

***Trichomycterus nigroauratus* (a catfish, no common name)**

Ecological Risk Screening Summary

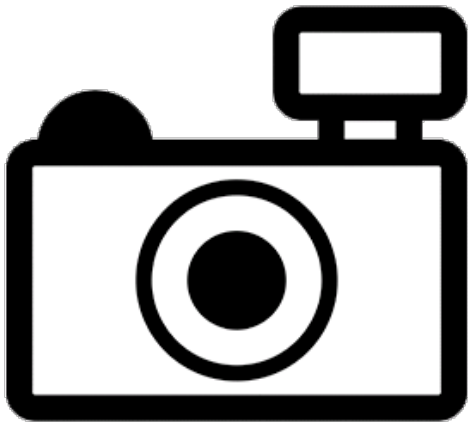
U.S. Fish & Wildlife Service, January 2017

Revised, June 2018

Web Version, 10/26/2021

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Barbosa and Costa (2008):

“Upper Barreiro River drainage basin, serra da Bocaina, and upper Piquete, Pirapitinga, Alambari, Pedras, Bonito, and Campo Belo River drainage basins, serra da Mantiqueira, upper rio Paraíba do Sul basin, south-eastern Brazil.”

Status in the United States

Trichomycterus nigroauratus has not been reported in the wild in the United States. No information on trade of *T. nigroauratus* in the United States was 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 pantherinus* 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 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

Trichomycterus nigroauratus has not been reported as introduced or established in the United States.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Trichomycterus nigroauratus* Barbosa and Costa 2008 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

Barbosa and Costa (2008) give a standard length range of 42.1 mm – 73.2 mm.

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic”

Climate

From Froese and Pauly (2018):

“Tropical; 22°S - 23°S, 44°W - 46°W”

Distribution Outside the United States

Native

From Barbosa and Costa (2008):

“Upper Barreiro River drainage basin, serra da Bocaina, and upper Piquete, Pirapitinga, Alambari, Pedras, Bonito, and Campo Belo River drainage basins, serra da Mantiqueira, upper rio Paraíba do Sul basin, south-eastern Brazil.”

Introduced

Trichomycterus nigroauratus has not been reported as introduced or established outside of its native range.

Means of Introduction Outside the United States

Trichomycterus nigroauratus has not been reported as introduced or established outside of its native range.

Short Description

From Barbosa and Costa (2008):

“Distinguished from all other species of the genus from south-eastern Brazil by the unique colour pattern in living specimens, consisting of golden spots on the snout, flank, above and below the midline, and the dorsum [...] dorsal fin rays 11-12; anal fin rays 10-11; pectoral fin rays 8; pelvic fin rays 5; caudal fin principal rays 13, dorsal procurrent rays 14-17, ventral procurrent rays 11-13; total vertebrae 35- 36; pleural ribs 13-14; upper hypural plates separated, dorsal plate slightly wider than ventral plate. [...] Side of body and head light purplish brown, with dark grey to

black stripe along lateral midline between opercular region and caudal peduncle end, sometimes interrupted; row of horizontally elongated golden spots above and below midline, and along dorsum; laterodorsal row of coalesced grey spots; lateroventral row of dark grey to black dots or round spots; venter yellowish white; dark grey to black stripe between nasal barbel and eye; round golden spot on middle of snout, and another similar but smaller anterior to nasal barbel; nasal barbel dark grey to black, maxillary and rictal barbels light grey; iris light yellow; fins yellow, rays dark grey to black; pectoral fin filament white; in juveniles, black stripe along lateral midline, dark pigmentation extending to posterior margin of caudal fin, and faint grey spots on dorsum.”

Biology

From Barbosa and Costa (2008):

“*Trichomycterus nigroauratus* and *T. itatiayae* are often found together living syntopically in small mountain rivers of the region, swimming close to the substrate during daylight.”

“Juveniles and adults were observed and collected swimming actively during daylight, usually in still water pools, close to the bottom, on the litter, never in places with higher current velocities. Specimens were collected between 20 and 150 cm depth, in pools in clearwater streams with fast flowing water, and sandy and gravel substrate.”

Human Uses

No information available on human uses of *Trichomycterus nigroauratus* was found.

Diseases

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

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

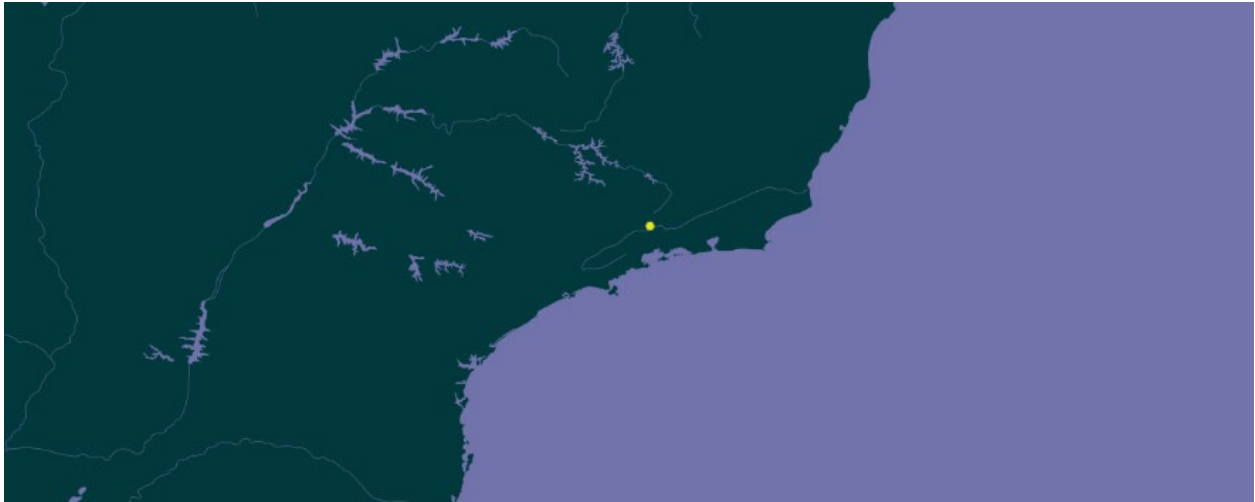
Trichomycterus nigroauratus has not been reported as introduced or established outside of its native range.

T. nigroauratus is regulated in multiple States.

4 History of Invasiveness

No records of introduction were found for *Trichomycterus nigroauratus*. No indication of this species in trade was found. Therefore, the history of invasiveness is classified as No Known Nonnative Population.

5 Global Distribution



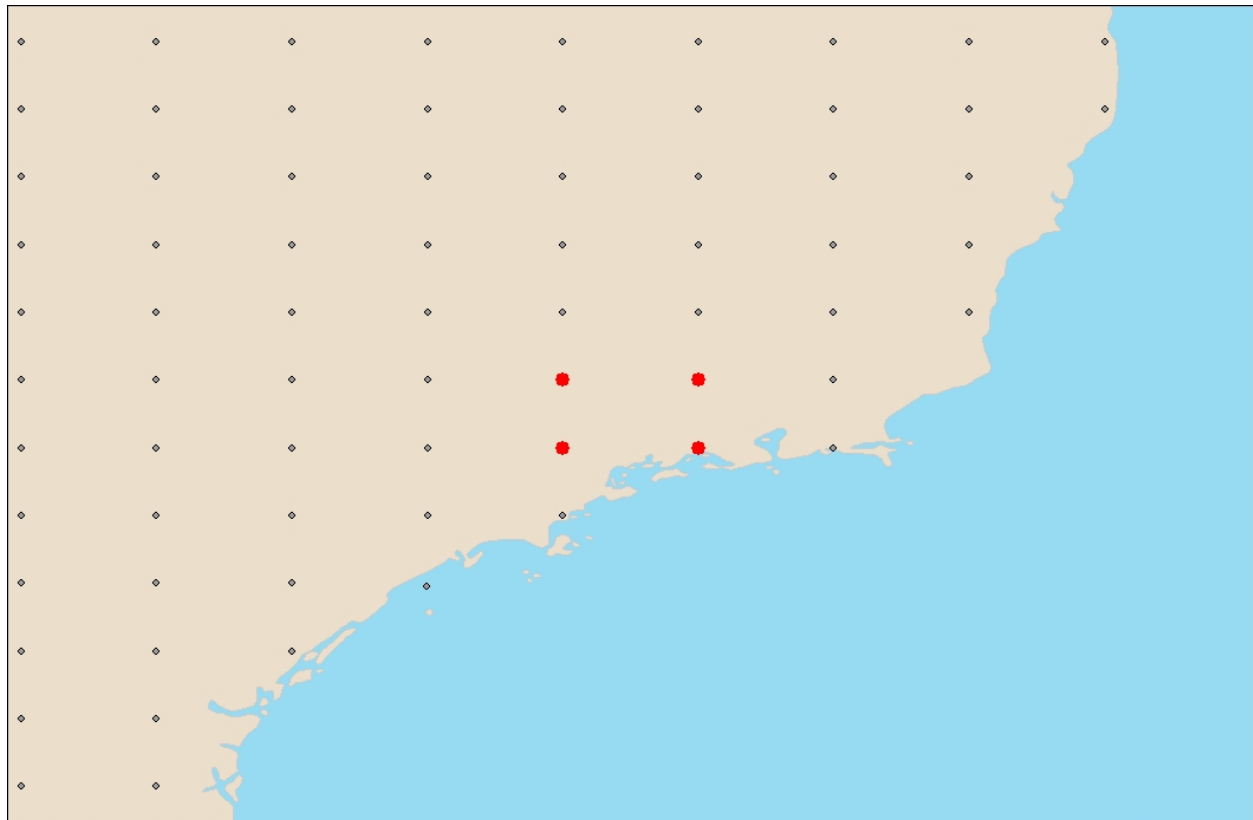
6 Distribution Within the United States

Trichomycterus nigroauratus has not been reported as introduced or established in the United States.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Trichomycterus nigroauratus* was low for the vast majority of the United States. Areas of medium match were found in peninsular Florida and coastal Georgia. There were no areas of high match. The overall climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean Distance) for the contiguous United States was 0.004, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had low individual Climate 6 scores except for Florida, which had a high individual score.



Species: *Trichomycterus nigroauratus*
Selected Climate Stations

0 40 80 160 240 km



Selected •



RAMP

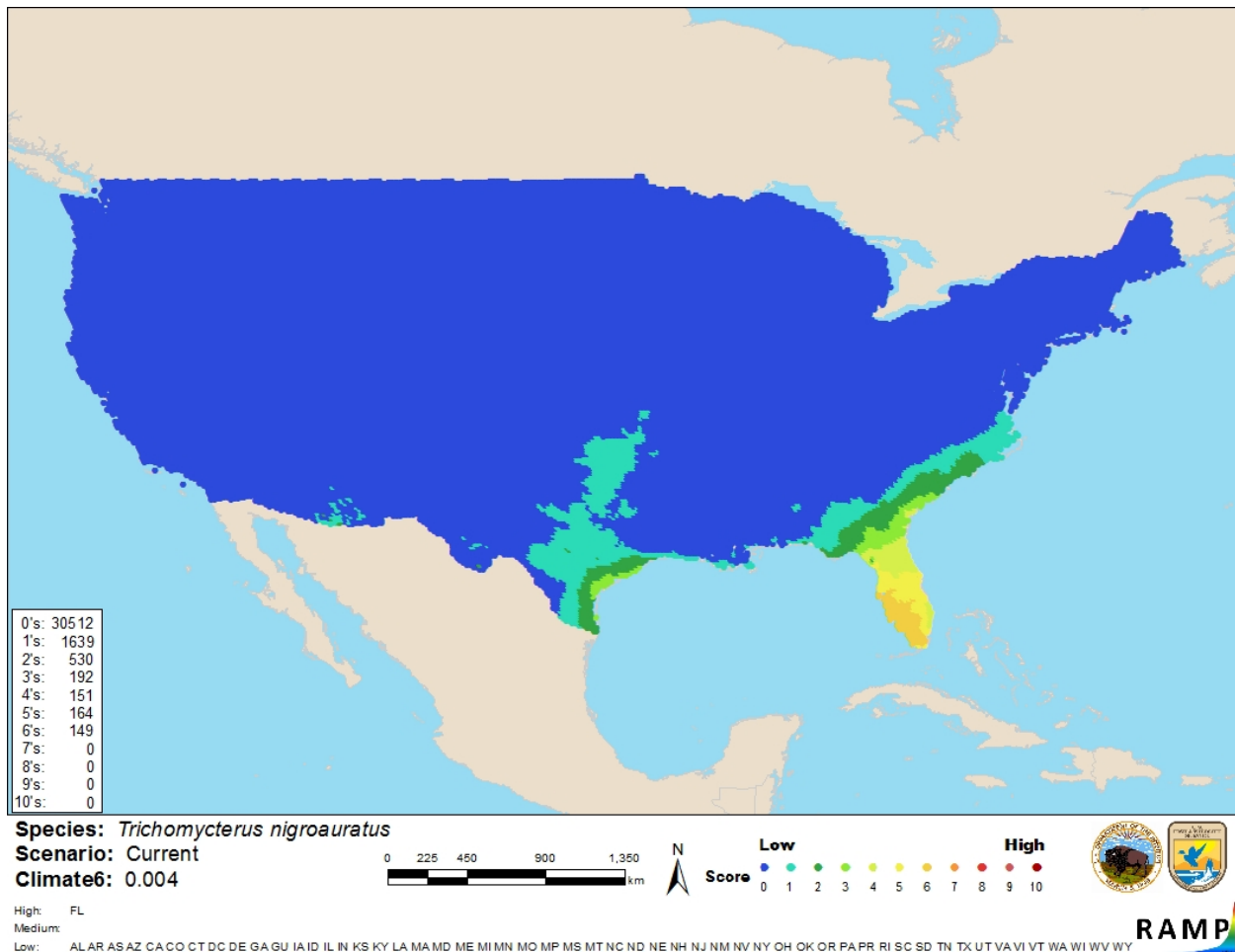


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Trichomycterus nigroauratus* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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
≥ 0.103	High

8 Certainty of Assessment

There was very little information available on the species *Trichomycterus nigroauratus*. *T. nigroauratus* has not been reported outside of its native range so impacts of introductions are unknown. With such little information known on this species the certainty of this assessment is low.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus nigroauratus 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. No records of this species in trade were found. *T. nigroauratus* 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 Low. Peninsular Florida had a medium match. 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

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.

Barbosa MA, Costa WJEM. 2008. Description of a new species of catfish from the upper rio Paraíba do Sul basin, south-eastern Brazil (Teleostei: Siluriformes: Trichomycteridae) and re-description of *Trichomycterus itatiayae*. Aqua International Journal of Ichthyology 14:175–186.

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

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> (May 2018).

- [FFWCC] Florida Fish and Wildlife Conservation Commission. 2017. Prohibited species list. Tallahassee: Florida Fish and Wildlife Conservation Commission. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/#nogo> (January 2017).
- Froese R, Pauly D, editors. 2018. *Trichomycterus pantherinus* (Barbosa and Costa, 2008). Fishbase. Available: <https://www.fishbase.de/summary/Trichomycterus-nigroauratus.html> (June 2018).
- GBIF Secretariat (Global Biodiversity Information Facility). 2018. GBIF backbone taxonomy: *Trichomycterus nigroauratus* (Barbosa and Costa, 2008). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2343197> (June 2018).
- Georgia [DNR] Department of Natural Resources. 2020. Wild animals/exotics. Social Circle: Georgia Department of Natural Resources Law Enforcement Division. Available: <http://gadnrle.org/exotics> (November 2020).
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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.
- 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.

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.

No references in this section.