

## ***Mesoheros gephyrus* (a cichlid, no common name)**

### **Ecological Risk Screening Summary**

U.S. Fish and Wildlife Service, August 2011

Revised, October 2012, September 2018

Web Version, 1/3/2020

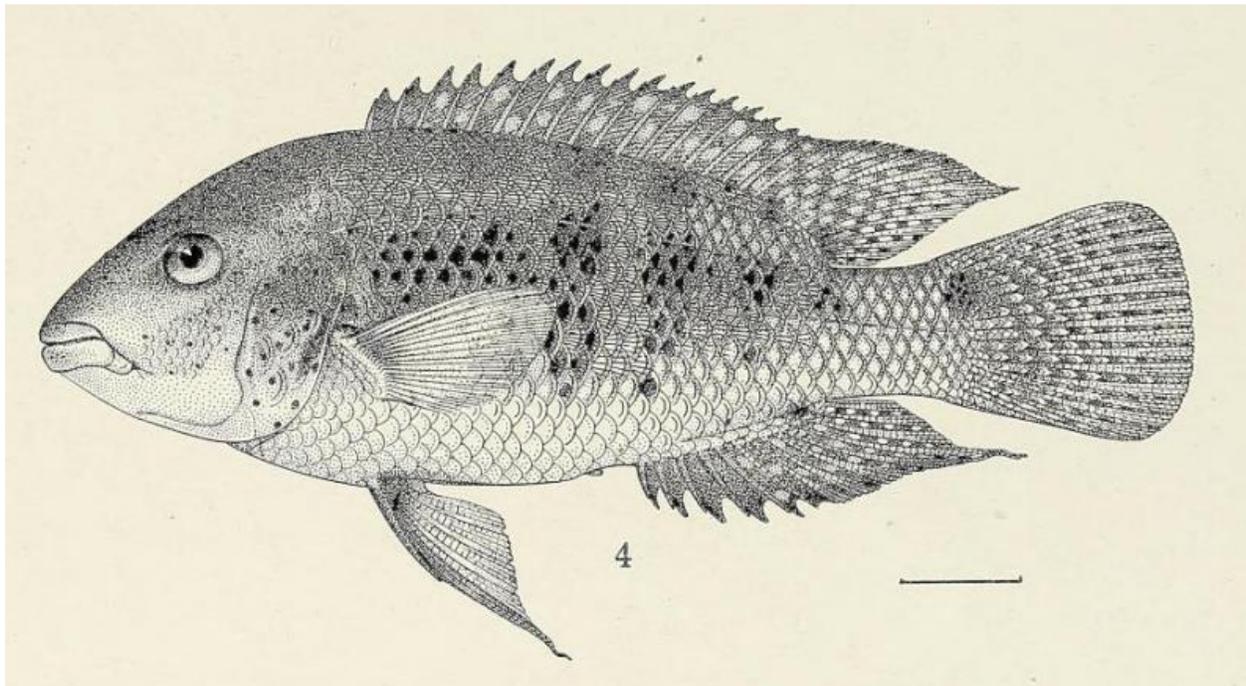


Photo: C. H. Eigenmann. Public domain. Available:  
<https://www.biodiversitylibrary.org/page/52520865#page/229/mode/1up>. (September 2018).

## **1 Native Range and Status in the United States**

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### **Native Range**

From Froese and Pauly (2018):

“South America: Dagua and San Juan rivers on the Pacific slope of Colombia.”

### **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

According to Eschmeyer et al. (2018), the following scientific names have been applied to this species historically: *Cichlasoma ornatum gephyrum*, *Nandopsis gephyra*, *Cichlasoma gephyrum*, and *Mesoheros gephyrus*. Information for this report was collected by searching with both the currently accepted scientific name, *Mesoheros gephyrus*, and all synonyms.

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From GBIF Secretariat (2018):

“Kingdom Animalia  
Phylum Chordata  
Class Actinopterygii  
Order Perciformes  
Family Cichlidae  
Genus *Mesoheros* McMahan & Chakrabarty, 2015  
Species *Mesoheros gephyrus* (Eigenmann, 1922)”

From Eschmeyer et al. (2018):

“Current status: Valid as *Mesoheros gephyrus* (Eigenmann 1922). Cichlidae: Cichlinae.”

### Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 12.0 cm SL male/unsexed; [Kullander 2003]”

“Max length 25 cm TL [Axelrod 1993].”

### 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: Dagua and San Juan rivers on the Pacific slope of Colombia.”

### **Introduced**

This species has not been reported as introduced or established outside of its native range.

## **Means of Introduction Outside the United States**

This species has not been reported as introduced or established outside of its native range.

## **Short Description**

From Eigenmann (1922):

“Description of the Type. [...]”

“Head very rarely 3; depth 2.4; D. XVII, 12; A. V, 9; eye 5.5, snout equals half the length of the head; interorbital 2.6; preorbital 1.5 times the eye. Five series of scales on the cheeks; 3.5 scales between the upper lateral line and the soft dorsal ; two scales between the two branches of the lateral line ; scales twenty-nine in a median series to base of caudal; sixth to fourteenth dorsal spines of nearly equal height, 1.25 the diameter of the eye; last spine three times in the head; soft dorsal and anal pointed, not reaching middle of caudal; pectoral less than head without opercle, not reaching to above anus.”

“Remains of cross-bands occur especially along back and middle of sides, many of the scales of the bands below the middle have black bases; axil black, centers of scales otherwise largely light; soft dorsal, caudal, and posterior half of soft anal with translucent spots; anterior parts of soft dorsal and anal and outer parts of ventrals black, the inner rays of ventrals and the entire pectoral light; small (blue?) spots on cheeks and opercles; a black spot on base of upper half of caudal, a black spot on bases of soft dorsal and anal near the ends of these fins.”

“The dorsal spines are relatively higher in the young and the lateral bars are complete from dorsal to anal. In the larger specimen from Istmina the centers of all the scales over the abdominal cavity and a little beyond it are pearl-gray, the dark spot on base of pectoral is lacking, the caudal spot is less conspicuous, and the bands do not encroach on the base of the dorsal spine. Otherwise this specimen is very similar to one of *ornatum* of the same size from the Telembi.”

## **Biology**

From Mesa-Salazar et al. (2016):

“It inhabits creeks with deep waters and vegetation, and can also be found in holes of clay and granite in streams and rivers of gentle slopes. It feeds mainly on insects, but it can also consume

plant matter. The quality of this species' habitat is presumed to be declining due to pollution and sedimentation from mining activities.”

### **Human Uses**

From Mesa-Salazar et al. (2016):

“The species has not been reported to be consumed.”

### **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**

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This species has not been reported as introduced or established outside of its native range.

## 4 Global Distribution

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**Figure 1.** Known global distribution of *Mesoheros gephyrus*, reported from the Pacific coast of Colombia. Map from GBIF Secretariat (2018).

## 5 Distribution Within the United States

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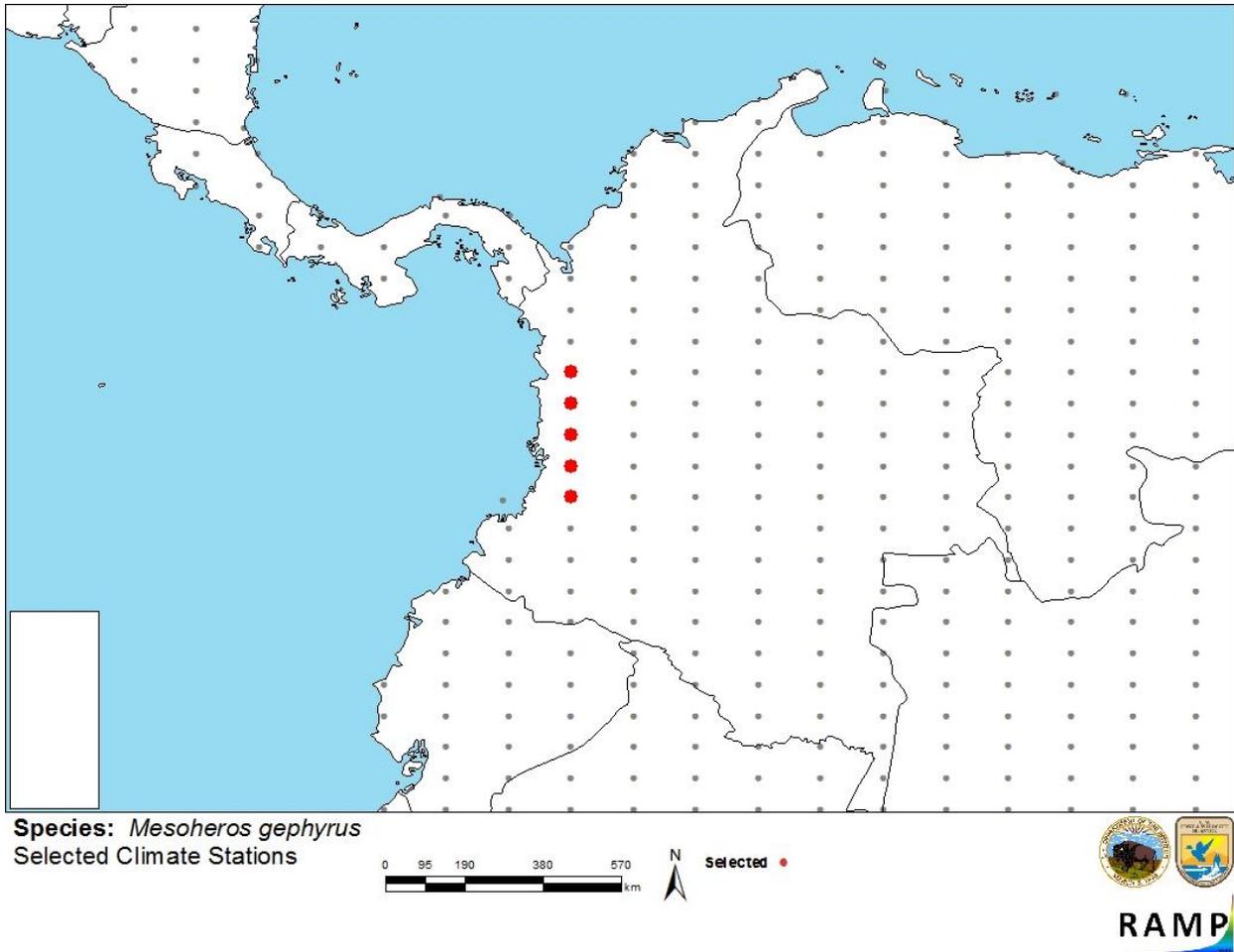
This species has not been reported as introduced or established in the United States.

## 6 Climate Matching

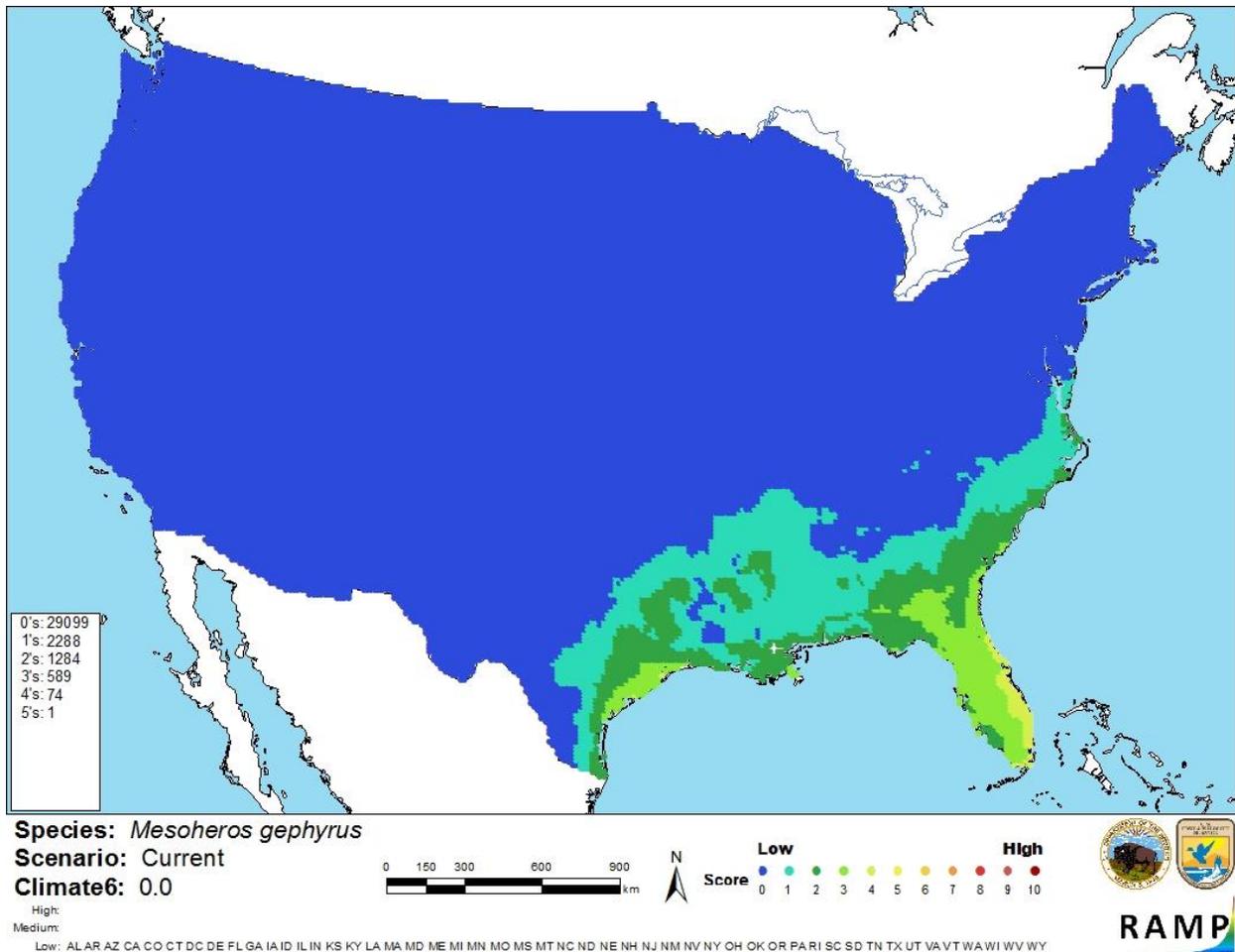
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### Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.0, which is a low climate match. The climate match was categorically low in every state in the contiguous United States. Locally, the climate match was slightly higher in the Southeast, with medium match along the Atlantic coastline of peninsular Florida.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations in northwestern South America selected as source locations (red; Colombia) and non-source locations (gray) for *Mesoheros gephyrus* climate matching. Source locations from GBIF Secretariat (2018).



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *Mesoheros gephyrus* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 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
$\geq 0.103$	High

## 7 Certainty of Assessment

There is some limited information available on the biology of *Mesoheros gephyrus*. Its distribution is well-known. This species has never been reported as introduced or established outside of its native range, so no information is available from which to assess the invasive potential of this species. Certainty of this assessment is low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Mesoheros geophyrus* is a cichlid species native to the Dagua and San Juan rivers in Colombia. Little information is known about this species. There is no information available on its trade status, and it does not seem to be used as a food fish. *M. geophyrus* has a low climate match with the contiguous United States, although the climate match in the Southeast was slightly higher. This species has never been reported as introduced or established outside of its native range. Further information is needed to adequately assess the risk this species poses to the contiguous U.S., so the certainty of this assessment is low. The overall risk assessment category 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

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**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.**

Eigenmann, C. H. 1922. The fishes of western South America. Part I. The fresh-water fishes of northwestern South America, including Colombia, Panama, and the Pacific slopes of Ecuador and Peru, together with an appendix upon the fishes of the Rio Meta in Colombia. *Memoirs of the Carnegie Museum* 9(1):1-346.

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/fishcatmain.asp>. (September 2018).

Froese, R., and D. Pauly, editors. 2018. *Mesoheros geophyrus* (Eigenmann, 1922). FishBase. Available: <https://www.fishbase.de/summary/Mesoheros-gephyrus.html>. (September 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Mesoheros geophyrus* (Eigenmann, 1922). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/9558736>. (September 2018).

Mesa-Salazar, L., F. Villa-Navarro, and P. Sanchez-Duarte. 2016. *Cichlasoma gephyrum*. The IUCN Red List of Threatened Species 2016: e.T64791096A64890450. Available: <http://www.iucnredlist.org/details/64791096/0>. (September 2018).

Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. US Fish and Wildlife Service.

## **10 References Quoted But Not Accessed**

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**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.

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.