

# ***Trichomycterus emanueli* (a catfish, no common name)**

## **Ecological Risk Screening Summary**

U.S. Fish and Wildlife Service, January 2017

Revised, May 2018

Web Version, 8/8/2019

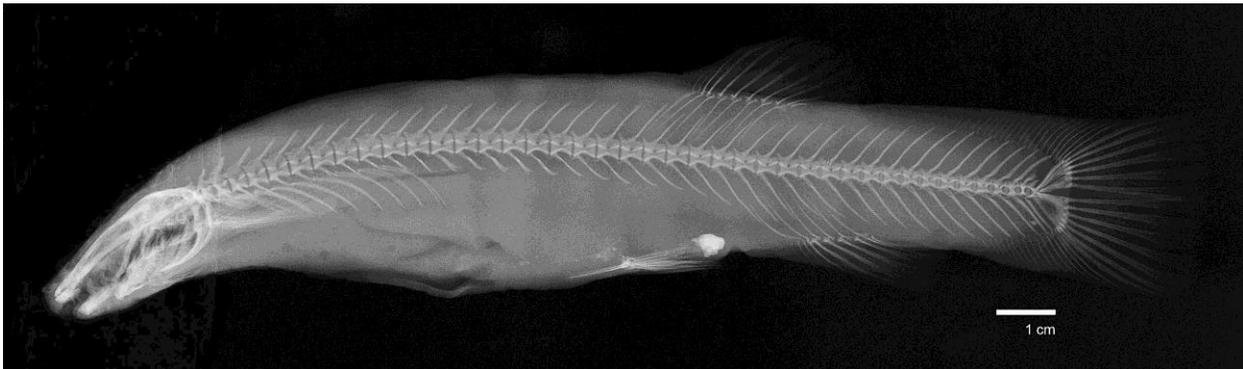


Photo: National Museum of Natural History Collections. Licensed under CC BY-NC-SA 3.0. Available: [http://eol.org/data\\_objects/18144869](http://eol.org/data_objects/18144869). (May 2018).

## **1 Native Range and Status in the United States**

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### **Native Range**

From Fricke et al. (2019):

“Chama River basin, Venezuela and 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 emanueli*”

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 as introduced in the United States.

## 2 Biology and Ecology

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### 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 emanueli* (Schultz, 1944)”

From Fricke et al. (2019):

“**Current status:** Valid as *Trichomycterus emanueli* (Schultz 1944). Trichomycteridae: Trichomycterinae.”

### Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 17.4 cm male/unsexed; [de Pínna and Wosiacki 2003]”

### Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

### Climate/Range

From Froese and Pauly (2018):

“Tropical”

## **Distribution Outside the United States**

### **Native**

From Fricke et al. (2019):

“Chama River basin, Venezuela and Colombia.”

### **Introduced**

This species has no known records of introduction.

## **Means of Introduction Outside the United States**

This species has no known records of introduction.

## **Short Description**

According to Fernández and Schaefer (2005), *T. emanueli* has nine pairs of ribs, nine pectoral-fin rays, 10 anal-fin rays, and 17-18 ventral procurrent caudal-fin rays.

## **Biology**

No information available.

## **Human Uses**

No information available.

## **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**

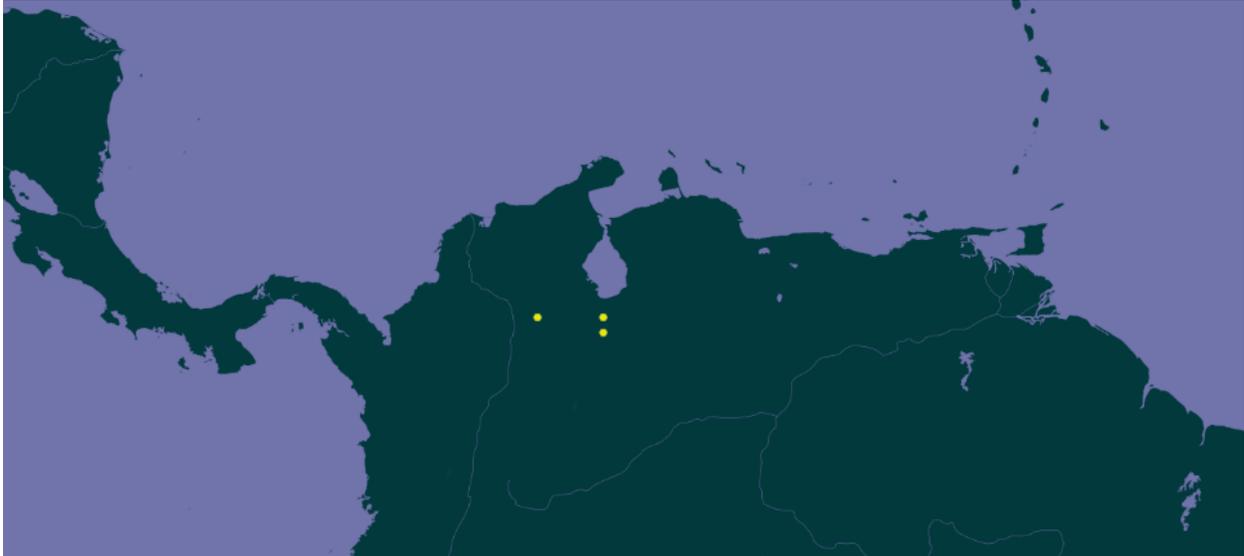
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No introductions of *Trichomycterus emanueli* have been reported outside its native range so no impacts of introduction are known.

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

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**Figure 1.** Reported global established locations of *Trichomycterus emanueli*, reported from Colombia and Venezuela. Map from GBIF Secretariat (2018).

## 5 Distribution Within the United States

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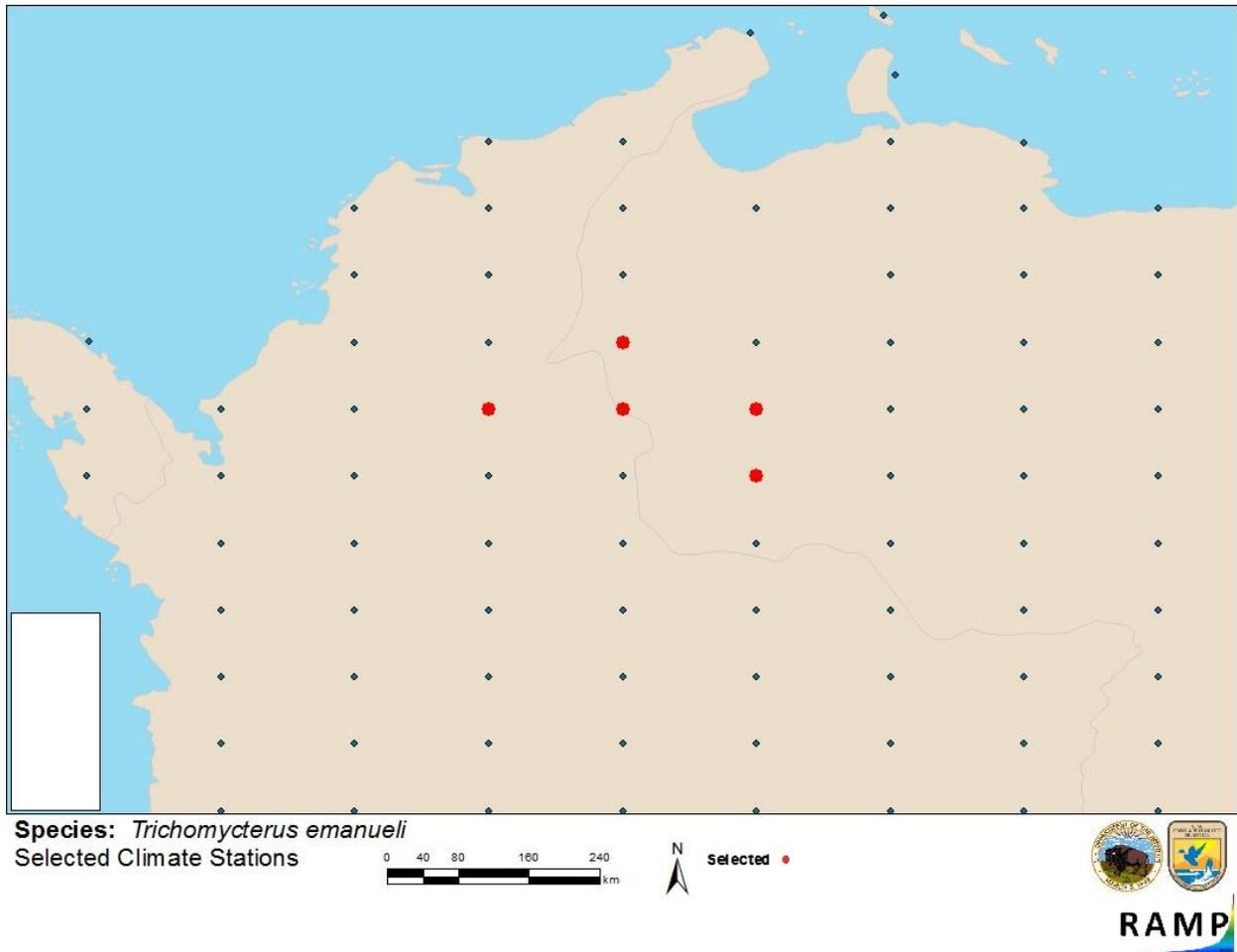
This species has not been reported in the United States.

## 6 Climate Matching

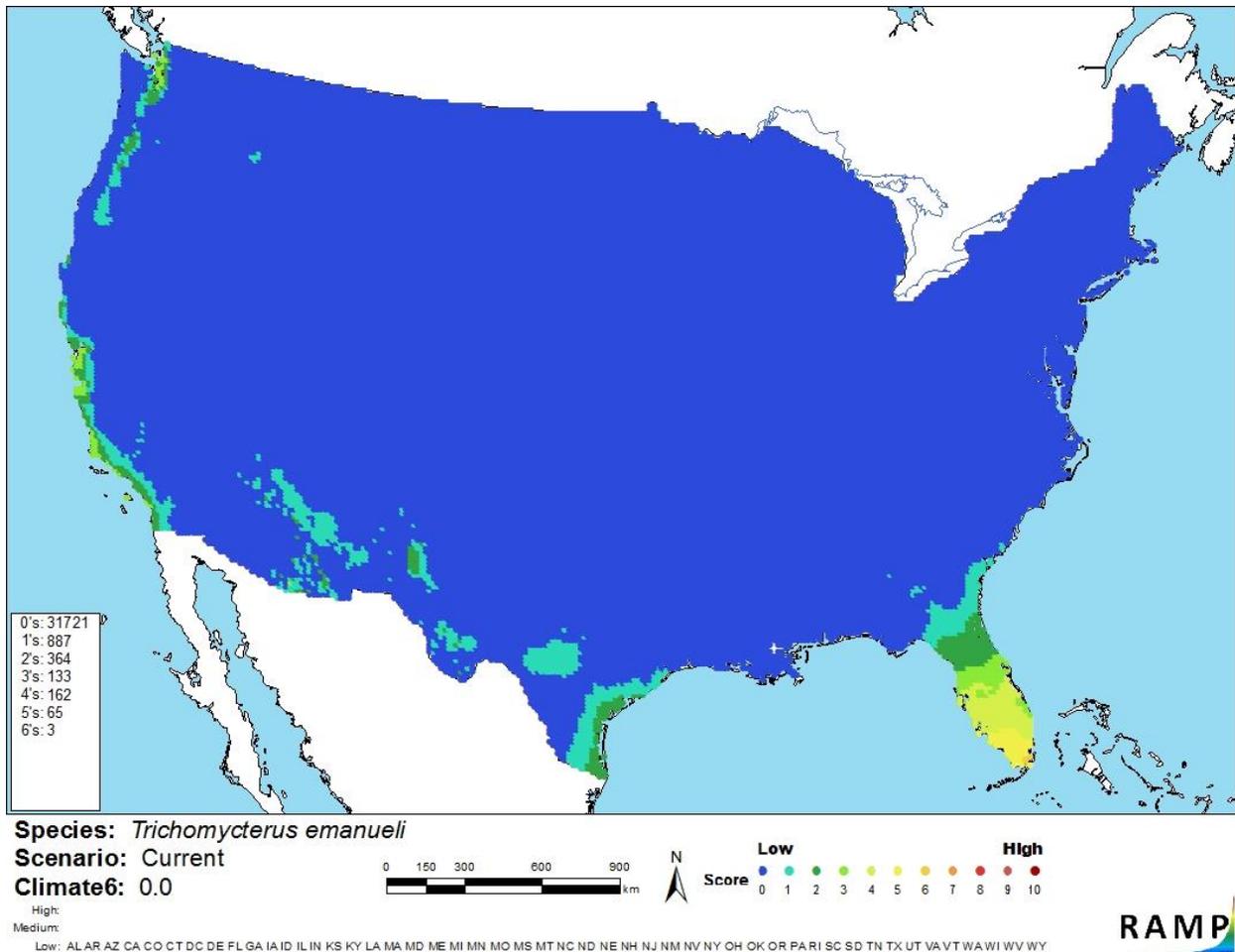
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### Summary of Climate Matching Analysis

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 proportion of 0.0. Scores between 0.000 and 0.005, inclusive, are classified as low. Locally, the climate match was medium in southern Florida and low elsewhere in the contiguous United States. All States had low individual climate scores.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations in northwestern South America selected as source locations (red; Colombia, Venezuela) and non-source locations (gray) for *T. emanueli* climate matching. Source locations from GBIF Secretariat (2018).



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *T. emanueli* 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
$0.000 \leq X < 0.005$	Low
$0.005 < X < 0.103$	Medium
$\geq 0.103$	High

## 7 Certainty of Assessment

There is little knowledge on the biology and ecology of *Trichomycterus emanueli*. 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

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### Summary of Risk to the Contiguous United States

*Trichomycterus emanueli* is a freshwater parasitic catfish from South America. It has not been reported outside of its native range of the Chama River basin in Venezuela and Colombia. Due to lack of introduction history, the history of invasiveness is uncertain. This species has a low overall climate match to the contiguous United States, with medium match only in southern Florida. Due to the lack of information about potential introductions, the certainty of assessment is low and the 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

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**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 the 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).

Froese, R., and D. Pauly, editors. 2018 *Trichomycterus emanueli* (Schultz, 1944). FishBase. Available: <https://www.fishbase.de/summary/Trichomycterus-emanueli.html>. (May 2018).

- GBIF Secretariat. 2018. GBIF backbone taxonomy: *Trichomycterus emanueli* (Schultz, 1944). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2343055>. (May 2018)
- Integrated Taxonomic Information System (ITIS). 2018 *Trichomycterus emanueli* (Schultz, 1944). Integrated Taxonomic Information System, Reston, Virginia. Available: [https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=682205#null](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682205#null). (May 2018).
- 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.
- 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

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**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). Checklist of the Freshwater Fishes of South and Central America. EDIPUCRS, Porto Alegre, Brazil.