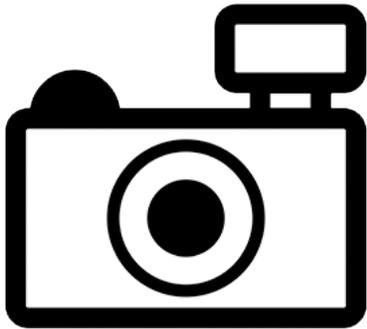


***Plectrochilus machadoi* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, November 2016
Revised, February 2017
Web Version, 4/2/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: Amazon River basin [Brazil, Bolivia, Peru].”

Status in the United States

This species has not been reported as introduced or established in the U.S.

From FFWCC (2017):

“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. Very limited exceptions may be made by permit from the Executive Director for research or for public exhibition by facilities that meet biosecurity criteria [...]

[The list of prohibited nonnative species includes] *Plectrochilus machadoi*”

Means of Introductions in the United States

This species has not been reported as introduced or established in the U.S.

Remarks

From GBIF (2016):

“SYNONYMS

Vandellia hasemani Eigenmann, 1918”

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

Subfamily Vandelliinae

Genus *Plectrochilus*

Species *Plectrochilus machadoi* Miranda Ribeiro, 1917”

“Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 9.3 cm male/unsexed; [de Pínna and Wosiacki 2003]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic.”

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, Bolivia, Peru].”

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 (1918):

“Head 8-8.5 [mm]; depth 8 [mm]; [...] Five or six teeth in the premaxillaries, two thorn-like teeth on the distal part of the anterior face of the premaxillary, two or three more slender teeth on the distal part of the lower face of the premaxillary; mandibular rami without teeth, widely separated from each other, the membrane between the two rami but little emarginate; angle of gape about halfway between the premaxillary and the barbel; maxillary barbel 2-2.5 in the length of the head; lower barbel minute; about ten interopercular thorns, fifteen or more on the opercle; broad, free, fleshy lobes behind the opercular and pre-opercular spines; gill-openings about half as wide as the mouth; eye entirely in the anterior half of the head; the posterior nares nearly as large as the eyes and between the anterior halves of the latter, anterior nares, with a short flap; pectorals about equal to the length of the head; origin of ventrals equidistant from tip of caudal and eye or opercle, reaching a little beyond the anus; origin of anal under middle of dorsal; distance between anal and base of middle caudal rays 4.5-5.25 in the length; caudal forked for about two-ninths of its length; origin of dorsal over the tips of the ventrals, distance of origin of dorsal from caudal 2.25-2.5 in its distance from the snout. Back and basal part of caudal truncate.”

Biology

From Baskin (2016):

“*Plectrochilus* has been found in a wound on the body of an alligator, so it is possible that blood is gotten from places other than the gills by at least some Vandelliinae. There is no evidence, however, that any feed on anything other than blood.”

From Froese and Pauly (2016):

“Specimens of *P. machadoi* were found partially buried in the belly of a specimen of *Pseudoplatystoma* where it apparently had burrowed through the body wall [Burgess 1989].”

Human Uses

No information available.

Diseases

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

Threat to Humans

From Froese and Pauly (2016):

“Harmless”

3 Impacts of Introductions

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

From FFWCC (2017):

“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. Very limited exceptions may be made by permit from the Executive Director for research or for public exhibition by facilities that meet biosecurity criteria [...]

[The list of prohibited nonnative species includes] *Plectrochilus machadoi*”

4 Global Distribution

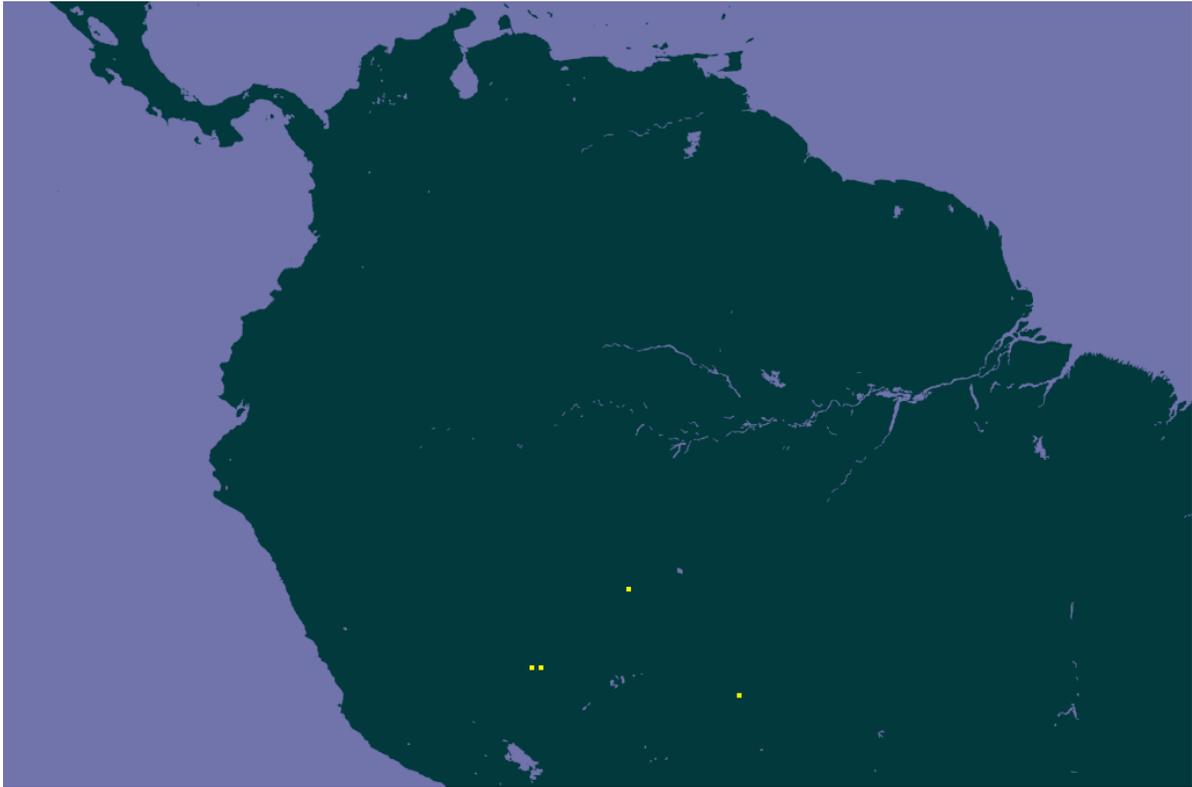


Figure 1. Known global established locations of *Plectrochilus machadoi* in Peru, Brazil, and Bolivia. Map from GBIF (2016).

5 Distribution Within the United States

This species has not been reported as introduced or established in the U.S.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was high in Florida and low elsewhere in the U.S. Climate 6 proportion indicated that the contiguous U.S. has a low climate match. Climate 6 proportion indicates a low climate match when the value is less than or equal to 0.005; the Climate 6 proportion of *Plectrochilus machadoi* was 0.003.

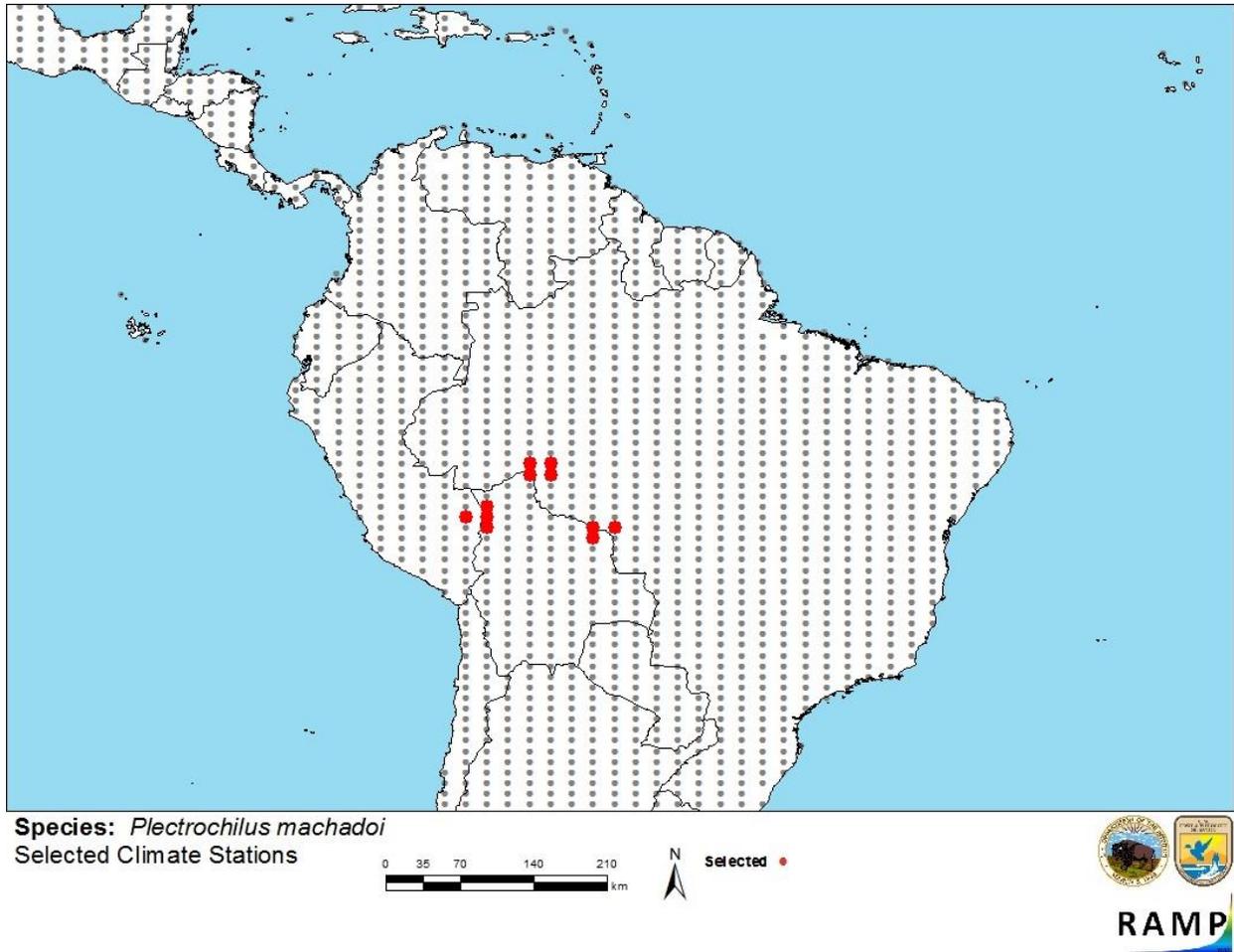


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Peru, Bolivia, Brazil) and non-source locations (gray) for *Plectrochilus machadoi* climate matching. Source locations from GBIF (2016).

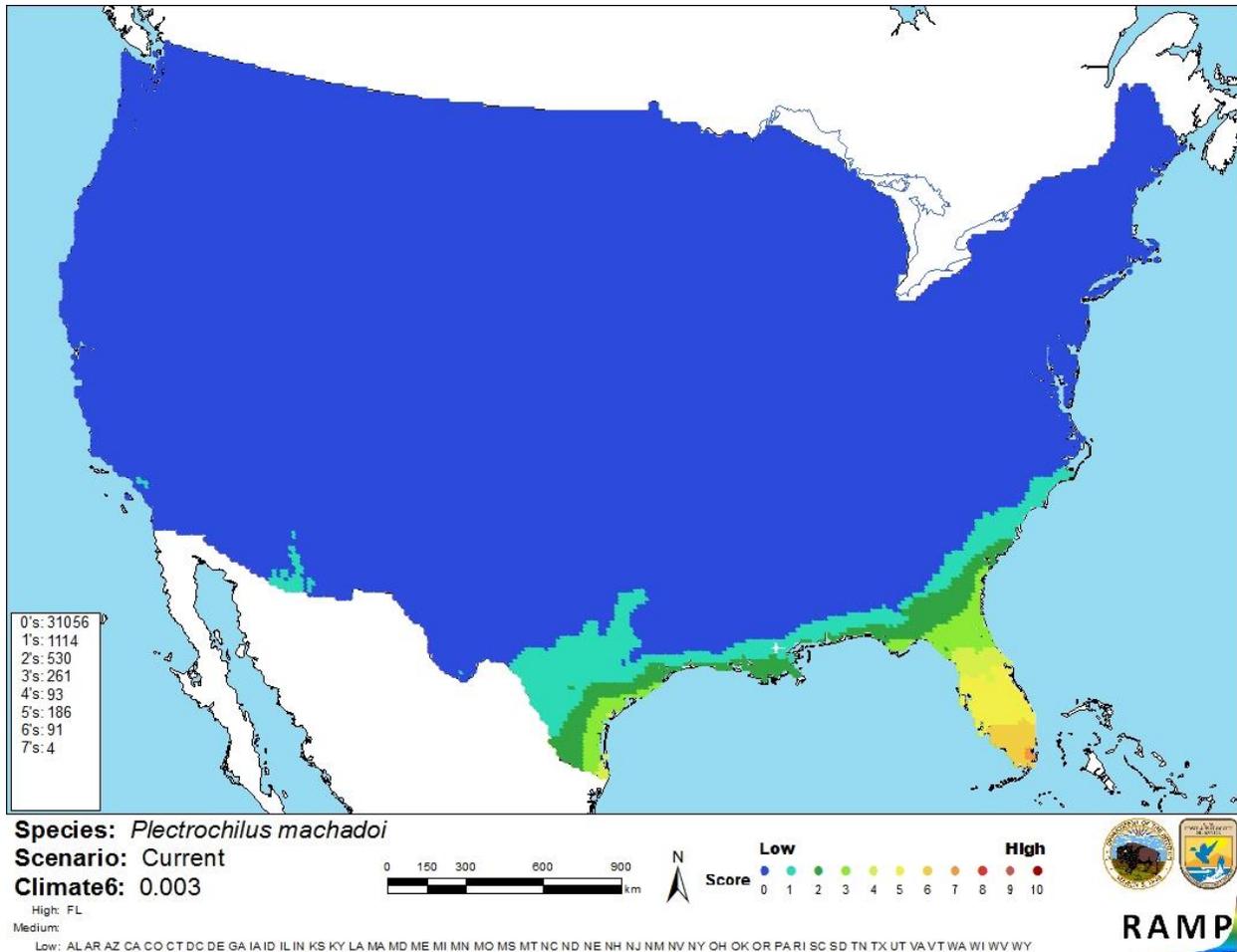


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Plectrochilus machadoi* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

There is almost no information available on the biology and ecology of *Plectrochilus machadoi*. Further information is needed to evaluate the potential for negative impacts from this species. The certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Plectrochilus machadoi is a small, parasitic catfish native to the upper Amazon River basin. There is very little information available on this species. *P. machadoi* has a low climate match with the contiguous United States and no documented history of introduction outside its native range. Possession of the species is prohibited in the state of Florida, as with other trichomycterids. Overall risk assessment category for 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.

Baskin, J. N. 2016. Structure and relationships of the Trichomycteridae (first edition of the original thesis presented in 1973). *Neotropical Ichthyology* 14(2):S1 of de Pinna (2016).

Eigenmann, C. H. 1918. The Pygidiidae, a family of South American catfishes. *Memoirs of the Carnegie Museum* 7(5):259-398.

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Froese, R., and D. Pauly, editors. 2016. *Plectrochilus machadoi* (Miranda Ribeiro, 1917). FishBase. Available: <http://www.fishbase.org/summary/48784>. (November 2016).

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ITIS (Integrated Taxonomic Information System). 2016. *Plectrochilus machadoi*, (Miranda Ribiero, 1917). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682152#null. (November 2016).

Sanders, S., C. Castiglione, and M. 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.

Burgess, W. E. 1989. An atlas of freshwater and marine catfishes. A preliminary survey of the Siluriformes. T. F. H. Publications, Inc., Neptune City, New Jersey.

de Pínna, M. C. C. and W. Wosiacki. 2003. Trichomycteridae (pencil or parasitic catfishes). p. 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.