

Trichomycterus uisae (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, February 2017

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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: Colombia. Cueva El Misterio, upper Sogamoso River basin, Santander [Castellanos-Morales 2008].”

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 uisae 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 GBIF Secretariat (2016):

“Kingdom Animalia
Phylum Chordata
Class Actinopterygii
Order Siluriformes
Family Trichomycteridae
Genus *Trichomycterus* Valenciennes, 1832
Species *Trichomycterus uisae* Castellanos-Morales, 2008”

From Eschmeyer et al. (2017):

“Current status: Valid as *Trichomycterus uisae* Castellanos-Morales 2008. Trichomycteridae: Trichomycterinae.”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 7.3 cm SL male/unsexed [Castellanos-Morales 2008].”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic”

Climate/Range

From Froese and Pauly (2016):

“Tropical; 20°C, preferred ?; 6N - , 73W –”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: Colombia. Cueva El Misterio, upper Sogamoso River basin, Santander [Castellanos-Morales 2008].”

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 Froese and Pauly (2016):

“Vertebrae: 35. [...] body elongated, deeper than wide, gradually deeper from trunk toward caudal peduncle; convex dorsal profile of trunk; straight ventral profile of trunk; dorsal and ventral profiles of caudal peduncle slightly convex; thick integument with lateral cutaneous folds forming vertical rings between pectoral and anal fins in specimens preserved in alcohol; wide head, trapezoidal, and depressed in dorsal view; straight dorsal profile of head, the ventral and lateral profiles convex; eye small, black, rounded, well defined, with variable diameter, positioned dorsally on anterior half of head; subterminal mouth, the corners oriented backwards; lower lip with distinct fleshy lateral lobes; teeth conical and curved, arranged in 3-4 irregular rows on upper jaw and 3 rows on lower jaw; jaw muscles not particularly developed and not bulging from surface of head; thick branchial membranes, united to isthmus anteromedially and forming free fold across isthmus; wide gill opening; nasal and maxillary barbels surpassing base of pectoral fin; the maxillary barbel is longer than nasal barbel; the anterior nostril is surrounded by slightly raised thick integument, continuous with nasal barbel, both forming a tubular-shaped structure around nostril; the posterior nostril oriented transversally, its anterior edge delimited by thin and long flap of integument; pectoral fin rounded with i,8 rays, the first ray thin and fragile, prolonged as a long filament; dorsal-fin is rounded and located posterior to vertical through midbody, with iv,7 rays (only 2 unbranched rays are externally visible); pelvic-fin rays i,4, with a lateral splint, its origin anterior to vertical through dorsal-fin origin and its posterior edge slightly surpasses urogenital opening, the pelvic-fin bases not widely separated; anal-fin similar to dorsal fin, but smaller, with ii, 5 rays, its origin at level of last dorsal-fin ray; caudal-fin rays i, 5+6, i, caudal-fin edge slightly convex, with uppermost rays larger [Castellanos-Morales 2008].”

From Castellanos-Morales (2008):

“The new species has a characteristic dark bluish-gray band from the head to the origin of the dorsal fin, five to nine opercular odontodes, and the anterior and posterior fontanels separated but connected by a narrow channel.”

Biology

From Froese and Pauly (2016):

“An hypogean catfish from the northeastern Andean Cordillera. The Cueva El Misterio is located at the east side of a plateau known as Mesa de los Santos, in the Municipio de los Santos. The plateau has Cretaceous sedimentary rocks and limestones of the Rosablanca Formation (Williams, 1990); reaches 1800 meters above sea level and is located on the oriental versant of the Chicamocha Canyon, in the Colombian Andes, of Santander Department. The cave, with a total of 110 m of explored passages, is isolated from the epigeal stream and is oriented longitudinally with galleries formed by gentle slope tunnels and narrow passageways. The cave has small wells interconnected by reduced descending channels where water infiltration was

observed. In dry months, an isolated sump pool was observed at each gallery. The bottom of each well is rocky and contains much sediment composed chiefly of bat excrement. Cydnid bugs (Hemiptera: Heteroptera) were found inside the wells. Diptera, crayfish and bats were observed in the interior of the galleries [Castellanos-Morales 2008].”

Human Uses

No information reported for this species.

Diseases

No OIE-reportable diseases (OIE 2019) 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. Data on the impacts are lacking.

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

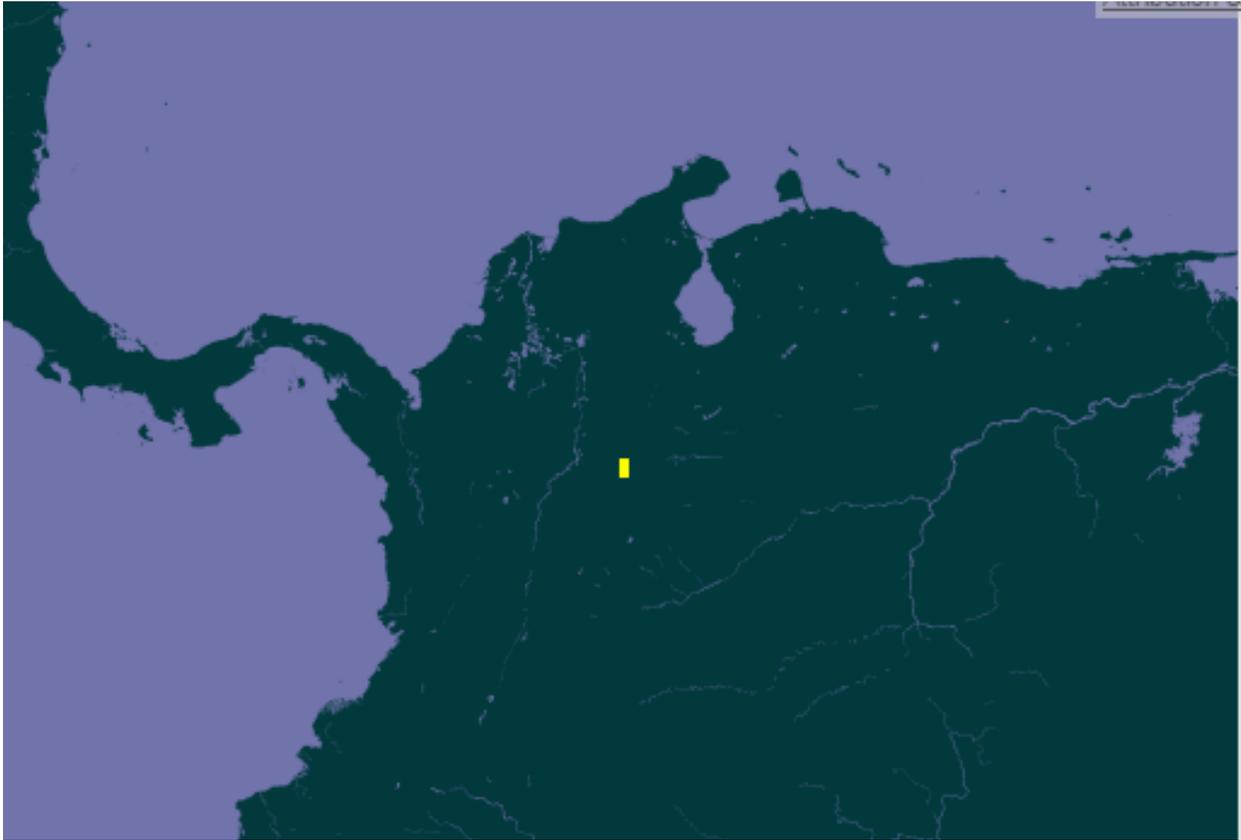


Figure 1. Distribution of *Trichomycterus uisae*, reported from Columbia. Map from GBIF Secretariat (2016).

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

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous United States. Areas of higher, but still low, match were found in Florida, other Southeastern coastal states and isolated regions in Oregon, Washington, and California. 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 a low individual climate score.

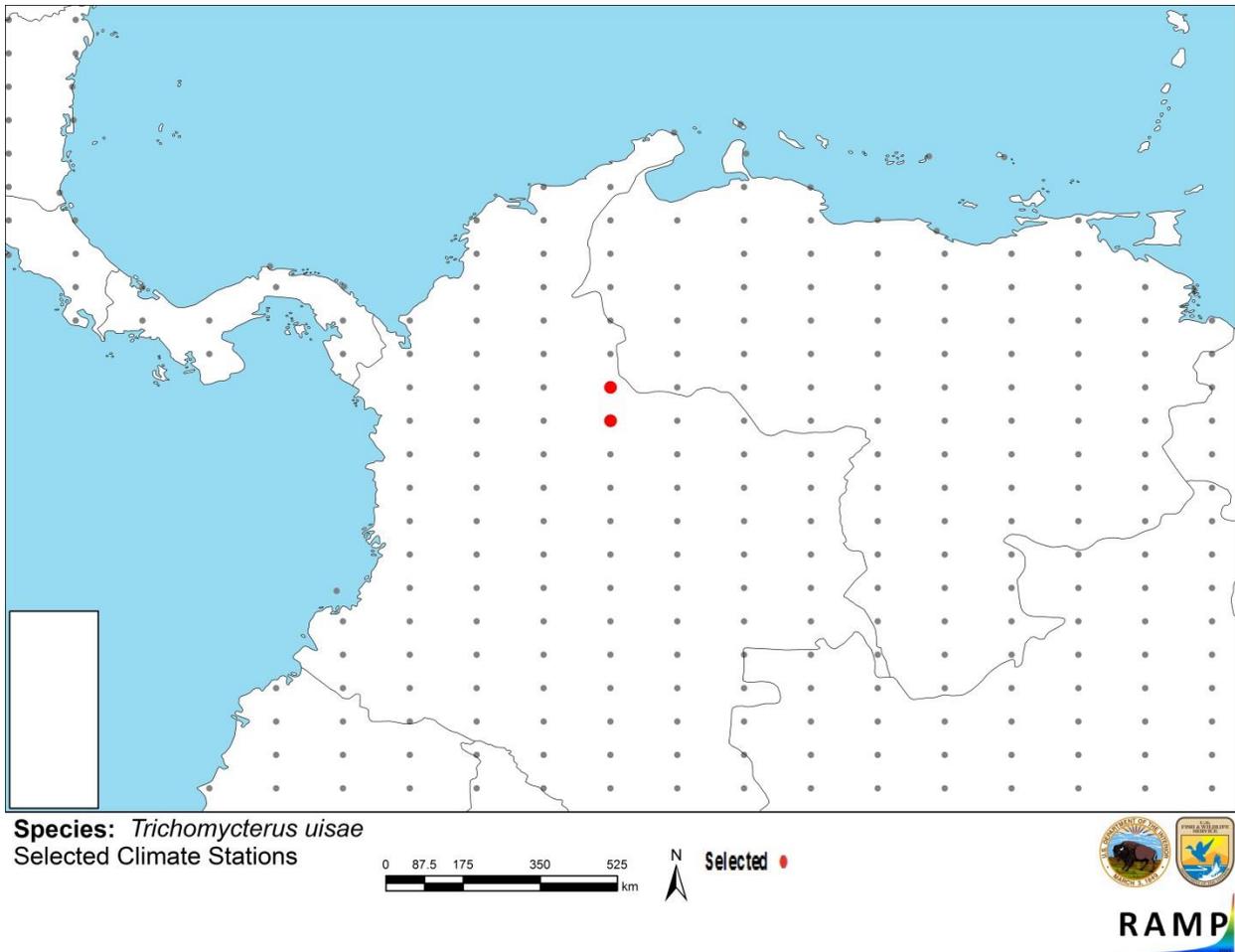


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Colombia) and non-source locations (gray) for *Trichomycterus uisae* climate matching. Source locations from GBIF (2016).

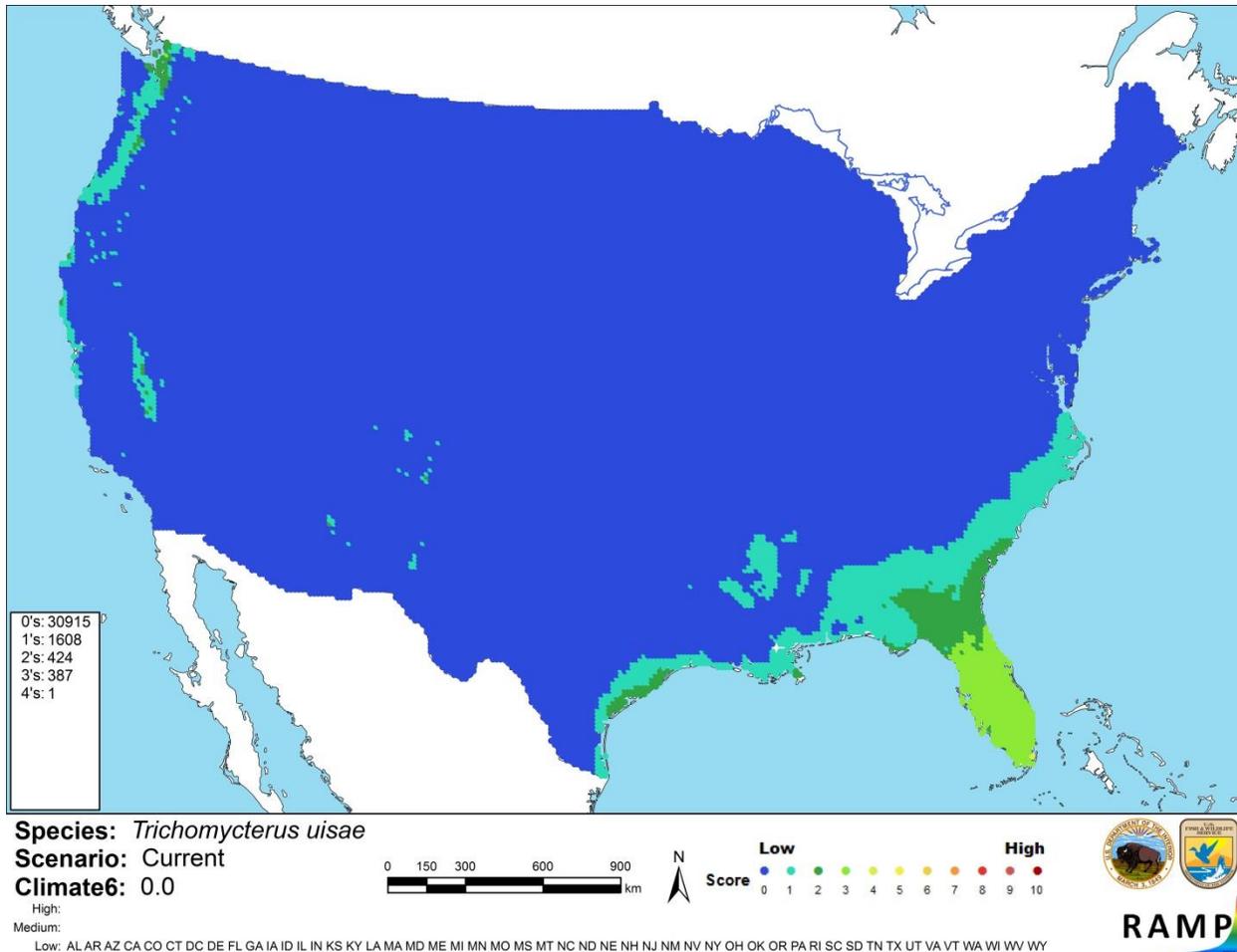


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Trichomycterus uisae* in the contiguous United States based on source locations reported by GBIF Secretariat (2016). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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 biology of *Trichomycterus uisae* is not widely available. No introductions of this species outside of its native range have been documented. Data on the impacts of introductions are lacking. Certainty of this assessment low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus uisae is a small cave-dwelling catfish native to Cueva El Misterio, located in the upper Sogamoso River basin of Colombia. This species has not been documented 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. The certainty of this assessment is low because of a lack of information. *T. uisae* has a low climate match with the contiguous United States. 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.

Arizona Secretary of State. 2006. Restricted live wildlife. Arizona Administrative Code, R12-4-406.

Castellanos-Morales, C. A. 2008. *Trichomycterus uisae*: a new species of hypogean catfish (Siluriformes: Trichomycteridae) from the northeastern Andean Cordillera of Colombia. Neotropical Ichthyology 6(3):307-314.

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.

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