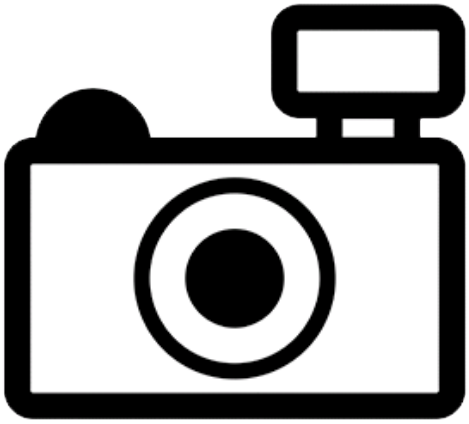
Mesoheros atromaculatus (a cichlid, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2011
Revised, October 2012, August 2018
Web Version, 9/12/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"South America: Atrato, San Juan, and Baudó River basins in Colombia."

Status in the United States

This species has not been reported as introduced or established in the United States. This species is present in the aquarium trade in the United States. For example:

From Bluegrass Aquatics (2018):

"Atromaculatus Cichlid REGULAR
$19.98"

Means of Introductions in the United States

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

Remarks

From Froese and Pauly (2018):

"The generic allocation of this species is still uncertain. It belongs to the tribe Heroini, but is maintained as an incertae sedis species of *Cichlasoma* pending a revision of heroin cichlids traditionally assigned to the cichlasomatin genus *Cich*[*lasoma*.]"

From Eschmeyer et al. (2018):

"*atromaculatum, Cichlasoma (Parapetenia)* […] Current status: Valid as *Mesoheros atromaculatus*"

The names *Cichlasoma atromaculatum*, *Cichlasoma atromaculatus*, and *Mesoheros atromaculatus* were used to search 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 atromaculatus* Regan, 1912"

From Eschmeyer et al. (2018):

"Current status: Valid as *Mesoheros atromaculatus*"

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 25.0 cm TL male/unsexed; [Axelrod 1993]"

Environment
From Froese and Pauly (2018):

"Freshwater; brackish; benthopelagic; pH range: 5.5 - 7.5; dH range: ? - 3. […] 23°C - 29°C [Stawikowski and Werner 1998; unknown whether this temperature range refers to air or water, aquarium or natural settings]"

Climate/Range
From Froese and Pauly (2018):

"Tropical; […]"

Distribution Outside the United States
Native
From Froese and Pauly (2018):

"South America: Atrato, San Juan, and Baudó River basins in Colombia."

Introduced
No known introductions.

Means of Introduction Outside the United States
No known introductions.

Short Description
From McMahan et al. (2015):

"The genus *Mesoheros* is diagnosed by an elongate body with a moderately small mouth that does not reach the anterior margin of the orbit. Seven (rarely six) dark spots […] are present along the lateral sides of body. All other genera of herichthyin cichlids with a small mouth possess a deeper body with angular heads, and lack this number of spots and bar-type markings along the body. The caudal fin is relatively truncate to rounded, and a well-defined, round, black spot is present on the dorsal portion of the caudal peduncle sitting directly above (often resting upon) the lower lateral line. Scale rows continue onto the base of the dorsal and anal fins. Spots are present on the dorsal, caudal, and anal fins."

Biology
From Froese and Pauly (2018):

"Up to 3000 eggs are deposited on open substratum, such as a flat stone. Mainly the female guards eggs and young."

Human Uses
This species is present in the aquarium trade in the United States. For example:

From Bluegrass Aquatics (2018):

"Atromaculatus Cichlid REGULAR
$19.98"

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
No introductions have been reported. There is no information available on impacts.

4 Global Distribution

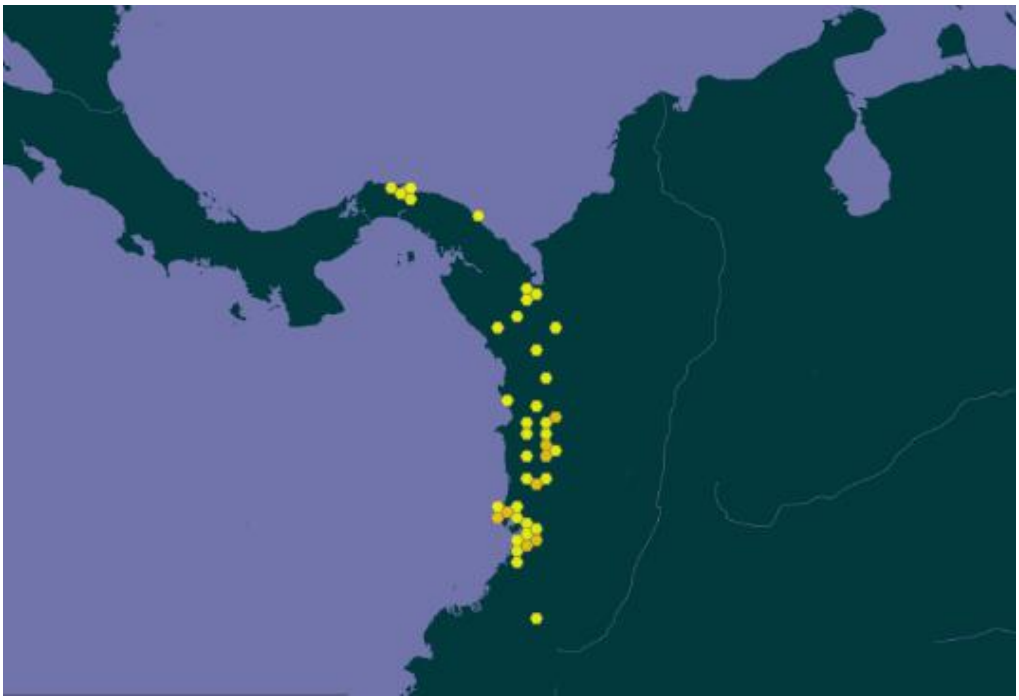


Figure 1. Known global distribution of *Mesoheros atromaculatus* reported from Colombia. Map from GBIF Secretariat (2017). Occurrences reported in Panama were excluded from the climate matching analysis because the species is not known to be established outside of Colombia.

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. The entire contiguous United States was a low match except the east coast of peninsular Florida. Every state recorded a low score. The highest match was 5 out of 10, which was recorded in the southern Florida. The majority of the contiguous United States recorded 0 out of 10.

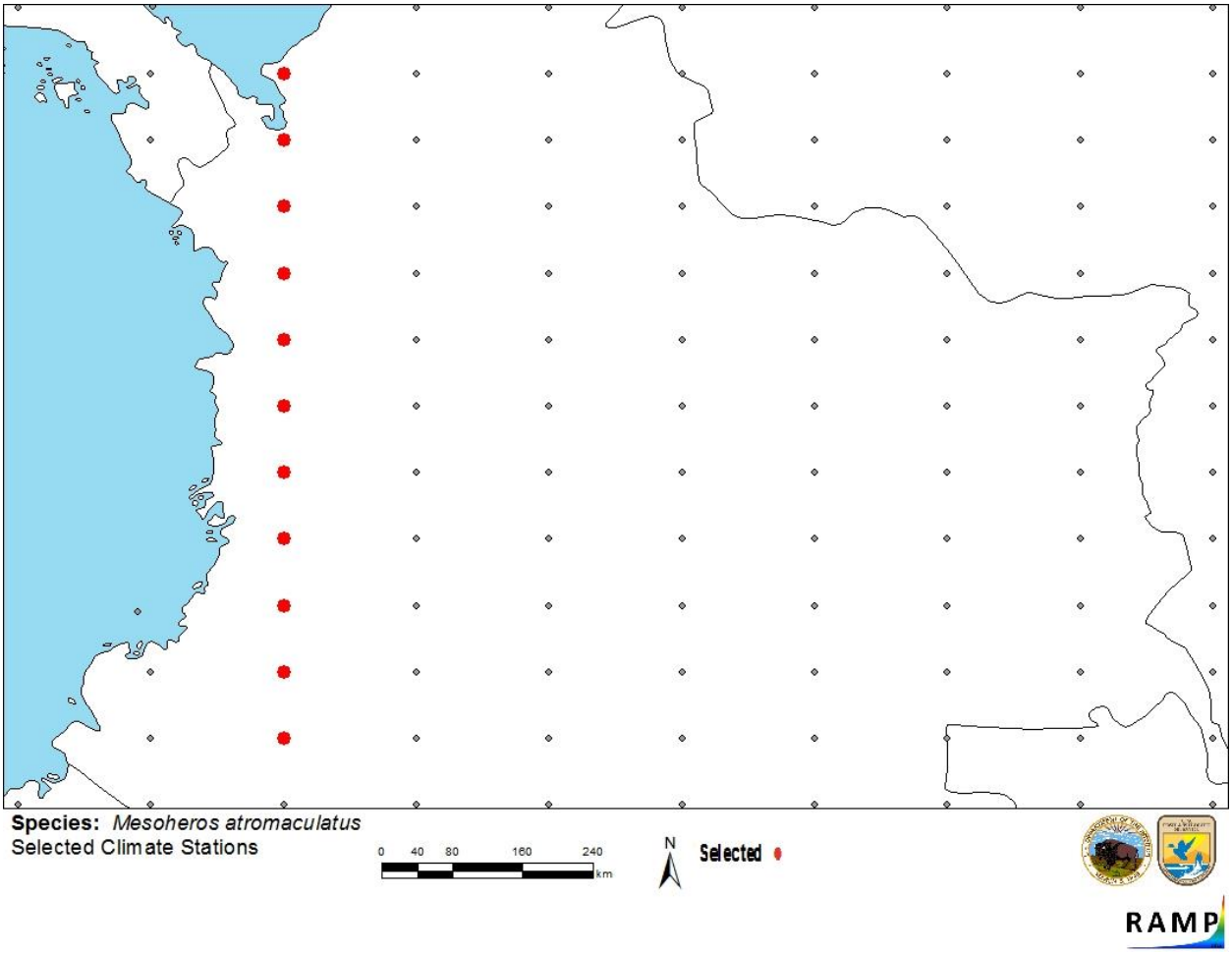


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Colombia) and non-source locations (gray) for *Mesoheros atromaculatus* climate matching. Source locations from GBIF Secretariat (2017).

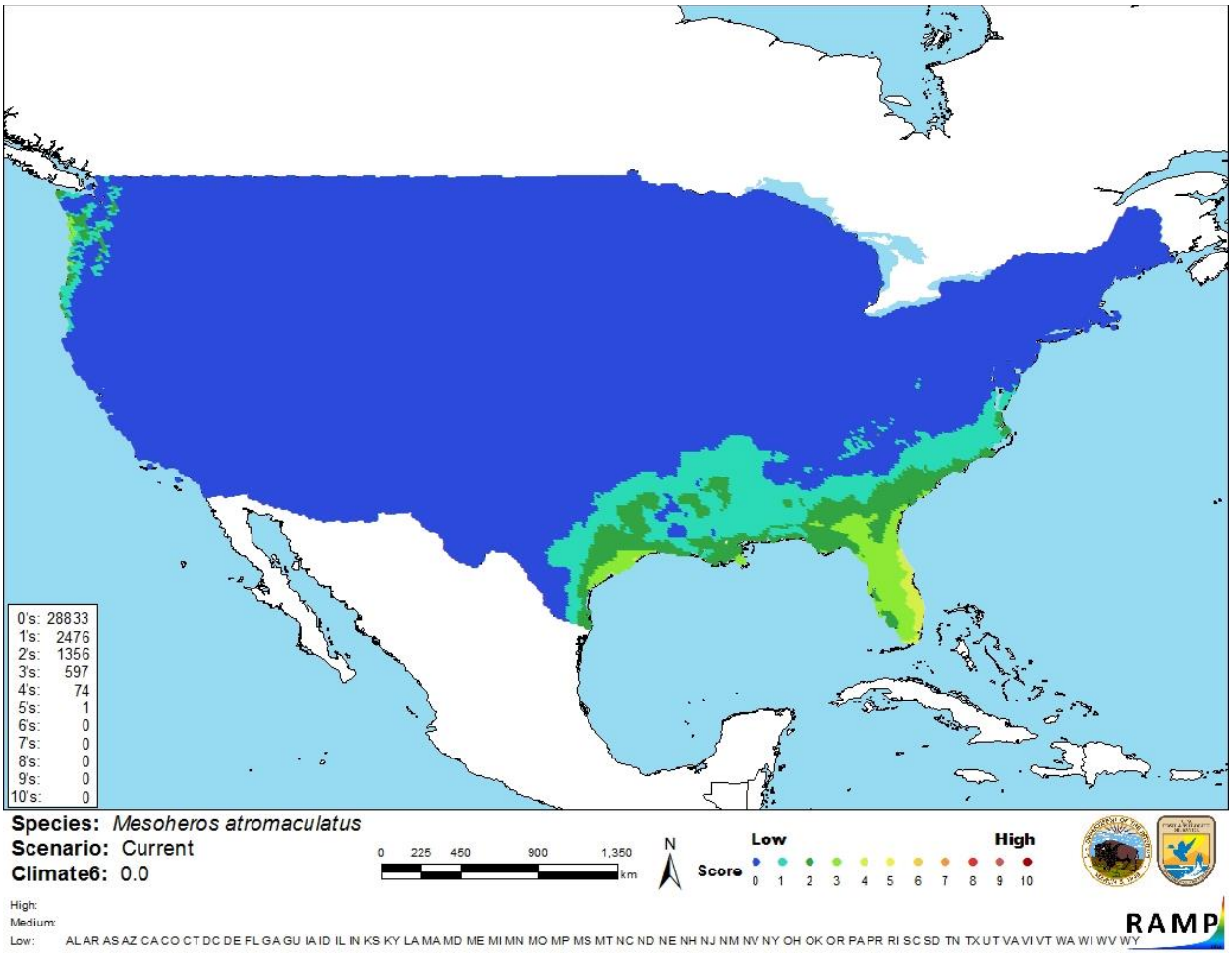


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Mesoheros atromaculatus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10= Highest match.

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

Little information is known about the biology and ecology of *Mesoheros atromaculatus*. This species has not been reported as introduced and no information is available on impacts of introduction. Due to lack of information, the certainty of assessment is low. More information is needed to increase assessment certainty.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Mesoheros atromaculatus is a cichlid native to the Atrato, San Juan and Baudó River basins of Colombia. It has not been reported as introduced outside its native range. No information is available on potential impacts of an introduction of this species. History of invasiveness is uncertain. *M. atromaculatus* is present in the aquarium trade in the United States. The climate match with the contiguous United States was low. The east coast of peninsular Florida had a medium match; the remainder of the contiguous United States had a low match. Due to lack of information about potential negative impacts from introduction, the certainty of assessment is low and the overall risk for *M. atromaculatus* 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.

Bluegrass Aquatics. 2018. Atromaculatus cichlid REGULAR. Available: https://bluegrassaquatics.com/atromaculatus-cichlid-regular.html. (September 2018).

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=45536. (August 2018).

Froese, R., and D. Pauly, editors. 2018. *Mesoheros atromaculatus* (Regan, 1912). FishBase. Available: https://www.fishbase.de/summary/Mesoheros-atromaculatus.html. (August 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Mesoheros atromaculatus* (Regan, 1912). Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/9356536. (August 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Cichlasoma atromaculatus* Regan, 1912. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=649449#null. (September 2018).

McMahan, C. D., W. A. Matamoros, K. R. Piller, and P. Chakrabarty. 2015. Taxonomy and systematics of the herichthyins (Cichlidae: Tribe Heroini), with the description of eight new Middle American genera. Zootaxa 3999(2):211-234.

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.

Axelrod, H. R. 1993. The most complete colored lexicon of cichlids. T. F. H. Publications, Neptune City, New Jersey.

Stawikowski, R., and U. Werner. 1998. Die Buntbarsche Amerikas, volume 1. Verlag Eugen Ulmer, Stuttgart, Germany.