

# *Trichomycterus pauciradiatus* (a catfish, no common name)

## Ecological Risk Screening Summary

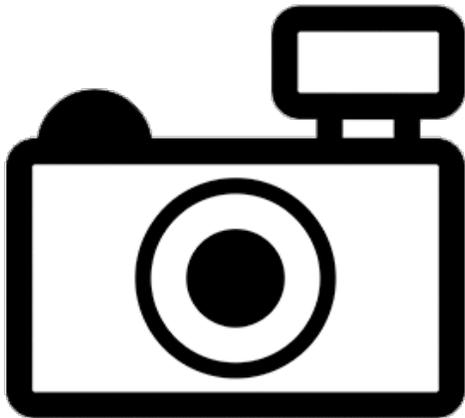
U.S. Fish & Wildlife Service, January 2017

Revised, June 2018

Web Version, 11/1/2021

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

## 1 Native Range and Status in the United States

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### Native Range

From Froese and Pauly (2018):

“South America: Debaixo da Serra, upper Paraná River basin in Brazil.”

### Status in the United States

No records of *Trichomycterus pauciradiatus* in the wild or in trade in 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 *Trichomycterus pauciradiatus* as a prohibited species. Prohibited nonnative species (FFWCC 2018), "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 be held 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 *Pygidium* 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 pauciradiatus* in the United States were found.

## Remarks

No additional remarks.

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Trichomycterus pauciradiatus* Alencar and Costa, 2006 is the valid name for this species, it is also the original name.

From Froese and Pauly (2018):

“[Class] Actinopterygii (ray-finned fishes) >[Order] Siluriformes (Catfish) > [Family] Trichomycteridae (Pencil or parasitic catfishes) >[Subfamily] Trichomycterinae”

## Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 5.2 cm SL male/unsexed; [Alencar and Costa, 2006]”

## Environment

From Froese and Pauly (2018):

“Freshwater; demersal.”

## Climate

From Froese and Pauly (2016):

“Tropical”

## Distribution Outside the United States

Native

From Froese and Pauly (2018):

“South America: Debaixo da Serra, upper Paraná River basin in Brazil.”

Introduced

No records of *Trichomycterus pauciradiatus* introductions were found.

## Means of Introduction Outside the United States

No records of *Trichomycterus pauciradiatus* introductions were found.

## Short Description

From Froese and Pauly (2018):

“Dorsal soft rays (total): 10-12; Anal soft rays: 9; Vertebrae: 36 - 38. Differs from all other members of the genus by possessing four pelvic-fin rays. Similar to *Trichomycterus reinhardti* by having a unique color pattern consisting of a broad dark brown stripe on the flank, dorsally bordered by a bright yellow zone without dark marks; but differs from *Trichomycterus reinhardti* by having a more slender body (body depth 12.6-15.1% SL) and a shorter preorbital length (25.7-39.3% HL) [Alencar and Costa, 2006]”

## Biology

From Alencar and Costa (2006):

“*Trichomycterus pauciradiatus* is possibly more closely related to *T. reinhardti*, which is endemic to the upper rio São Francisco basin, than to other congeners due to both species sharing a derived color pattern not found among congeners. This color pattern consists of a broad dark

brown stripe along the lateral midline, bordered above by a light yellow longitudinal zone lacking dark marks.”

## **Human Uses**

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

## **Diseases**

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

## **Threat to Humans**

From Froese and Pauly (2018):

“Harmless”

## **3 Impacts of Introductions**

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No records of *Trichomycterus pauciradiatus* introductions were found.

*T. pauciradiatus* is regulated in multiple States, see section 1.

## **4 History of Invasiveness**

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No records of introductions or populations established outside of the native range were found for *Trichomycterus pauciradiatus*. Therefore, the history of invasiveness is classified as No Known Nonnative Population.

## 5 Global Distribution

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## 6 Distribution Within the United States

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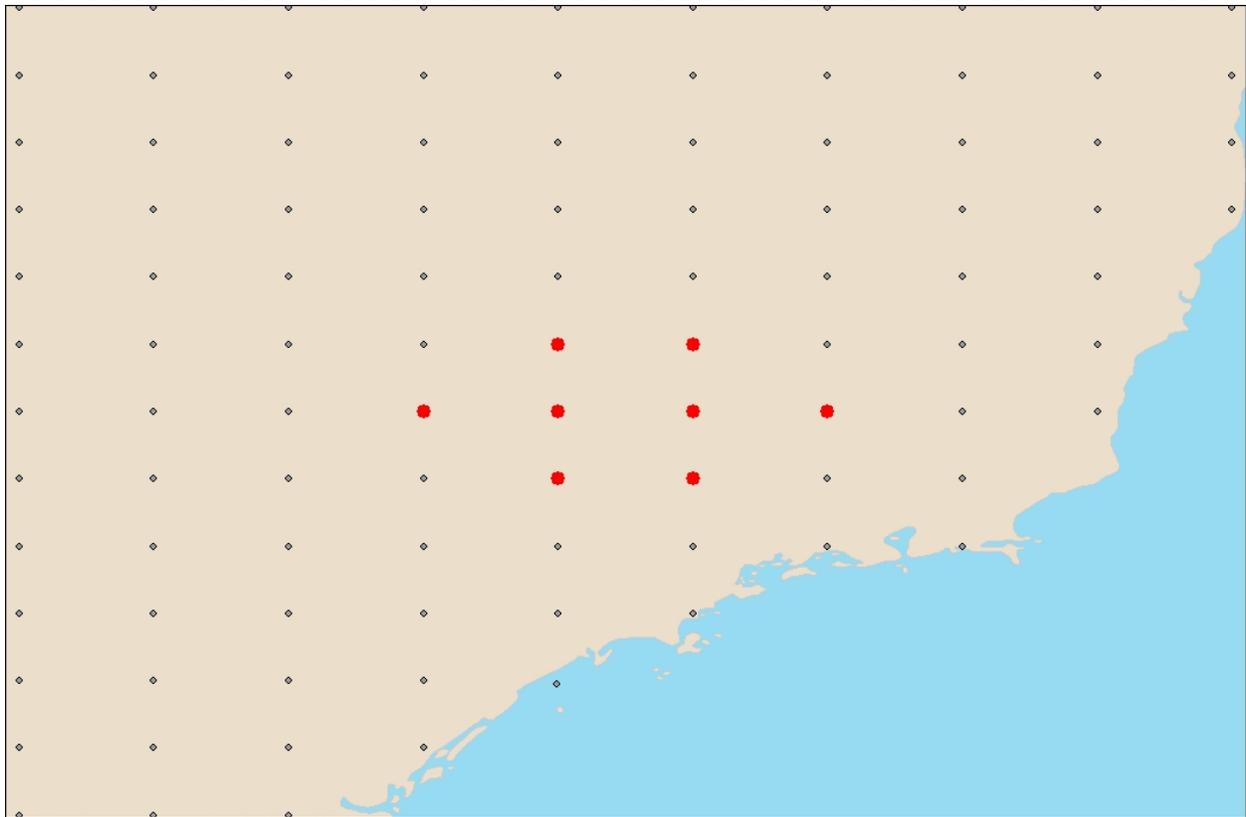
No records of *Trichomycterus pauciradiatus* in the United States were found.

## 7 Climate Matching

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### Summary of Climate Matching Analysis

The climate match for *Trichomycterus pauciradiatus* was low across most of the contiguous United States. There was a small portion of southeastern Texas that had a medium climate match, while southern Florida had the only areas of high climate match. The overall Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.003, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had a low individual Climate 6 score, except for Florida which had a high individual score.



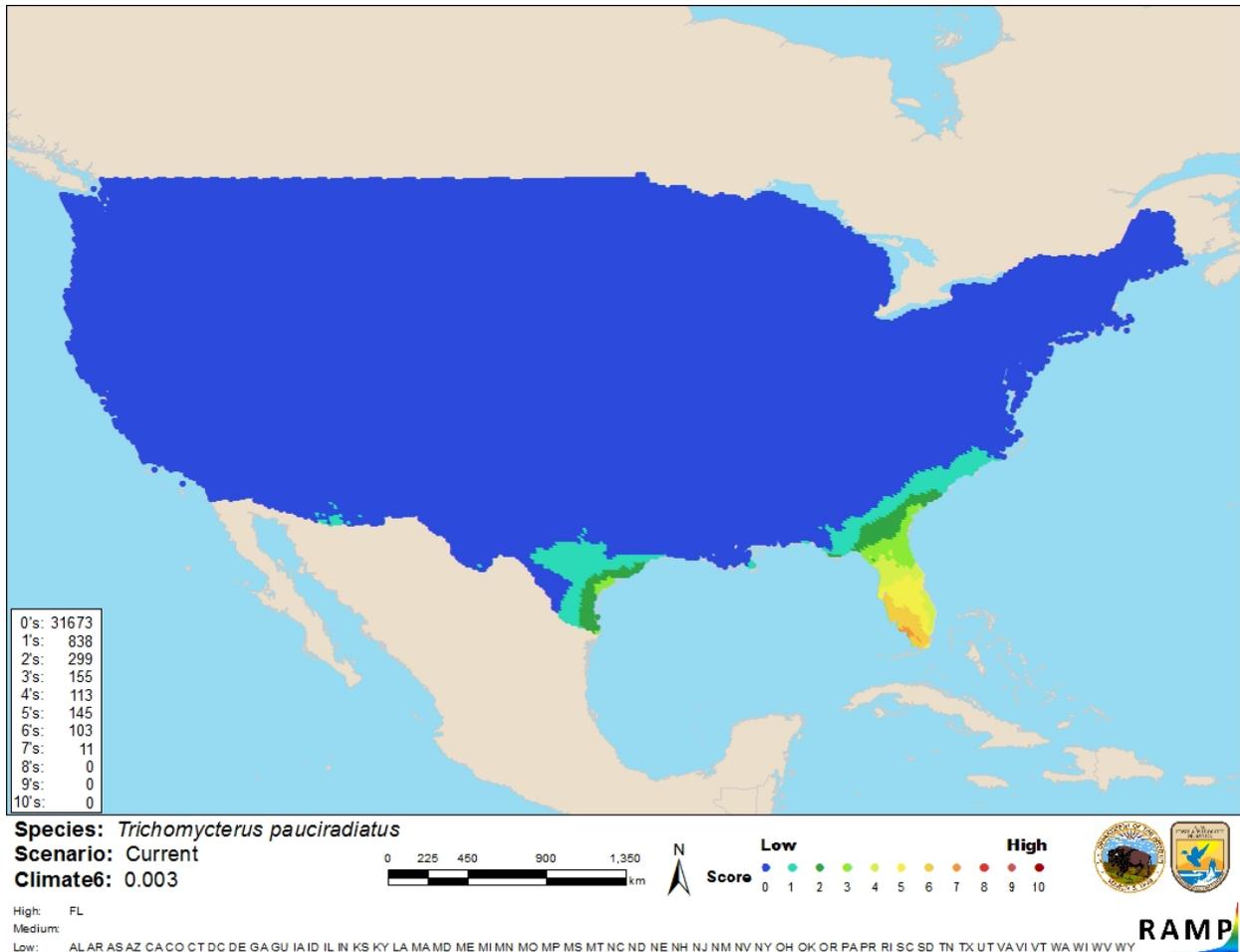
**Species:** *Trichomycterus pauciradiatus*  
**Selected Climate Stations**



**Selected** ●



**RAMP**



**Figure 3.** Map of RAMP (Sanders et al. 2018) climate matches for *Trichomycterus pauciradiatus* 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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
$\geq 0.103$	High

## 8 Certainty of Assessment

There is very little information available for *Trichomycterus pauciradiatus*. More data is needed to perform a thorough assessment of this species. *T. pauciradiatus* 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

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### Summary of Risk to the Contiguous United States

*Trichomycterus pauciradiatus* is a species of trichomycterid catfish that native to southeastern Brazil. Very little information regarding this species is available. There have been no reports of the species outside of its native range. No indication of this species in trade was found, however, it is regulated in multiple States. The history of invasiveness is classified as No Known Nonnative Population. The overall climate match to the contiguous United States is Low. Medium match was found in peninsular Florida, with a small area of high match in southern 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): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional remarks.**
- **Overall Risk Assessment Category: Uncertain**

## 10 Literature Cited

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

Alencar AR, Costa WJEM. 2006. *Trichomycterus pauciradiatus*, a new catfish species from the upper ría Paraná basin, southeastern Brazil (Siluriformes: Trichomycteridae). *Zootaxa* 1269:43-49.

Arizona Office of the Secretary of State. 2013. Live wildlife. Arizona Administrative Code, Game and Fish Commission, Title 12, Chapter 4, Article 4.

California Department of Fish and Wildlife. 2019. Restricted species laws and regulations manual. Available: <https://wildlife.ca.gov/Conservation/Invasives/Regulations> (November 2020).

[FFWCC] Florida Fish and Wildlife Conservation Commission. 2018. Prohibited species list. Tallahassee: Florida Fish and Wildlife Conservation Commission. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/> (June 2018).

Fricke R, Eschmeyer WN, 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).

- Froese R, Pauly D, editors. 2018. *Trichomycterus pauciradiatus* Alencar and Costa, 2006. FishBase. Available: <https://www.fishbase.de/summary/Trichomycterus-pauciradiatus.html>. (June 2018).
- GBIF Secretariat. 2018. GBIF backbone taxonomy: *Trichomycterus pauciradiatus* Alencar and Costa, 2006. Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2343173> (June 2018).
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- Mississippi Secretary of State. 2019. Guidelines for aquaculture activities. Mississippi Administrative Code, Title 2, Part 1, Subpart 4, Chapter 11. Jackson: Office of the Mississippi Secretary of State, Regulatory and Enforcement Division.
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- 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.
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- Utah Office of Administrative Rules. 2019. Classification and specific rules for fish. Utah Administrative Code, Rule R657-3-23.

## **11 Literature Cited in Quoted Material**

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**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.**

No references for this section.