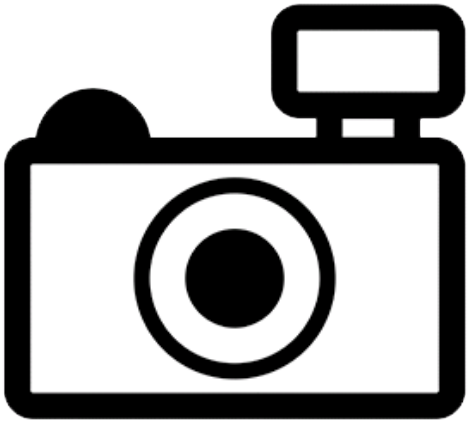
Trichomycterus spegazzinii (a catfish, no common name)

Ecological Risk Screening Summary

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



1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

"South America: Salta and Catamarca [Provinces], Argentina."

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 spegazzinii 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 spegazzinii*

From Eschmeyer et al. (2016):

"Current status: Valid as *Trichomycterus spegazzinii* (Berg 1897). Trichomycteridae: Trichomycterinae."

Size, Weight, and Age Range

From Froese and Pauly (2016):

"Max length : 10.8 cm NG male/unsexed; [de Pínna and Wosiacki 2003]"

Environment

From Froese and Pauly (2016):

"Freshwater; benthopelagic."

Climate/Range

From Froese and Pauly (2016):

"Tropical"

Distribution Outside the United States

Native

From Froese and Pauly (2016):

"South America: Salta and Catamarca [Provinces], Argentina."

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 DoNascimiento (2015):

"Jaw teeth bifid. The presence of bifid teeth was proposed as a putative synapomorphy for loricarioid catfishes, being observed in adult specimens of […] *T. spegazzinii* […]"

From Fernández and Vari (2002):

"[…] ontogenetic increase in the proportional size of the papillae occurs in […] *T. spegazzinii* in which small-sized specimens have relatively small papillae."

From Eigenmann (1917):

"Head 6.5-7.5 in the length with the caudal; […] eye much nearer snout than to edge of opercle; nasal barbell extending beyond the eye, maxillary barbell short and broad; gill-membrane without free margin at the middle; teeth in many series; interopercular spines few, in three or four rows, the sixth to eighth in the lower row moderate in size; opercular spines also few and minute; body verrucose; pertoral obliquely rounded, its first ray not prolonged; anal inserted under posterior part of dorsal; caudal subtrauncate or rounded."

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.

The importation, possession, or trade of the catfish *T. spegazzinii* 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

No georeferenced occurrences were available for *T. spegazzinii* (GBIF Secretariat 2019).

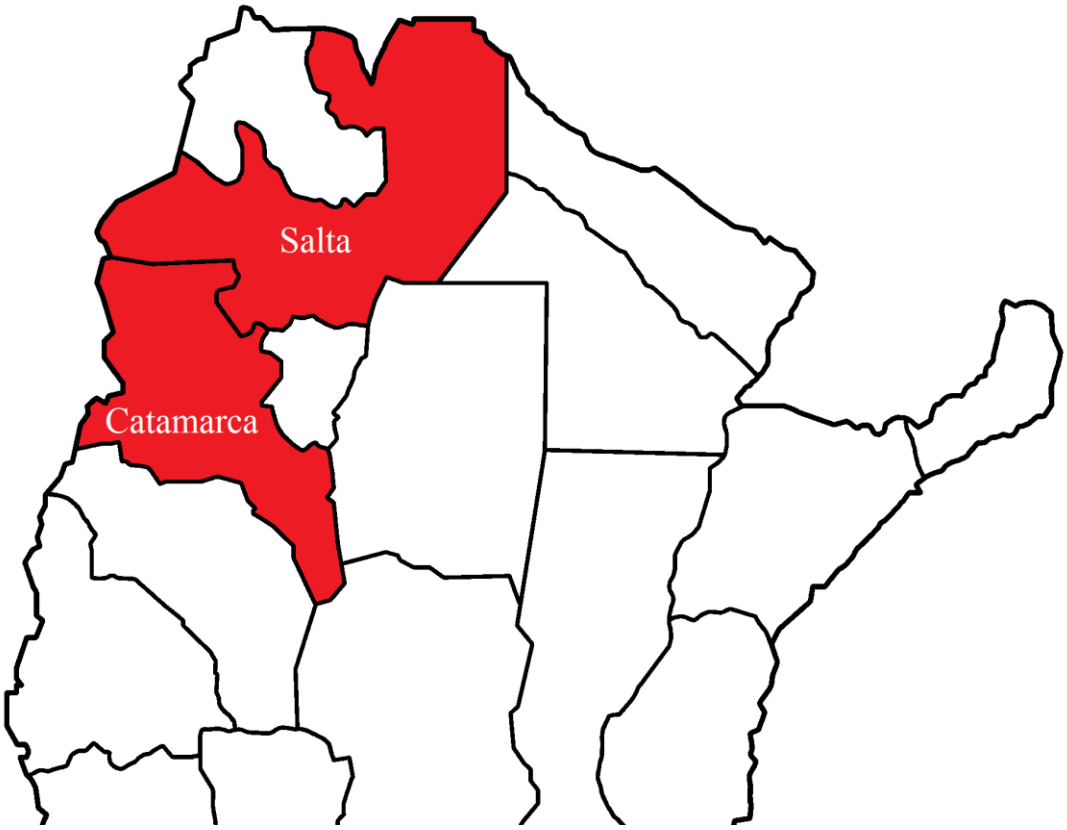


Figure 1. Map of the provinces of Salta and Catamarca in northwest Argentina, which is the distribution of *T. spegazzinii* as reported by Froese and Pauly (2016). Base map by Golbez; licensed under Creative Commons (CC BY-SA). Available: https://commons.wikimedia.org/wiki/File:Argentina_provinces_blank.png. (December 2016).

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

Note: There is a lack of georeferenced collection points for the species. Source locations are based on the described range of occurrences (Provinces of Argentina) from Froese and Pauly (2016); therefore the climate match is an approximation and likely an overestimate.

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was high in the southern portions of Arizona, New Mexico, and Texas. Medium matches occurred in Arizona, New Mexico, Texas, Oklahoma, Montana, and southern Florida and California. The rest of the contiguous United States had a low match. The Climate 6 score indicated that the contiguous United States has a medium climate match. (Scores between 0.005 and 0.103 are classified as medium.) The Climate 6 score for *Trichomycterus spegazzinii* is 0.063. Arizona, New Mexico and Texas had high individual Climate 6 scores, while all other States had a low Climate 6 score.

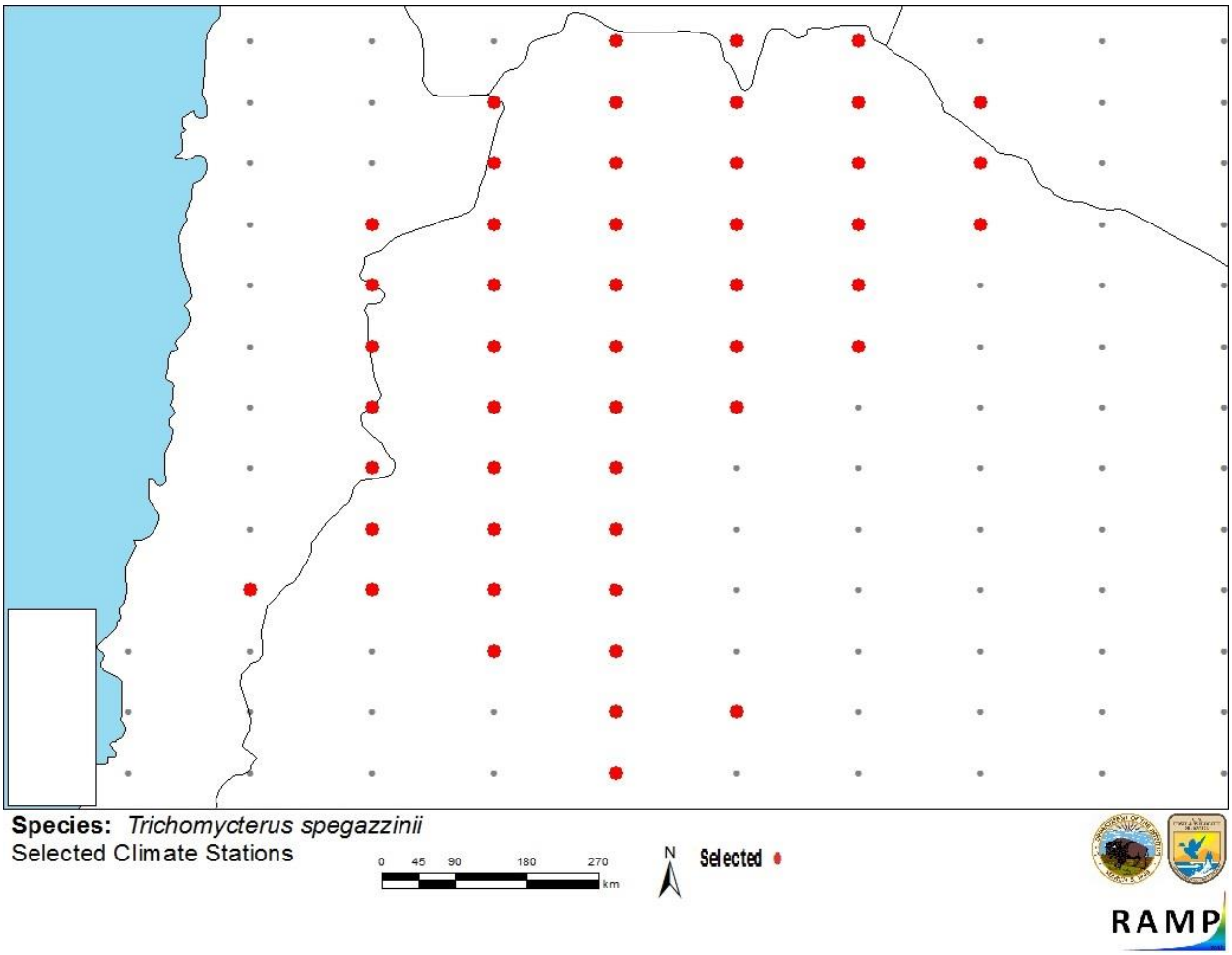


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *Trichomycterus spegazzinii* climate matching in northwest Argentina and surrounding areas. Source locations approximated from verbal description of range reported by Froese and Pauly (2016).

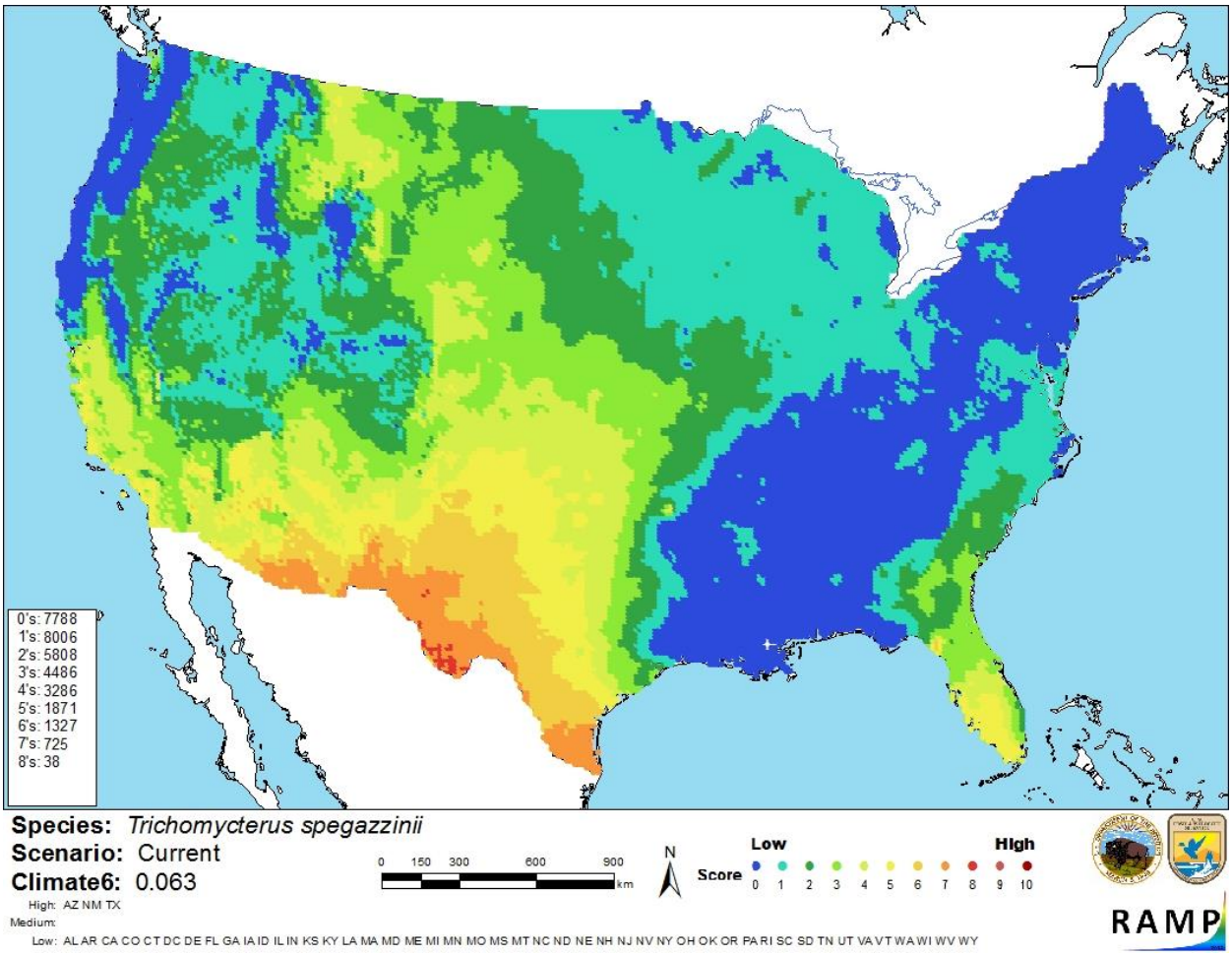


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Trichomycterus spegazzinii* in the contiguous United States based native range description reported by Froese and Pauly (2016). 0= Lowest match, 10= Highest match. Counts of climate match scores are tabulated on the left.

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 exact distribution and biology of *T. spegazzinii* is not widely available. No introductions of this species outside of its native range have been reported. Therefore, 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 spegazzinii is a catfish native to the Salta and Catamarca Provinces in Argentina. Several U.S. States prohibit or restrict the possession, transport, or trade of this species along with other members of the family Trichomycteridae. This species has not been documented outside of its native range. History of invasiveness is uncertain. Certainty of this assessment low due to lack of information. There are no georeferenced occurrence data reported for this species. The climate matching analysis was conducted using approximated source locations, contributing to the uncertainty of this assessment. *T. spegazzinii* has a medium climate match with the contiguous United States,with a high match in Arizona, New Mexico, and Texas. The overall risk assessment category for 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.

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.

DoNascimiento, C. 2015. Morphological evidence for the monophyly of the subfamily of parasitic catfishes Stegophilinae (Siluriformes, Trichomycteridae) and phylogenetic diagnoses of its genera. Copeia 103(4):933-960.

Eigenmann, C. H. 1917. The Pygidiidae. Memoirs of the Carnegie Museum 7(5):259-398.

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2016. Catalog of fishes: genera, species, references. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (December 2016).

Fernández, L. and R. P. Vari. 2002. New species of *Trichomycterus* from the Andes of Argentina with a redescription of *Trichomycterus alterus* (Siluriformes: Trichomycteridae). Copeia 2002(3):739-747.

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., and D. Pauly, editors. 2016. *Trichomycterus spegazzinii* (Berg 1897). FishBase. Available: http://www.fishbase.org/references/FBRefSummary.php?ID=39970. (December 2016).

GBIF Secretariat. 2019. GBIF backbone taxonomy: *Trichomycterus spegazzinii* (Berg, 1897). Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/2343162. (February 2020).

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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. World Organisation for Animal Health, Paris. Available: http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2019/. (February 2020).

Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk Assessment Mapping Program: RAMP. 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).

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.

Berg 1897 [Source did not provide full citation for this reference.]

de Pínna, M. C. C., and W. Wosiacki. 2003. Trichomycteridae (pencil or parasitic catfishes). Pages 270-290 *in* R. E. Reis, S. O. Kullander, and C. J. Ferraris, Jr., editors. Checklist of the freshwater fishes of South and Central America. EDIPUCRS, Porto Alegre, Brazil.