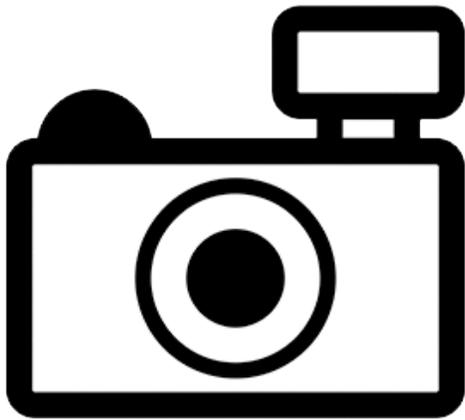


Silver Dollar (*Metynnis altidorsalis*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, January 2013
Revised, March 2018
Web Version, 8/3/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2017):

“South America: North and eastern Guiana Shield rivers.”

From Mol (2012):

“North and eastern Guiana Shield rivers: French Guiana, Guyana, Suriname, and Venezuela; in Suriname, known from Suriname (Para River) and Commewijne (Rikanau Creek) rivers”

Status in the United States

There are no records of occurrence for *Metynnis altidorsalis* 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).”

No information was found on trade in *M. altidorsalis* 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

Nico et al. (2018) report “metynnis” and “silver dollar” as common names for species within the genus *Metynnis*.

From Nico et al. (2018):

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

“Several *Metynnis* species are popular aquarium fishes. 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 non-established 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).”

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 Ostariophysi
Order Characiformes
Family Characidae
Genus *Metynnis* Cope, 1878
Species *Metynnis altidorsalis* Ahl, 1923”

“Taxonomic status: valid”

Eschmeyer et al. (2018) lists the family as “Serrasalminidae”.

From Nico et al. (2018):

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

Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length: 11.2 cm SL male/unsexed; [Zarske and Géry 1999]”

Environment

From Froese and Pauly (2017):

“Freshwater; pelagic”

From Mol (2012):

“Black-water streams and other coastal streams (Mol 2012). The black-water streams of Suriname have a high humic acid concentration (3-3.5 mg L), no measurable hardness, low pH

(4.3-5.2), low electrolyte content (34-38 $\mu\text{S cm}$) low dissolved oxygen concentration (1.0-2.8 m L) and clear water (Secchi transparency 80-90 cm) (Haripersad-Makhanlal and Ouboter 1993).”

Distribution Outside the United States

Native

From Froese and Pauly (2017):

“South America: North and eastern Guiana Shield rivers.”

From Mol (2012):

“North and eastern Guiana Shield rivers: French Guiana, Guyana, Suriname, and Venezuela; in Suriname, known from Suriname (Para River) and Commewijne (Rikanau Creek) rivers”

Introduced

There are no known introductions of this species outside of its native range.

Means of Introduction Outside the United States

There are no known introductions of this species outside of its native range.

Short Description

From Mol (2012):

“*Diagnostic characteristics:* a very long adipose fin (its base larger than the interdorsal distance); maximum SL < 15 cm”

Biology

From Mol (2012):

“*Position in the water column:* mid-water
Diet: aquatic macrophytes such as *Cabomba*”

Human Uses

From Nico et al. (2018):

“Several *Metynnis* species are popular aquarium fishes.”

Diseases

No OIE-reportable diseases have been documented for this species.

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

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

4 Global Distribution



Figure 1. Reported global distribution of *Metynnis altidorsalis*, reported from northern South America. Map from GBIF Secretariat (2017). Points in Brazil, Ecuador, and Peru were removed from the climate matching analysis because they do not represent established populations of the species as currently described in the literature.

5 Distribution Within the United States

There is currently no known distribution of *Metynnis altidorsalis* 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 match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous United States. Climate 6 score indicated an overall low climate match for the contiguous United States. Scores of 0.005 or less are classified as low match; Climate 6 score for *Metynnis altidorsalis* was 0.000. All states had low climate scores.

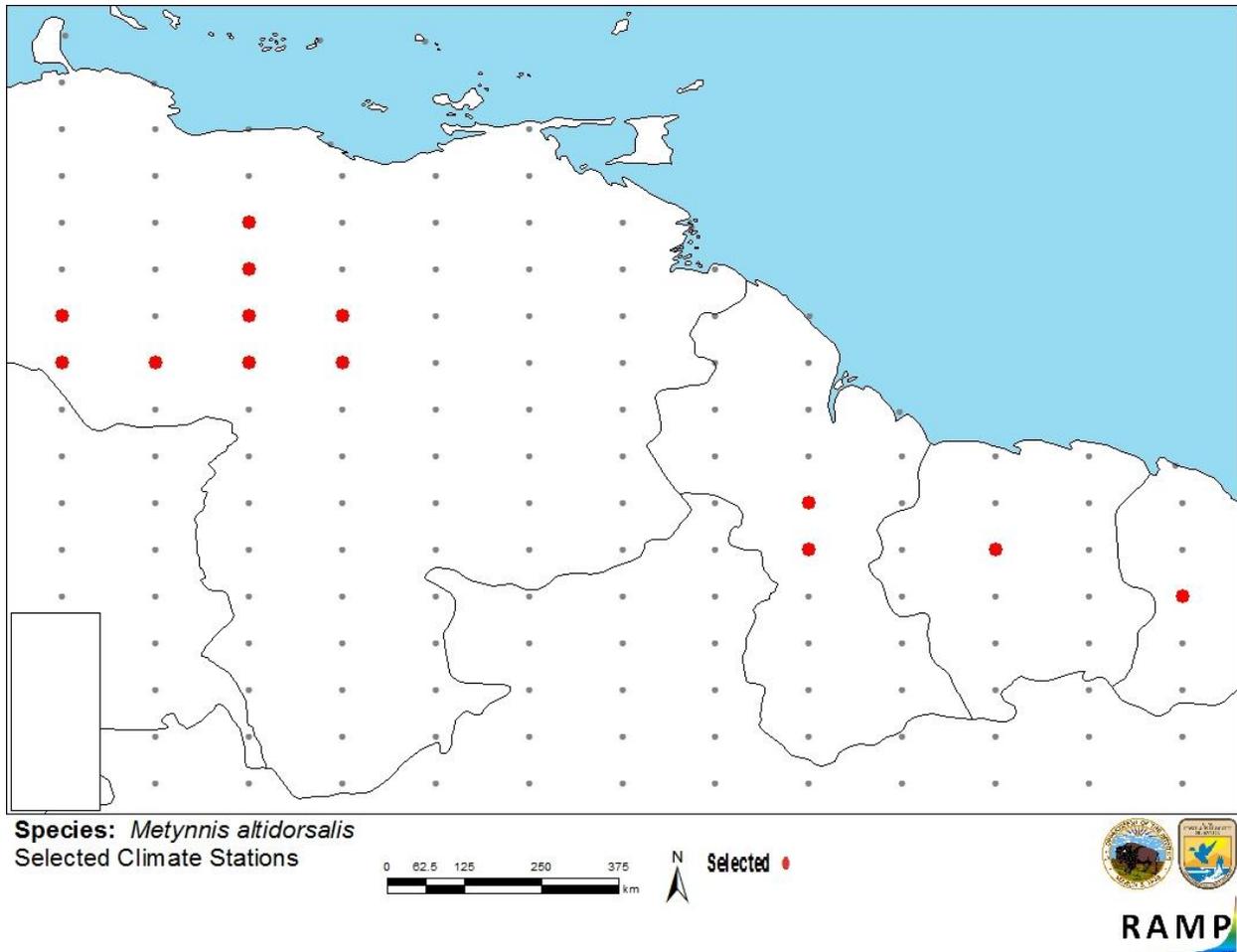


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; French Guiana, Guyana, Suriname and Venezuela) and non-source locations (gray) for *Metynnis altidorsalis* climate matching. Source locations from GBIF Secretariat (2017).

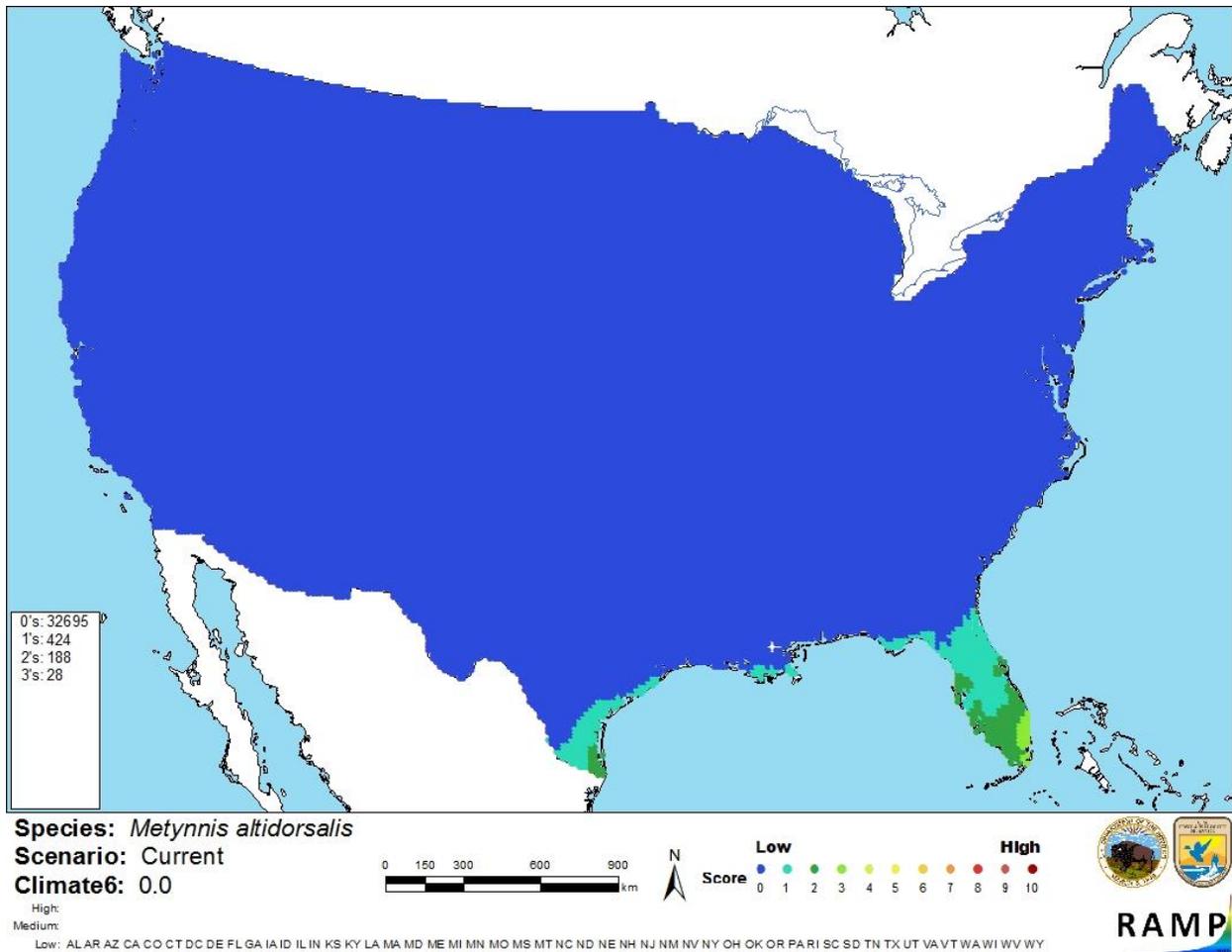


Figure 3. Map of RAMP (Sanders et al 2014) climate matches for *Metynnis altidorsalis* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

Peer-reviewed literature on the biology, ecology, distribution and potential invasiveness associated with *Metynnis altidorsalis* is limited. There are no reported introductions of the species, 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 and research 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

The silver dollar (*Metynnis altidorsalis*) is a fish native to rivers in the countries of French Guiana, Guyana, Suriname and Venezuela in northern South America. *Metynnis* spp. are common in the pet trade. There are no reports of introductions of *Metynnis altidorsalis*. However, members of the *Metynnis* genus (species identification uncertain) have been collected beyond their native range in Florida, where their status is listed as locally established. *Metynnis* spp. found in Florida are believed to be aquarium releases. Climate match to the contiguous United States is low. Certainty of assessment is low because of a lack of information and taxonomic confusion. Overall risk posed by 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

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/fishcatmain.asp>. (February 2018).

Froese, R. and D. Pauly, editors. 2017. *Metynnis altidorsalis* Ahl, 1923. FishBase. Available: <http://www.fishbase.org/summary/Metynnis-altidorsalis.html>. (February 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Metynnis altidorsalis* Ahl, 1923. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2353446>. (February 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Metynnis altidorsalis*. Integrated Taxonomic Information System, Reston, Virginia. Available: <https://www.itis.gov/servlet/SingleRpt/SingleRpt#null>. (February 2018).

Mol, J. H. 2012. The freshwater fishes of Suriname, volume 2. Brill, Boston.

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).

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.

Courtenay, W. R., Jr., D. A. Hensley, J. N. Taylor, and J. A. McCann. 1984. Distribution of exotic fishes in the continental United States. Pages 41-77 *in* W. R. Courtenay, Jr., and J. R. Stauffer, Jr, editors. *Distribution, biology, and management of exotic fishes*. John Hopkins University Press, Baltimore, Maryland.

Courtenay, W. R., Jr., D. P. Jennings, and J. D. Williams. 1991. Appendix 2: exotic fishes. Pages 97-107 *in* C. R. Robins, R. M. Bailey, C. E. Bond, J. R. Brooker, E. A. Lachner, R. N. Lea, and W. B. Scott. *Common and scientific names of fishes from the United States and Canada*, 5th edition. American Fisheries Society Special Publication 20. American Fisheries Society, Bethesda, Maryland.

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.

Florida Fish and Wildlife Conservation Commission. 2009. Florida FWC exotic database. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida.

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

Haripersad-Makhanlal, A., and P. E. Ouboter. 1993. Limnology: physico-chemical parameters and phytoplankton composition. *In* P. E. Ouboter, editor. *The freshwater ecosystems of Suriname*. *Monographiae Biologicae*, volume 70. Springer, Dordrecht, The Netherlands.

Shafland, P. L., K. B. Gestring, and M. S. Stanford. 2008. Florida's exotic freshwater fishes - 2007. *Florida Scientist* 71(3):220-245.

Zarske, A., and J. Géry. 1999. Revision der neotropischen Gattung *Metynnis* Cope, 1878. 1. Evaluation der Typusexemplare der nominellen Arten (Teleostei: Characiformes: Serrasalminidae). *Zoologische Abhandlungen (Dresden)* 50(13):169-216.