Henonemus macrops (a catfish, no common name)
Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, December 2016
Revised, January 2017
Web Version, 1/14/2018

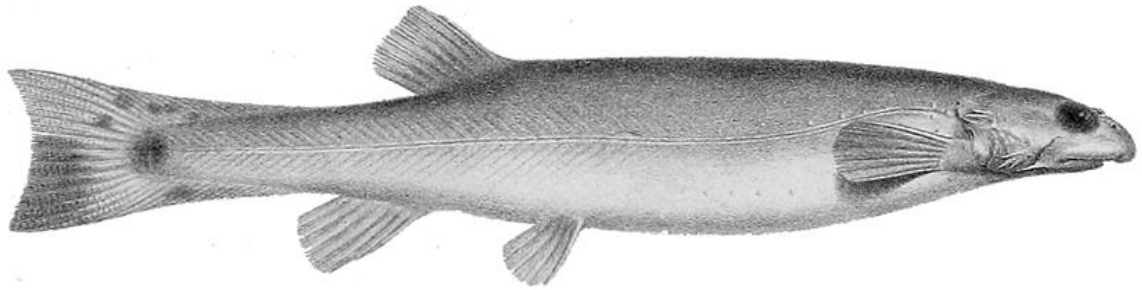

Image: Unknown author. Public domain. Available: https://commons.wikimedia.org/w/index.php?curid=16013464. (January 2017).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

"South America: Amazon River basin [Brazil]."

From Reis et al. (2003):

"Type locality: Manacapuru Lake [Brazil], Amazon River basin."

Status in the United States

This species has not been reported in the United States.

From FFWCC (2016):

"Prohibited nonnative species are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities. […]

Freshwater Aquatic Species […]
Parasitic catfishes […]
Henonemus macrops"

Means of Introductions in the United States

This species has not been reported in the United States.

Remarks

From GBIF (2016):

"BASIONYM
Stegophilus macrops Steindachner, 1882"

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2016):

"Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Ostariophysi
Order Siluriformes
Family Trichomycteridae Bleeker, 1858
Subfamily Stegophilinae
Genus *Henonemus*
Species *Henonemus intermedius* (Eigenmann and Eigenmann, 1889)"

"Current Standing: valid"

Size, Weight, and Age Range

From Froese and Pauly (2016):

"Max length : 6.0 cm TL male/unsexed; [de Pínna and Wosiacki 2003]"

Environment
From Froese and Pauly (2016):

"Freshwater; demersal."

Climate/Range
From Froese and Pauly (2016):

"Tropical, preferred ?"

Distribution Outside the United States
Native
From Froese and Pauly (2016):

"South America: Amazon River basin [Brazil]."

From Reis et al. (2003):

"Type locality: Manacapuru Lake [Brazil], Amazon River basin."

Introduced
No introductions of this species have been reported.

Means of Introduction Outside the United States
No introductions of this species have been reported.

Short Description
From DoNascimiento and Provenzano (2006):

"Henonemus is distinguished by the following synapomorphic characters: opercle with two or three odontodes, rarely four odontodes, but when four odontodes are present, occurring on a single opercle (vs. four or more opercular odontodes or completely absent in *Apomatoceros* and *Megalocentor*); teeth of the most posterior row on premaxilla and dentary proximally turned to the midline then abruptly bent laterally in the distal half, arranged in a compact band (vs. teeth of the most posterior row on premaxilla and dentary slightly curved at the tip, similar to those of the other rows). Other characters representing putative synapomorphies with some stegophiline genera include: single medial supraorbital (epiphysial) pore (vs. pair of epiphysial pores); superficial neuromasts aligned in two rows on the base of the middle rays of caudal fin (vs. absent on the base of the middle caudal-fin rays); lateral line long, reaching to or beyond a vertical through end of dorsal-fin base (vs. lateral line short, not reaching a vertical through dorsal-fin origin). Additionally, the following unique combination of characters is useful to identify *Henonemus* from other stegophilines: upper lip with three rows of teeth; posterior labial rows of teeth interrupted in the middle by a patch of larger teeth; premaxillary teeth arranged in four rows."

Biology
From DoNascimiento and Provenzano (2006):

"Stegophilines are considered parasites or semi-parasites, because of their peculiar habit of feeding on scales, mucus, or skin of other fishes (Baskin et al., 1980; Winemiller and Yan, 1989; de Pinna and Britski, 1991)."

Human Uses
No information available.

Diseases
No information available.

Threat to Humans
From Froese and Pauly (2016):

"Harmless"

3 Impacts of Introductions
No introductions of this species have been reported.

From FFWCC (2016):

"Prohibited nonnative species are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities.[…]
Freshwater Aquatic Species[…]
Parasitic catfishes[…]
Henonemus macrops"

4 Global Distribution

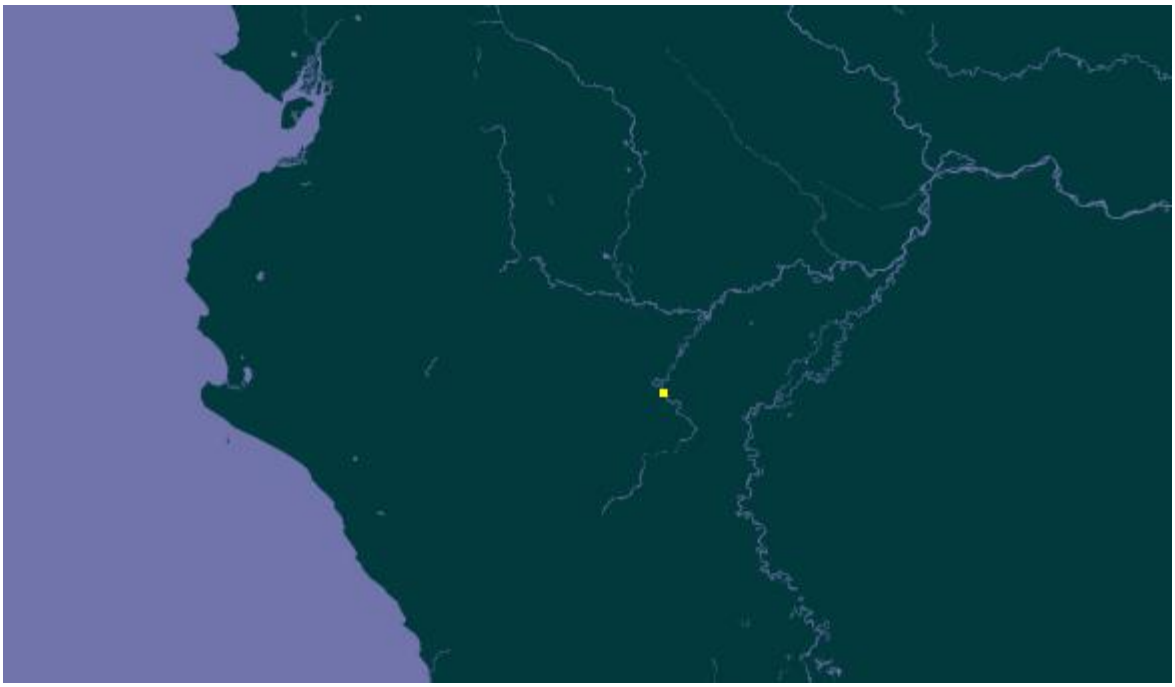

Figure 1. Known global established locations of *Henonemus macrops* in the Amazon River basin, South America. Map from GBIF (2016).

5 Distribution Within the United States

This species has not been reported in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was categorically low throughout the contiguous U.S., reflected in a Climate 6 proportion of 0.0. The range for Climate 6 proportions indicating a low climate match is 0.000 to 0.005.

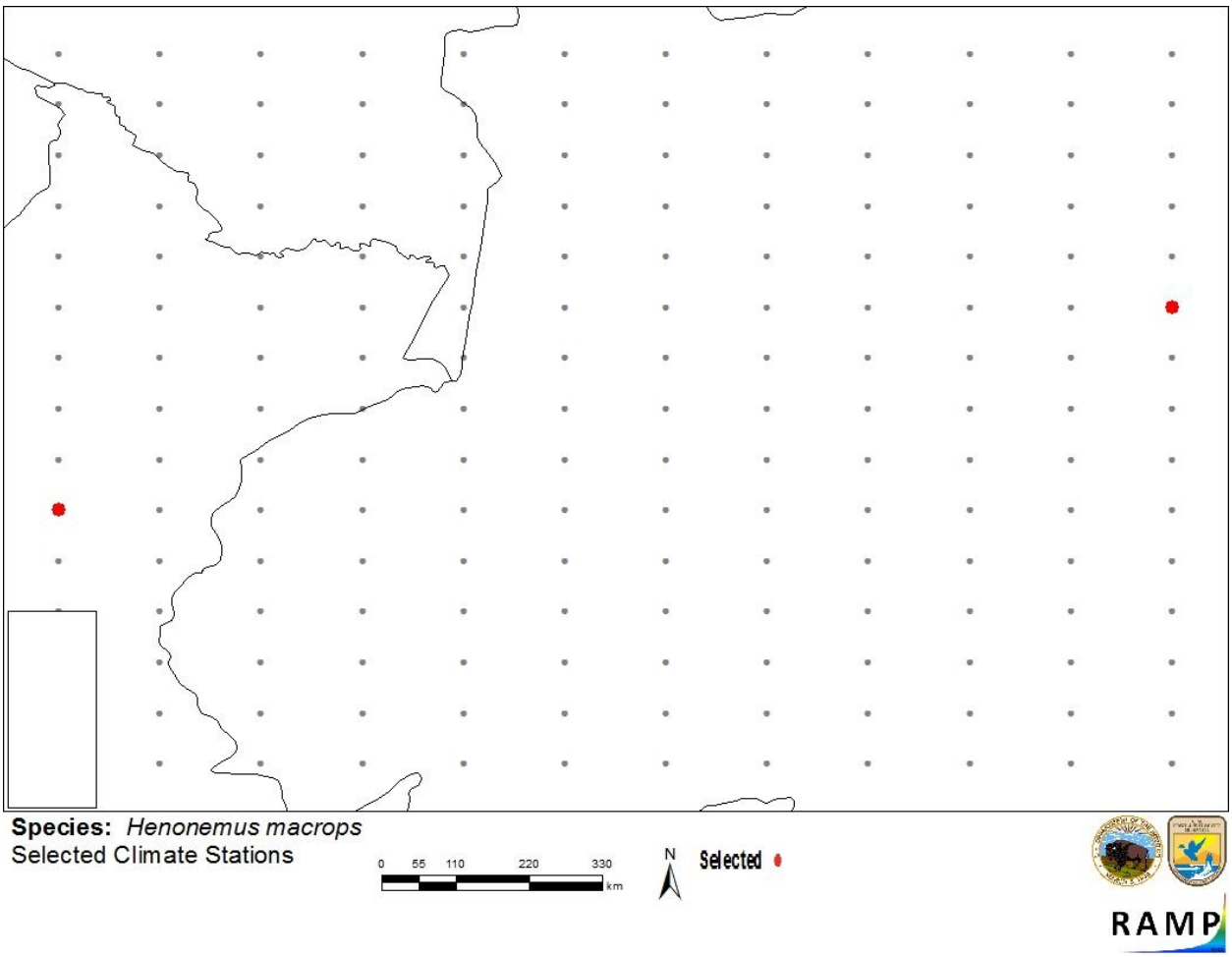

Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in northern Peru and western Brazil selected as source locations (red) and non-source locations (gray) for *Henonemus macrops* climate matching. Source locations from Reis et al. (2003) and GBIF (2016).

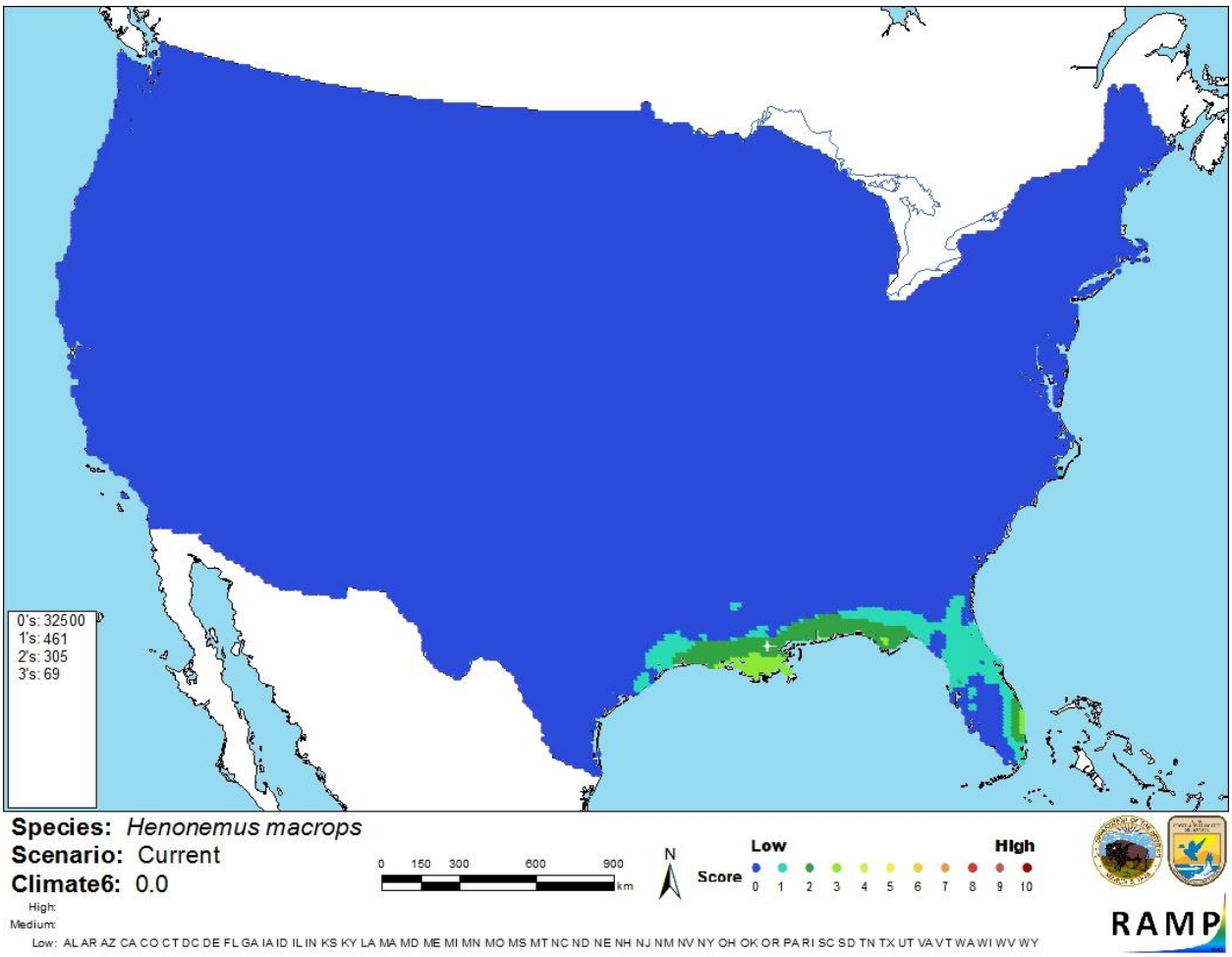

Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Henonemus macrops* in the contiguous United States based on source locations reported by Reis et al. (2003) and GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate matches are tabulated on the left.

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≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

7 Certainty of Assessment

There is very limited information available on the distribution and biology of *Henonemus macrops*. The species has not been reported as introduced outside its native range, so potential impacts are unknown. Due to the lack of information, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Henonemus macrops is a trichomycterid catfish species native to the Amazon River basin in South America. Very little is known about its biology, and it has not been reported as introduced outside its native range, so impacts of introduction are unknown. Climate match to the contiguous U.S. is low. Overall risk posed by *H. macrops* 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.

DoNascimiento, C., and F. Provenzano. 2006. The genus *Henonemus* (Siluriformes: Trichomycteridae) with a description of a new species from Venezuela. Copeia 2006(2):198-205.

FFWCC (Florida Fish and Wildlife Conservation Commission). 2016. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/#nogo. (December 2016).

Froese, R., and D. Pauly, editors. 2016. *Henonemus macrops* (Steindachner, 1882). FishBase. Available: http://www.fishbase.se/summary/Henonemus-macrops.html. (December 2016).

GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Henonemus macrops* (Steindachner, 1882). Global Biodiversity Information Facility, Copenhagen. Available: http://www.gbif.org/species/2343255. (December 2016).

ITIS (Integrated Taxonomic Information System). 2016. *Henonemus macrops* (Steindachner, 1882). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682109#null. (December 2016).

Reis, R. E., S. O. Kullander, and C. J. Ferraris, Jr. 2003. Check list of the freshwater fishes of South and Central America. EDIPUCRS, Porto Alegre, Brazil.

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

Baskin, J.N., T. M. Zaret, and F. Mago-Leccia. 1980. Feeding of reportedly parasitic catfishes (Trichomycteridae and Cetopsidae) in the Río Portuguesa basin, Venezuela. Biotropica 12:182-186.

de Pínna, M. C. C., and H. A. Britski. 1991. *Megalocentor*, a new genus of parasitic catfish from the Amazon basin: the sister group of *Apomatoceros* (Trichomycteridae: Stegophilinae). Ichthyological Exploration of Freshwaters 2:113-128.

de Pínna, M. C. C., and W. Wosiacki. 2003. Trichomycteridae (pencil or parasitic catfishes). Pages 270-290 *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.

Winemiller, K. O., and H. Y. Yan. 1989. Obligate mucus-feeding in a South American trichomycterid catfish (Pisces: Ostariophysi). Copeia 1989:511-514.