

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

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016

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1 Native Range and Status in the United States

Native Range

From Velasquez et al. (2016):

“This species occurs in the lower Santiago and Guayas basin, and probably in the Esmeralda basin [in Ecuador]. Its type locality is the western slope of the Andes of Ecuador (Kner 1863). It has also been cited for Peru (Ortega et al. 2012), but its presence there is uncertain (M. Velasquez pers. comm. 2014). The records from Colombia are a mistake (Vila-Navarro, obs. pers.).”

More recent research (Peixoto 2019; DoNascimento and Prada-Pedreros 2020) considers records of *T. taenia* from Colombia as valid.

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 taenia 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 taenia*

From Eschmeyer et al. (2016):

“Current status: Valid as *Trichomycterus taenia* Kner 1863. Trichomycteridae: Trichomycterinae.”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 11.1 cm male/unsexed; [de Pínna and Wosiacki 2003]”

Environment

From Velasquez et al. (2016):

“It is found primarily in small fast-flowing creeks with rock or sandy bottoms with abundant submerged vegetation that are shaded by trees (Maldonado-Ocampo et al, 2012). Adults are often found in the central portion of the stream while juveniles in the less deep areas (Maldonado-Ocampo et al, 2012).”

Climate/Range

From Froese and Pauly (2016):

“Tropical”

From Velasquez et al. (2016):

“This species occurs between 150 to 400 m asl [above sea level].”

Distribution Outside the United States

Native

From Velasquez et al. (2016):

“This species occurs in the lower Santiago and Guayas basin, and probably in the Esmeralda basin [in Ecuador]. Its type locality is the western slope of the Andes of Ecuador (Kner 1863). It has also been cited for Peru (Ortega et al. 2012), but its presence there is uncertain (M. Velasquez pers. comm. 2014). The records from Colombia are a mistake (Vila-Navarro, obs. pers.).”

More recent research (Peixoto 2019; DoNascimento and Prada-Pedreros 2020) considers records of *T. taenia* from Colombia as valid.

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

No information available.

Biology

From Velasquez et al. (2016):

“It feeds on aquatic insects (Trichoptera, Diptera, Ephemeroptera) (Lasso et al. 2011).”

Human Uses

From Velasquez et al. (2016):

“This species is not utilized.”

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. taenia* 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 taenia*, reported from Ecuador and Colombia. 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 low throughout the contiguous United States, except for areas of medium-low match along the Atlantic coast of Florida and around Puget Sound, Washington. The Climate 6 score indicated that the contiguous United States has a low overall climate match. The Climate 6 score of *Trichomycterus taenia* is 0.0. (Scores between 0.000 and 0.005, inclusive, are classified as low.) All States had individually low climate scores.

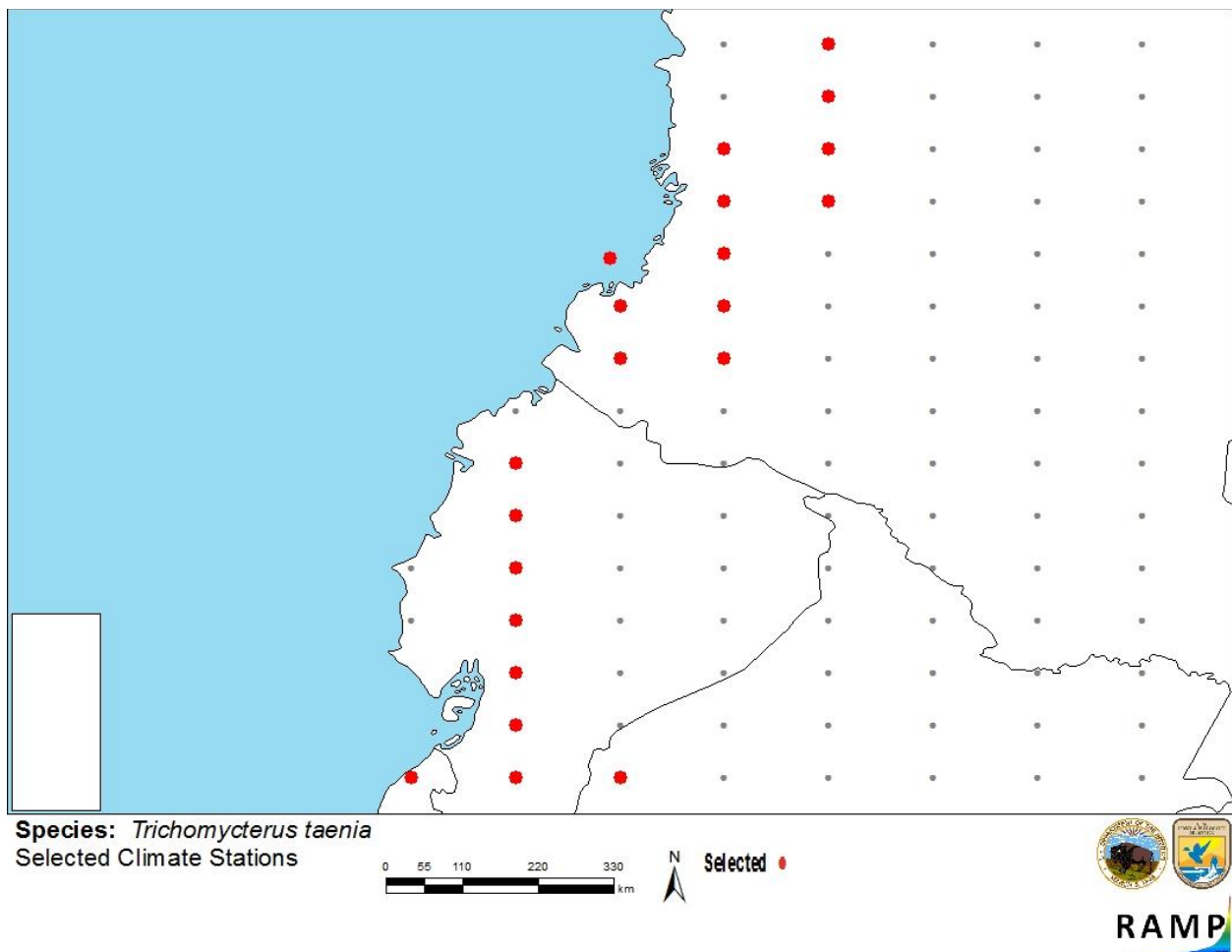


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Colombia, Ecuador, Peru) and non-source locations (gray) for *Trichomycterus taenia* climate matching. Source locations from GBIF Secretariat (2017). Selected source locations are within 100 km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

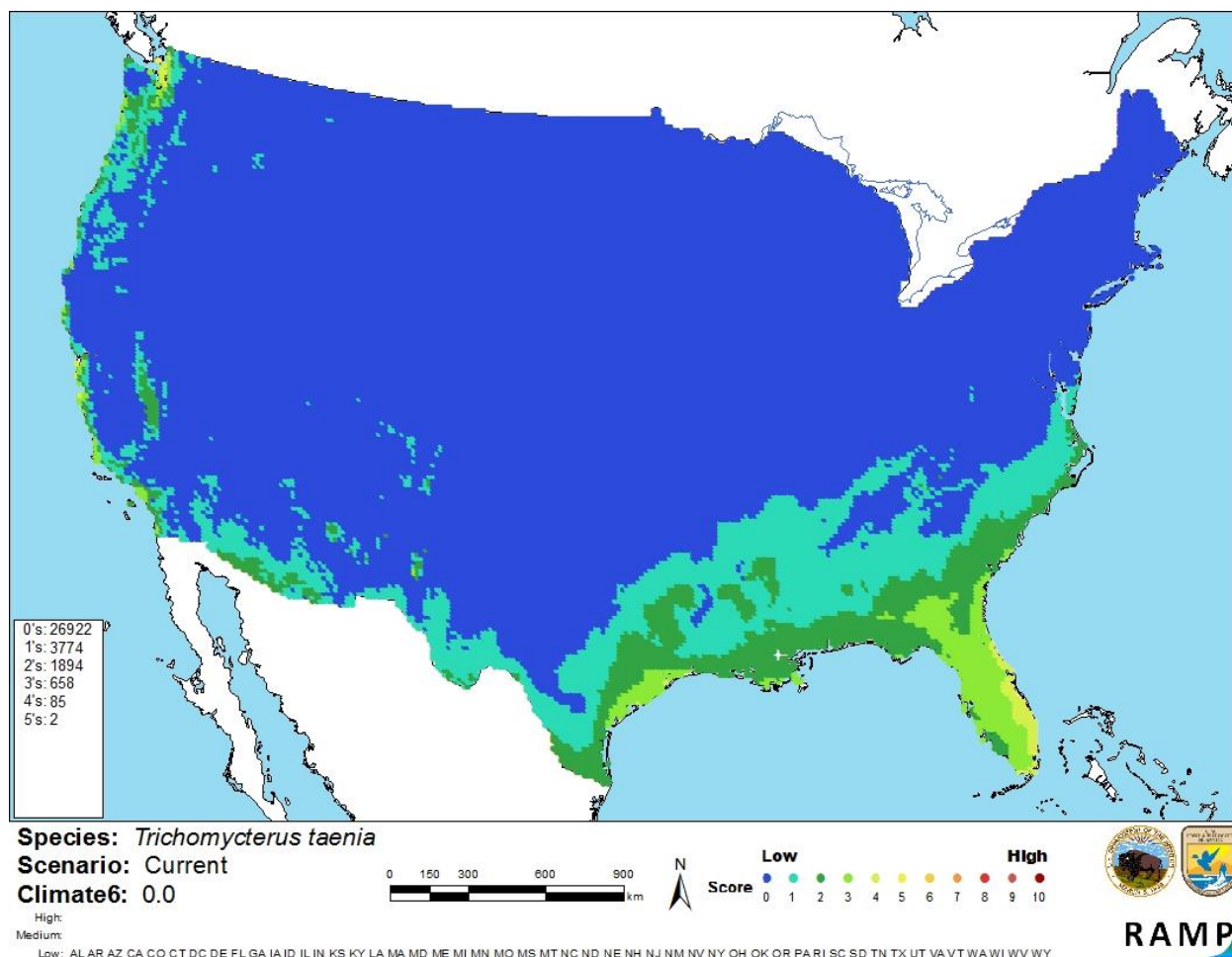


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Trichomycterus taenia* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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 distribution of *T. taenia* is available, but sometimes contradictory. Information on the biology of this species is limited. There are no documented introductions of this species outside of its native range. Therefore, data on the impacts of introductions are lacking and the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus taenia is a small catfish native to western Ecuador and southwestern Colombia. There are 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. Certainty of assessment is low due to lack of information on impacts of introduction and conflicting information over the native range of the species. Climate match with the United States is low overall, with medium match in limited areas of Florida and Washington. 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

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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