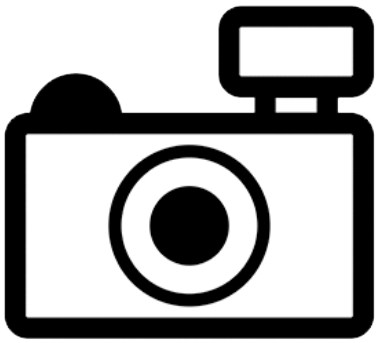
Trichomycterus bogotensis (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016
Revised, April 2017
Web Version, 4/26/2018



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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

"South America: River drainages in Colombia and Venezuela."

Status in the United States

This species has not been reported in the U.S. There is no evidence that this species is in trade in the U.S.

From FFWCC (2017):

"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. Very limited exceptions may be made by permit from the Executive Director […] [The list of prohibited nonnative species includes] *Trichomycterus bogotensis*"

Means of Introductions in the United States

This species has not been reported in the U.S.

Remarks

From GBIF (2016):

"SYNONYMS
Pygidium bogotense Eigenmann, 1912
Trichomycterus bogotense (Eigenmann, 1912)"

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* Valenciennes, 1832
Species *Trichomycterus bogotense* (Eigenmann, 1912)"

From Eschmeyer et al. (2017):

"Current status: Valid as *Trichomycterus bogotensis* (Eigenmann 1912)."

Size, Weight, and Age Range

From Froese and Pauly (2016):

"Max length : 9.4 cm male/unsexed; [de Pinna 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: River drainages in Colombia and Venezuela."

Introduced
No introductions of this species have been reported.

Means of Introduction Outside the United States
No introductions of this species have been reported.

Short Description
From Eigenmann (1918):

"Head 5.25-6; D. 10.5 in two specimens, 11.5 in four, 12.5 in eight, 13.5 in two; A. 10.5; P. 8; center of the eye very little in front of the middle of the head; interocular about three in the length of the head; head but little longer than wide; teeth conical, in three or four irregular series."

"Nasal barbel extending to tip or base of opercular spines; maxillary barbel extending to the base of the opercular spines or beyond the base of the pectoral; pectoral rays about as long as the head behind the nasal barbel, pectoral filament about as long as the head; origin of ventrals equidistant from base of middle caudal rays and tip or base of the opercular spines, tips of ventrals extending to or very slightly beyond the vent; origin of anal under one of the last three dorsal rays or just behind the vertical from the last one; distance between the base of the last anal ray and the middle of the caudal ray four and three-fifths to five in the length; caudal rounded, six to seven in the length; accessory caudal rays numerous and large; origin of dorsal over origin or posterior half of the ventrals, equidistant from tip of caudal and eye, its distance from the base of the middle caudal rays one and five-tenths to one and seven-tenths in its distance from the snout."

"Sides and back with numerous irregular spots, larger in the larger specimens, sometimes referable to distinct series. The spots are smaller in the specimens from Santander [Colombia]."

Biology
From Castro-Rebolledo et al. (2014):

"[…] *Trichomycterus bogotensis* fed on macroinvertebrates in both reaches [of Tota stream, department of Boyacá, Colombia], and in 1 reach *Oncorhychus* [*mykiss*] became a prey of *Trichomycterus* […]"

From Chará et al. (2006):

"Flórez & Sarmiento (1991) found that […] *Trichomycterus bogotense* (Eigenmann) spawn only once a year […]"

Human Uses
No information available.

Diseases
No information available.

Threat to Humans
From Froese and Pauly (2016):

"Harmless"

3 Impacts of Introductions
No introductions of this species have been reported. The Florida Fish and Wildlife Conservation Commission (2017) has listed the parasitic catfish *T. bogotensis* as a prohibited species.

4 Global Distribution

Figure 1. Known global established locations of *T. bogotensis*, reported from Colombia. Map from GBIF (2016). Although the species is reported as present in Venezuela as well, there were no georeferenced occurrences of *T. bogotensis* available from Venezuela (GBIF 2016).

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) was medium around Puget Sound, Washington, parts of coastal California, and a small area on the southeast tip of the Florida coast. The climate match was low elsewhere in the contiguous U.S. Climate 6 proportion indicated a low climate match overall for the contiguous U.S. Proportions of 0.005 and less are classified as low match; the Climate 6 proportion for *T. bogotensis* was 0.000.

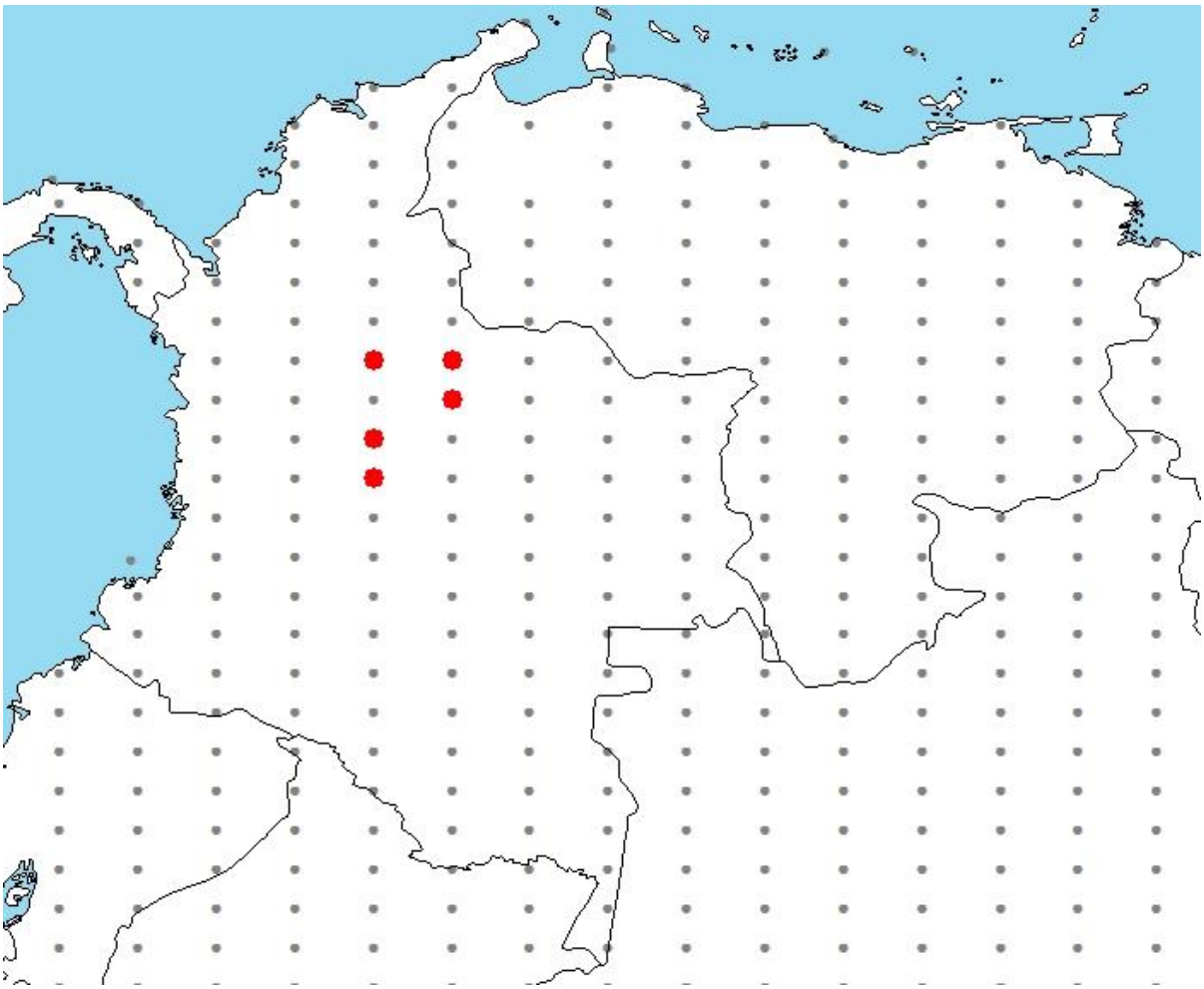

Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in northwestern South America selected as source locations (red; in Colombia) and non-source locations (gray) for *T. bogotensis* climate matching. Source locations from GBIF (2016). No georeferenced occurrences were available to represent the species distribution in Venezuela.

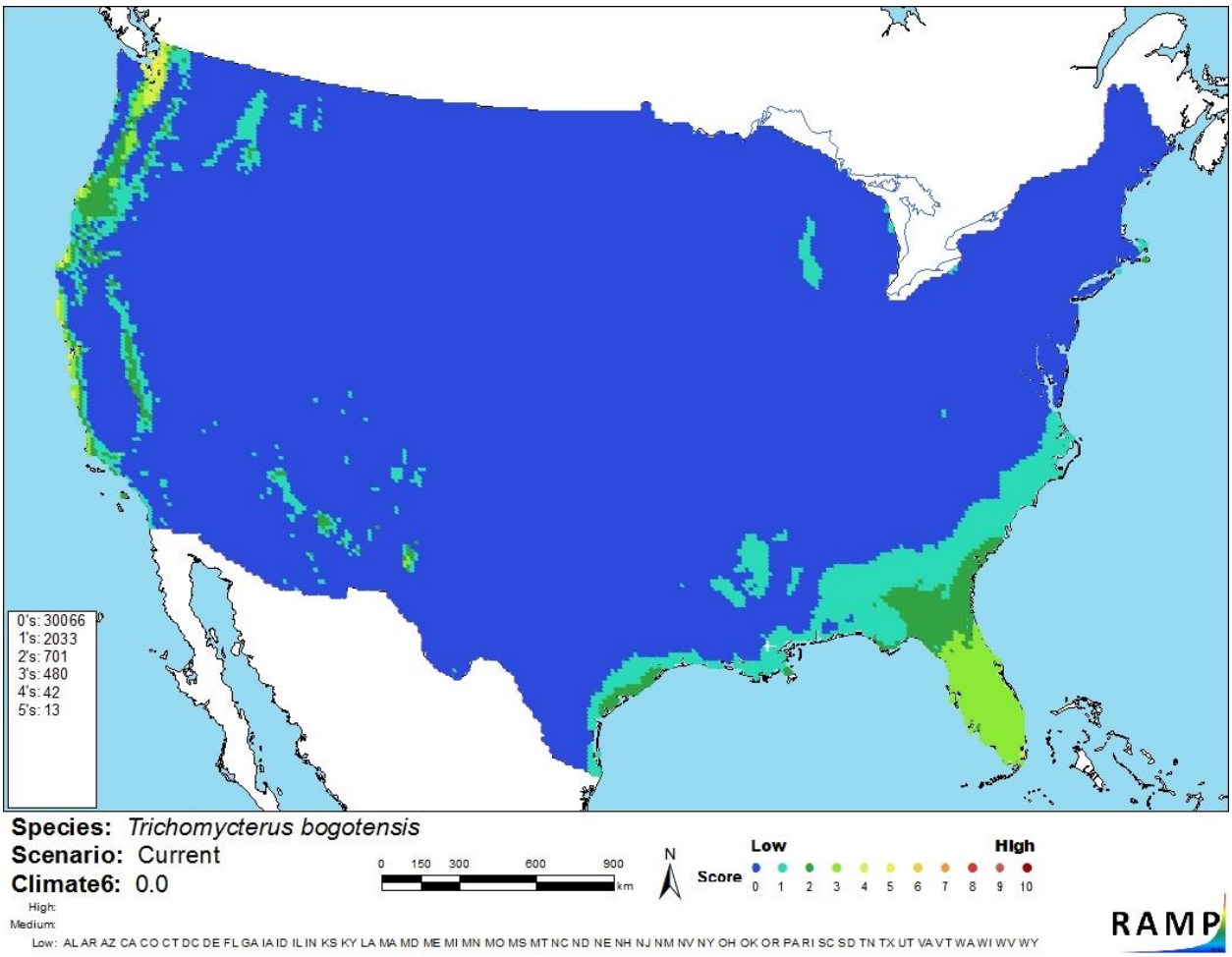

Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *T. bogotensis* in the contiguous United States based on source locations reported by GBIF (2016). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

7 Certainty of Assessment

The ecology and biology of *T. bogotensis* is poorly known, and its distribution is not well recorded. It has never been reported outside its native range so impacts of introduction are unknown. The certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus bogotensis is an insectivorous and occasionally piscivorous trichomycterid catfish native to Columbia and Venezuela. It has not been introduced outside of its native range. Without being able to observe introductions in other parts of the world, it is impossible to know the potential impacts of introduction of *T. bogotensis* to the U.S. The Florida Fish and Wildlife Conservation Commission has listed the parasitic catfish *T. bogotensis* as a prohibited species. Climate match to the contiguous U.S. was low. The overall risk posed by *T. bogotensis* 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.

Castro-Rebolledo, M. I., I. Muñoz-Gracia, and J. C. Donato-Rondón. 2014. Food web of a tropical high mountain stream: effects of nutrient addition. Acta Biológica Colombiana 19(1):33-42.

Chará, J. D., D. J. Baird, T. C. Telfer, and E. A. Rubio. 2006. Feeding ecology and habitat preferences of the catfish genus *Trichomycterus* in low-order streams of the Colombian Andes. Journal of Fish Biology 68:1026-1040.

Eigenmann, C. H. 1918. The Pygidiidae: a family of South American catfishes. Memoirs of the Carnegie Museum 7(5):259-398.

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. (April 2017).

FFWCC (Florida Fish and Wildlife Conservation Commission). 2017. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/. (January 2017).

Froese, R., and D. Pauly, editors. 2016. *Trichomycterus bogotensis* (Eigenmann, 1912). FishBase. Available: http://www.fishbase.org/summary/48670. (December 2016).

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ITIS (Integrated Taxonomic Information System). 2016. *Trichomycterus bogotense* (Eigenmann, 1912). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682181#null. (December 2016).

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

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.

Flórez, A., and N. Sarmiento. 1991. Observaciones ecológicas sobre el pez capitán, HUMBOLDT 1805 (Pisces Trichomycteridae) en los departamentos de Cundinamarca y Boyacá, Colombia. Acta Biológica Colombiana 1:99-115.