

Trichomycterus brasiliensis (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016

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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: upper São Francisco River in Minas Gerais and in smaller adjoining basins in southeastern Brazil.”

Status in the United States

This species has not been reported in the United States. There is no indication that this species is in trade in the United States.

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 brasiliensis*”

Means of Introductions in the United States

This species has not been reported in the United States.

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 brasiliensis* Lütken, 1874”

“Taxonomic Status: valid”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 13.5 cm SL male/unsexed; [Triques and Vono 2004]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2016):

“Tropical, preferred ?”

Distribution Outside the United States

From Froese and Pauly (2016):

“South America: upper São Francisco River in Minas Gerais and in smaller adjoining basins in southeastern Brazil.”

Introduced

No introductions of this species have been reported.

Means of Introduction Outside the United States

No introductions of this species have been reported.

Short Description

From Barbosa and Costa (2010):

“Body moderately deep, subcylindrical on anterior portion, compressed on caudal peduncle. [...] Skin papillae minute. [...] Dorsal-fin rays 11; anal-fin rays 9 to 10; pectoral-fin rays 7; pelvic-fin rays 5; caudal-fin principal rays 13, dorsal procurrent rays 19-22, ventral procurrent rays 14-17. Total vertebrae 36-39; pleural ribs 12-14. [...] Head depressed, longer than wide, trapezoidal in dorsal view. Snout blunt. Mouth subventral. Maxilla short, shorter than premaxilla. Teeth conical. Eye slightly nearer to tip of snout than posterior edge of head.”

“*Trichomycterus brasiliensis* is similar to *T. maracaya*, *T. mirissumba* and *T. macrotrichopterus* and distinguished from all the remaining species of the *T. brasiliensis* species complex by having a short process on the posterodorsal tip of hyomandibula [...] (vs. long pointed process [...]). It is distinguished from *T. maracaya*, *T. mirissumba* and *T. macrotrichopterus* by possessing nine branchiostegal rays (vs. seven or eight). It is also distinguished from *T. maracaya* and *T. mirissumba* by having a shorter head (head length 17.7-20.5 % SL, vs. 20.5-24.4), and the absence of two anterior pores on the infraorbital series (vs. presence); and from *T. macrotrichopterus* by the morphology of metapterygoid, which is narrow and triangular [...] (vs. broad and square-shaped [...]), a narrower body (body width 8.1-9.6 % SL, vs. 9.9-10.8) and a wider caudal peduncle (caudal peduncle width 3.9-4.9 % SL, vs. 3.3-3.9 % SL).”

Biology

From Barbosa and Costa (2010):

“*Trichomycterus brasiliensis* was found in shallow places (20-40 cm deep) of fast flowing clear water streams, on sand and gravel substratum.”

Human Uses

No information available.

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 (2017) has listed the parasitic catfish *T. brasiliensis* as a prohibited species.

4 Global Distribution



Figure 1. Known global established locations of *T. brasiliensis* in southeastern Brazil. Map from GBIF (2016). Occurrence in Mato Grosso state, Brazil (GBIF 2016), is not shown on this map and was excluded from the climate matching analysis because it does not represent a known established population.

5 Distribution Within the United States

This species has not been reported in the United States.

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 the remainder of peninsular Florida and coastal Texas, and low elsewhere. Climate 6 proportion indicated that the contiguous U.S. has a medium climate match overall. Proportions between 0.005 and 0.103 are classified as a medium match; the Climate 6 proportion for *T. brasiliensis* was 0.007.

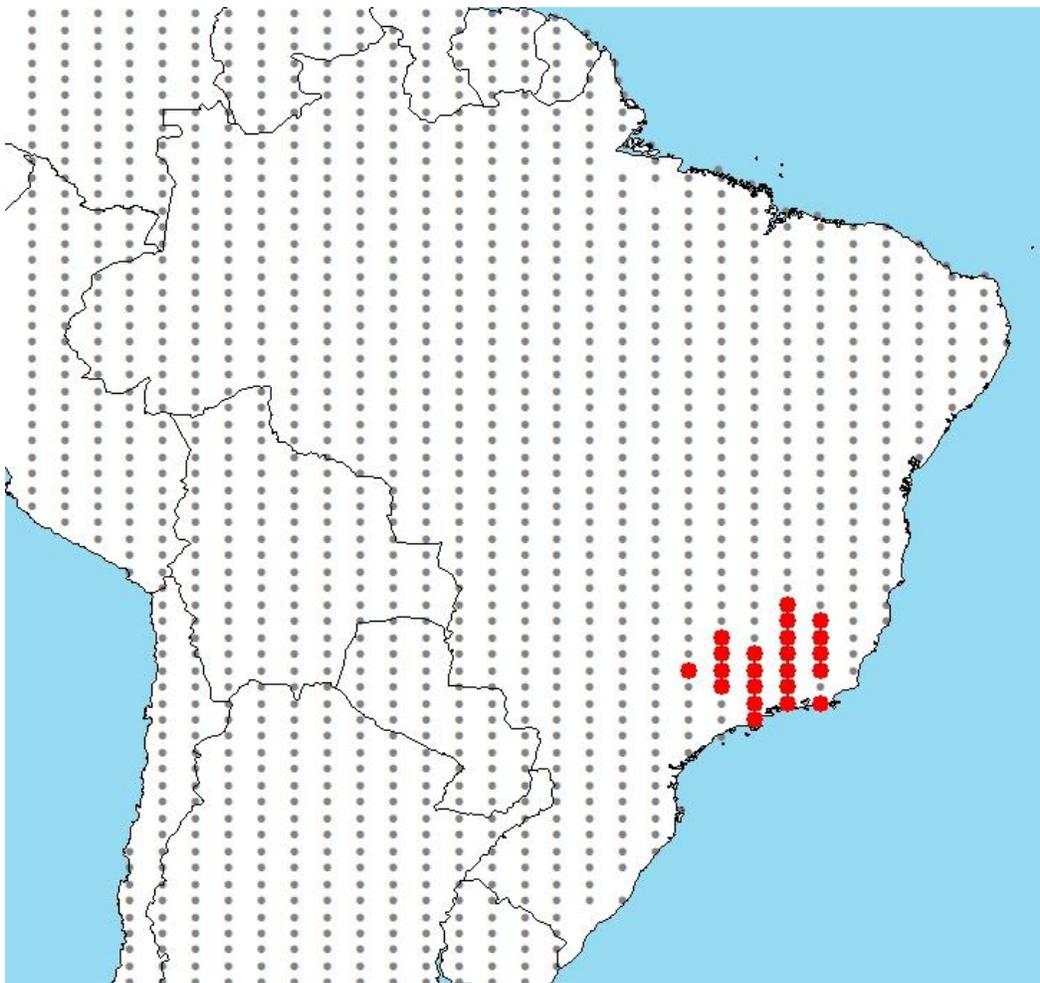


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in South America selected as source locations (red; southeastern Brazil) and non-source locations (gray) for *T. brasiliensis* climate matching. Source locations from GBIF (2016).

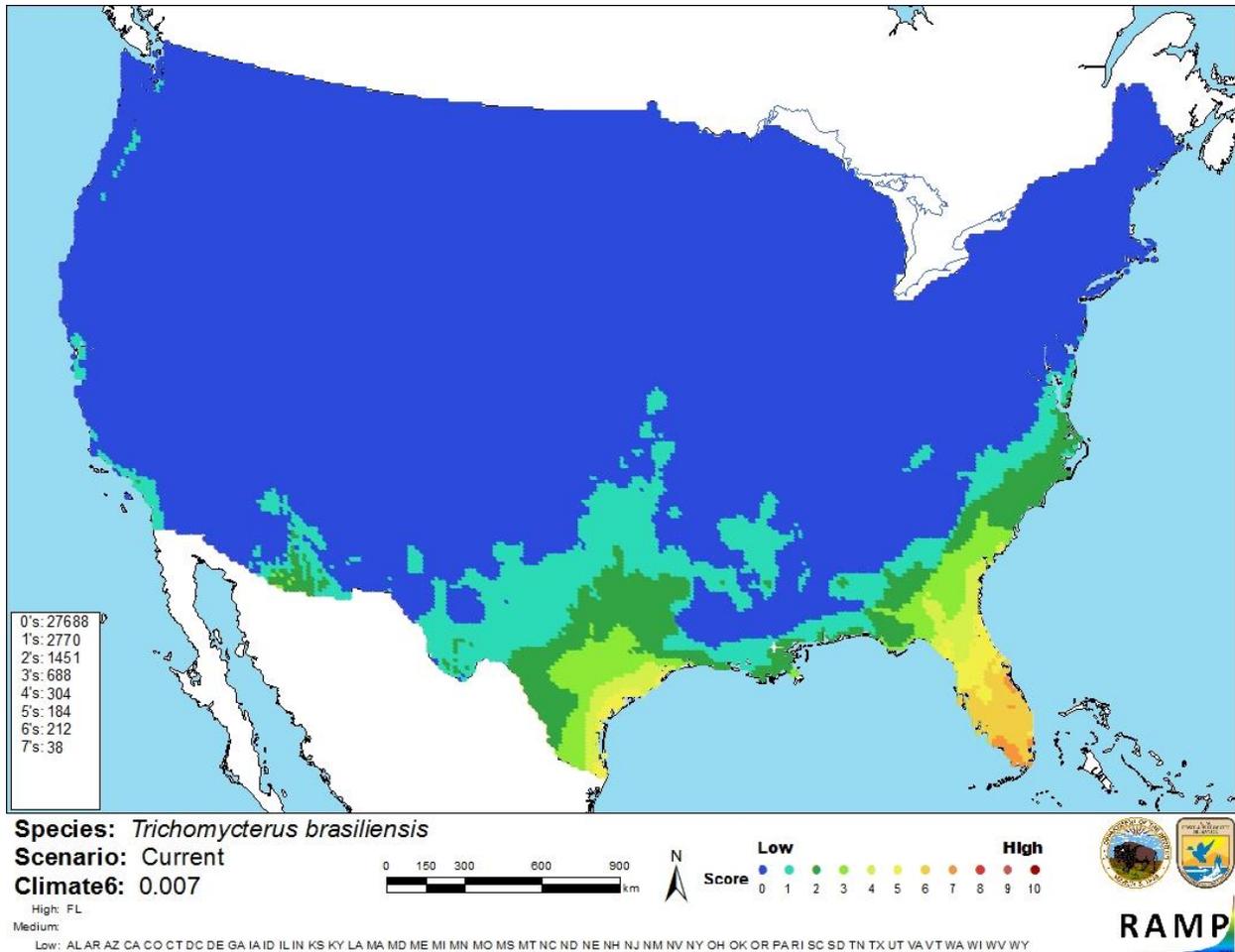


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *T. brasiliensis* in the contiguous United States based on source locations reported by GBIF (2016). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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
$0.000 \leq X < 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

The biology and ecology of *T. brasiliensis* is poorly known. It has not been reported outside its native range, so impacts of introduction are unknown. The certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus brasiliensis is a trichomycterid catfish native to southeastern Brazil. It has not been reported as 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. brasiliensis* to the U.S. Climate match to the contiguous U.S. is medium, with areas of highest match occurring in Florida and Texas. *T. brasiliensis* is listed as a prohibited species in the state of Florida. 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.

- Barbosa, M. A., and W. J. E. M. Costa. 2010. Seven new species of the catfish genus *Trichomycterus* (Teleostei: Siluriformes: Trichomycteridae) from southeastern Brazil and redescription of *T. brasiliensis*. *Ichthyological Exploration of Freshwaters* 21(2):97-122.
- 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/>. (January 2017).
- Froese, R., and D. Pauly, editors. 2016. *Trichomycterus brasiliensis* Lütken, 1874. FishBase. Available: <http://www.fishbase.se/summary/48673>. (December 2016).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Trichomycterus brasiliensis* Lütken, 1874. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2343113>. (December 2016, April 2017).
- ITIS (Integrated Taxonomic Information System). 2016. *Trichomycterus brasiliensis* Lütken, 1874. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682185#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.

Triques, M. L., and V. Vono. 2004. Three new species of *Trichomycterus* (Teleostei: Siluriformes: Trichomycteridae) from the Rio Jequitinhonha basin, Minas Gerais, Brazil. *Ichthyological Exploration of Freshwaters* 15(2):161-172.