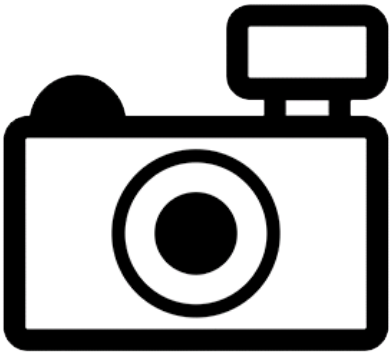
Trichomycterus alternatus (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016
Revised, April 2017
Web Version, 4/26/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

"South America: coastal river basins in Rio de Janeiro and Espírito Santo, Brazil."

Status in the United States

This species has not been reported in the U.S. There is no indication that this species is currently traded 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 […] [The list of prohibited nonnative species includes] *Trichomycterus alternatus*"

Means of Introductions in the United States

This species has not been reported in the U.S.

Remarks
From GBIF (2016):

"BASIONYM
Pygidium alternatum Eigenmann, 1917"

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 Trichomycterinae
Genus *Trichomycterus*
Species *Trichomycterus alternatus* (Eigenmann, 1917)"

"Taxonomic Status: valid"

Size, Weight, and Age Range
From Froese and Pauly (2016):

"Max length : 8.1 cm male/unsexed; [de Pinna 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: coastal river basins in Rio de Janeiro and Espírito Santo, Brazil."

Introduced
No introductions of this species have been reported.

Short Description
From Eigenmann (1917):

"Head 5-5.75; D. 10.5-11.5; A. 7.5 or 8.5 counting the rudimentary rays; P. 7 or 8; eye in middle of the head or slightly further forward; interocular 3-3.33 in the length of the head. Teeth conic, in bands. Nasal barbel very little shorter than maxillary barbel which reaches to the base of the pectoral and is equal to the head in length; pectoral rays equal to length of head behind the nasal barbels, the first ray with the filament longer than the head; ventrals reaching to or just beyond the vent; origin of ventrals equidistant from base of middle caudal rays and a point between the posterior nares and the area just behind the eyes; origin of anal under posterior part of dorsal; distance between base of last anal ray and middle caudal rays four and one half to five and one third in the length; caudal subtruncate or rounded, very little longer than head; origin of dorsal over posterior half of ventrals; distance between origin of dorsal and base of middle caudal rays 1.54 in its distance from the snout. Ten to fourteen large spots along the middle of the sides, an irregular series of much smaller ones below it. Large spots above the median series, frequently alternating with it, sometimes partly confluent into a longitudinal series, sometimes forming with a mid-dorsal series irregular bars across the back."

Biology
From Aquarium Glaser GmbH (2017):

"These very shy fish […] lives in […] clean, fast flowing brooks and small rivers. Therefore a good water hygiene and high oxygen content is a must. […] *T. alternatus* is not a parasite as some of its relatives from the group of the pencil or parasitic catfish."

Human Uses
Aquarium Glaser GmbH (2017) reports that *T. alternatus* is among the "most easy to keep pencil catfishes" in aquaria.

Diseases
No information available.

Threat to Humans
From Froese and Pauly (2016):

"Harmless"

3 Impacts of Introductions
No introductions of this species have been reported. The Florida Fish and Wildlife Conservation Commission has listed the parasitic catfish *T. alternatus* as a prohibited species.

4 Global Distribution

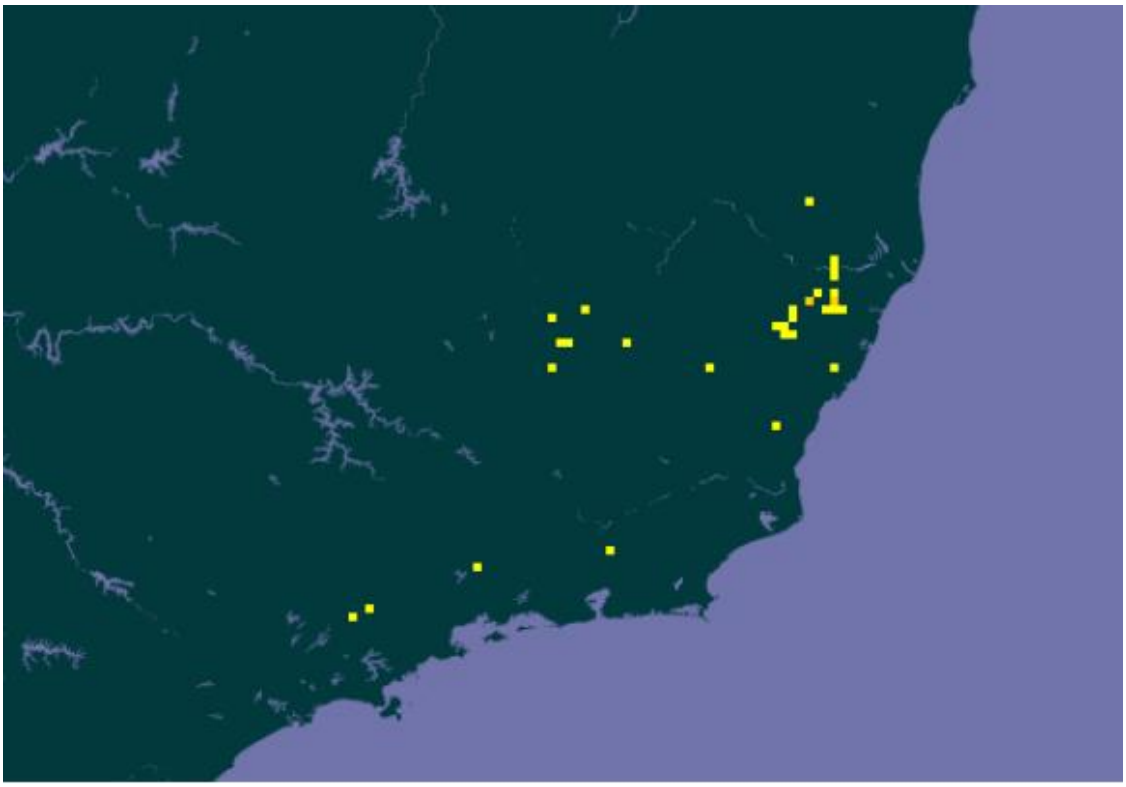


Figure 1. Known global established locations of *T. alternatus* in Brazil. Map from GBIF (2016).

5 Distribution Within the United States
This species has not been reported 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 southern Florida, medium in northern Florida and coastal Texas, and low elsewhere in the U.S. Climate 6 proportion indicated that the contiguous U.S. is a medium climate match overall. Proportions between 0.005 and 0.103 are classified as medium match; the Climate 6 proportion for *T. alternatus* was 0.008.

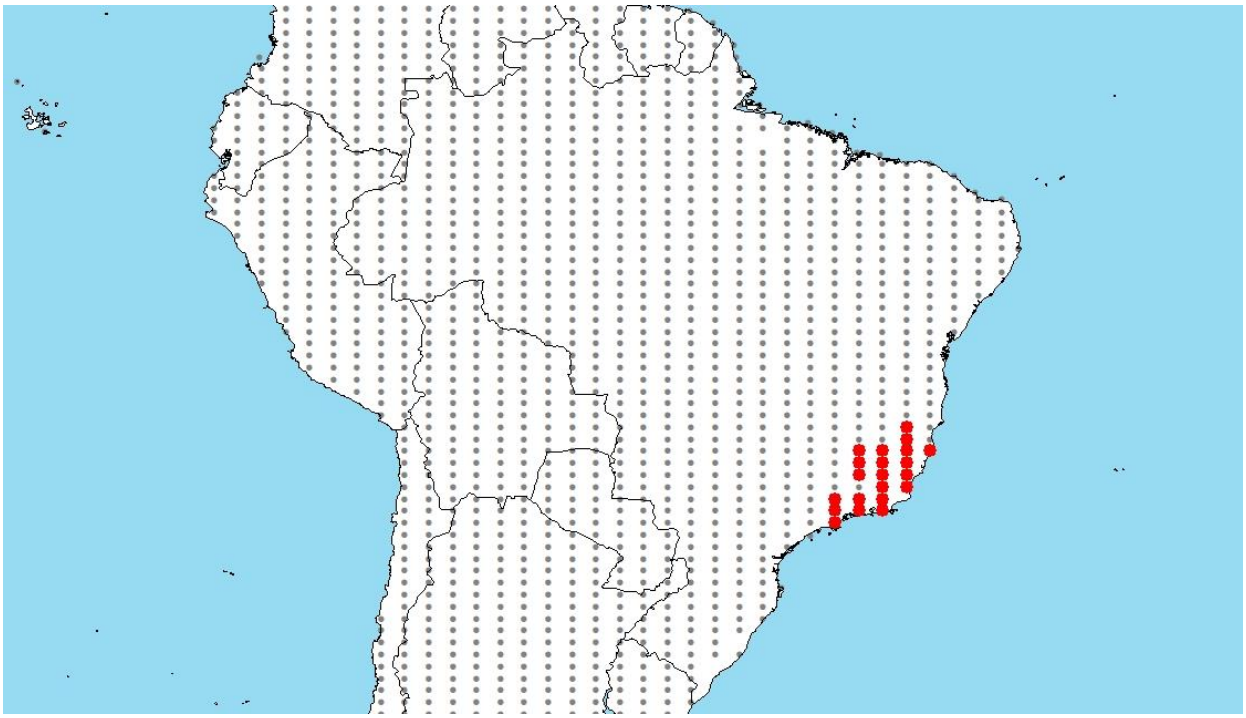


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *T. alternatus* climate matching in Brazil. Source locations from GBIF (2016).

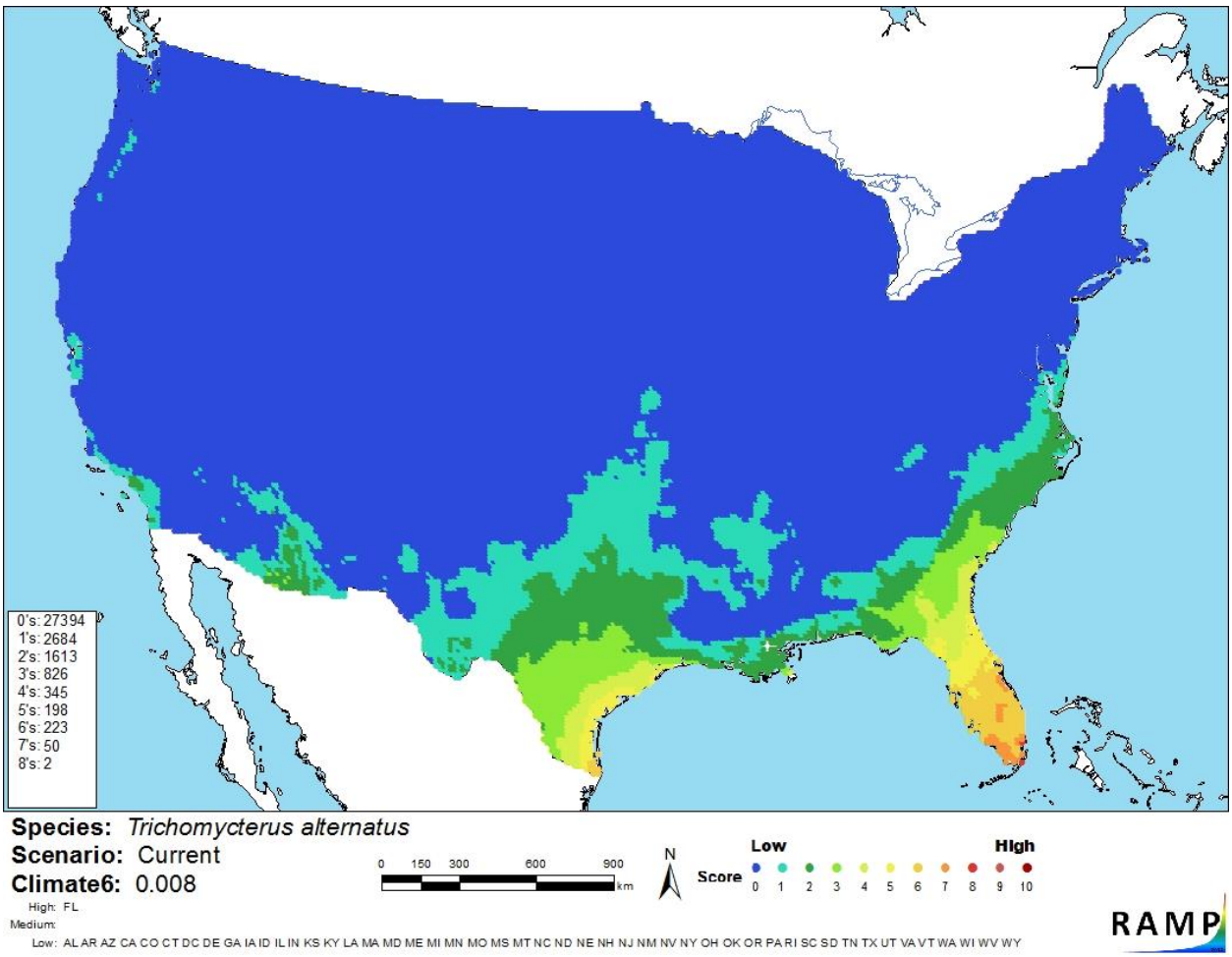


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *T. alternatus* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

The biology and ecology of *T. alternatus* are poorly known. It has never been reported outside its native range so any impacts of introduction cannot be assessed. The certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

T. alternatus is a trichomycterid catfish with a limited native distribution in eastern Brazil. It has not been introduced outside of its native range. Without being able to observe introductions in other parts of the world, it is impossible to know the potential impacts of introduction of *T. alternatus* to the U.S. The Florida Fish and Wildlife Conservation Commission has listed the parasitic catfish *T. alternatus* as a prohibited species. *T. alternatus* has a medium climate match with the contiguous U.S. The overall risk posed by this species 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.

Aquarium Glaser GmbH. 2017. *Trichomycterus alternatus*. Aquarium Glaser GmbH, Rodgau, Germany. Available: http://www.aquariumglaser.de/en/fish-archives/trichomycterus_alternatus_en/. (April 2017).

Eigenmann, C. H. 1917. Descriptions of sixteen new species of Pygidiidae. Proceedings of the American Philosophical Society 56(7):690-703.

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/. (January 2017).

Froese, R., and D. Pauly, editors. 2016. *Trichomycterus alternatus* (Eigenmann, 1917). FishBase. Available: http://www.fishbase.org/summary/ http://www.fishbase.org/summary/48660. (December 2016).

GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Trichomycterus alternatus* (Eigenmann, 1917). Global Biodiversity Information Facility, Copenhagen. Available: http://www.gbif.org/ species/2343016. (December 2016).

ITIS (Integrated Taxonomic Information System). 2016. *Trichomycterus alternatus* (Eigenmann, 1917). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682173#null. (December 2016).

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

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.