No known introductions.

Short Description

From Tobler (2006):

“Black vertical bands wider than spaces in between.”

Biology

No information available.

Human Uses

No information available.

Diseases

No OIE reportable diseases. No other information available.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No introductions have been reported.

4 Global Distribution

No occurrences were found on GBIF Secretariat (2017). Distribution estimated based on information provided by Kullander (2003).



Figure 1. Known global distribution of *Mayaheros aguadae*. Mexico outline map: Jacobolus. Licensed under Creative Commons BY-SA 3.0. Available: https://commons.wikimedia.org/wiki/File:Mexico_states_blank.png. (August 2018). Red dot was added to show estimated location based on information from Kullander (2003). The location is estimated to be “about 90 km. south, and 40 km. east of Champoton” (Kullander 2003) in the Campeche State of Mexico.

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 0.0, which is a low score. The range for a low climate match is from 0.000 to 0.005, inclusive. Medium climate matches occurred in southern Florida and southern coastal Texas, while the remainder of the contiguous United States had a low match. Every state recorded a low score except Florida which recorded a medium score. The highest match was 6 out of 10 which was recorded in the southern tip of Florida. The majority of the contiguous United States recorded 0 out of 10.

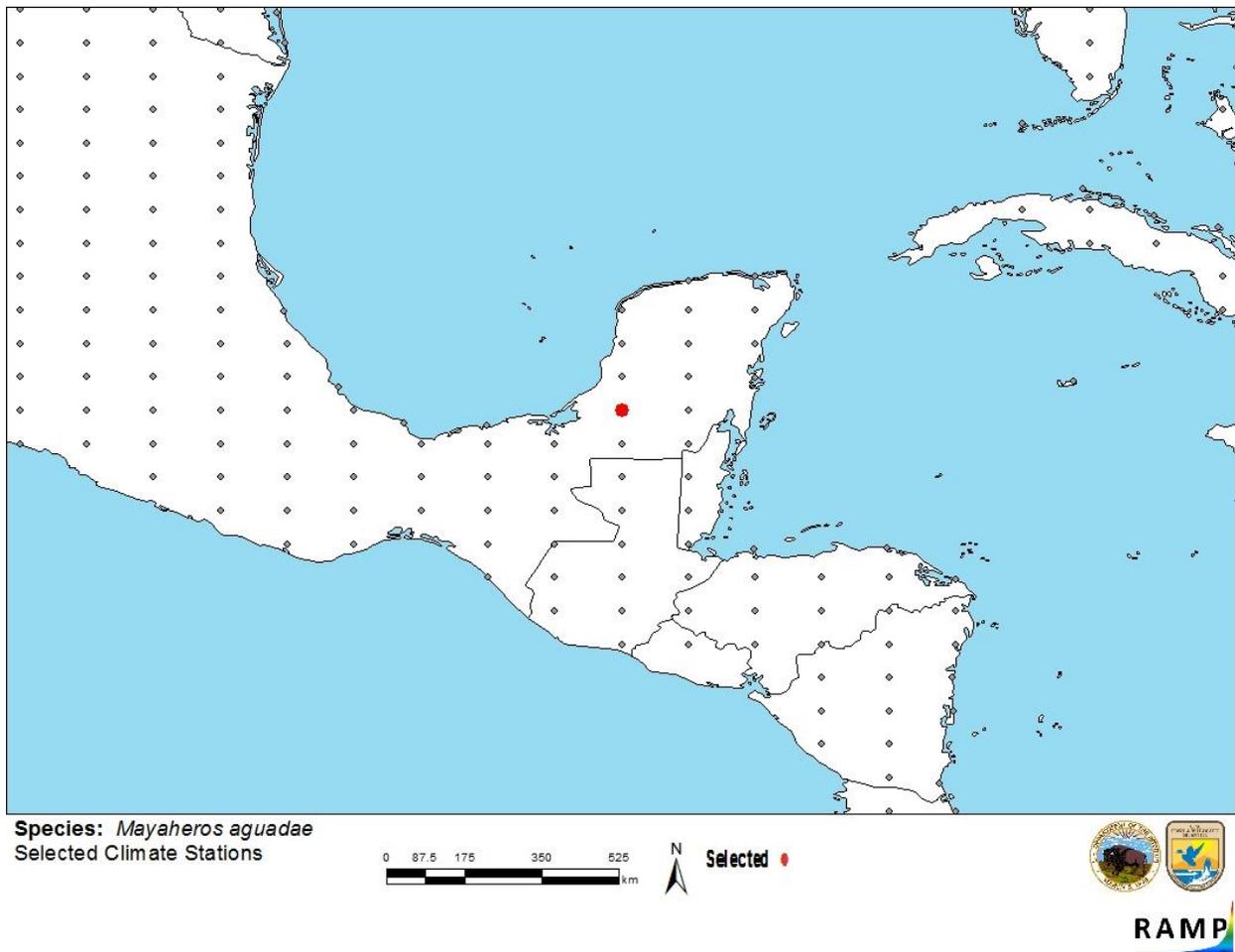


Figure 2. RAMP (Sanders et al. 2018) source map showing weather station selected as source location (red; Campeche, Mexico) and non-source locations (gray) for *Mayaheros aguadae* climate matching. Source location approximated from Kullander (2003).

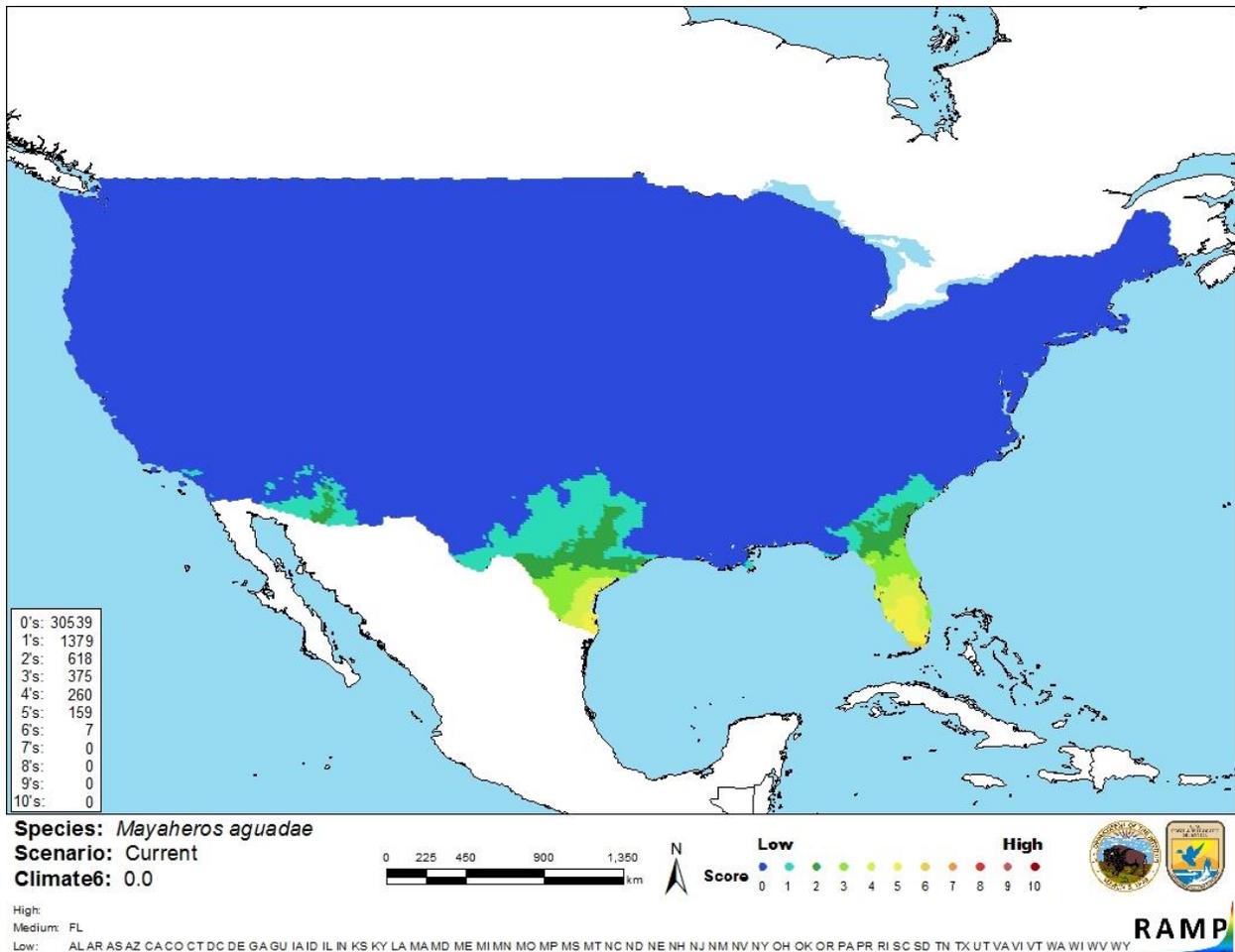


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Mayaheros aguadae* in the contiguous United States based on source locations approximated from information by Kullander (2003). 0= Lowest match, 10=Highest match.

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

7 Certainty of Assessment

Little information is known on the biology and ecology of *Mayaheros aguadae*. No georeferenced occurrences were available and had to be estimated based on a verbal description of the type locality. This fish has not been reported as introduced, and no information is available on potential impacts if this species does become 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 aguadae is a cichlid that is native to the state of Campeche, Mexico. It has not been reported as introduced outside of its native range so no information is available on the impacts of introduction of this species. The history of invasiveness is uncertain. Unlike many cichlids, *M. aguadae* does not appear to be present in the aquarium trade in the United States or elsewhere. Climate match with the contiguous United States is low. Southern Florida and the southern Gulf Coast of Texas have a medium climate match. Due to lack of information about potential negative impacts from introduction, the certainty of assessment is low and the overall risk for this species 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

- 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=52324>. (August 2018).
- Froese, R., and D. Pauly, editors. 2018. *Mayaheros aguadae* (Hubbs, 1936). FishBase. Available: <https://www.fishbase.de/summary/Mayaheros-aguadae.html>. (August 2018).
- GBIF Secretariat. 2017. GBIF backbone taxonomy: *Cichlasoma aguadae* (Hubbs, 1936). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2371850>. (August 2018)
- ITIS (Integrated Taxonomic Information System). 2018. *Cichlasoma aguadae* (Hubbs, 1936). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648361#null. (July 2018).
- 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.
- Sanders, S., C. Castiglione, and M. H. Hoff. 2018. Risk Assessment Mapping Program: RAMP, version 3.1. U.S. Fish and Wildlife Service.

Tobler, M. 2006. The "*Cichlasoma*" *urophthalmus* species group. The Cichlid Room Companion. Available: <http://www.cichlidae.com/section.php?id=45>. (August 2011).