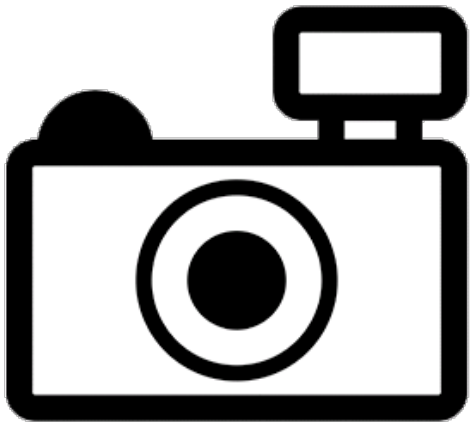
Trichomycterus paolence (a catfish, no common name)
Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, January 2017
Revised, June 2018
Web Version, 10/29/2021

Organism Type: Fish
Overall Risk Assessment Category: Uncertain



1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"South America: Paraná River basin in São Paulo, Brazil."

Status in the United States

No records of *Trichomycterus paolence* in the wild or in trade in the United States were found.

From Arizona Office of the Secretary of State (2013):

"I. Fish listed below are considered restricted wildlife: […]
9. All species of the family Cetopsidae and Trichomycteridae. Common name: South American catfish."

From California Department of Fish and Wildlife (2019):

“It shall be unlawful to import, transport, or possess live animals restricted in subsection (c) below except under permit issued by the department. […] Family Trichomycteridae (Pygidiidae)-Parasitic Catfishes.: All species”

The Florida Fish and Wildlife Conservation Commission has listed the tilapia *Trichomycterus paolence* as a prohibited species. Prohibited nonnative species (FFWCC 2016), "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.”

From Georgia DNR (2020):

“The exotic species listed below, except where otherwise noted, may not beheld as pets in Georgia. This list is not all inclusive. […]
Parasitic catfishes; all species”

From Louisiana State Legislature (2019):

“No person, firm, or corporation shall at any time possess, sell, or cause to be transported into this state 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: freshwater electric eel (*Electrophorus* sp.); rudd (*Scardinius erythrophthalmus*); all members of the families Synbranchidae (Asian swamp eels); Channidae (snakeheads); Clariidae (walking catfishes); 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. However, species listed as prohibited may be allowed under a permitting process where environmental impact has been assessed. […]
Pencil or parasitic catfishes Family Trichomycteridae **** [indicating all species within the family are included in the regulation]”

From State of Nevada (2018):

“Except as otherwise provided in this section and NAC 504.486, the importation, transportation or possession of the following species of live wildlife or hybrids thereof, including viable embryos or gametes, is prohibited: […]
South American Parasitic Catfish.....All species in the families Cetopsidae and Trichomycteridae”

From Oklahoma Secretary of State (2019):

"Until such time as is necessary for the Department of Wildlife Conservation to obtain adequate information for the determination of other harmful or potentially harmful exotic species, the importation into the State and/or the possession of the following exotic fish or their eggs is prohibited: […]
Parasitic South American Catfish group (Candiru), genera & species of the Trichomycteridae family. *Vandellia* spp., *Tridens* spp., and *Pyqidium* spp."

From Texas Parks and Wildlife (2020):

"The organisms listed here are legally classified as exotic, harmful, or potentially harmful. No person may possess or place them into water of this state except as authorized by the department. Permits are required for any individual to possess, sell, import, export, transport or propagate listed species for zoological or research purposes; for aquaculture (allowed only for Blue, Nile, or Mozambique tilapia, Triploid Grass Carp, or Pacific White Shrimp); or for aquatic weed control (for example, Triploid Grass Carp in private ponds). […]
South American Parasitic Candiru Catfishes, Family Trichomycteridae All species"

From Utah Office of Administrative Rules (2019):

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

Means of Introductions in the United States

No records of *Trichomycterus paolence* in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Trichomycterus paolence* (Eigenmann 1917) is the valid name for this species. *Trichomycterus paolence* was originally described as *Pygidium paolence* Eigenmann 1917.

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 paolence* (Eigenmann, 1917)

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 6.8 cm male/unsexed;[dePinna and Wosiacki, 2004]"

Environment

From Froese and Pauly (2018):

"Freshwater; benthopelagic."

Climate

From Froese and Pauly (2018):

"Tropical"

Distribution Outside the United States

Native

From Froese and Pauly (2018):

"South America: Paraná River basin in São Paulo, Brazil."

Introduced

No records of *Trichomycterus paolence* introductions were found.

Means of Introduction Outside the United States

No records of *Trichomycterus paolence* introductions were found.

Short Description

From Wosiacki and Oyakawa (2005):

"*Trichomycterus tupinamba* and *T. paolence* are similar to each other in having a dark mid-lateral stripe from the opercle to a vertical line through the anal-fin origin. However, *T. paolence*

has a dark stripe "along the side of the back and a stripe along the edge of the belly" (Eigenmann, 1918), the latter of which is absent in *T. tupinamba*. *Trichomycterus tupinamba* has eight pectoral-fin rays, the first is the longest, without a filamentous extension, which helps differentiate it from *T. triguttatus* (Eigenmann) and the holotype of *T. paolence* both of which have with six pectoral-fin rays and the first ray prolonged as a filament."

Biology

From N. Furlan et al. (2013):

"However, the high dominance values observed in the Grande River headwaters seems to be related to the restricted distribution of the small catfish *T. paolence*, which was associated with the particular conditions of this region, where large boulders and closed canopies are characteristic."

"The latter and *T. paolence* are considered endangered species (Rosa and Lima 2008)"

Human Uses

No information on human uses of *Trichomycterus paolence* was found.

Diseases

No information on pathogens or parasites of *Trichomycterus paolence* was found. **No records of OIE-reportable diseases (OIE 2021) were found for *T. paolence* were found.**

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

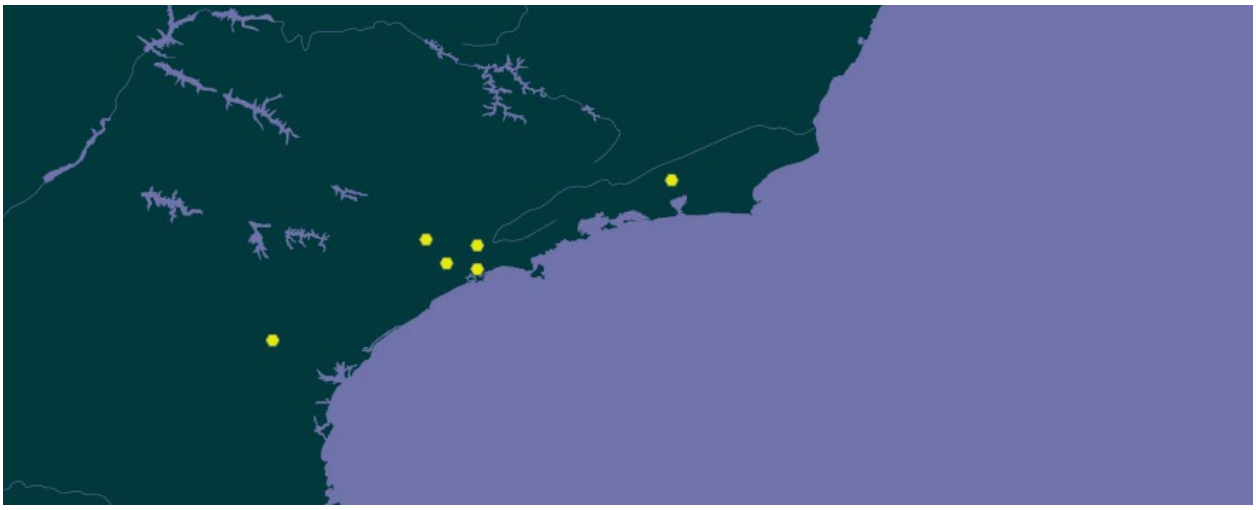
No records of *Trichomycterus paolence* introductions were found.

T. paolence is regulated in multiple States, see section 1.

4 History of Invasiveness

No records of introduction were found for *Trichomycterus paolence*. There was also no evidence of this species in trade. Therefore, the history of invasiveness is classified as No Known Nonnative Population.

5 Global Distribution



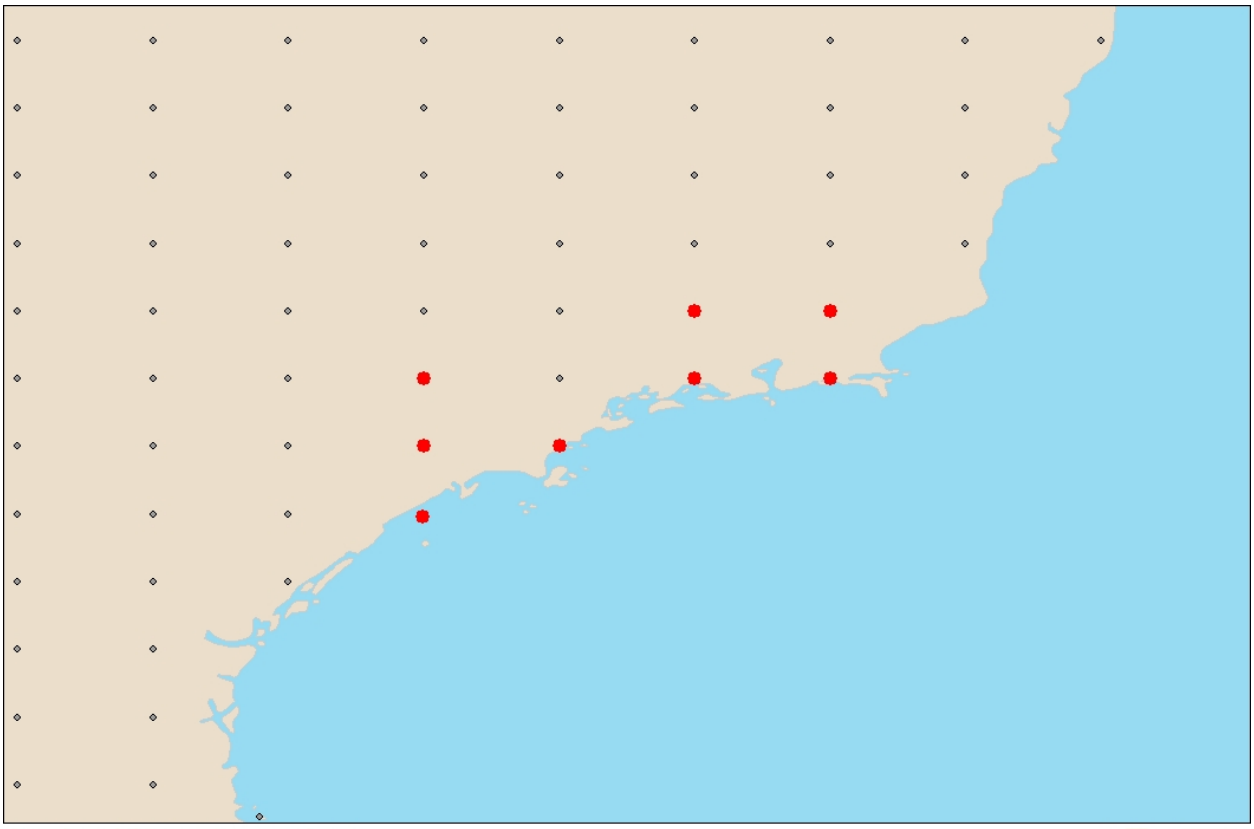
6 Distribution Within the United States

No records of *Trichomycterus paolence* in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Trichomycterus paolence* was low across the contiguous United States. Southeastern Texas, southeastern Georgia, and northern Florida had medium climate matches. While southern Florida had the only high climate match. The overall Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.007, medium (scores between 0.005 and 0.103, exclusive, are classified as medium). All States had a low individual Climate 6 score except Florida which had a high individual score.



Species: *Trichomycterus paolence*
Selected Climate Stations

0 40 80 160 240
km

N

Selected

RAMP

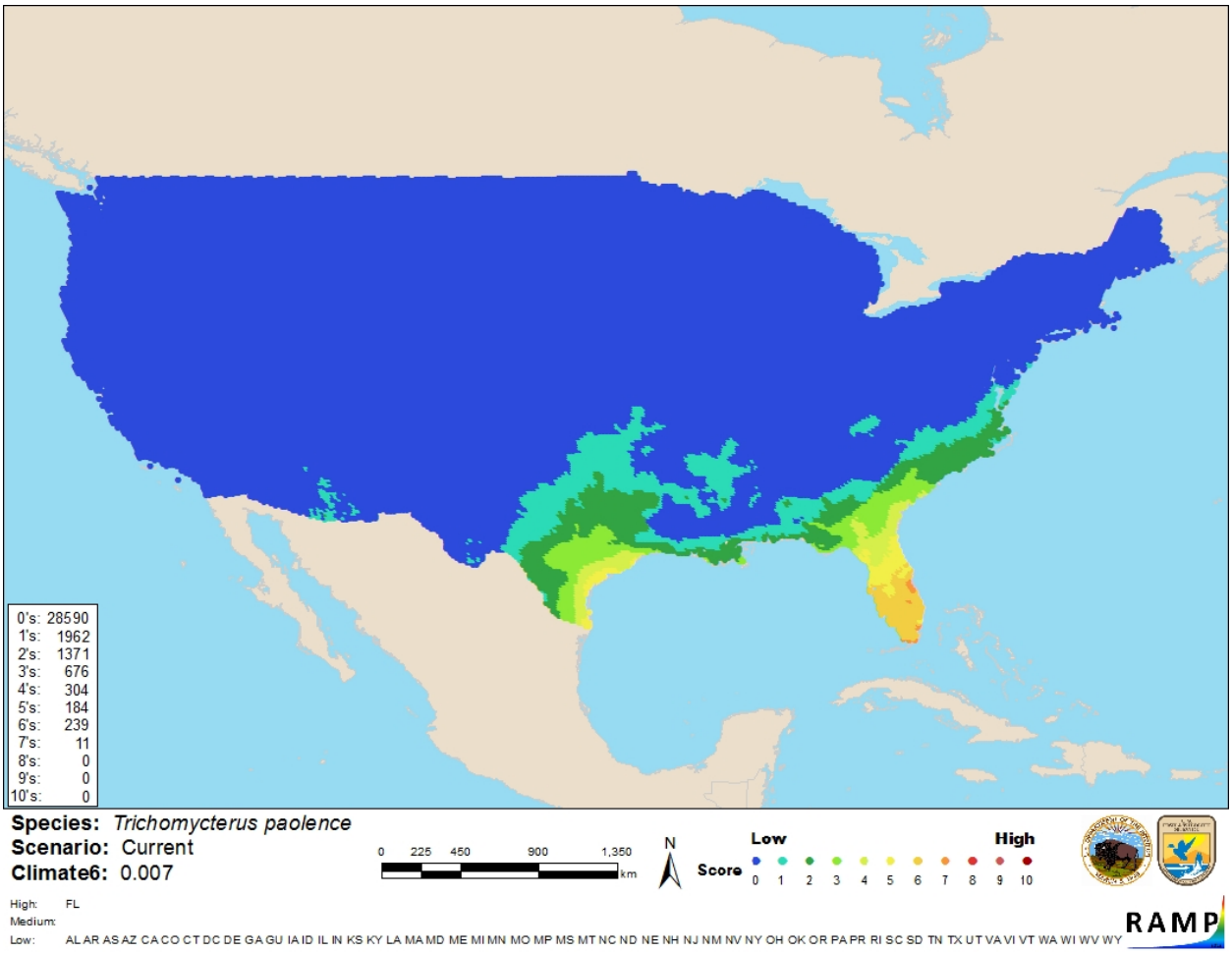


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Trichomycterus paolence* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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

There is very little known about *Trichomycterus paolence*; more information is needed to perform a thorough assessment of this species. *T. paolence* is not known to have been introduced outside of its native range, so no history of invasiveness exists. The certainty of this assessment is low.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus paolence is a species of trichomycterid catfish that has been subject to very limited study. Its known distribution is southern Brazil. There is little information on the biology of the fish. *T. paolence* is regulated in multiple States. There have been no reports of the species outside of its native range. Therefore, the history of invasiveness is classified as No Known Nonnative Population. The overall climate match to the contiguous United States is Medium. Much of the contiguous United States had low local matches; small areas of high match were found in Florida. The certainty of assessment is Low due to a general lack of information. The overall risk for this species is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match (Sec. 7): Medium**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information:** No additional remarks
- **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 Office of the Secretary of State. 2013. Live wildlife. Arizona Administrative Code, Game and Fish Commission, Title 12, Chapter 4, Article 4.

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Eschmeyer WN, Fricke R, van der Laan R, editors. 2018. Catalog of fishes: genera, species, references. California Academy of Science. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp (June 2018).

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Froese R, Pauly D, editors. 2018. *Trichomycterus paolence* (Eigenmann, 1917). FishBase. Available: https://www.fishbase.de/summary/Trichomycterus-paolence.html (June 2018).

Furlan N, Esteves KE, Quináglia GA. 2012. Environmental factors associated with fish distribution in an urban neotropical river (Upper Tietê River Basin, São Paulo, Brazil). Environmental Biology of Fishes 96:77–92.

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Trichomycterus paolence* (Eigenmann, 1917). Copenhagen: Global Biodiversity Information Facility. Available: https://www.gbif.org/species/2343109 (June 2018).

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Oklahoma Secretary of State. 2019. List of restricted exotic species. Oklahoma Administrative Code, Title 800, Chapter 20-1-2.

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

State of Nevada. 2018. Restrictions on importation, transportation and possession of certain species. Nevada Administrative Code, Chapter 503, Section 110.

Texas Parks and Wildlife. 2020. Invasive, prohibited and exotic species. Austin: Texas Parks and Wildlife. Available: https://tpwd.texas.gov/huntwild/wild/species/exotic/prohibited_aquatic.phtml (November 2020).

Utah Office of Administrative Rules. 2019. Classification and specific rules for fish. Utah Administrative Code, Rule R657-3-23.

Wosiacki WB, Oyakawa OT. 2005. Two new species of the catfish genus *Trichomycterus* (Siluriformes: Trichomycteridae) from the rio Ribeira de Iguape Basin, Southeastern Brazil. Neotropical Ichthyology 3:465–472.

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.

Rosa RS, Lima FCT. 2008. Peixes. In A. B. Machado, C. S. Martins, and G. M. Drummond, editors. Livro vermelho da fauna brasileira ameaçada de extinção, 1st edn. Ministério do Meio Ambiente. Belo Horizonte, Brasília: Fundação Biodiversitas.