

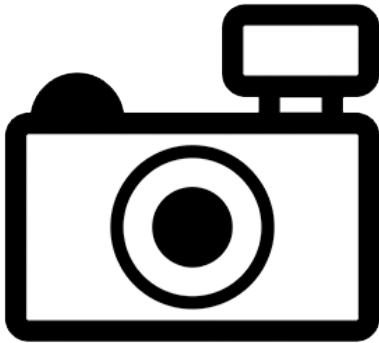
***Trichomycterus corduensis* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016

Revised, May 2017

Web Version, 5/1/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: Primeiro River basin in Argentina.”

Status in the United States

This species has not been reported as introduced in the United States.

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

Means of Introductions in the United States

This species has not been reported as introduced in the United States.

Remarks

From GBIF (2016):

“SYNONYMS

Trichomycterus corduvense Weyenbergh, 1877”

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 corduvensis* Weyenbergh, 1877”

“Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 13.6 cm NG male/unsexed; [de Pinna and Wosiacki 2003]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic.”

From Fernández and Vari (2012):

“Ichthyological explorations near the type locality of *T. minus* revealed a population of *T. corduvensis* in a stream at Los Nacimientos (27°09’S, 66°45’W; 2,126 m asl) utilized by the local inhabitants as a hot bath thermal. At that site *T. corduvensis* (MCN 1530, 4 specimens) inhabits a portion of a small thermal pH 7.9, oligo to mesohaline creek in 29°C waters. This clear water creek ranges between 0.30–0.60 m wide and 0.30–0.50 m deep and flows slowly for approximately 3 m over a clay and sand substrate before ending at what during higher flow rates would be a 2 m high waterfall.”

Climate/Range

From Froese and Pauly (2016):

“Subtropical, preferred ?”

From Ferriz et al. (2010):

“[...] in four rivers located in Córdoba Province Bistoni & Hued (2002) found that *T. corduvensis* were mostly distributed up to 1000 m height [...]”

From Fernandez and Bize (2017):

“[...] *T. corduvensis* are recorded at 3,430 m [11,253 feet] above sea level from the High Andean Plateau (or Puna) in a stream near Antofagasta de la Sierra, Provincia de Catamarca, Argentina.”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: Primeiro River basin in Argentina.”

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 Fernández and Miranda (2007):

“Two derived characters, namely the presence of spatulate incisiform premaxillary teeth and large and rounded papilla-like structures, define a monophyletic group within *Trichomycterus*, comprising *T. therma*, *T. corduvensis* and *T. tiraquae*.”

From Eigenmann and Eigenmann (1890):

“Obscure blotches on the back, the sides with a dusky band.”

From Fernandez and Bize (2017):

“The *T. corduensis* [...] specimens were recognized by the following combination of characters: caudal peduncle smoothly continuous with dorsal and ventral profiles of trunk; papillae-like structures present on body; unpigmented region on the dorsal-fin origin absent [...] interopercular and opercular odontodes not embedded in thick integument; premaxilla with 4 to 6 teeth rows and distal portions of teeth in each jaw flattened and slightly expanded; 13 principal caudal-fin rays with distal margin straight (Fernandez 2001). Additional features include: supraorbital canal segment continuous, with pores s1, s2 and s6 present and laterosensory canal of trunk with 4 to 6 pores anteriorly; and supraorbital tendon-bone straight (LF pers. obs.).”

Biology

From Ferriz et al. (2010):

“We were able to identify three common species in sampled rivers [in Achala Hydric Reserve and the Quebrada del Condorito National Park, Argentina]: *Trichomycterus corduensis* Weyenberg, 1877 and two exotic salmonids such as *Salvelinus fontinalis* (Mitchill, 1814) and *Oncorhynchus mykiss* (Walbaum, 1792).”

“In the case of *T. corduensis* trophic niche values ranged between 1.18 and 3.49, with the exception of San Guillermo stream (0.55), where this species consumed zoptera nymphs, insects, chironomid and trichoptera larvae.”

“Analysis of food characteristics showed that *T. corduensis* consumed benthic organisms associated with aquatic vegetation as its main food resource. Main items comprised chironomid larvae, with the exception of the Torrecillas stream where oligochaeta and zoptera represented the main food resource. However trichoptera larvae, odonata nymphs and heteroptera were also important components, whereas algae, amphipods, ephemeroptera nymphs, hirudinea and coleoptera larvae represented a secondary food source. This siluriform behaves as a benthic insectivorous fish as was also noted by Ferriz (1998) in San Luis Province rivers analyzing the trophic patterns of *Trichomycterus areolatus* (Duarte *et al.*, 1971; Ruiz & Berra, 1994) and *Hatcheria macraei* (Ferriz, 1994). Such species exhibited similar environmental preferences such as *T. corduensis*, capturing their food items based on hunting speculation and grubbers excavating while moving (Sazima, 1986).”

“Species such as *O. mykiss* and *T. corduensis* were found sharing the same habitats in only two streams, San Guillermo and Jaime where predation on *T. corduensis* was recorded.”

Froese and Pauly (2016) report that *T. corduensis* reproduction is characterized by dioecism, external fertilization, and one clear seasonal spawning peak per year (Marraro et al. 2005).

From Marraro et al. (2005):

“The breeding season spanned between October and February. [...] The high percentage of spent ovaries observed in March indicates that most of the females have concluded their reproductive cycle by the end of the summer. However, some mature gonads were observed in March. The association between the reproductive period, higher temperature and the high river discharge indicates that spawning specimens occur mainly during the warm and rainy season. In several places of Córdoba Province, resting and immature females were collected during the winter and females with spent ovaries were collected in late spring. This grouping was based on the macroscopic observation of a few individuals only (Menni et al., 1984).”

“The dynamics of oocyte development of *T. corduvense*, suggest an asynchronism in maturation. This pattern is usually observed in species which spawn many times during the course of a prolonged breeding season (Wallace & Selman, 1981; Jobling, 1996).”

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 (FFWCC 2016) has listed the parasitic catfish *Trichomycterus corduvensis* as a prohibited species.

4 Global Distribution



Figure 1. Known global established locations of *T. corduensis*, reported from Argentina. Map from GBIF (2016).

5 Distribution Within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was classified as medium for the contiguous U.S. overall, with a Climate 6 proportion of 0.025. The range of Climate 6 proportions indicating a medium climate match is 0.005 to 0.103. The climate match was high in western Texas, with medium matches occurring in New Mexico, Arizona, California, and northern Florida. The remainder of the contiguous U.S. showed low matches.

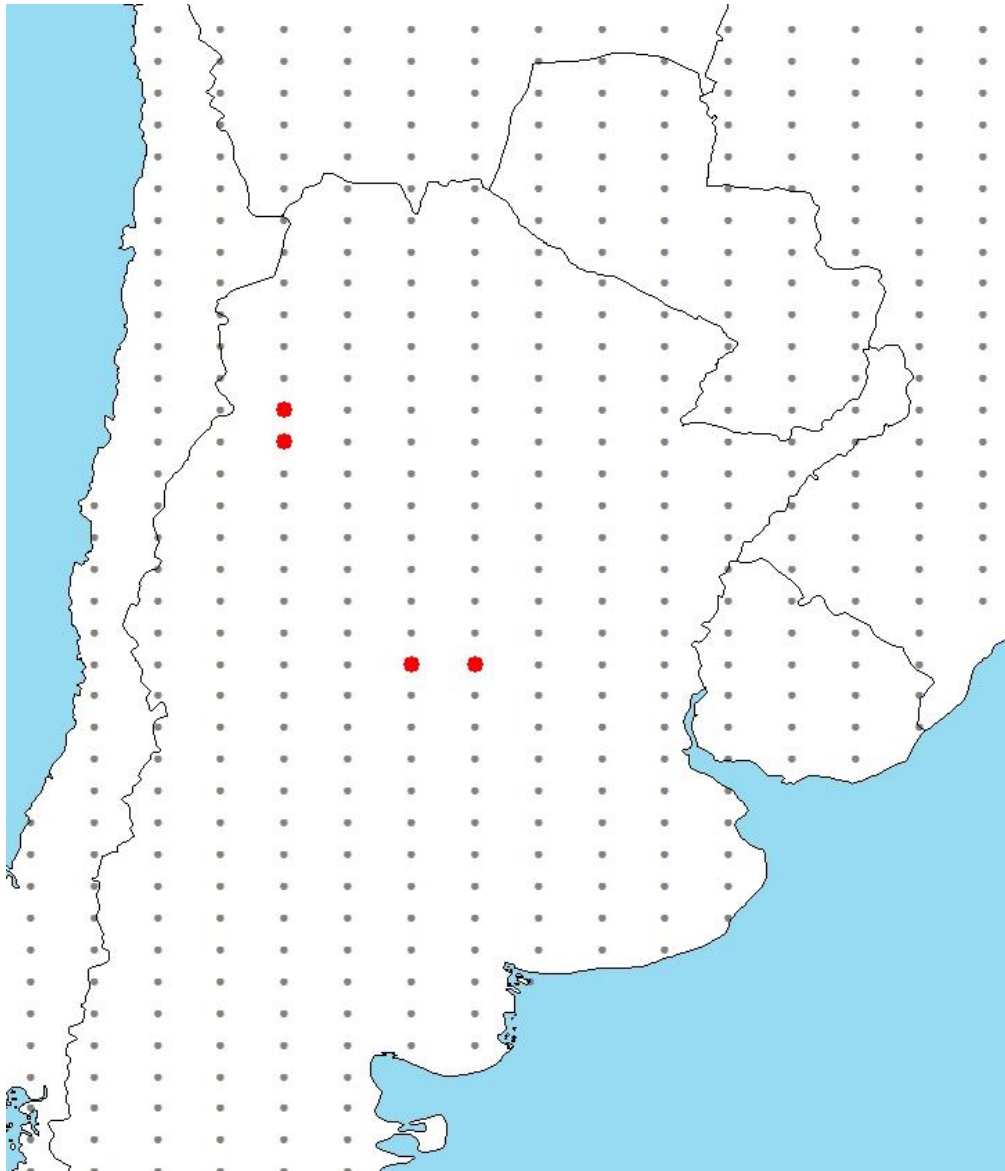


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in southern South America selected as source locations (red; Argentina) and non-source locations (gray) for *T. corduvensis* climate matching. Source locations from GBIF (2016).

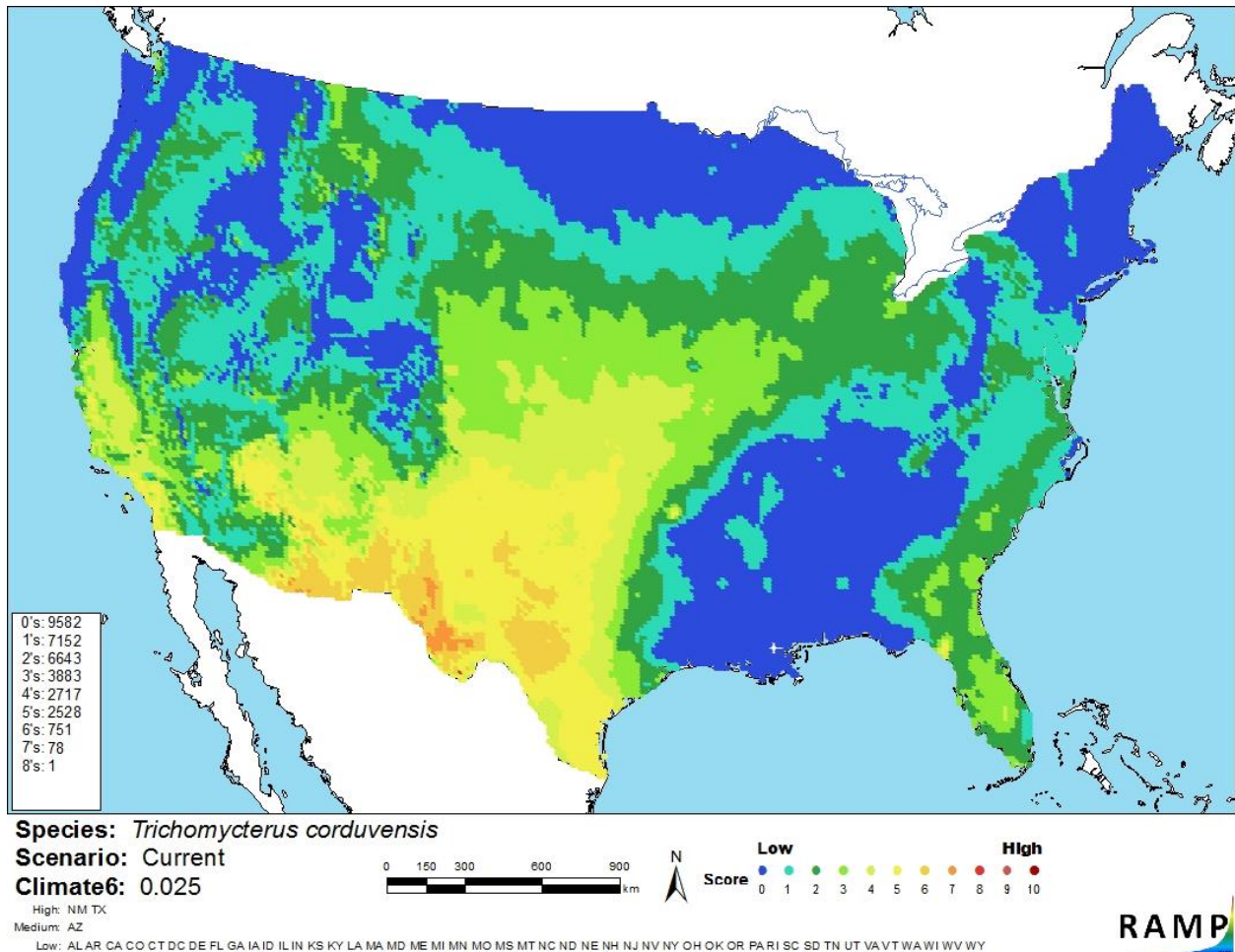


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *T. corduvensis* in the contiguous United States based on source locations reported by GBIF (2016). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

Some information is available on the biology and ecology of *T. corduvensis*, but its distribution is poorly known. It has never been introduced outside its native range. The certainty of this assessment is low due to the lack of information about the species and potential impacts of its introduction.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Trichomycterus corduvensis is a parasitic catfish native to Argentina, where it is found over a wide range of elevations. 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. corduvensis* to the U.S. The Florida Fish and Wildlife Conservation Commission has listed the catfish *T. corduvensis* as a prohibited species. Climate match to the contiguous U.S. was medium overall, with areas of highest match occurring in Texas and New Mexico. The species is listed as prohibited in the state of Florida. The overall risk posed by *T. corduvensis* is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Medium**
- **Certainty of Assessment (Sec. 7): Low**
- **Overall Risk Assessment Category: Uncertain**

9 References

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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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