

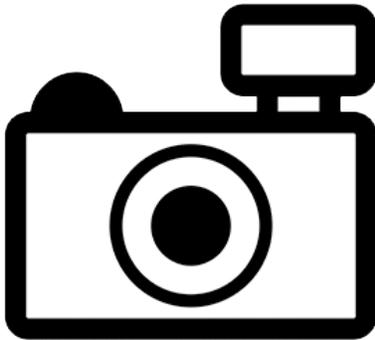
***Pseudostegophilus maculatus* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, November 2016

Revised, December 2016

Web Version, 4/4/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: lower Paraná and Uruguay River basins.”

From Eschmeyer et al. (2016):

“Lower Paraná and Uruguay River basins: Argentina and Uruguay.”

Status in the United States

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

From FFWCC (2018):

“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 [...]
[The list includes] *Parastegophilus maculatus*”

Means of Introductions in the United States

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

Remarks

From DoNascimento (2015):

“Koch’s (2002) taxonomic revision of *Homodiaetus* proposed a diagnosis for the genus mainly based on external characters. This author moved *Homodiaetus haemomyzon* and *Parastegophilus maculatus* into the genus *Pseudostegophilus*, based on a weak phenetic argument.”

“The genera *Parastegophilus* and *Pseudostegophilus* have lacked adequate phylogenetic definition, and the species originally described in *Homodiaetus* (e.g., *H. haemomyzon*) and *Pseudostegophilus* (e.g., *P. paulensis*) have been serendipitously moved between both genera, highlighting uncertain and different classification criteria throughout their taxonomic histories. The most recent concept of *Pseudostegophilus*, albeit not explicitly defined (de Pinna and Wosiacki, 2003), is proposed here to include in its synonymy the genus *Parastegophilus*, based on three unique synapomorphies shared by all species currently assigned to both genera.”

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 Ostariophysii
Order Siluriformes
Family Trichomycteridae
Subfamily Stegophilinae
Genus *Parastegophilus*
Species *Parastegophilus maculatus* (Steindachner, 1879)”

From Eschmeyer et al. (2016):

“Current status: Valid as *Pseudostegophilus maculatus* (Steindachner 1879). Trichomycteridae: Stegophilinae.”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 6.0 cm SL male/unsexed; [de Pínna and Wosiacki, 2003]”

“Reported to reach around 9 cm SL [Britski et al., 2007]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2016):

“Temperate”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: lower Paraná and Uruguay River basins.”

From Eschmeyer et al. (2016):

“Lower Paraná and Uruguay River basins: Argentina and Uruguay.”

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 DoNascimento (2015):

“Autapomorphies [of *Pseudostegophilus*]: 1. Dorsal edge of quadrate convex or straight [...] 2. Anterior edge of hyomandibula notched and overlapped [...] 3. Fleshy membrane of posterior nostril continuous [...]”

Biology

From Froese and Pauly (2016):

“Enters the gill chamber of *Luciopimelodus pati* and feeds on the gills [Wheeler, 1977].”

From Sazima (1983):

“Mucus-eating may have been the ancestral feeding behavior of the scale- and even blood-feeding trichomycterids. [...] I have found specimens of *Pseudostegophilus maculatus* with their stomachs filled with mucus along with some characoid scales.”

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 or established outside of its native range.

From FFWCC (2018):

“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 [...]

[The list includes] *Parastegophilus maculatus*”

4 Global Distribution



Figure 1. Reported distribution of *Pseudostegophilus maculatus* in the lower Paraná and Uruguay River basins of South America. 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 along the central Atlantic coast of the U.S and the Gulf coast of Texas, medium overall in the southeastern U.S., and low elsewhere. Climate 6 proportion indicated that the contiguous U.S. has a medium climate match. The range for a medium climate match is greater than 0.005 and less than 0.103; the Climate 6 proportion for *Pseudostegophilus maculatus* is 0.065.

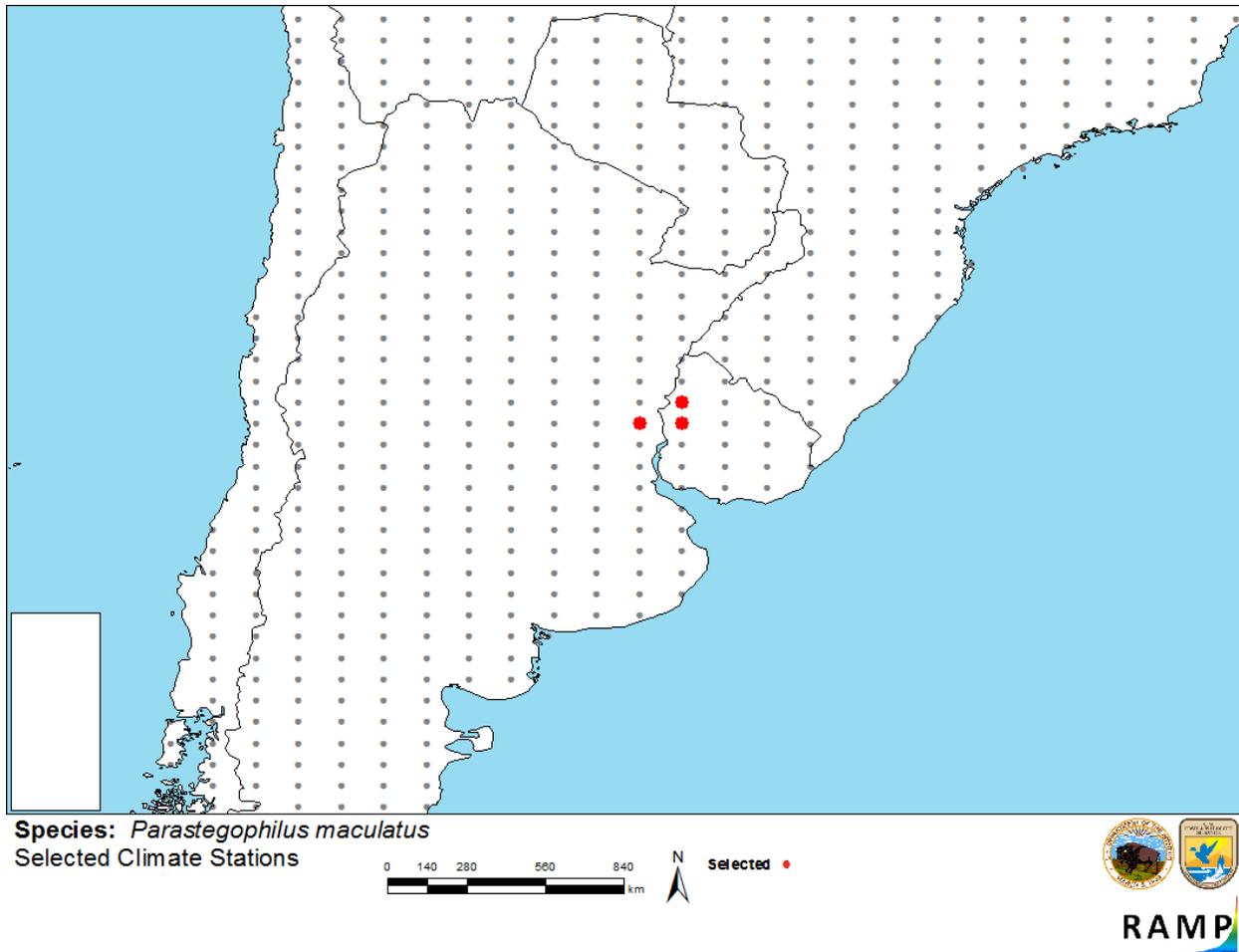


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Argentina and Uruguay) and non-source locations (gray) for *Pseudostegophilus maculatus* climate matching. Source locations from GBIF (2016).

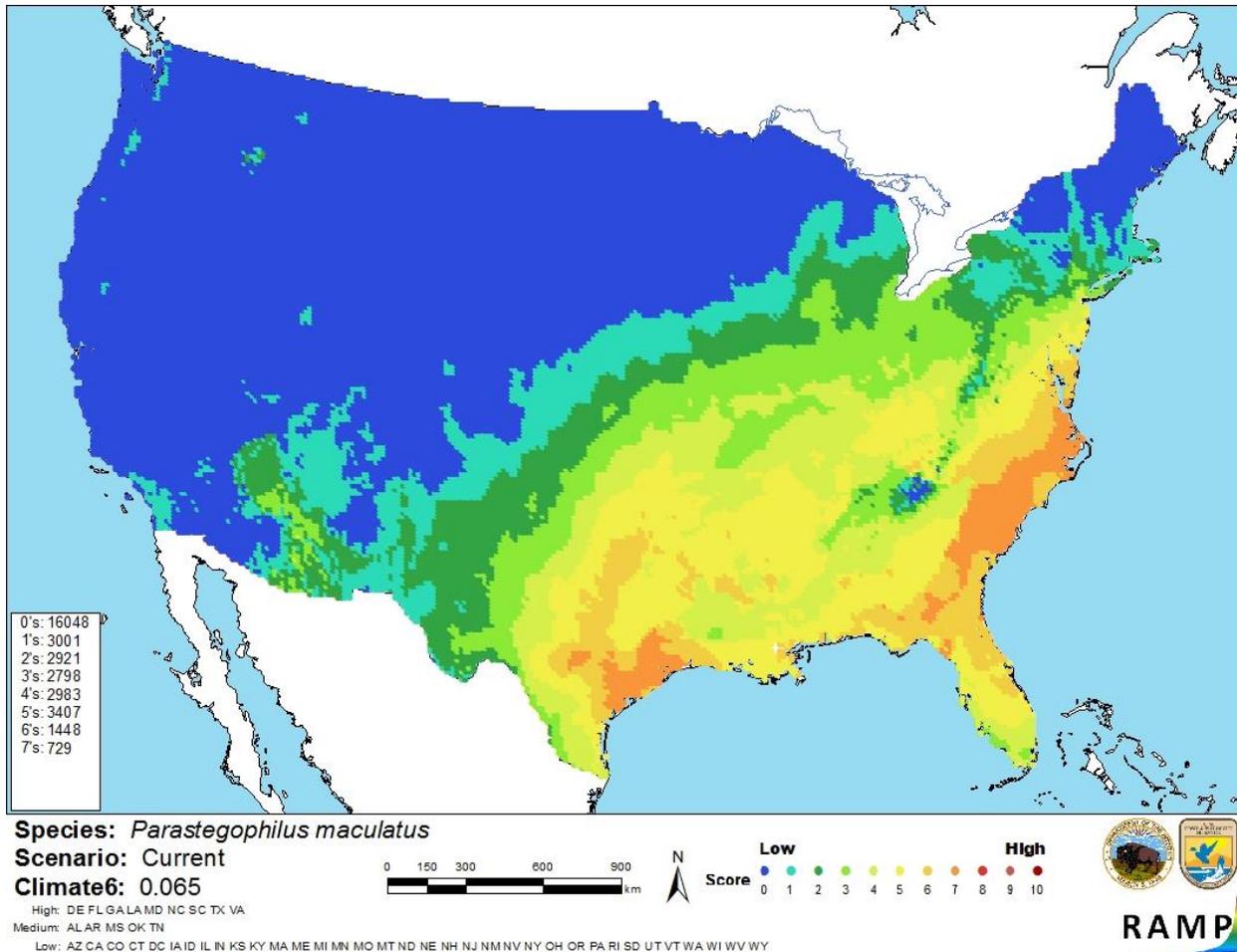


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Pseudostegophilus maculatus* in the contiguous United States based on source locations reported by GBIF (2016). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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 little information available on the biology or distribution of *P. maculatus*, and it is not documented as established outside its native range. The certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Parastegophilus maculatus is a freshwater catfish that feeds from the gills of a host fish. It has a medium climate match with the United States. There is no documented history of invasiveness for this species, but the species is listed as prohibited in Florida due to concerns about its potential impacts on the ecology or human health and welfare of the state. Overall risk assessment category for *P. maculatus* is uncertain with high certainty due to lack of information.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec.6): Medium**
- **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.

- DoNascimento, C. 2015. Morphological evidence for the monophyly of the subfamily of parasitic catfishes Stegophilinae (Siluriformes, Trichomycteridae) and phylogenetic diagnoses of its genera. *Copeia* 103(4):933-960.
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- FFWCC (Florida Fish and Wildlife Conservation Commission). 2018. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/#Pseudostegophilus>. (April 2018).
- Froese, R., and D. Pauly, editors. 2016. *Parastegophilus maculatus* (Steindachner, 1879). FishBase. Available: <http://www.fishbase.org/summary/Parastegophilus-maculatus.html>. (November 2016).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Parastegophilus maculatus* (Steindachner, 1879). Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2343228>. (November 2016).
- ITIS (Integrated Taxonomic Information System). 2016. *Parastegophilus maculatus* (Steindachner, 1879). Integrated Taxonomic Information System, Reston, Virginia.

Available:

https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682146#null. (November 2016).

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

Sazima, I. 1983. Scale-eating in characoids and other fishes. *Environmental Biology of Fishes* 9(2):87-101.

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.

Britski, H. A., K. Z. de Silimon, and B. S. Lopes. 2007. Peixes do Pantanal: manual de identificação, 2nd edition. Embrapa Informação Tecnológica, Brasília, Brazil.

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.

Koch, W. R. 2002. Revisão taxonômica do gênero *Homodiaetus* (Teleostei, Siluriformes, Trichomycteridae). *Iheringia, Série Zoologia* 92:33-46.

Wheeler, A. 1977. *Das grosse Buch der Fische*. Eugen Ulmer GmbH & Co., Stuttgart, Germany.