

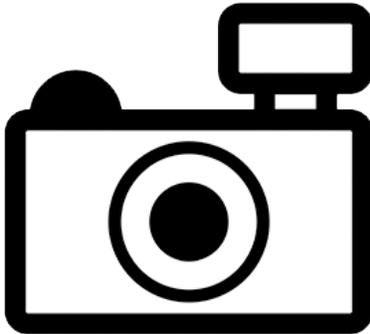
***Paravandellia phaneronema* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, November 2016

Revised, January 2017

Web Version, 3/28/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: Magdalena and Cauca River basins in Colombia.”

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 [...]
Freshwater Aquatic Species [...]
Parasitic catfishes [...]
Paravandellia phaneronema”

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 phaneronema* (Miles, 1943)”

From Eschmeyer et al. (2016):

“Current status: Valid as *Paravandellia phaneronema* (Miles 1943). Trichomycteridae: Vandelliinae.”

Size, Weight, and Age Range

From Froese and Pauly (2016):

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

Environment

From Froese and Pauly (2016):

“Freshwater; demersal.”

From Sanchez-Duarte and Mesa-Salazar (2016):

“This small fish inhabits slow-moving permanent rivers and streams with white waters and sandy bottoms. It also occurs in floodplain lakes.”

Climate/Range

From Froese and Pauly (2016):

“Tropical”

From Sanchez-Duarte and Mesa-Salazar (2016):

“Lower elevation limit (metres): 50
Upper elevation limit (metres): 500”

Distribution Outside the United States

Native

From Sanchez-Duarte and Mesa-Salazar (2016):

“This species is endemic to the Upper Cauca basin, Colombia, where it has been found in Caldas (La Miel River, Norcasia), Quindío (La Vieja River), Tolima (mouth of the Amoyá River in the Saldaña River basin), and Valle del Cauca (Quebrada San Pablo) (Maldonado-Ocampo et al. 2005). In the Santander Department, it is known from the Lebrija and Suárez rivers (Castellanos[-]Morales et al. 2011). Its type locality is Río Cauca, Upper Cauca Valley (Miles 1943).”

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.”

“In *Paravandellia*, the median premaxilla is kidney-shaped, with both lobes facing posteriorly. Two strong ligaments are attached to the posterior margin of these lobes and insert on each side of the anterior tip of the parasphenoid in *P. phaneronema* and *Paravandellia* sp.

Biology

From Sanchez-Duarte and Mesa-Salazar (2016):

“It is a parasite of bigger fish that lives adhered to their gills through the maxillary teeth and spines located to the side of its head, feeding on blood. When not parasitizing, it hides in the mud and sand of big rivers (Ortega-Lara 2000, Maldonado-Ocampo et al. 2005).”

Human Uses

From Sanchez-Duarte and Mesa-Salazar (2016):

“The species is not utilized.”

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 (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 [...]
Freshwater Aquatic Species [...]
Parasitic catfishes [...]
Paravandellia phaneronema”

4 Global Distribution

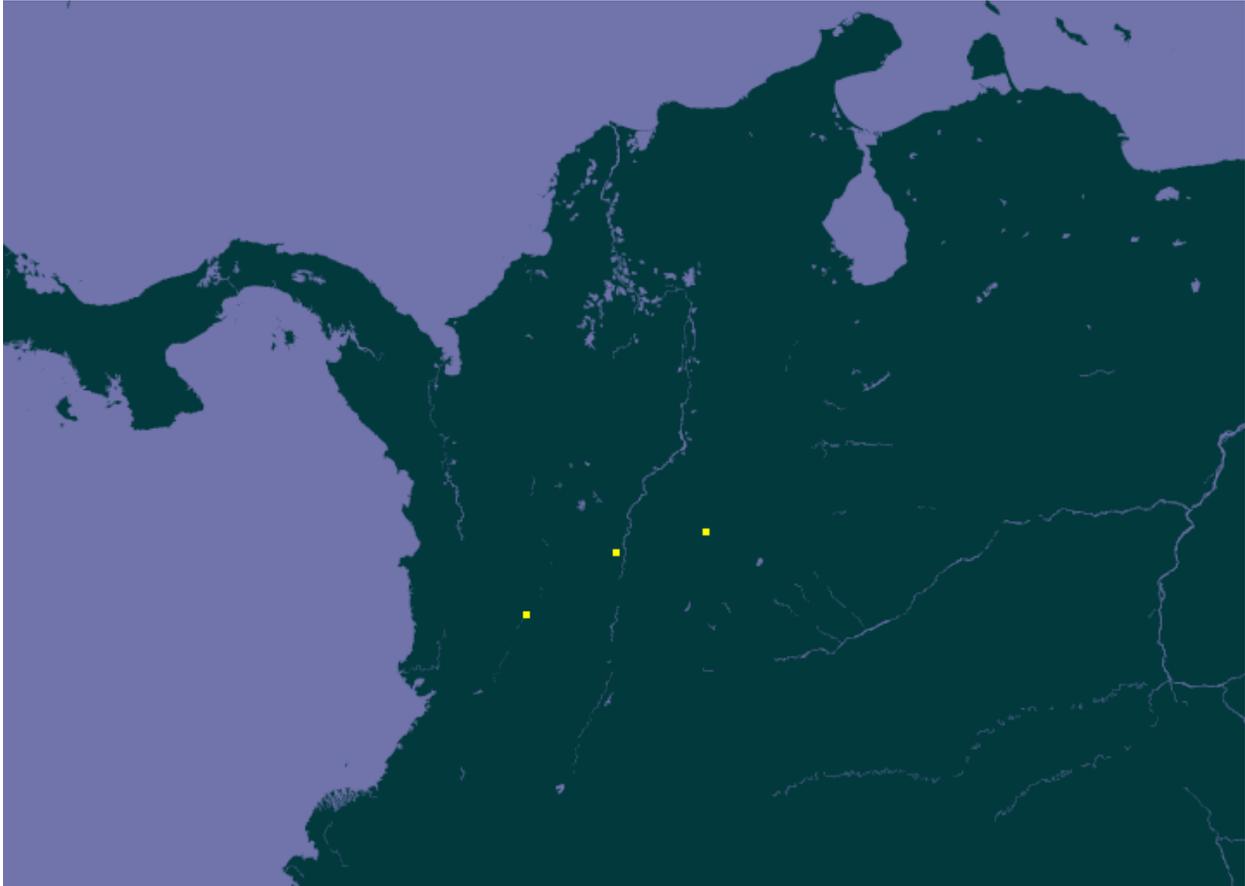


Figure 1. Distribution of *Paravandellia phaneronema* in Colombia. Map from GBIF (2016).

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 U.S., but slightly higher in the southeast. Climate 6 proportion indicated that the contiguous U.S. has a low climate match. Climate 6 proportion indicates a low climate match when the proportion is less than or equal to 0.005; the Climate 6 proportion of *Paravandellia phaneronema* is 0.0.

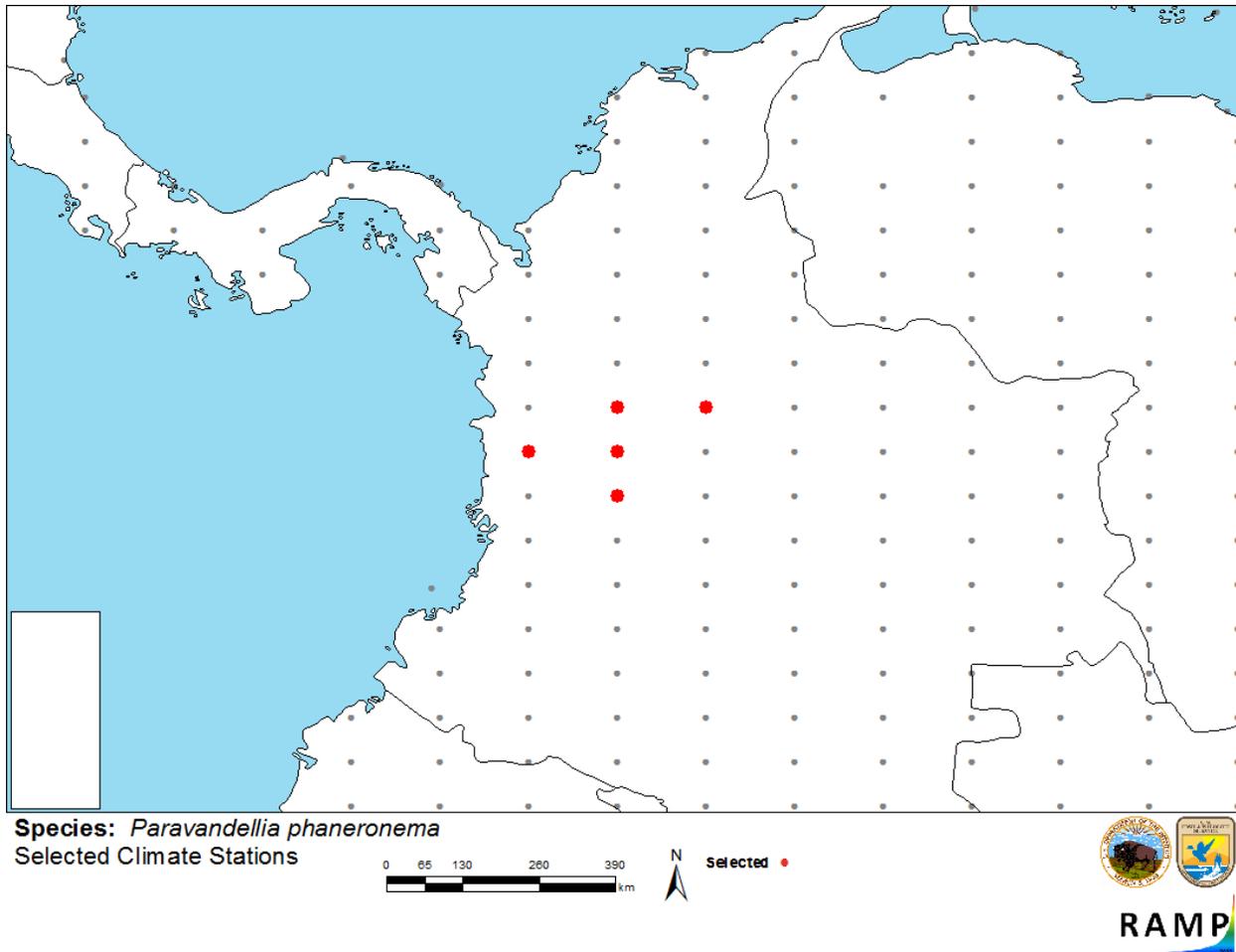


Figure 3. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Colombia) and non-source locations (gray) for *Paravandellia phaneronema* climate matching. Source locations from GBIF (2016).

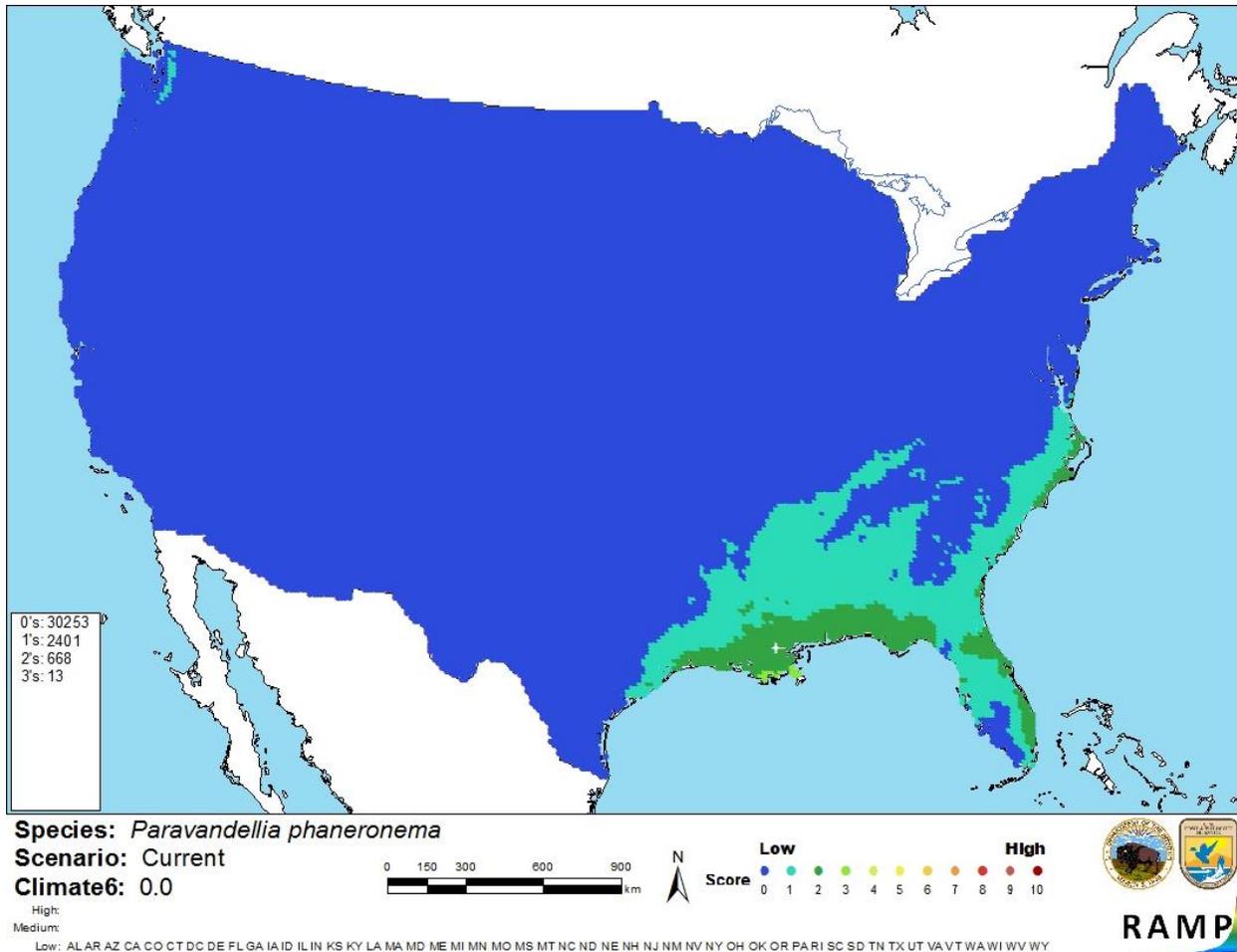


Figure 4. Map of RAMP (Sanders et al. 2014) climate matches for *Paravandellia phaneronema* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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 preferences of *P. phaneronema*. This species has no history of introductions outside its native range, so no negative impacts from introductions and spread of this species have been documented. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Paravandellia phaneronema is a small parasitic catfish native to South America. It feeds from the gills of larger host fish. *P. phaneronema* has a low climate match with the U.S. State authorities currently consider *P. phaneronema* dangerous to the ecology or health and welfare of the people of Florida, where personal possession or commercial use of this species is prohibited by law. This species has no documented history of introductions outside its native range, so 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): 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.

- 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.
- Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2016. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (December 2016).
- FFWCC (Florida Fish and Wildlife Conservation Commission). 2017. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/#Trichomycterus>. (January 2017).
- Froese, R., and D. Pauly, editors. 2016. *Paravandellia phaneronema* (Miles, 1943). FishBase. Available: <http://www.fishbase.se/summary/Paravandellia-phaneronema.html>. (November 2016).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Paravandellia phaneronema*, Miles, 1943. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2343316>. (November 2016).

Integrated Taxonomic Information System (ITIS). 2016. *Paravandellia phaneronema* (Miles, 1943). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682149#null. (November 2016).

Sanchez-Duarte, P., and L. Mesa-Salazar. 2016. *Paravandellia phaneronema*. The IUCN Red List of Threatened Species 2016. Available: <http://www.iucnredlist.org/details/biblio/49829945/0>. (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.

Castellanos-Morales, C. A., L. L. Marino-Zamudio, L. Guerrero-V., and J. A. Maldonado-Ocampo. 2011. Peces del departamento de Santander, Colombia. *La Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales* 35(135):189-212.

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.

Maldonado-Ocampo, J. A., A. Ortega-Lara, J. S. U. Oviedo, G. G. Vergara, F. A. Volla-Navarro, L. V. Gamboa, S. Prada-Pedrerros, and C. A. Rodriguez. 2005. *Peces de los Andes de Colombia. Guia de campo*. Instituto de Investigacion de Recursos Biologicos Alexander von Humboldt, Bogota, Colombia.

Miles, C. W. 1943. *Estudio economico y ecologico de los peces de agua dulce del valle de Cauca*. Publicación Secretaría Agricultura y Fomento del Depart: 1-99.

Ortega-Lara, A., O. Murillo, C. Pimentia, and E. Sterling. 2000. *Los peces del Alto Cauca, Riqueza Ictiológica del Valle del Cauca*. Corporación Autónoma Regional del Valle del Cauca, CVC, Santiago de Cali, Colombia.