

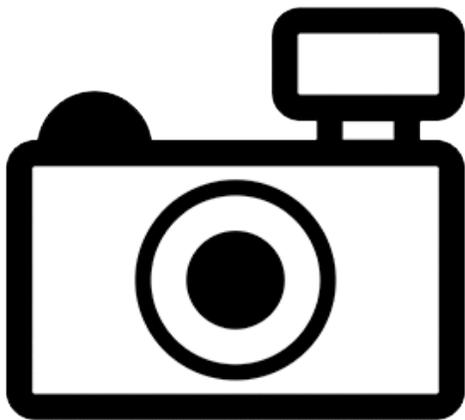
Trichomycterus unicolor (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, February, 2017

Revised, March 2017

Web Version, 11/25/2019



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: San Juan River basin in Colombia.”

From Mesa-Salazar et al. (2016):

“This species is endemic to Colombia, where is known only from its type locality Río Condoto, in the middle San Juan River basin, Pacific system (Regan 1913, Castellanos-Morales and Galvis 2012). Its EOO is estimated at 750 km² (calculated as the minimum convex polygon around the sub-catchments where the species occurs) and it occurs at only one location, based on the main threat affecting the species (mining).”

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 unicolor 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 (2017):

Kingdom Animalia

Subkingdom Bilateria

Infrakingdom Deuterostomia

Phylum Chordata

Subphylum Vertebrata

Infraphylum Gnathostomata

Superclass Osteichthys

Class Actinopterygii

Subclass Neopterygii

Infraclass Teleostei

Superorder Ostariophysii

Order Siluriformes

Family Trichomycteridae

Subfamily Trichomycterinae

Genus *Trichomycterus* Valenciennes, 1832

Species *Trichomycterus unicolor* (Regan, 1913)”

From Eschmeyer et al. (2017):

“Current status: Valid as *Trichomycterus unicolor* (Regan 1913). 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 Froese and Pauly (2016):

“Freshwater; benthopelagic”

Climate/Range

From Froese and Pauly (2016):

“Tropical, preferred ? ”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: San Juan River basin in Colombia.”

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 Regan (1913):

“Depth of body 7 in length, length of head 6. Head as broad as long. Diameter of eye 12 in length of head or 3 in interocular width; eyes well in advance of middle of head, close behind nostrils. Barbels as long as head. Dorsal 8-9, with 5 or 6 branched rays, rounded; origin above or a little in advance of vent, $1\frac{4}{5}$ as far from end of snout as from base of caudal. Anal 7, with 4 branched rays; origin below last rays of dorsal. Pectoral filament $\frac{4}{5}$ to as long as head, branched rays $\frac{2}{3}$ length of head. Pelvics covering vent. Caudal subtruncate. Coloration uniform.”

Biology

From Mesa-Salazar et al. (2016):

“There are no data on the species' habitat and ecology. However, it is inferred that the quality of the habitat is declining due to mining activities in the area.”

Human Uses

From Mesa-Salazar et al. (2016):

“Use and Trade: The species is not utilized.”

Diseases

No OIE-reportable diseases (OIE 2019) have been documented for this species.

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

This species has not been reported as introduced or established outside of its native range, so no information is available on impacts of introduction.

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

Note: Occurrence data obtained from GBIF Secretariat (2017) is not georeferenced and therefore points cannot be accurately represented on a map. The following is an estimated range of the Río Condoto in Colombia, where all occurrences were reported.

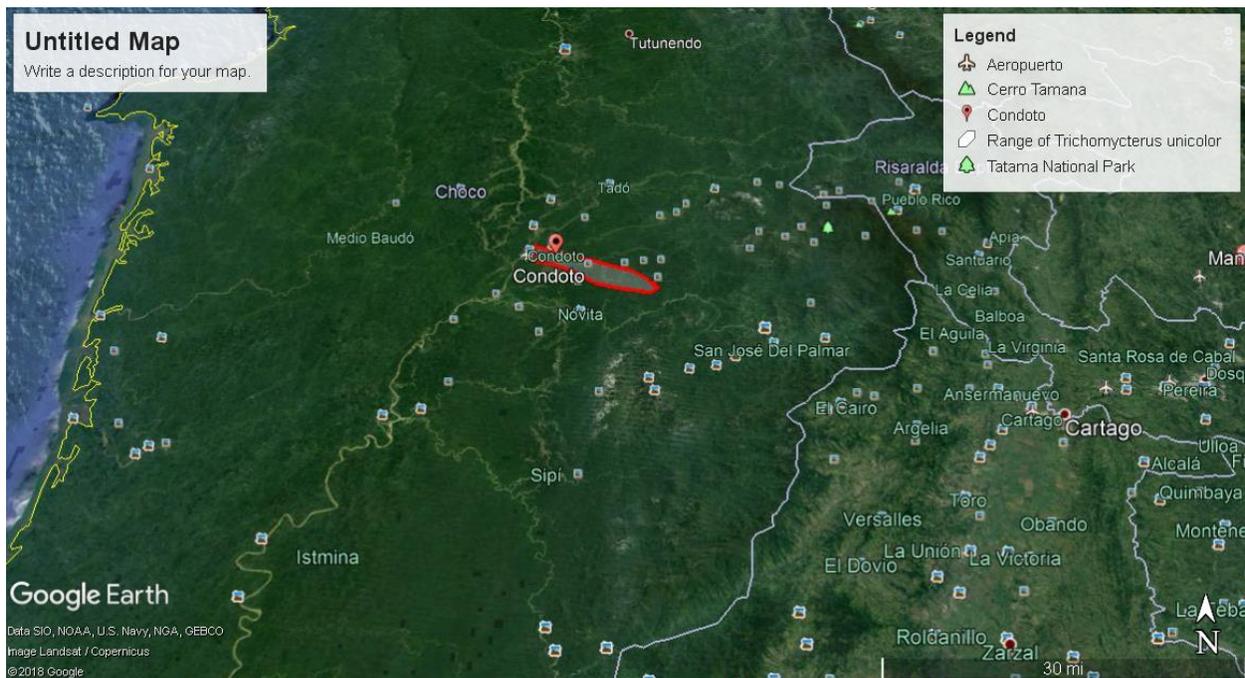


Figure 1. Known global distribution of *Trichomycterus unicolor*, reported from Colombia, based on approximate source locations described by GBIF Secretariat (2017).

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

Note: There is a lack of georeferenced collection points from the species distribution as described in the literature. Source locations are based on the described range of occurrences from GBIF Secretariat (2017); therefore the climate match is an approximation.

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous United States. The climate match was still low, but slightly higher in peninsular Florida and northwestern Washington. The Climate 6 score for the contiguous United States was 0.0, low. (Scores between 0.000 and 0.005, inclusive, are classified as low.) All States had an individually low climate score.

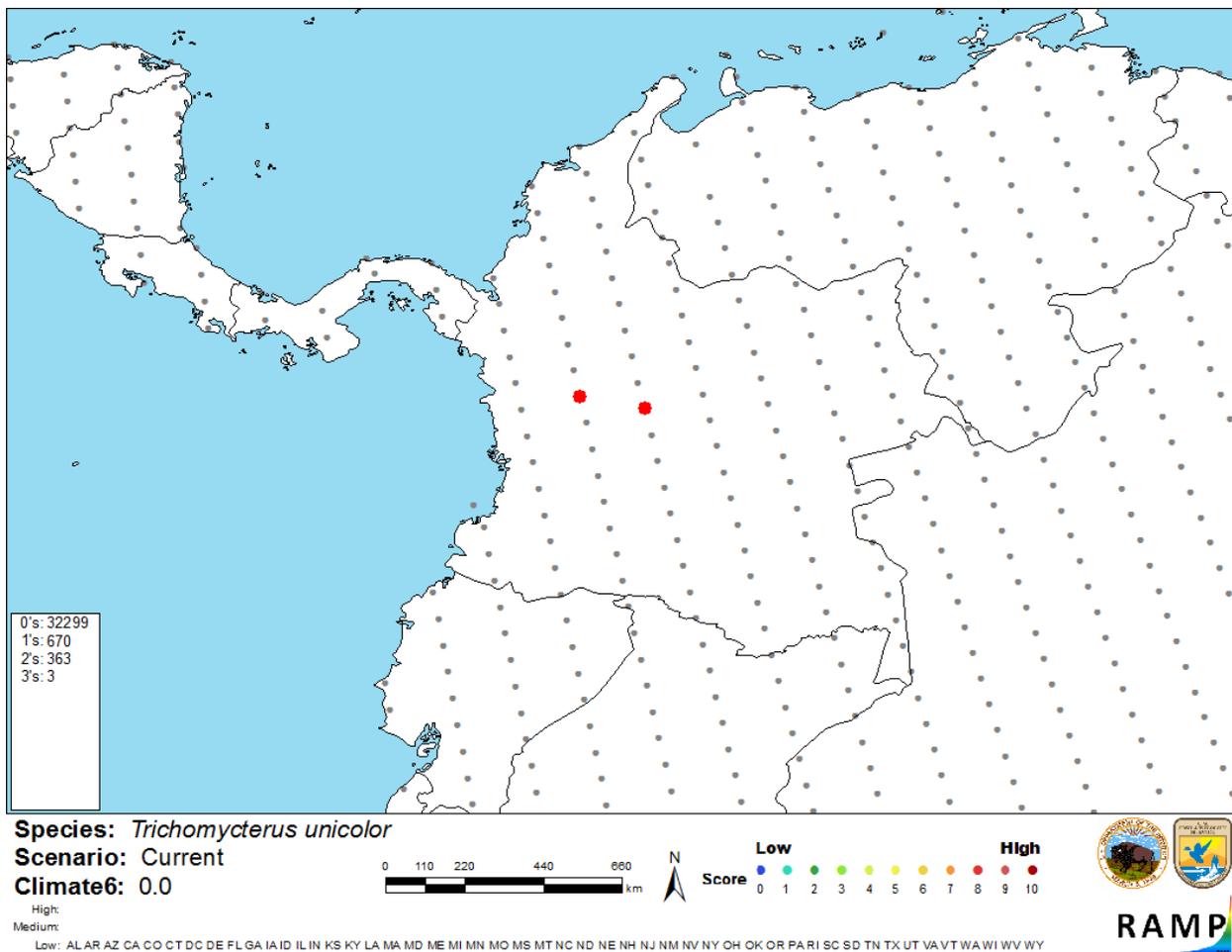


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Colombia) and non-source locations (gray) for *Trichomycterus unicolor* climate matching. Source locations approximated from occurrences reported by GBIF Secretariat (2017).

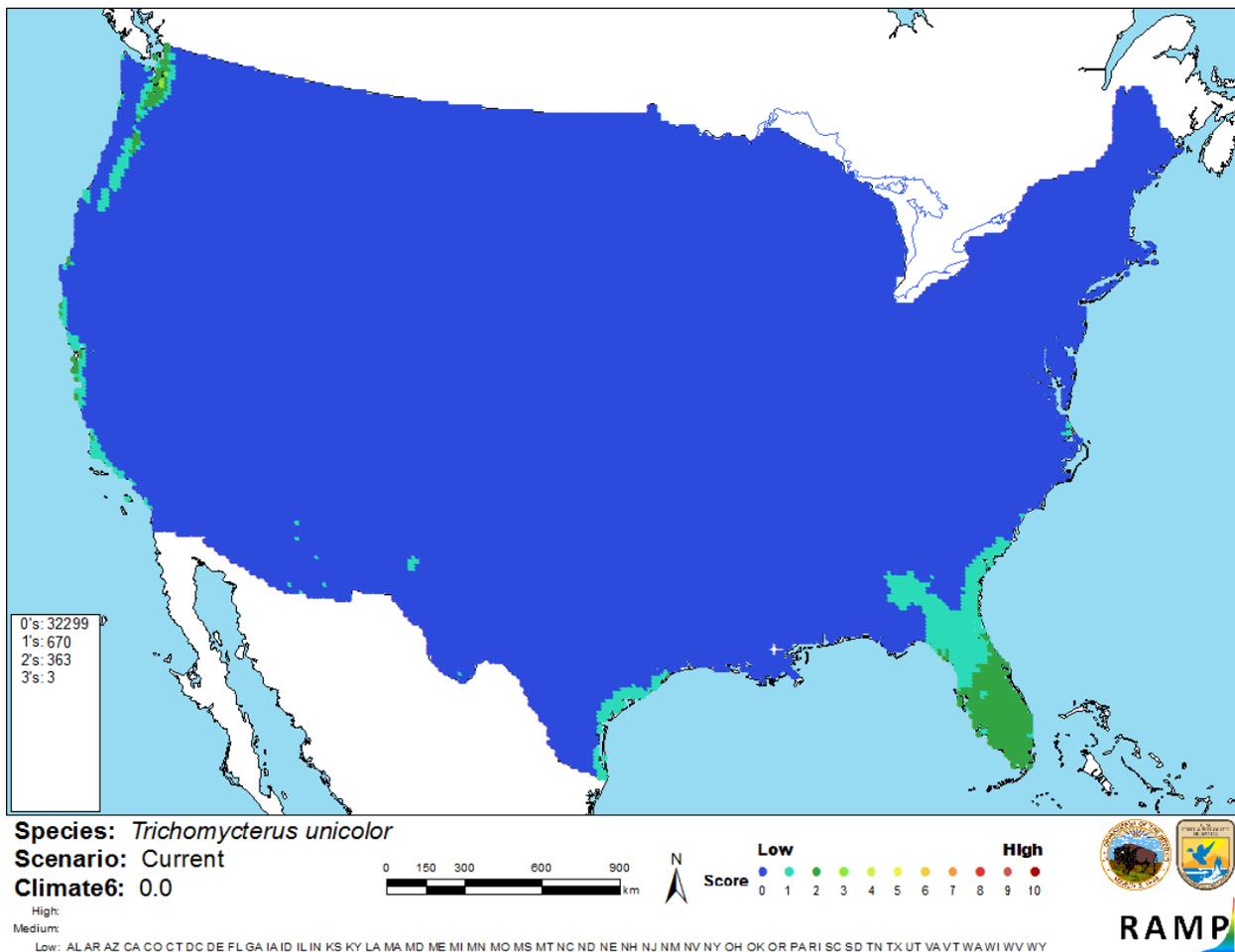


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Trichomycterus unicolor* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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 unicolor* is not widely available. No georeferenced occurrences were available to inform the climate matching analysis. There have been no documented introductions of this species outside its native range, therefore there is no information on the impacts of introductions from which to determine history of invasiveness. For these reasons, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus unicolor is a small catfish native to the San Juan River basin in Colombia. *T. unicolor* has not been reported as introduced outside of its native range. Several U.S. States prohibit or restrict the possession, transport, or trade of this species along with other members of the family Trichomycteridae. History of invasiveness is uncertain. The climate match with the contiguous United States is low. The climate match was estimated based on locations described in the literature since no georeferenced locations were available. The certainty of this assessment low due a lack of information about this species. Overall risk posed by this species 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.

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2017. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (February 2017).

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 unicolor* (Regan 1913). Fishbase. Available: <http://www.fishbase.org/summary/Trichomycterus-unicolor.html>. (February 2017).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Trichomycterus unicolor* (Regan 1913). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2343107> (March 2018).

- ITIS (Integrated Taxonomic Information System). 2017. *Trichomycterus unicolor* (Regan 1913). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682276#null. (February 2017).
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- Mesa-Salazar, L., F. Villa-Navarro, S. Usma, P. Sanchez-Duarte, and C. Lasso. 2016. *Trichomycterus unicolor*. The IUCN Red List of Threatened Species 2016: e.T49830588A61474068. Available: <http://dx.doi.org/10.2305/IUCN.UK.2016-1.RLTS.T49830588A61474068.en> (March 2018).
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- OIE (World Organisation for Animal Health). 2019. OIE-listed diseases, infections and infestations in force in 2019. World Organisation for Animal Health, Paris. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2019/>. (August 2019).
- Regan, C. T. 1913. The fishes of the San Juan River, Colombia. Gerstein, University of Toronto. Available: https://archive.org/stream/cbarchive_53463_thefishesofthesanjuanrivercolo1840/thefishesofthesanjuanrivercolo1840_djvu.txt. (February 2017).
- 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.

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.