

***Metynnis guaporensis* (a fish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, January 2013
Revised, January 2018
Web Version, 8/22/2018

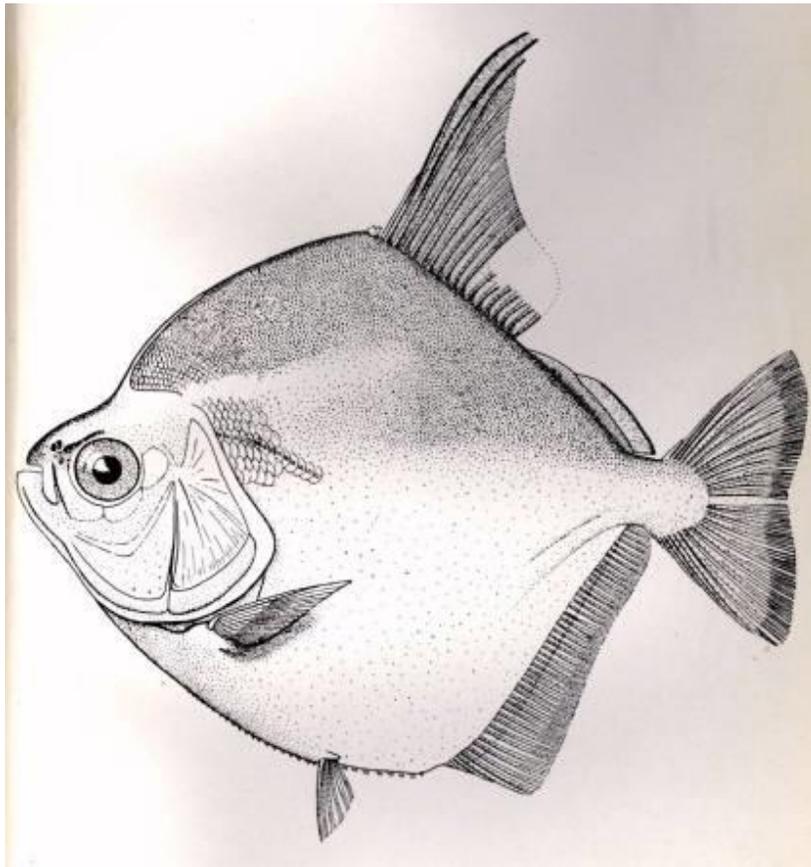


Image: “*Metynnis gnaporensis* [sic]” by Carl H. Eigenmann. Available:
<http://digitalcollections.lib.washington.edu/cdm/singleitem/collection/fishimages/id/52304/rec/1>.
(January 2018)

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2017):

“South America: Guaporé River basin.”

Froese and Pauly (2017) report *M. guaporensis* as native to Brazil (Zarske and Géry 1999) and of questionable status in Bolivia (Jégu 2003).

Specimens of this species are also reported from Peru and Guyana (Smithsonian National Museum of Natural History 2018).

Status in the United States

There are no known occurrences of *M. guaporensis* in the United States; however, Nico et al. (2018) report that the genus *Metynnis* (species uncertain) is locally established in Florida.

From Nico et al. (2018):

“A member of this genus [*Metynnis*] was collected in **Florida** from a lake on Marco Island, Collier County in January, 1980 (FSBC 19822; listed as *Metynnis lippincotianus* in Courtenay et al. 1984, and as *Metynnis* sp. in Courtenay and Stauffer 1990 and in Courtenay et al. 1991). A reproducing population was found in Halpatokee Regional Park Conservation Area in Martin County in 2005, with additional specimens taken in 2006 and 2007 (Shafland et al. 2008; Florida Fish and Wildlife Conservation Commission 2009). In **Kentucky**, a single fish (originally identified as a piranha and as *Metynnis roosevelti*) was taken by hook and line from Lighthouse Lake, Louisville, Jefferson County, in the summer of 1981 (Anonymous 1981; Fossett 1981).”

“There is considerable confusion surrounding the Kentucky record. In original published accounts, the fish was identified as a piranha, but the scientific name provided was *Metynnis roosevelti* (= *Metynnis maculatus*). However, in a photograph of the fish accompanying the newspaper article (Fossett 1981), the specimen actually appears to have a short adipose fin and is probably a pacu, possibly *Piaractus brachypomus*. The collectors gave the live fish to the Louisville Zoo, where it was kept in aquaria; when the fish later died, it was supposedly not preserved. The Kentucky specimen has been the basis for inclusion of the species in published lists of nonestablished foreign species, with earlier listings identifying it as *Metynnis roosevelti* (e.g., Courtenay et al. 1984) and later simply as *Metynnis* sp. (i.e., Courtenay and Stauffer 1990; Courtenay et al. 1991).”

There is no indication that *M. guaporensis* is in trade in the United States.

Means of Introductions in the United States

From Nico et al. (2018):

“Records [for *Metynnis* sp.] mostly likely represent aquarium releases.”

Remarks

From Nico et al. (2018):

“The genus *Metynnis* is in great need of systematic revision.”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

“Kingdom Animalia
Phylum Chordata
Subphylum Vertebrata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Ostariophysi
Order Characiformes
Family Characidae
Genus *Metynnis* Cope, 1878
Species *Metynnis guaporensis* Eigenmann, 1915

“Taxonomic Status: valid.”

Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length : 16.0 cm SL male/unsexed; [Cella-Ribeiro et al. 2015]; max. published weight: 180.10 g [Cella-Ribeiro et al. 2015]”

Environment

From Froese and Pauly (2017):

“Freshwater; pelagic.”

Climate/Range

From Froese and Pauly (2017):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2017):

“South America: Guaporé River basin.”

Froese and Pauly (2017) report *M. guaporensis* as native to Brazil (Zarske and Géry 1999) and of questionable status in Bolivia (Jégu 2003).

Specimens of this species are also reported from Peru and Guyana (Smithsonian National Museum of Natural History 2018).

Introduced

This species is not known to be introduced outside of its native range.

Means of Introduction Outside the United States

This species is not known to be introduced outside of its native range.

Short Description

No information available.

Biology

No information available.

Human Uses

From de Queiroz et al. (2013):

“Among the species sampled from Cuniã Lake, almost 40% (72 species [including *Metynnis guaporensis*]) are included on the list of species which are allowed to be exploited as ornamental fishes (Instrução Normativa 1, January 3rd 2012). [...] These results indicate their potential to be exploited locally for the ornamental fish trade, although this activity is currently not being practiced in the Brazilian portion of the Madeira River Basin.”

Diseases

No information available.

Threat to Humans

From Froese and Pauly (2013):

“Harmless”

3 Impacts of Introductions

There are currently no recorded introductions or impacts of introductions of *Metynnis guaporensis*, however unidentified species of *Metynnis* are listed as locally established in Florida.

4 Global Distribution

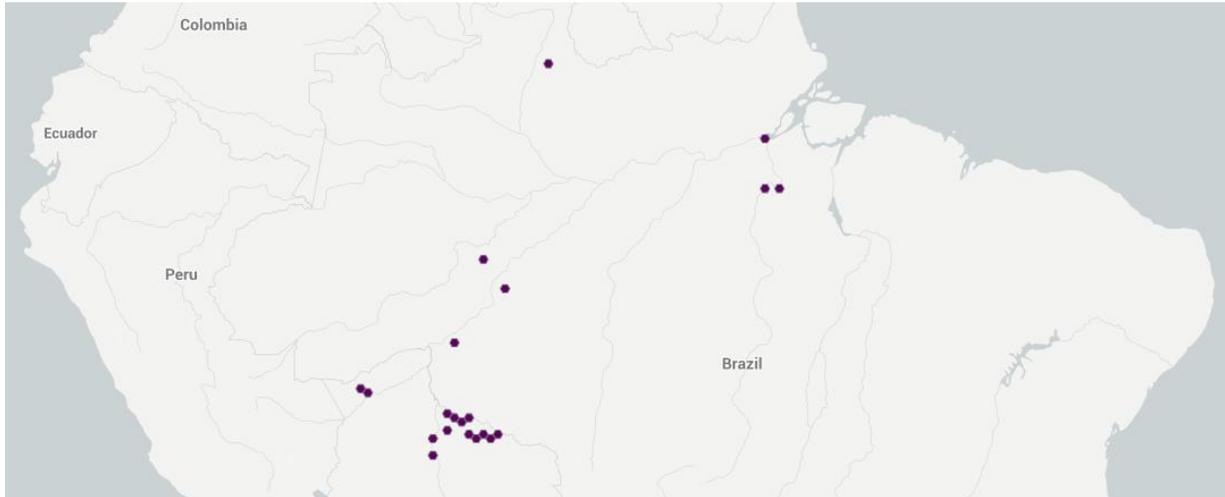


Figure 1. Known global distribution of *Metynnis guaporensis*, reported from Brazil and Bolivia. Map from GBIF Secretariat (2017). Occurrences reported from northern and eastern Brazil were excluded from the climate matching analysis because these points are far outside the known established range of the species in the Guapore River basin along the Brazil-Bolivia border. Additionally, although specimens of this species are also reported from Peru and Guyana (Smithsonian National Museum of Natural History 2018), they were not included in this map because there are no point data available for these occurrences.

5 Distribution Within the United States

There is currently no known distribution of *Metynnis guaporensis* within the United States; however, unidentified species of *Metynnis* are listed as locally established in Florida.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for *Metynnis guaporensis* in the contiguous United States is 0.004, which is low. The range for a low climate match is from 0.0 to 0.005, inclusive. The highest matches were in southern Texas and peninsular Florida. Far southern Florida had a high match, while the rest of peninsular Florida and the southern tip of Texas had a medium match. The climate match was low throughout the remainder of the contiguous United States.

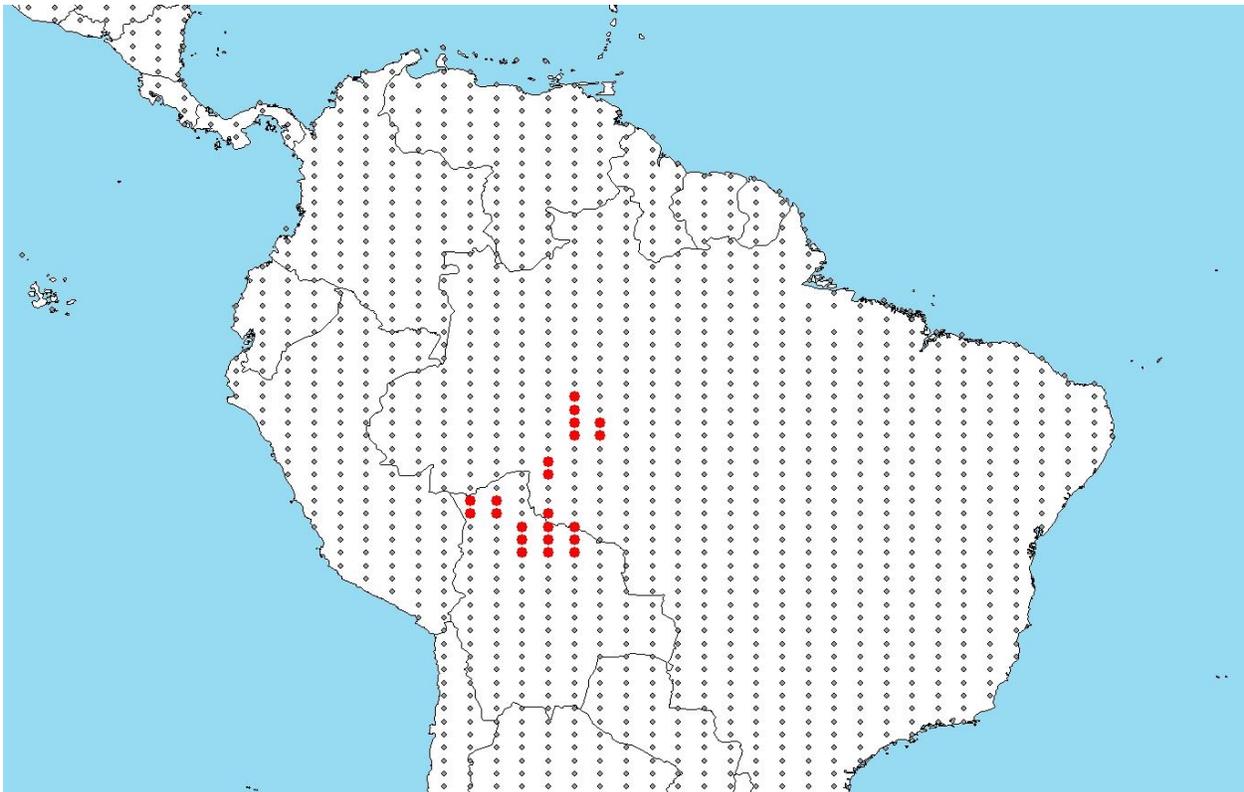


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in South America selected as source locations (red; Brazil and Bolivia) and non-source locations (gray) for *Metynnis guaporensis* climate matching. Source locations from GBIF Secretariat (2017).

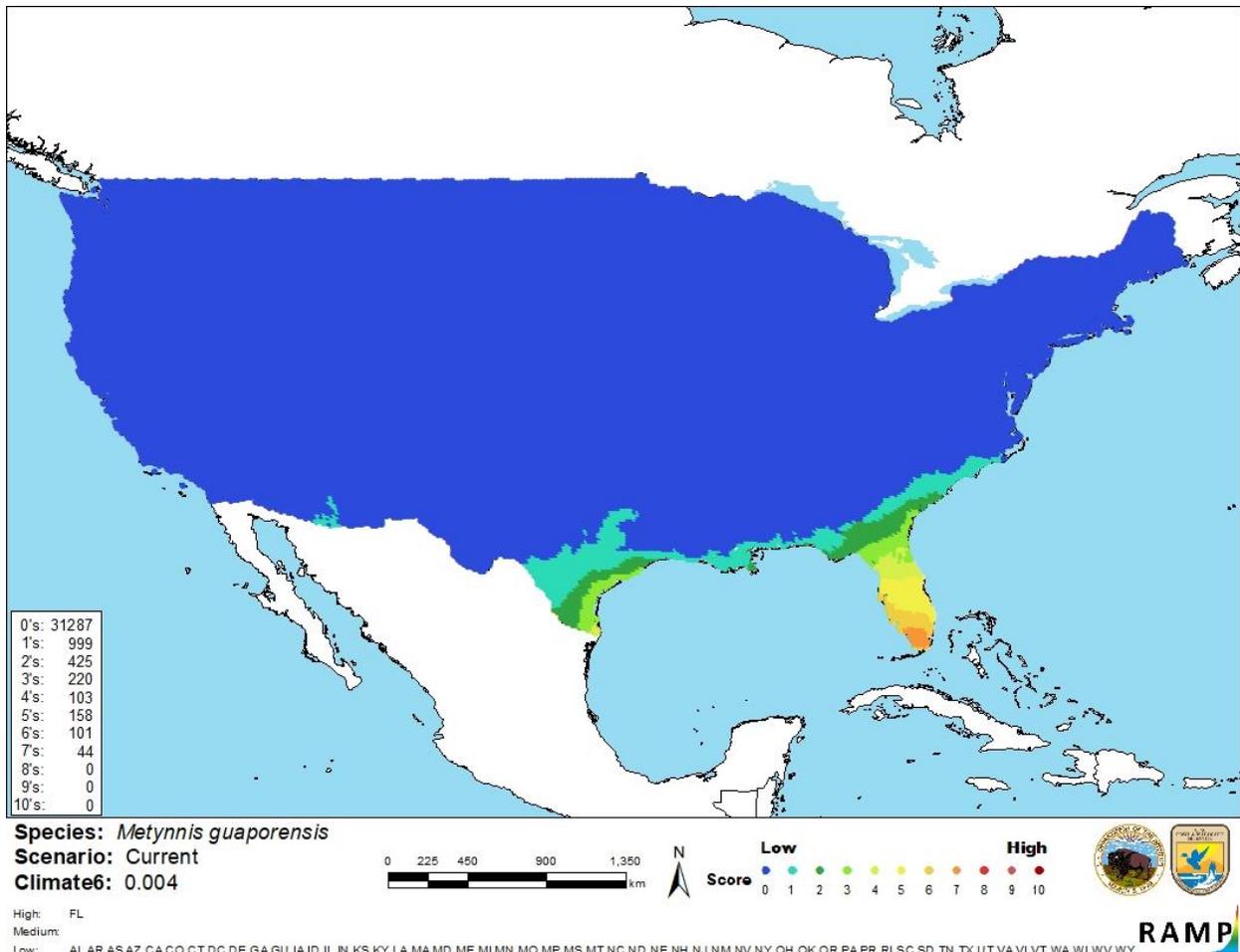


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Metynnis guaporensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match.

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

7 Certainty of Assessment

Peer-reviewed English language literature on the biology, ecology and distribution of *Metynnis guaporensis* is limited. *Metynnis guaporensis* has not been introduced outside of its native range, so impacts of introduction are unknown. Assessment of this species is complicated due to uncertain identification of *Metynnis* spp. captured and established in the United States, and the need for systematic revision of the genus. Additional information on this species will be needed

to increase the certainty of this assessment. Based on available data, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Metynnis guaporensis is a freshwater fish native to South America. It is not known to be introduced outside of its native range, leading to a history of invasiveness classification of uncertain. However, members of the *Metynnis* genus (species uncertain) have been collected beyond their native range in Florida, where their status is listed as locally established.

M. guaporensis has a low climate match with the contiguous United States, with the highest matches in southern Texas and peninsular Florida, and a low match throughout the rest of the contiguous United States. This species is not known to be in trade, although it is permitted by the Brazilian government to be used in the ornamental fish trade. Certainty of this assessment is low due to limited availability of information about *M. guaporensis* and taxonomic uncertainty. The overall risk for *M. guaporensis* 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.

de Queiroz, L. J., G. Torrente-Vilara, F. G. Vieira, W. M. Ohara, J. Zuanon, and C. R. Doria. 2013. Fishes of Cuniã Lake, Madeira River Basin, Brazil. *Check List* 9(3):540-548.

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Nico, L., P. Fuller, and M. Neilson. 2018. *Metynnis sp.* Cope, 1878. U.S. Geological Survey, Nonindigenous Aquatic Species Database, Gainesville, Florida. Available: <https://nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=423>. (February 2018).

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Smithsonian National Museum of Natural History. 2018. Division of Fishes Collections. Available: <https://collections.nmnh.si.edu/search/fishes/>. (January 2018).

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.

Anonymous. 1981. Piranha caught in Kentucky. *Pet Business* 7(11):33.

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Courtenay, W. R., Jr., and J. R. Stauffer, Jr. 1990. The introduced fish problem and the aquarium fish industry. *Journal of the World Aquaculture Society* 21(3):145-159.

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Fossett, J. 1981. Here's one that didn't get away. *The Courier-Journal*, Louisville, Kentucky (June 19).

Instrução Normativa 1, January 3rd 2012 [Source did not provide complete citation for this reference.]

Jégu, M. 2003. Serrasalminae (Pacus and piranhas). Pages 182-196 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.

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