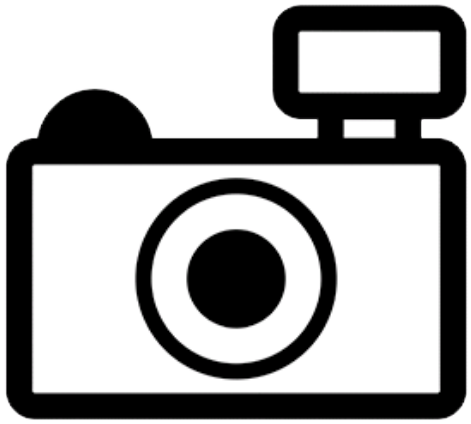
Trichomycterus triguttatus (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, February 2017
Revised, March 2017
Web Version, 8/13/2020

Organism Type: Fish
Overall Risk Assessment Category: Uncertain



1 Native Range and Status in the United States

Native Range

From Eschmeyer et al. (2017):

"São Paulo State, Brazil."

Status in the United States

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

From Arizona Secretary of State (2006):

"Fish listed below are restricted live wildlife [in Arizona] as defined in R12-4-401. […] South American parasitic catfish, all species of the family Trichomycteridae and Cetopsidae […]"

From Dill and Cordone (1997):

"[…] At the present time, 22 families of bony and cartilaginous fishes are listed [as prohibited in California], e.g. all parasitic catfishes (family Trichomycteridae) […]"

From FFWCC (2019):

"Nonnative Conditional species (formerly referred to as restricted species) and Prohibited species are considered to be dangerous to Florida's native species and habitats or could pose threats to the health and welfare of the people of Florida. These species are not allowed to be personally possessed, but can be imported and possessed by permit for research or public exhibition; Conditional species may also be possessed by permit for commercial sales. Facilities where Conditional or Prohibited species are held must meet certain biosecurity criteria to prevent escape."

Trichomycterus triguttatus is listed as a Prohibited species in Florida.

From Louisiana House of Representatives Database (2010):

"No person, firm, or corporation shall at any time possess, sell, or cause to be transported into this state [Louisiana] by any other person, firm, or corporation, without first obtaining the written permission of the secretary of the Department of Wildlife and Fisheries, any of the following species of fish: […] all members of the families […] *Trichomycteridae* (pencil catfishes) […]"

From Mississippi Secretary of State (2019):

"All species of the following animals and plants have been determined to be detrimental to the State's native resources and further sales or distribution are prohibited in Mississippi. No person shall import, sell, possess, transport, release or cause to be released into the waters of the state any of the following aquatic species or hybrids thereof.
[The list includes all species of] Family Trichomycteridae"

From Legislative Council Bureau (2018):

"Except as otherwise provided in this section and NAC [Nevada Administrative Code] 504.486, the importation, transportation or possession of the following species of live wildlife or hybrids thereof, including viable embryos or gametes, is prohibited [in Nevada]: […]
All species in the families Cetopsidae and Trichomycteridae"

From Utah DNR (2012):

"All species of fish listed in Subsections (2) through (30) are classified [in Utah] as prohibited for collection, importation and possession […]
Parasitic catfish (candiru, carnero) family Trichomycteridae (All species)"

Means of Introductions in the United States

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

Remarks

This species was originally described under the name *Pygidium triguttatum* (Eschmeyer et al. 2017). Information searches for this assessment were conducted using both the valid name, *Trichomycterus triguttatus*, as well as the original name.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

"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 triguttatus*"

"Current Standing: valid"

From Eschmeyer et al. (2017):

"Current status: Valid as *Trichomycterus triguttatus* (Eigenmann 1918). Trichomycteridae: Trichomycterinae."

Size, Weight, and Age Range

From Froese and Pauly (2016):

"Max length : 3.6 cm male/unsexed [de Pínna and Wosiacki 2003]"

Environment

From Froese and Pauly (2016):

"Freshwater; benthopelagic."

Climate

From Froese and Pauly (2016):

"Tropical, preferred ?"

Distribution Outside the United States

Native

From Eschmeyer et al. (2017):

"São Paulo State, Brazil."

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 Eigenmann (1918):

"Readily distinguished by the few spines in the interopercle."

"Head 5-5.5; D. 8 or 9; A. 6 or 7.5; P. 6; eye in anterior half of the head, 2 in the snout, 6 in the head, about 1.5 in the interorbital ; teeth pointed, in very narrow bands; gill-openings reaching forward to below the eye; nasal barbels reaching to tip of opercular spines, or but little beyond the eye; maxillary barbels to the base of the opercular spine or to the axil; pectorals lanceolate, the first ray much prolonged, one and a third times as long as the head in the type, longer than the head in all but one of the paratypes; origin of ventrals equidistant from snout and middle of caudal; tips of ventrals reaching anus in two of the specimens, falling considerably short of the anus in the rest; origin of anal behind the dorsal; distance between last anal ray and caudal 5-5.5 in the length; caudal rounded, but few inconspicuous accessory rays; distance from origin of dorsal to base of middle caudal rays 1.2-1.4 in the distance between snout and dorsal; distance from origin of dorsal to tip of caudal sometimes less, sometimes greater, than its distance from the snout."

"A row of small spots along the middle of the sides, another along the middle of the back and a third between the two."

Biology
No information reported for this species.

Human Uses
No information reported for this species.

Diseases
No OIE-reportable diseases (OIE 2020) 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. Data on the impacts of introductions are lacking.

The importation, possession, or trade of the catfish *T. triguttatus* is prohibited or restricted in the following states: Arizona (Arizona Secretary of State 2006), California (Dill and Cordone 1997), Florida (FFWCC 2019), Louisiana (Louisiana House of Representatives Database 2010), Mississippi (Mississippi Secretary of State 2019), Nevada (Legislative Council Bureau 2018), and Utah (Utah DNR 2012).

4 History of Invasiveness
The history of invasiveness is classified as No Known Nonnative Population. This species has not been reported as introduced or established outside of its native range, and it is not in trade. Its importation, possession, or trade is prohibited or restricted in several U.S. States.

5 Global Distribution

Figure 1. Known global distribution of *Trichomycterus triguttatus*, reported from Brazil. Map from GBIF Secretariat (2016).

6 Distribution Within the United States

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

7 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous United States except for Florida and coastal Georgia, where the climate match was medium. The Climate 6 score indicated that the contiguous United States has a low overall climate match (scores between 0.000 and 0.005, inclusive, are classified as low). The Climate 6 score for *Trichomycterus triguttatus* is 0.002. Florida had a medium individual climate score and all other States had a low individual climate score. The climate matching

analysis was based on a single source location, which may affect the accuracy of the climate match slightly.

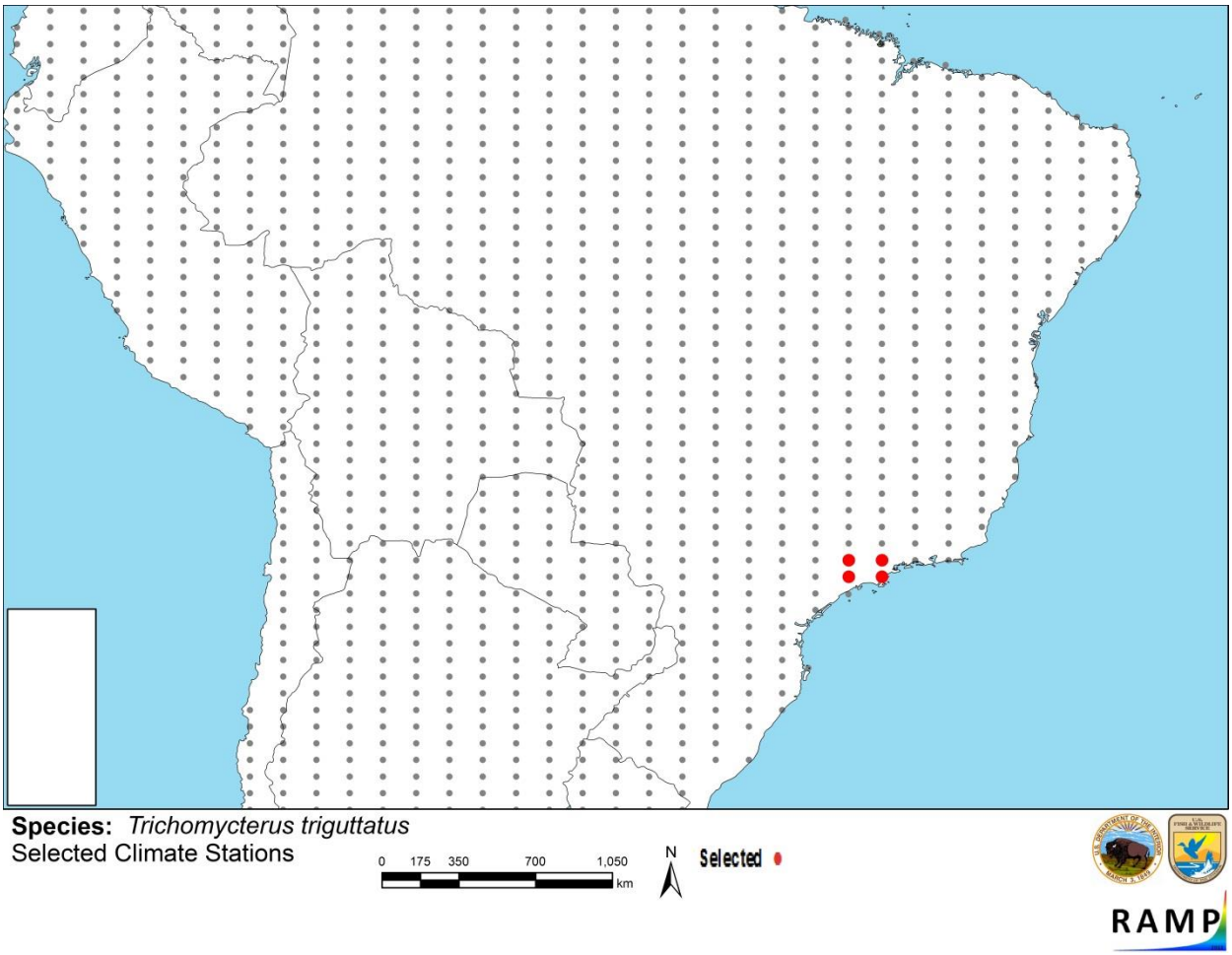


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Brazil) and non-source locations (gray) for *Trichomycterus triguttatus* climate matching. Source locations from GBIF Secretariat (2016). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

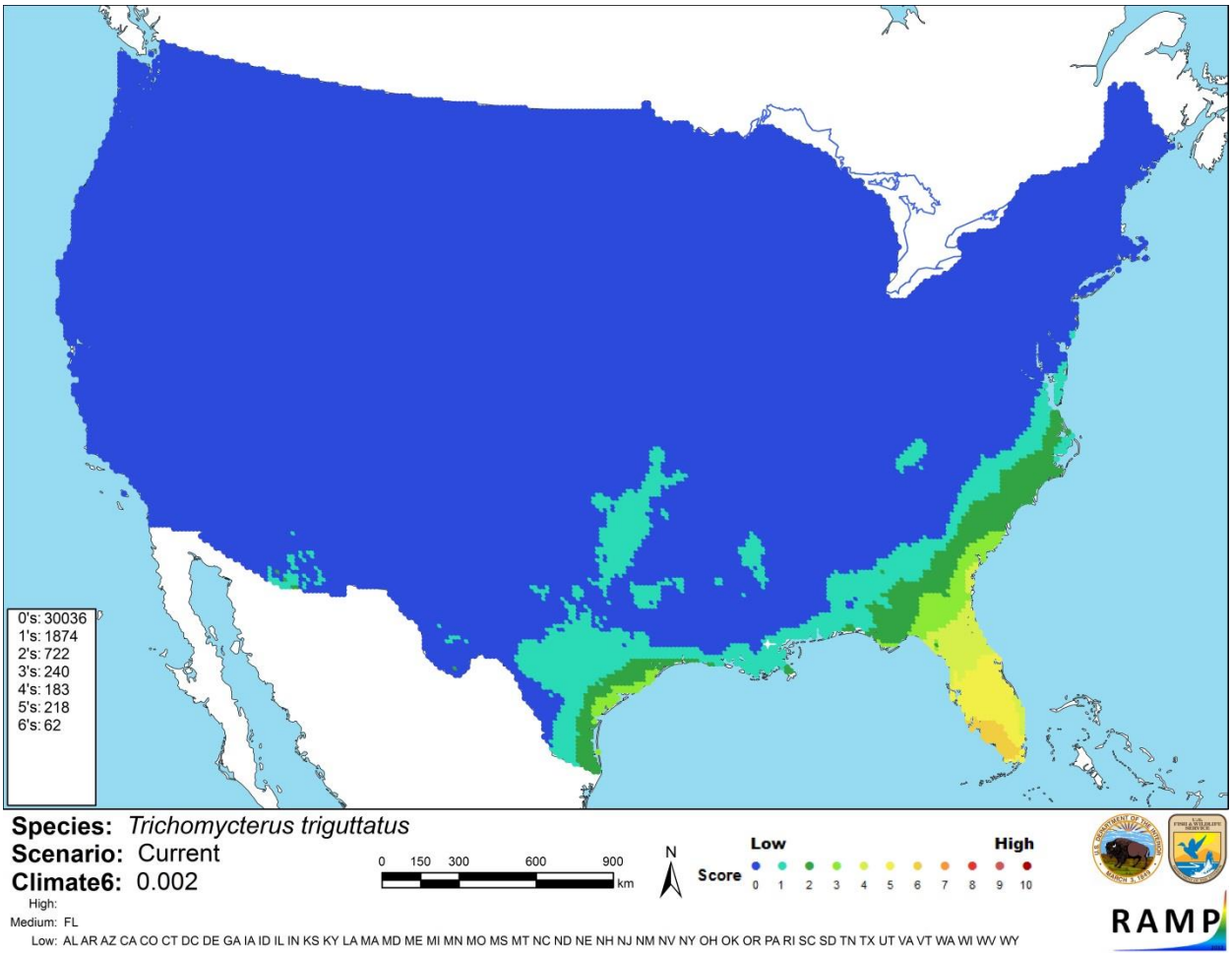


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Trichomycterus triguttatus* in the contiguous United States based on source locations reported by GBIF Secretariat (2016). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
0.000≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

8 Certainty of Assessment

Information on the biology of *Trichomycterus triguttatus* is lacking. This species has not been reported outside of its native range and data on the impacts of introductions are lacking. The climate matching analysis was based on a single georeferenced occurrence of the species. Certainty of this assessment low.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus triguttatus is a small catfish native to São Paulo State in southeastern Brazil. This species has not been reported outside of its native range. It is not known to be in trade in the United States, and several States have prohibitions or restrictions on its importation, possession, or trade. History of invasiveness is classified as No Known Nonnative Population. Certainty of this assessment low due to a lack of introduction history and biological information, and only one georeferenced occurrence for climate matching. *T. triguttatus* has a low overall climate match with the United States, however there is a medium match along the coast of Georgia and in Florida. Overall risk posed by this species is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Climate Match (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks, Important additional information:** None.
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

Arizona Secretary of State. 2006. Restricted live wildlife. Arizona Administrative Code, R12-4-406.

Dill, W. A., and A. J. Cordone. 1997. History and status of introduced fishes in California, 1871-1996. California Department of Fish and Game. Fish Bulletin 178.

Eigenmann CH. The Pygidiidae, a family of South American catfishes. Memoirs of the Carnegie Museum 7(5):259-373.

Eschmeyer WN, Fricke R, van der Laan R, editors. 2017. Catalog of fishes: genera, species, references. California Academy of Science. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp (February 2017).

FFWCC (Florida Fish and Wildlife Conservation Commission). 2019. Florida's nonnative fish and wildlife. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: https://myfwc.com/wildlifehabitats/nonnatives/. (November 2019).

Froese R, Pauly D, editors. 2016. *Trichomycterus triguttatus* (Eigenmann 1918). FishBase. Available: http://www.fishbase.org/summary/Trichomycterus-triguttatus.html (February 2017).

GBIF Secretariat. 2016. GBIF backbone taxonomy: *Trichomycterus triguttatus* (Eigenmann 1918). Copenhagen: Global Biodiversity Information Facility. Available: http://www.gbif.org/species/2343124 (February 2017).

[ITIS] Integrated Taxonomic Information System. 2017. *Trichomycterus triguttatus* (Eigenmann, 1918). Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682275#null (February 2017).

Legislative Council Bureau. 2018. Restrictions on importation, transportation and possession of certain species. Nevada Administrative Code, Section 503.110.

Louisiana House of Representatives Database. 2010. Exotic fish; importation, sale, and possession of certain exotic species prohibited; permit required; penalty. Louisiana Revised Statutes, Title 56, Section 319.

Mississippi Secretary of State. 2019. Guidelines for aquaculture activities. Mississippi Administrative Code, Title 2, Part 1, Subpart 4, Chapter 11. Regulatory and Enforcement Division, Office of the Mississippi Secretary of State, Jackson, Mississippi.

[OIE] World Organisation for Animal Health. 2020. OIE-listed diseases, infections and infestations in force in 2020. Available: http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2020/ (February 2020).

Sanders S, Castiglione C, Hoff M. 2018. Risk Assessment Mapping Program: RAMP. Version 3.1. U.S. Fish and Wildlife Service.

Utah DNR. 2012. R657-3 – collection, importation, transportation, and possession of animals. Utah Division of Natural Resources, Salt Lake City, Utah. Available: https://wildlife.utah.gov/hunting-in-utah/guidebooks/46-rules/rules-regulations/940-r657-3--collection-importation-transportation-and-possession-of-animals.html. (May 2018).

11 Literature Cited in Quoted Material

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 MCC, Wosiacki W. 2003. Trichomycteridae (pencil or parasitic catfishes). Pages 270-290 in Reis RE, Kullander SO, Ferraris, Jr. CJ, editors. Checklist of the freshwater fishes of South and Central America. Porto Alegre, Brasil: EDIPUCRS.