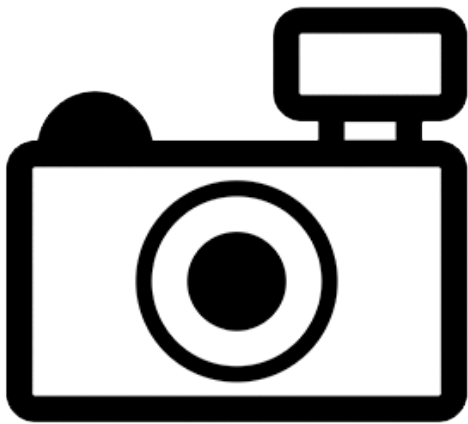


***Trichomycterus stawiarski* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016
Revised, February 2018
Web Version, 2/25/2020



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: Iguazu River basin in 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 stawiarski 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.

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 stawiarski*

From Eschmeyer et al. (2016):

“Current status: Valid as *Trichomycterus stawiarski* (Miranda Ribeiro 1968). Trichomycteridae: Trichomycterinae.”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 8.5 cm male/unsexed; [de Pínna and Wosiacki 2003]”

Environment

From Reis and Lima (2009):

“*T. stawiarski* is a benthopelagic (ecological region at the lowest level of water body) species. Occurs in small rivers and creeks with fast flowing water and rock bottoms.”

Climate/Range

From Froese and Pauly (2016):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: Iguazu River basin in 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 Barreto et al. (2013):

“[...] members of Trichomycteridae were characterized as benthic substrate speculators (Casatti & Castro, 1998; Casatti, 2002), by having well-developed sensory barbells and mouth terminal or subterminal, allowing them to explore small spaces (microhabitats) where they found aquatic immature insects (Casatti & Castro, 2006).”

From Ferrer and Malabarba (2013):

“In the few studies that attempted to elucidate the relationships among the species of *Trichomycterus* of south and southern of Brazil, Wosiacki & de Pinna (2008) recognized a monophyletic group formed by the species endemic to the rio Iguazu basin [*T. crassicaudatus* Wosiacki & de Pinna, 2008; *T. igobi* Wosiacki & de Pinna, 2008, and *T. stawiarski* (Miranda Ribeiro, 1968)] based in three putative synapomorphies: the procurrent caudal-fin rays thickly ossified and rigid, the dorsal procurrent rays extend for a long portion of the caudal peduncle, stretching over the tips of at least ten neural spines, and 10-11 branchiostegal rays.”

“According to Datovo & Bockmann (2010), the reduction of the interopercular patch of odontodes and the thinness and elongation of urohyal lateral processes is present in many other trichomycterines (e.g., *Trichomycterus stawiarski* [...])”

“[...] the two distinct layers of pigmentation in the skin of large specimens as reported for [...] *T. stawiarski* [...] by Datovo et al. (2012).”

Biology

From Barreto et al. (2013):

“Ephemeroptera nymphs, larvae and pupae of Diptera, organic detritus and plant fragments were the most representative food items for [...] *T. stawiarski*.”

“[...] *T. stawiarski* size class 1 (25 – 45 mm) had different diet from individuals > 66 mm; and *T. stawiarski* size class 2 (46 – 65 mm) had different diet from individuals > 86 mm. [...] The highest contributors to dissimilarity (> 43%) of diet composition between the “smallest” and the “largest” individuals of *T. stawiarski* were unidentified larvae and pupae of Diptera (16%), Ephemeroptera nymphs (16%), fragments of plants (15%) and Plecoptera larvae (13%) [...]”

“The presence of several groups of benthic invertebrates in the stomachs indicates a selective behavior of picking up items on the substrate, in the same way of other small-sized catfish (Aranha, Takeuti & Yoshimura, 1998; Casatti & Castro, 1998).”

From Reis and Lima (2009):

“It lives hidden among the rocks.”

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.

The importation, possession, or trade of the catfish *T. stawiarski* 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 Global Distribution



Figure 1. Known global distribution of *Trichomycterus stawiarski*, reported from Brazil. Map from GBIF Secretariat (2017).

5 Distribution within the United States

This species has not been reported as introduced or established 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 along the central Gulf of Mexico coast, medium-high along the Atlantic coast south of Virginia, and medium across much of the Southeastern United States from Texas to New Jersey. The remainder of the contiguous United States had a low climate match. The Climate 6 score was 0.023, indicating that the contiguous United States has a medium overall climate match. (Scores between 0.005 and 0.103 are classified as medium.) The States of Alabama, Florida, Louisiana, and Mississippi had high climate scores and the States of Georgia, North Carolina, South Carolina, and Texas had medium climate scores. The climate score was low for the remaining States.

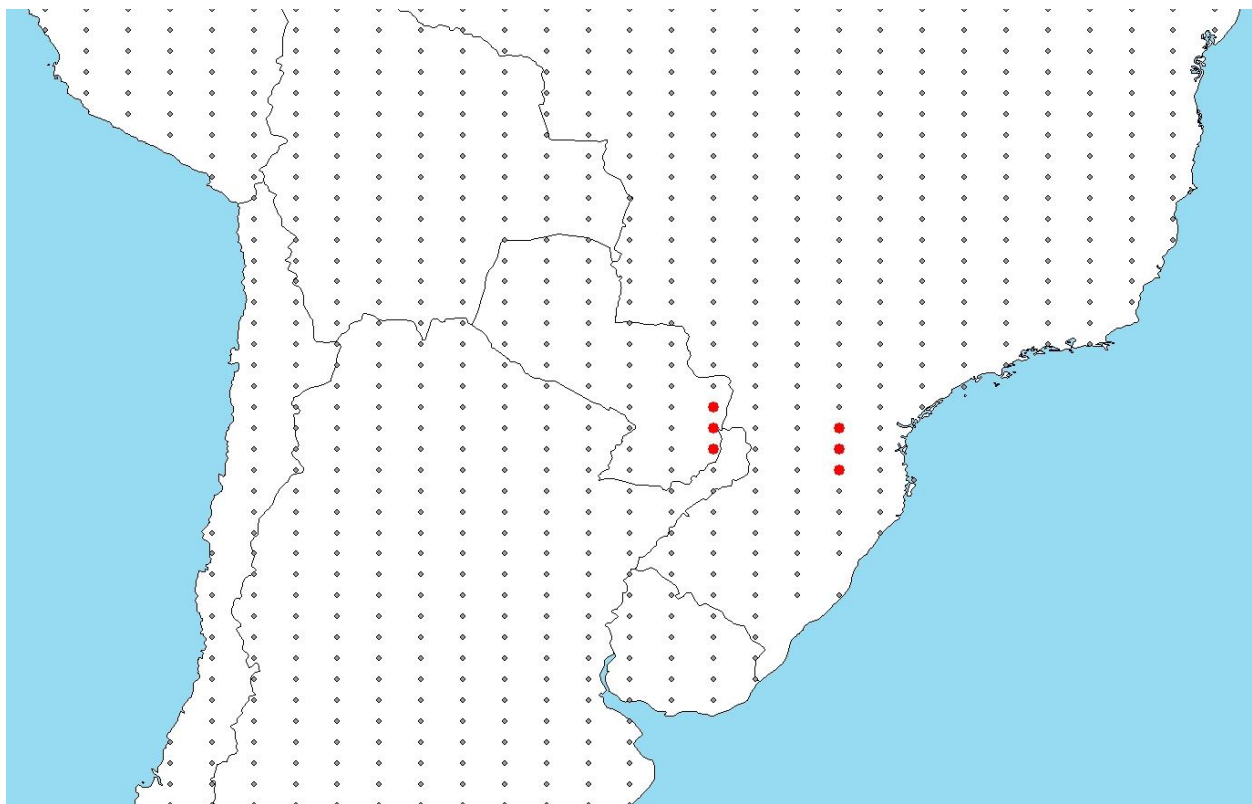


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Brazil and Paraguay) and non-source locations (gray) for *Trichomycterus stawiarski* climate matching. Source locations from GBIF Secretariat (2017). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

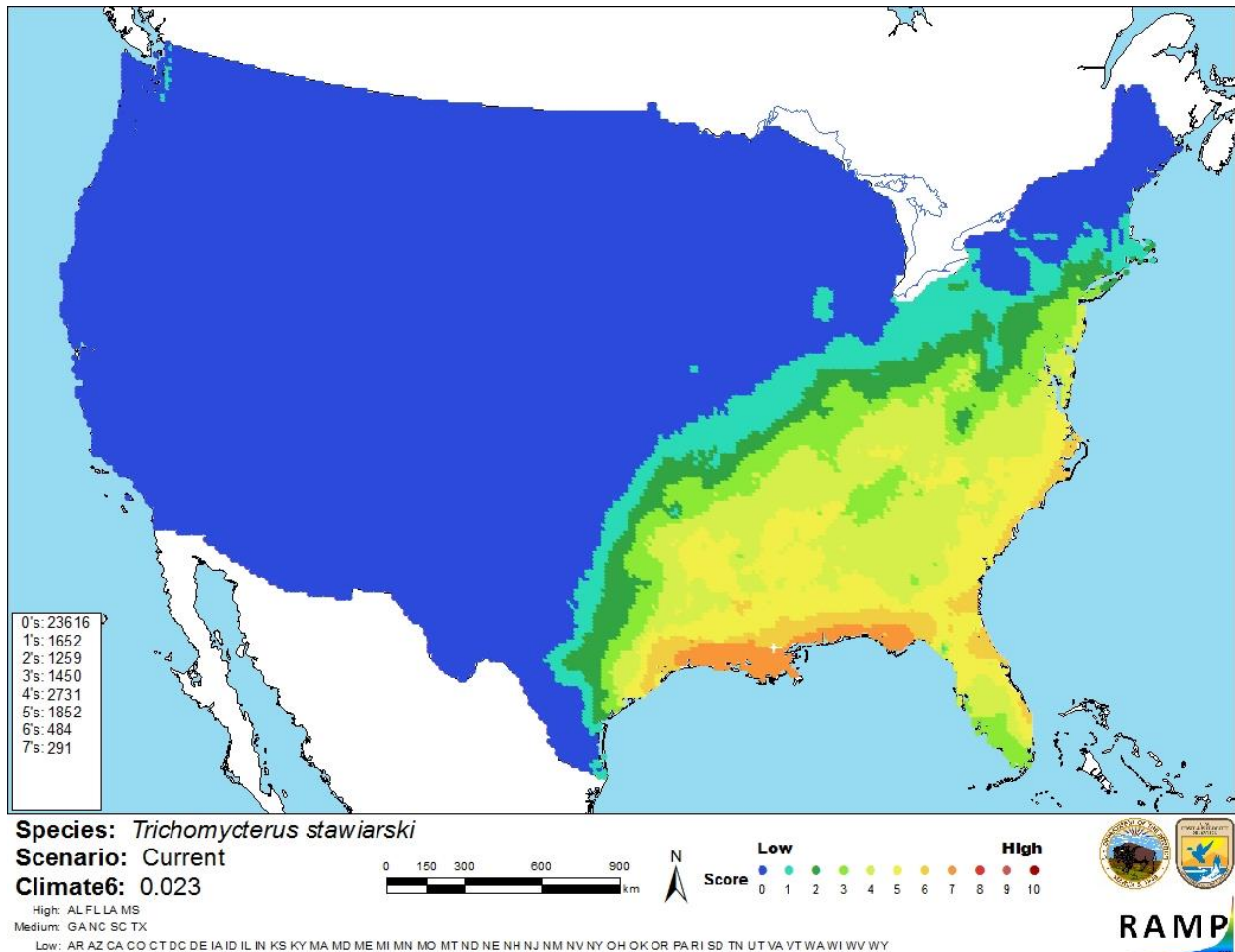


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Trichomycterus stawiarski* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10= Highest match. Counts of climate match scores are tabulated on the left.

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

7 Certainty of Assessment

Information on the biology and distribution of *Trichomycterus stawiarski* is well-documented in the scientific literature. There have been no documented introductions of this species outside of its native range. Data on the impacts of introductions are lacking; absence of this information makes the certainty of this assessment low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus stawiarski is a catfish native to Brazil. This species lives in small creeks and rivers with fast-moving water and rocky substrate, and feeds on benthic invertebrates. There have been no documented introductions of this species outside of its native range. History of invasiveness is uncertain. Several U.S. States prohibit or restrict the possession, transport, or trade of this species along with other members of the family Trichomycteridae. The certainty of this assessment low due to lack of information. *T. stawiarski* has a medium overall climate match with the contiguous United States, with a high match along the Gulf Coast from eastern Texas to western 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.

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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.

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