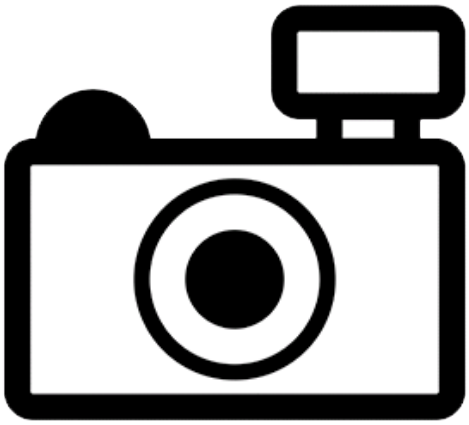
Trichomycterus gorgona (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, January 2017
Revised, May 2018
Web Version, 8/19/2019



1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"South America: Gorgona Island in Colombia."

Status in the United States

This species has not been reported as introduced in the United States. There is no evidence that this species is in trade in the United States, based on a search of the literature and online aquarium retailers.

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 (2016):

"Prohibited nonnative species 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.
[The list of prohibited nonnative species includes:]
Parasitic catfishes […]
Trichomycterus gorgona"

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 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 in the United States.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

"Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Siluriformes
Family Trichomycteridae
Subfamily Trichomycterinae
Genus *Trichomycterus*
Species *Trichomycterus gorgona* Fernández and Schaefer, 2005"

From Fricke et al. (2019):

"**Current status:** Valid as *Trichomycterus gorgona* Fernández & Schaefer 2005. Trichomycteridae: Trichomycterinae."

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 6.4 cm SL male/unsexed; [Fernández and Schaefer 2005]"

Environment

From Froese and Pauly (2018):

"Freshwater; demersal."

Climate/Range

From Froese and Pauly (2018):

"Tropical"

Distribution Outside the United States

Native

From Froese and Pauly (2018):

"South America: Gorgona Island in Colombia."

Introduced

This species has no reports of introductions.

Means of Introduction Outside the United States

No known introductions.

Short Description

From Froese and Pauly (2018):

"Distinguished from all congeners in having a thick transverse skin flap between the pelvic fins. Further differs by the following combination of characters: presence of eight or nine paired ribs, reduced pigmentation, and eyes reduced to small ovoid dots. Shares features commonly observed among troglomorphs, yet is distinguished from troglobitic Trichomycterinae in having the maxillary barbel extending to the anterior pectoral-fin margin, nasal barbels reaching the opercular odontodes, three supraorbital pores on the head, eight pectoral-fin rays and the first ray prolonged as a filament, tip of adpressed pelvic-fin not reaching anal-fin origin, 39-40 vertebrae, eight to 13 opercular odontodes, 14-15 interopercular odontodes [Fernández and Schaefer, 2005]."

Biology

From Fernández and Schaefer (2005):

"The new species is characterized, in part, by reductions in the degree of development of the eyes and pigmentation, features commonly observed among cave-dwelling, or troglobitic fishes (troglomorphisms; [Trajano, 1997; Romero and Paulson, 2001; Trajano et al., 2004]). Among *Trichomycterus*, three species are thought to be obligate troglobites (i.e., *Trichomycterus chaberti* from Umayalanta Cave, Bolivia; *Trichomycterus guianense* from Guacharo Cave, Venezuela; *Trichomycterus itacarambiensis* from Olhos d´Água Cave, Brazil), and we are aware of at least three undescribed troglomorphic species from the Colombian Andes and Brazil [Fernández and Bichuette, 2002]. However, the new species is known from two presumably epigean specimens taken from a small freshwater stream near the shoreline of the northeast end of Gorgona Island in Colombia during the 1961 University of Miami Argosy Expedition to Panama, Colombia, and Ecuador [de Sylva, 1963]. Although small in surface area (2400 ha), Gorgona Island has abundant permanent freshwater because of precipitation from its 338-m peak elevation. Its nearshore marine fauna is diverse and well known, but its freshwater ichthyofauna is relatively unknown [Rubio, 1986; Rubio et al., 1987]."

Human Uses

From Villa-Navarro et al. (2016):

"No uses are currently known for this species, but it is possible that this species was used in the past by the prisoners of the Gorgona Island to make keychain handicrafts, during the 23-year period that it was functioning (Mojica *et al*. 2012)."

Diseases

No information available. No OIE-listed diseases (OIE 2019) have been documented in this species.

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

No introductions of *Trichomycterus gorgona* have been reported outside its native range so no impacts of introduction are known.

The importation, possession, or trade of the parasitic catfish *T. gorgona* is prohibited or restricted in the following states: Arizona (Arizona Secretary of State 2006), California (Dill and Cordone 1997), Florida (FFWCC 2016), 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

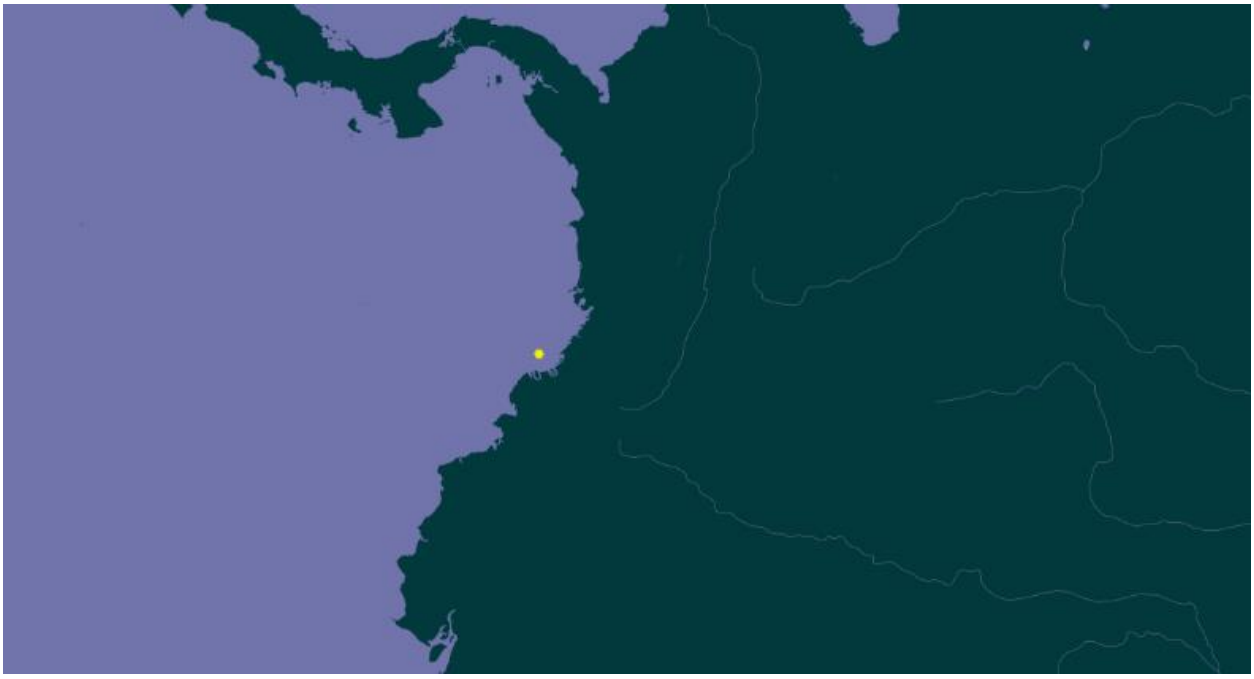


Figure 1. Known global established locations of *Trichomycterus gorgona*, reported from the Pacific coast of Colombia. Map from GBIF Secretariat (2018).

5 Distribution Within the United States

This species has not been reported in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) for the contiguous United States was low overall, reflected in a Climate 6 score of 0.0. Scores between 0.000 and 0.005, inclusive, are classified as low. Locally, the climate match was very low throughout the contiguous United States and all States had low individual climate scores.

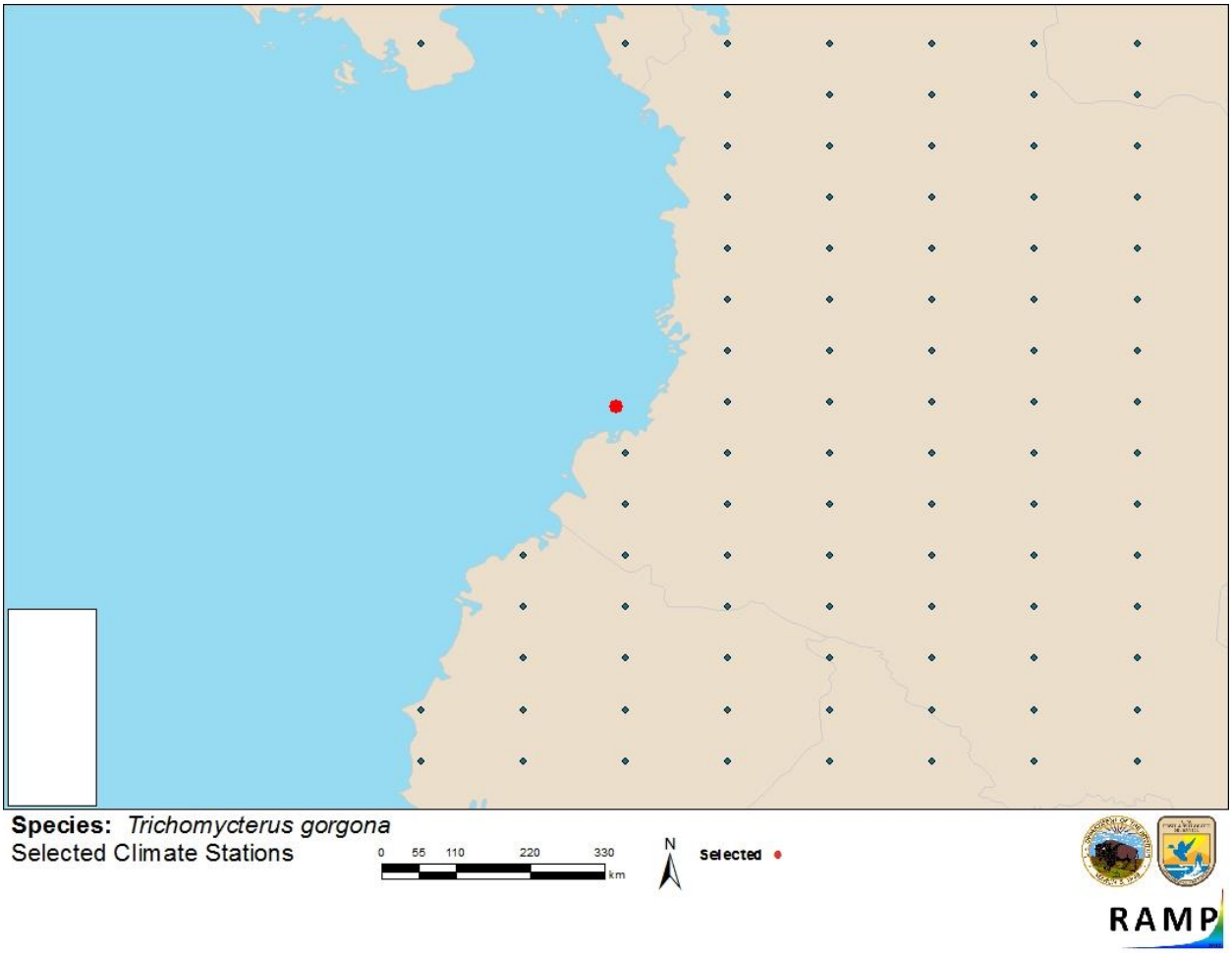


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Colombia) and non-source locations (gray) for *Trichomycterus gorgona* climate matching. Source locations from GBIF Secretariat (2018).

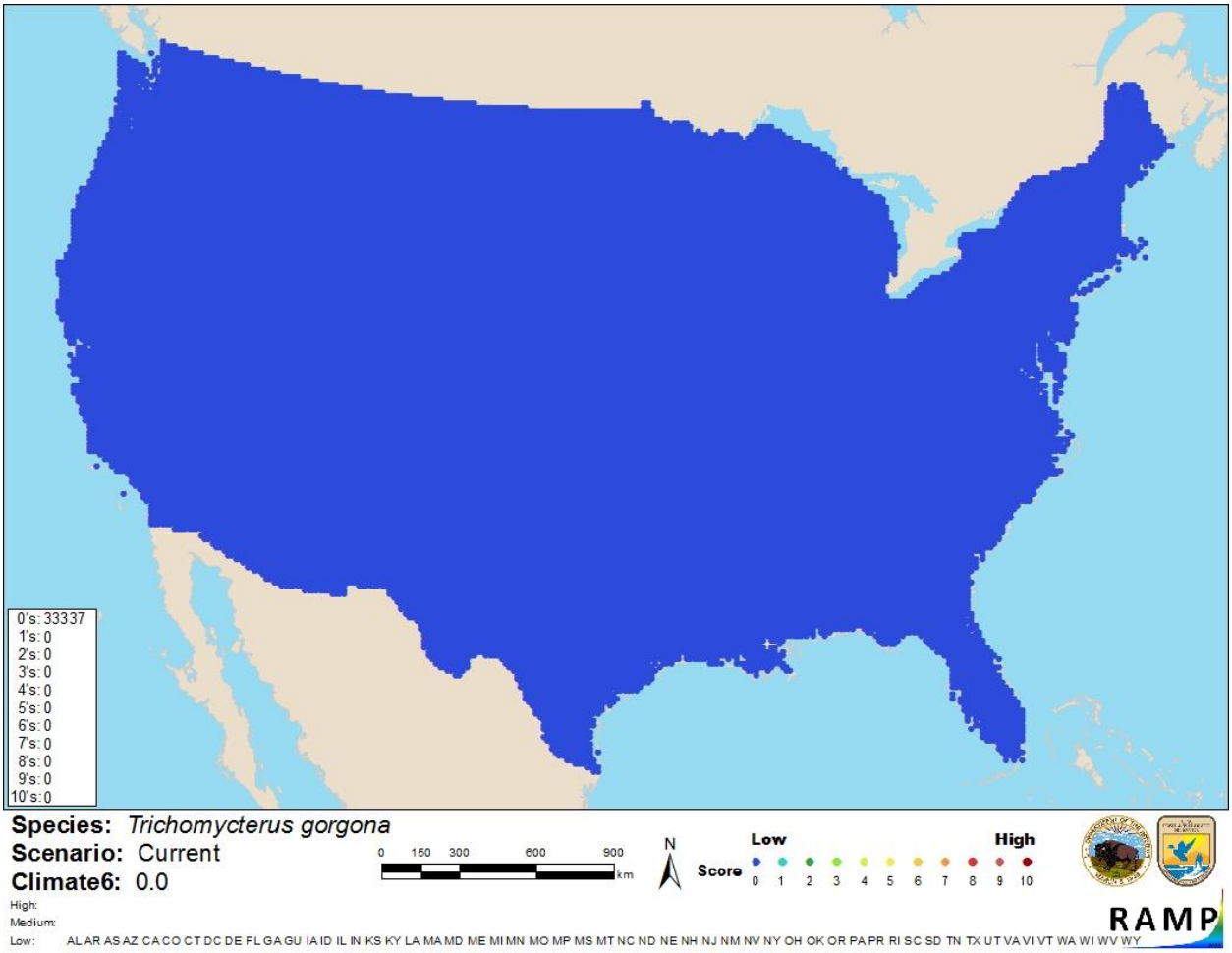


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Trichomycterus gorgona* in the continental United States based on source locations reported by GBIF Secretariat (2018). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

7 Certainty of Assessment

Trichomycterus gorgona is a relatively newly described species with some information available on its biology and ecology. There are no records showing introductions of this species outside of its native range. Little information is known to conclude what kind of effect it could have if it were introduced. Due to lack of information, the certainty of assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus gorgona is a freshwater parasitic catfish from South America. It has not been reported outside of its native range on Gorgona Island, just off the coast of Colombia. Due to lack of introduction history, the history of invasiveness is uncertain. This species has a uniformly low climate match to the contiguous United States. Due to lack of information about potential impacts of introductions, the certainty of assessment is low. The overall risk posed by *T. gorgona* is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **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.

Fernández, L., and S. A. Schaefer. 2005. New *Trichomycterus* (Siluriformes: Trichomycteridae) from an offshore island of Colombia. Copeia 2005(1):68-76.

FFWCC (Florida Fish and Wildlife Conservation Commission). 2016. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/. (December 2016).

Fricke, R., W. N. Eschmeyer, and R. Van der Laan, editors. 2019. Eschmeyer's Catalog of Fishes: genera, species, references. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (August 2019).

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GBIF Secretariat. 2018. GBIF backbone taxonomy: *Trichomycterus gorgona* Fernández & Schaefer, 2005. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/2343183. (May 2018).

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Legislative Council Bureau. 2018. Restrictions on importation, transportation and possession of certain species. Nevada Administrative Code, Section 503.110.

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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). 2019. OIE listed diseases, infections and infestations in force in 2019. Available: http:www.oie.int/animal-health-in-the-world/oie-listed-diseases-2019/. (August 2019).

Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.

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Villa-Navarro, F., L. Mesa-Salazar, P. Sanchez-Duarte, and C. Lasso. 2016. *Trichomycterus gorgona*. The IUCN Red List of Threatened Species 2016: e.T64792679A64890625. Available: http://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T64792679A64890625.en. (August 2019).

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.

Mojica, J. I., J. S. Usma, R. Álvarez-León, and C. A. Lasso. 2012. Libro rojo de peces dulceacuícolas de Colombia. Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Bogotá, Colombia.