

***Paravandellia oxyptera* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, November 2016
Revised, December 2016
Web Version, 3/28/2018



Photo: A. R. Manzotti. Licensed under CC BY-NC. Available:
<http://www.fishbase.se/photos/UploadedBy.php?autoctr=14569&win=uploaded>. (November 2016).

1 Native Range, and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: Paraná, Paraguay and Uruguay River basins [Argentina, Brazil, Paraguay, and Uruguay].”

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 [...]

Paravandellia oxyptera(Pantanal parasitic catfish)”

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 Vandelliinae
Genus *Paravandellia*
Species *Paravandellia oxyptera* Miranda Ribeiro, 1912”

“Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 2.8 cm NG male/unsexed; [de Pínna and Wosiacki 2003]”

Environment

From Froese and Pauly (2016):

“Inhabits rivers with sandy to muddy bottom.”

Climate/Range

From Froese and Pauly (2016):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: Paraná, Paraguay and Uruguay River basins [Argentina, Brazil, Paraguay, 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):

“[...] posteriorly projecting mouth corners also occur in the vandelliines *Paravandellia*, *Vandellia*, and the undescribed genus of Vandelliinae, although these vandelliines lack the sucking disk of stegophilines.”

“[...] specimens of *Paravandellia* sp. (Orinoco) around 17 mm SL [...] have straight, but slightly posterolaterally oriented, mesethmoid cornua, while specimens longer than 20 mm SL [...] have notably posteriorly curved cornua.”

Biology

From Froese and Pauly (2016):

“Found to exhibit parasitic traits [Burgess 1989]. [...] Forages both during the day and at night seeks the gill chambers of larger fishes, especially catfishes. Enters and leaves the gill chamber during the host's ventilating movements: feeds on blood drawn from the gill filaments and may stay in the gill chamber for 1-3 min; when gorged with blood, moves to the bottom and buries itself in the sand. A single large catfish tethered on the river bank may feed thousand [*sic*] of these parasitic catfish over a period of up to 6 hours. Two females, 1.8 cm TL, caught in January (wet season) had about 150 mature oocytes each, and one male 2.0 cm TL had well-developed testes. Large numbers of this fish may kill fishes tethered by fishermen [Machado and Sazima 1983].”

From Zuanon and Sazima (2004):

“Machado & Sazima (1983) suggested that the minute *Paravandellia oxyptera* takes blood from its hosts by biting the proximal and medial parts of the gill filaments, which would then bleed freely into the alimentary tract of the candiru. This suggestion was supported by the presence of small scratches and further bleeding of the filaments seen after feeding by these candirus. However, this view remains untested, even if it may apply to small species which attack very

large hosts, such as the catfishes *Pseudoplatystoma* spp. (Machado & Sazima, 1983). Minute candirus are unlikely to be able to cut through the relatively large, tough, major gill vessels of their large hosts; they most probably seek gill vessels of a diameter appropriate to their own size.”

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 (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 [...]

Paravandellia oxyptera(Pantanal parasitic catfish)”

4 Global Distribution

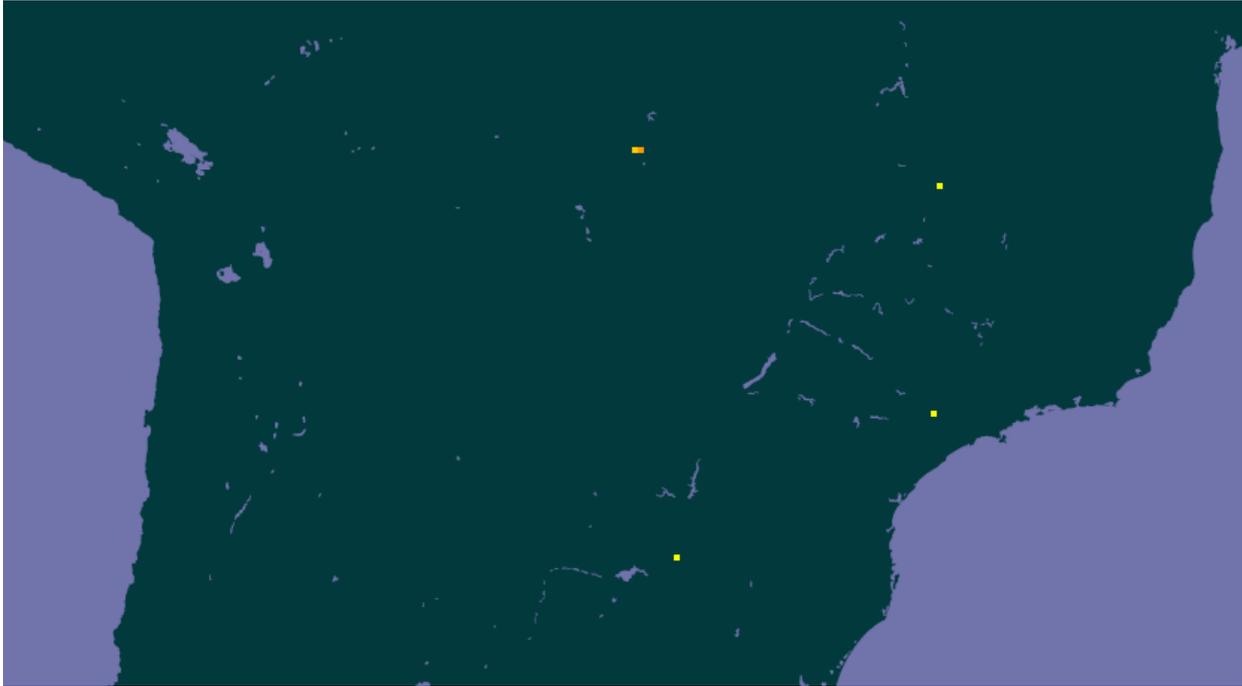


Figure 1. Distribution of *Paravandellia oxyptera*. Map from GBIF (2016).

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 along the Gulf Coast, medium-high in the southeastern and south-central U.S., and low elsewhere. Climate 6 proportion indicated that the contiguous U.S. has a medium climate match. Climate 6 proportions greater than 0.005 and less than 0.103 are considered a medium climate match; the Climate 6 proportion of *Paravandellia oxyptera* was 0.042.

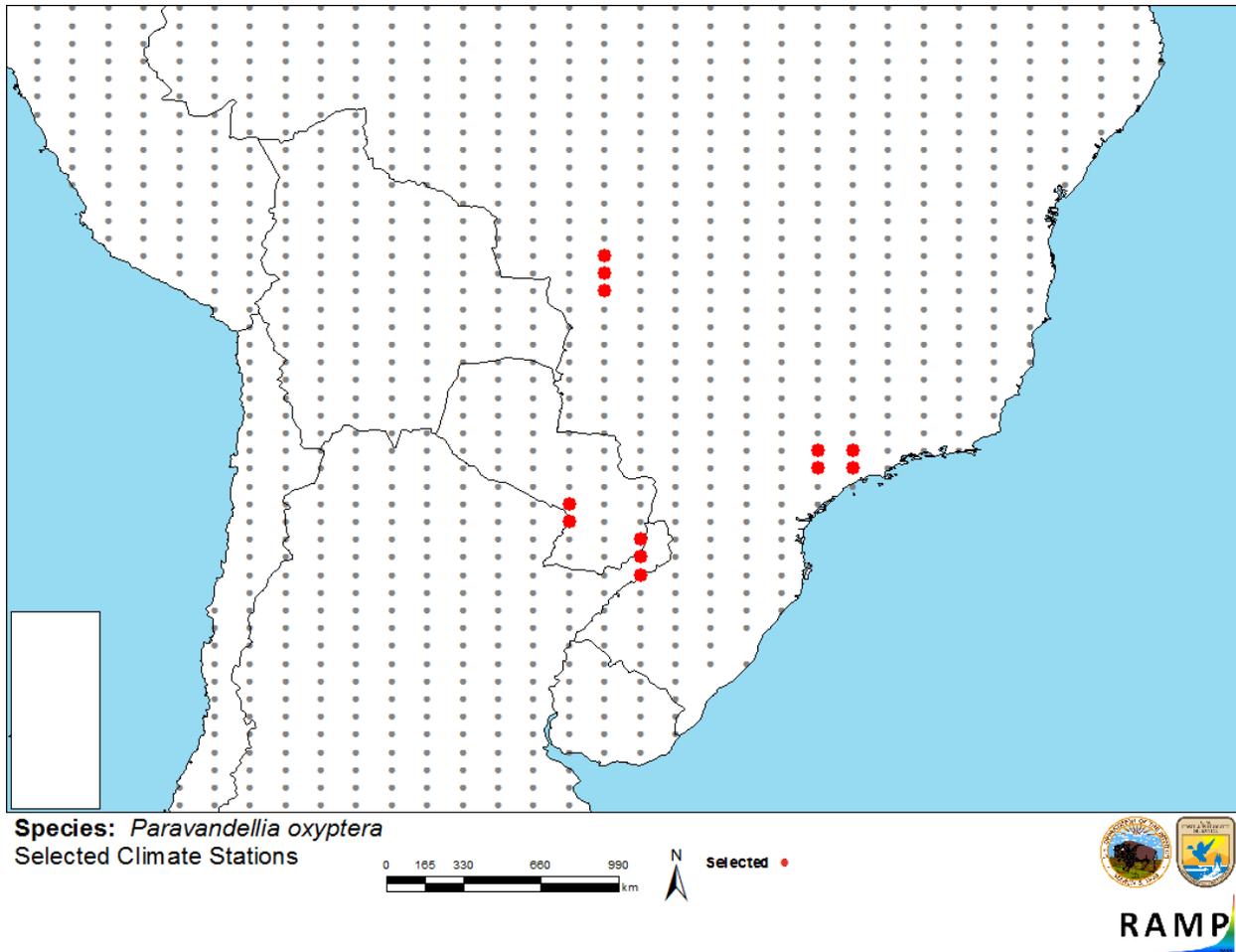


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Brazil, Paraguay, Argentina) and non-source locations (gray) for *Paravandellia oxyptera* climate matching. Source locations from GBIF (2016).

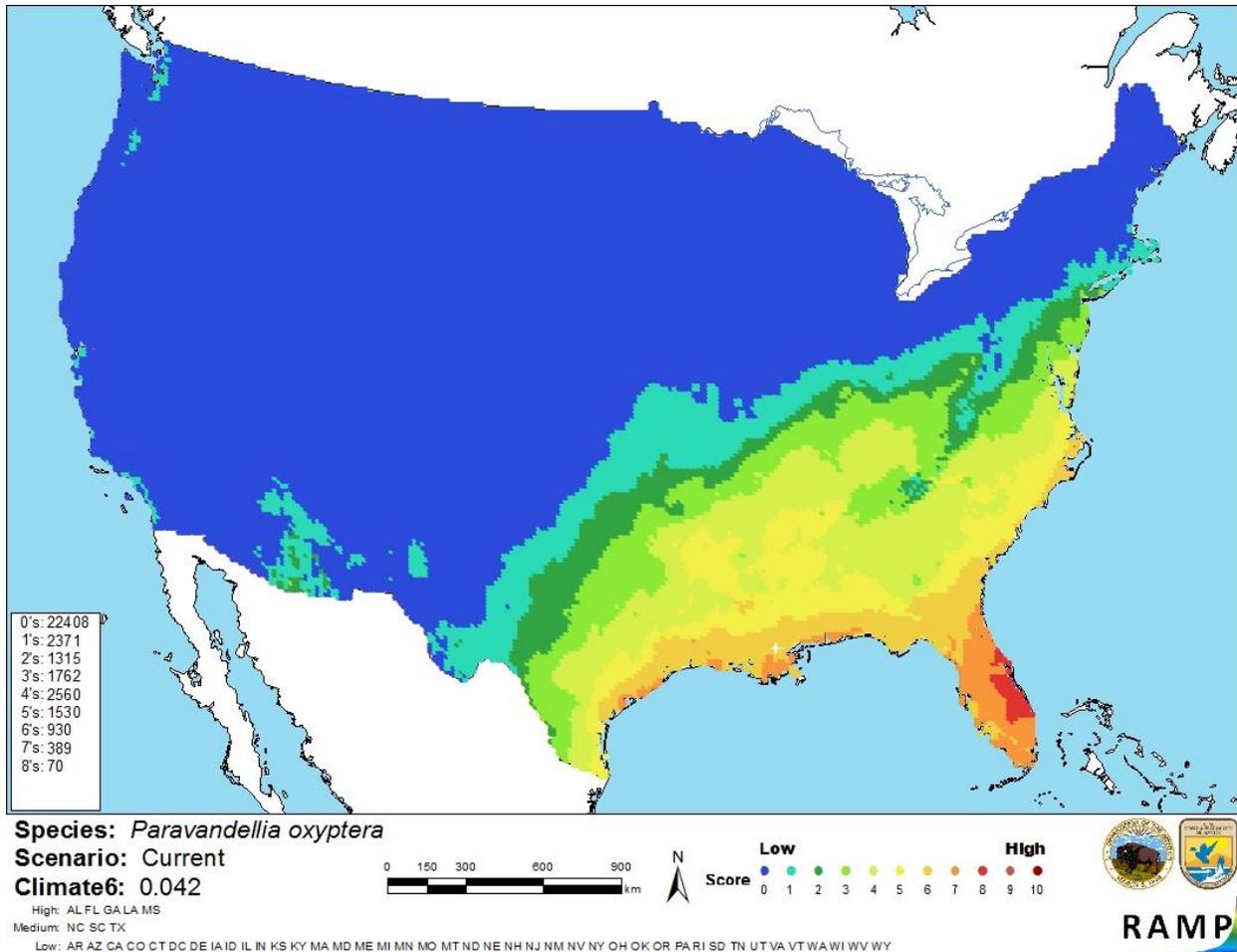


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Paravandellia oxyptera* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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 some information available on the feeding behavior and habitat preference of *P. oxyptera*. This species has no history of introduction outside its native range, so any impacts from introductions or spread of this species are unknown. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Paravandellia oxyptera is a small parasitic catfish native to South America. It feeds from the gills of larger host fish. *P. oxyptera* has a medium climate match with the U.S., with the highest match area being the southeastern U.S. This species has not been reported as introduced outside its native range. State authorities currently consider *P. oxyptera* dangerous to the ecology or the health and welfare of the people of Florida, where personal possession or commercial use of this species is prohibited by law. Further information is needed to adequately assess this species as having either high or low risk for the contiguous U.S. Because of this, overall risk assessment category is uncertain.

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.
- 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).
- Froese, R., and D. Pauly, editors. 2016. *Paravandellia oxyptera* (Miranda Ribeiro, 1912). FishBase. Available: <http://www.fishbase.se/summary/Paravandellia-oxyptera.html>. (November 2016).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Paravandellia oxyptera*, Miranda Ribiero, 1912. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2343320>. (December 2016).
- ITIS (Integrated Taxonomic Information System). 2016. *Paravandellia oxyptera* (Miranda Ribeiro, 1912). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682148#null. (November 2016).

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

Zuanon, J., and I. Sazima. 2004. Vampire catfishes seek the aorta not the jugular: candirus of the genus *Vandellia* (Trichomycteridae) feed on major gill arteries of host fishes. *Journal of Ichthyology and Aquatic Biology* 8(1):31-36.

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). 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.

Machado, F. A., and I. Sazima. 1983. Comportamento alimentar do peixe hematófago *Branchioica bertonii* (Siluriformes, Trichomycteridae). *Ciência e cultura* 35(3):344-352.