U.S. Fish & Wildlife Service

Pareiodon microps (a catfish, no common name)
Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, November 2016
Revised, December 2016 and March 2018
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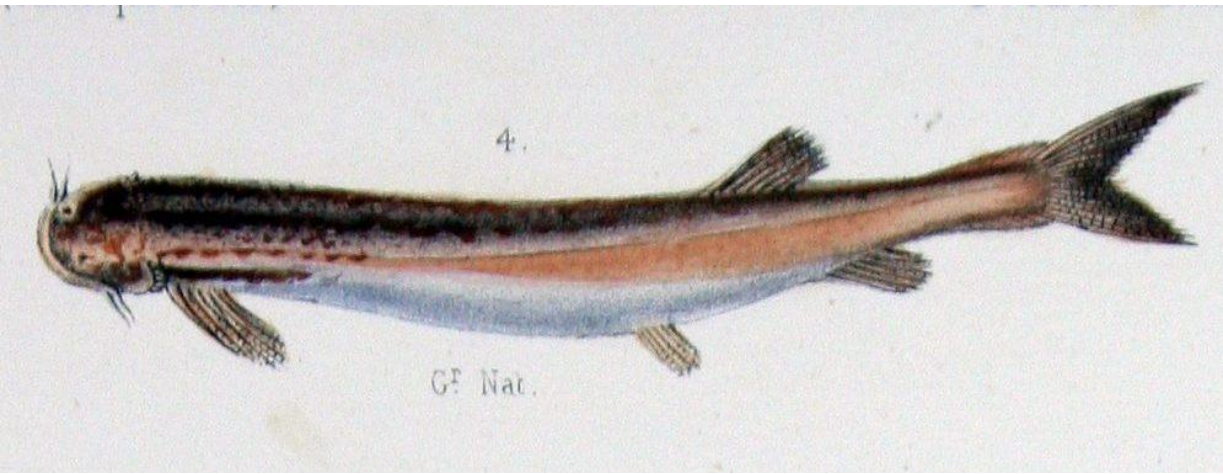

Photo: F. de Laporte de Castelnau. Public domain.

1 Native Range and Status in the United States

Native Range
From Froese and Pauly (2016):

"South America: Amazon River basin."

From Fowler (1939):

"Amazon between mouth of Rio Negro [Brazil] to Peru."

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

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 […]
Pareiodon microps"

Means of Introductions in the United States

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

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 Stegophilinae
Genus *Pareiodon*
Species *Pareiodon microps* Kner, 1855"

"Taxonomic Status: valid"

From DoNascimiento (2015):

"Stegophilinae has 12 recognized genera […] of which nearly half are monotypic [i.e., represented by only one described species] (*Acanthopoma*, *Apomatoceros*, *Haemomaster*, *Megalocentor*, and *Pareiodon*)."

Size, Weight, and Age Range

From Reis et al. (2003):

"Maximum length: 13 cm"

Environment

From Froese and Pauly (2016):

"Freshwater; demersal."

Climate/Range

From Froese and Pauly (2016):

"Tropical"

Distribution Outside the United States

Native

From Froese and Pauly (2016):

"South America: Amazon River basin."

From Fowler (1939):

"Amazon between mouth of Rio Negro [Brazil] to Peru."

Introduced

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

Means of Introduction Outside the United States

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

Short Description

From DoNascimiento (2015):

"Autapomorphies [of genus *Pareiodon*]: 1. Mesethmoid split dorsally. […] 2. Dentary with an internal posterior process […] 3. Jaw teeth strongly compressed and expanded basally […] 4. Quadrate lacking a synchondral articulation with the metapterygoid. […] 5. Parapophysis and post-hemopophysis of first post-Weberian vertebra connected by a dorsal lamina. […] 6. Posterior region of horizontal lamina of cleithrum extensively pierced by numerous broad foramina […] Diagnostic homoplasies: 1. Lateral ethmoid process anterodorsal to articular facet for autopalatine absent. […] 2. Mandibular ramus not extending beyond coronoid process […] 3. Coronoid portion of angular-articular-retroarticular perpendicular to mandibular ramus […] 4. Median premaxilla absent."

Biology
From Baskin et al. (1980):

"Lincoln observed large numbers of *H. candiru* and *Pareiodon microps* (a trichomycterid) acting together to devour a large doradid catfish by penetrating the body cavity and consuming it from the inside."

From DoNascimiento (2015):

"Along with its morphology, the feeding habits of *Pareiodon microps* are also peculiar. In addition to eating scales (Fernández and Schaefer, 2009; pers. obs.), this species is able to remove chunks of flesh from dead or dying fishes (de Pinna and Wosiacki, 2003; pers. obs.). Hence, carrion and carnivorous feeding of *Pareiodon* distinguish it from the remaining stegophilines, which are exclusively lepidophagous and muciphagous."

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 (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 […]
Pareiodon microps"

4 Global Distribution

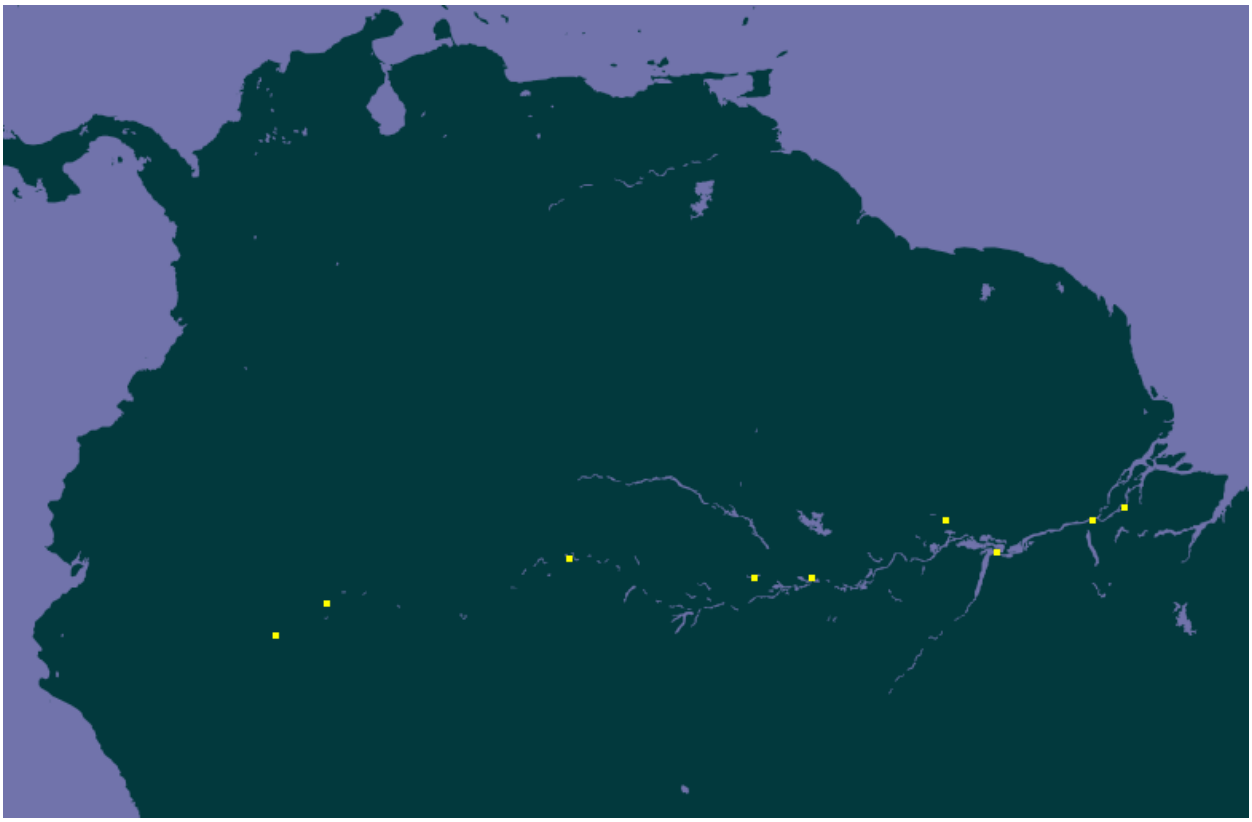

Figure 1. Distribution of *Pareiodon microps* in northern South America. Map from GBIF (2016).

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 low across the entire United States, but highest in Florida. Climate 6 proportion indicated that the contiguous U.S. has a low climate match. The proportions indicating a low climate match are those less than or equal to 0.005; the Climate 6 proportion for *Pareiodon microps* was 0.0.

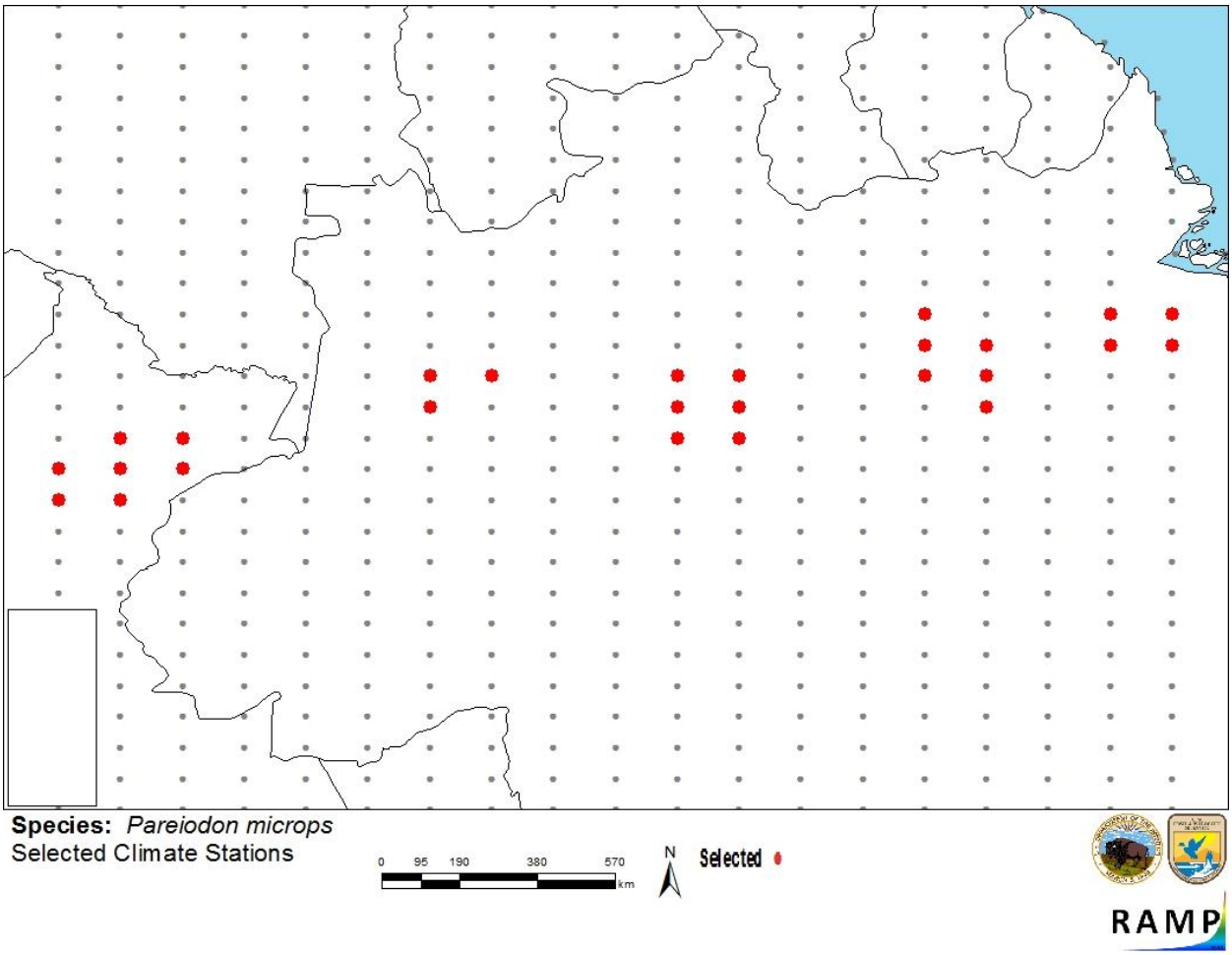

Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Brazil, Peru) and non-source locations (gray) for *Pareiodon microps* climate matching. Source locations from GBIF (2016).

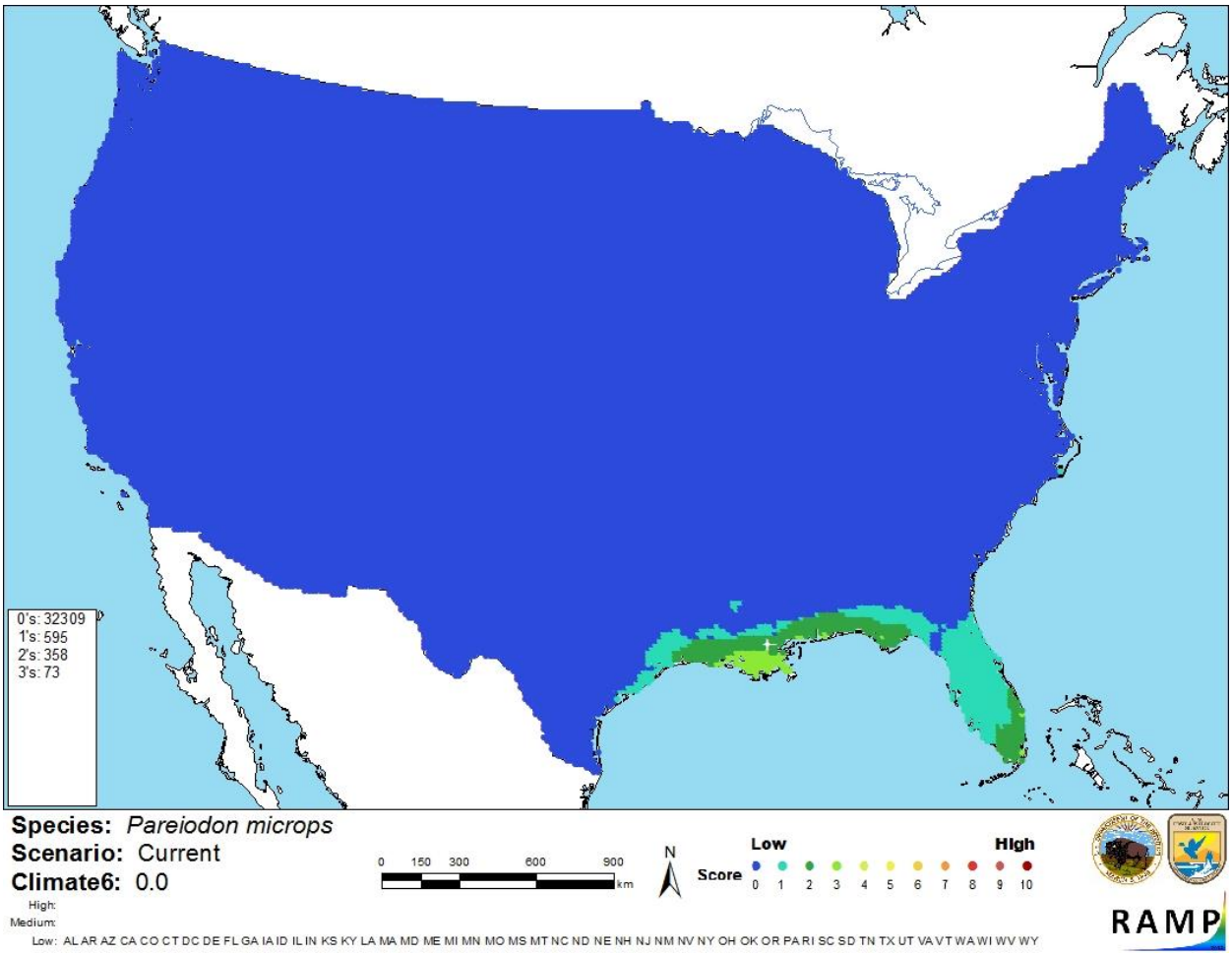

Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Pareiodon microps* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

7 Certainty of Assessment

There is little information available on the biology of *P. microps*. No negative impacts from introductions of this species have been documented because this species has not been reported outside of its native range. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Pareiodon microps is a small freshwater catfish native to the Amazon River basin. It has a low climate match with the United States. There is little information available on *P. microps*, and there is no documented history of invasiveness for this species. The state of Florida bars personal possession or commercial use of this species due to concerns over its potential effect on the ecology or human health and welfare. Overall risk assessment category 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., T. Zaret, and F. Mago-Leccia. 1980. Feeding of reportedly parasitic catfishes (Trichomycteridae and Cetopsidae) in the Rio Portuguesa Basin, Venezuela. Biotropica 12(3):182-186.

DoNascimiento, 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.

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/#Tridentopsis. (December 2016).

Fowler, H. W. 1939. A collection of fishes obtained by Mr. William C. Morrow in the Ucayali River Basin, Peru. Proceedings of the Academy of Natural Sciences of Philadelphia 91:219-289.

Froese, R., and D. Pauly, editors. 2016. *Pareiodon microps* (Kner, 1855). FishBase. Available: http://www.fishbase.org/summary/48758. (November 2016).

GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Pareiodon microps* Kner, 1855. Global Biodiversity Information Facility, Copenhagen. Available: http://www.gbif.org/species/2343306. (November 2016).

ITIS (Integrated Taxonomic Information System). 2016. *Pareiodon microps* Kner, 1855. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682150#null. (November 2016).

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

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

de Pinna, M. C. C., and W. B. Wosiacki. 2003. Family 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.

Fernández, L., and S. A. Schaefer. 2009. Relationships among the Neotropical Candirus (Trichomycteridae, Siluriformes) and the evolution of parasitism based on analysis of mitochondrial and nuclear gene sequences. Molecular Phylogenetics and Evolution 52:416-423.