

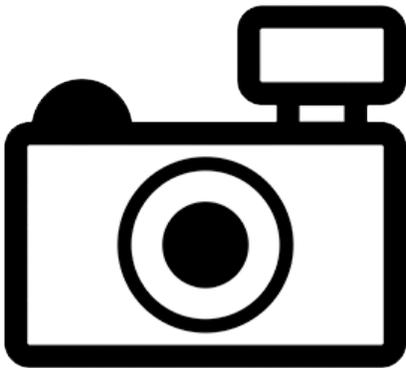
***Ituglanis epikarsticus* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, December 2016

Revised, February 2017

Web Version, 1/27/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: single set of rimstone dams in São Mateus Cave in Brazil.”

Status in the United States

This species has not been reported 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. [...]

Freshwater Aquatic Species [...]

Parasitic catfishes [...]

Ituglanis epikarsticus”

Means of Introductions in the United States

This species has not been reported 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 *Ituglanis*
Species *Ituglanis epikarsticus* Bichuette and Trajano, 2004”

“Taxonomic Status: valid”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 3.4 cm SL male/unsexed; [Bichuette and Trajano 2004]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic.”

From Bichuette and Trajano (2004):

“Environmental variables measured in May 1999 (dry season) in the rimstone pools: water temperature 24.8 °C; pH 7.7 and dissolved oxygen 7.7 mg·l⁻¹.”

Climate/Range

From Froese and Pauly (2016):

“Tropical; ? – 25°C [Bichuette and Trajano 2004], preferred ?”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: single set of rimstone dams in São Mateus Cave in Brazil.”

Introduced

This species has not been reported as introduced outside of its native range.

Means of Introduction Outside the United States

This species has not been reported as introduced outside of its native range.

Short Description

From Froese and Pauly (2016):

“Dorsal soft rays (total): 11; Anal soft rays: 8; Vertebrae: 36. Distinguished from its epigean and cave congeners by the combination of the following characters: small size (max. 3.4 cm SL); the higher degree of reduction in body pigmentation and in eye size, 2.0-2.1% HL; supraoccipital fontanel very reduced or absent; base and distal extremity of laminar surface of urohyal with similar widths, dorsal process short; posterior process of palatine as long as palatine length, medial concavity slightly rounded; maxilla with discrete medial-posterior projection; fronto-lachrymal 2/3 length of maxilla, anteriorly and posteriorly pointed; opercle with 9 odontodes and interopercle with 20-21 odontodes; 5 pairs of ribs (also observed in a juvenile of *I. bambui*); caudal skeleton with upper hypural plate triangular and lower one rectangular, neural spine or preural centrum with acute extremity, dorsal procurrent rays 14 and ventral 10 [Bichuette and Trajano 2004].”

From Bichuette and Trajano (2004):

“Color of living specimens. Pinkish-white, transparent in one individual. Dorsal region of skull darker than other parts of body. Eye spot black. Fins not transparent [...]”

Biology

From Froese and Pauly (2016):

“Occurs in pools in a set of rimstone dams (wall-shaped barriers of calcite, aragonite or other chemical deposits that impound water pools), 10-30 cm deep and with rocky bottom. A solitary species, swimming on the bottom, along the walls and sometimes at the surface of the pools. [Bichuette and Trajano 2004]”

From Bichuette and Trajano (2004):

“*Ituglanis epikarsticus* has been found in pools in a set of rimstone dams (wall-shaped barriers of calcite, aragonite or other chemical deposits that impound water pools), 10-30 cm deep and with rocky bottom. These pools are fed by epikarst waters percolating from the ceiling. Density of fish in the rimstone pools (about 20 m²) was estimated around 0.08 individuals per m². [...] The rare fishes seen were solitary, swimming on the bottom, along the walls and sometimes at the surface of the pools. [...] *I. epikarsticus* did not exhibit any cryptobiotic habits.”

Human Uses

No information available.

Diseases

No information available.

Threat to Humans

From Froese and Pauly (2016):

“Harmless”

3 Impacts of Introductions

This species has not been reported as introduced outside of its native range.

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. [...]

Freshwater Aquatic Species [...]

Parasitic catfishes [...]

Ituglanis epikarsticus”

4 Global Distribution



Figure 1. Known global established locations of *Ituglanis epikarsticus*. Map from GBIF (2016).

5 Distribution Within the United States

This species has not been reported within the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) for *Ituglanis epikarsticus* was low throughout the contiguous U.S., reflected in a Climate 6 proportion of 0.0. The range of proportions classified as a low climate match is 0.000-0.005.

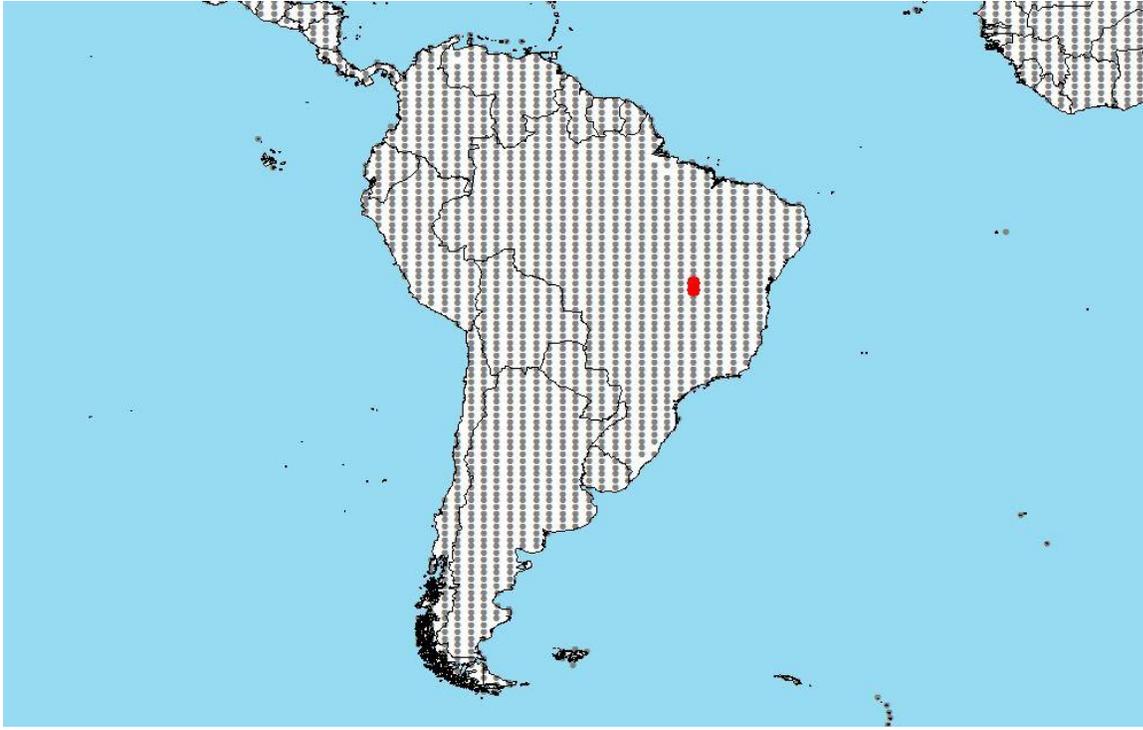


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) in Brazil and non-source locations (gray) for *Ituglanis epikarsticus* climate matching. Source locations from GBIF (2016).

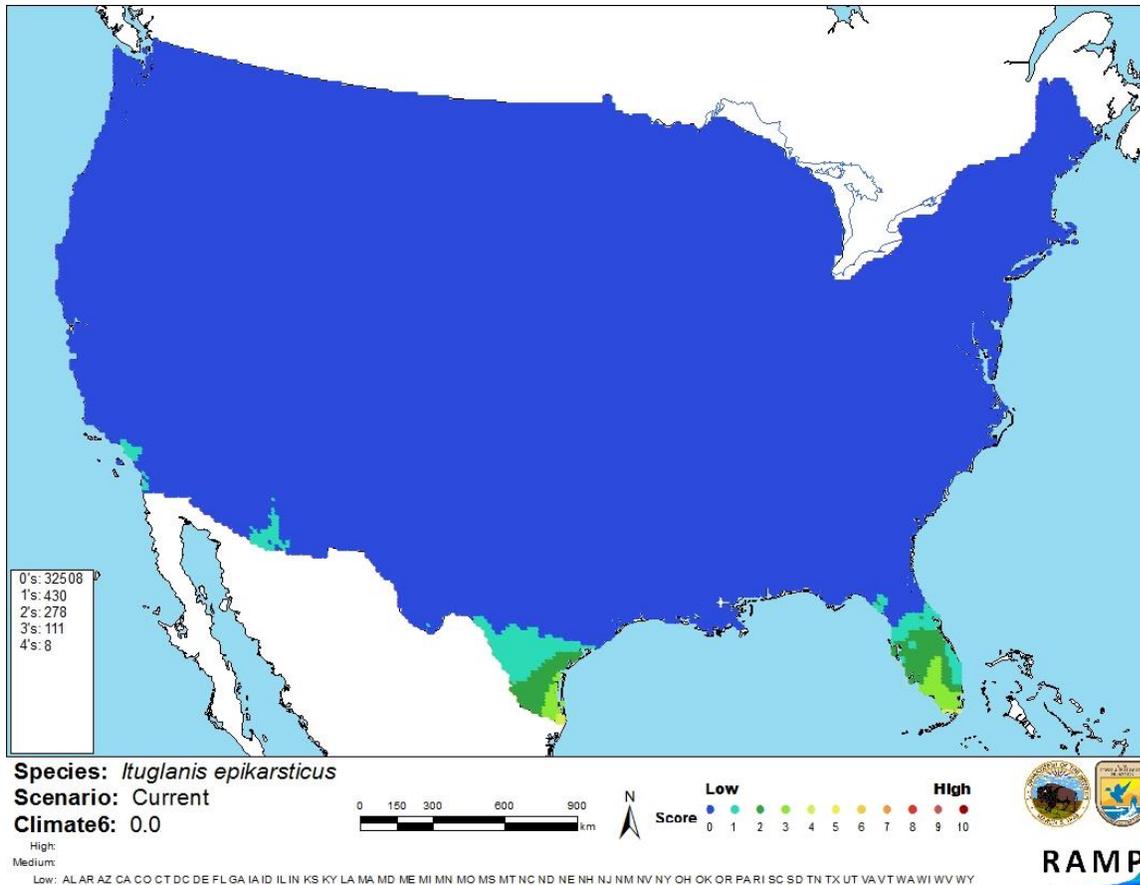


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Ituglanis epikarsticus* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match.

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

There was limited information available on the species *Ituglanis epikarsticus*. This species has not been reported outside of its native range so impacts of introduction are unknown. With such little information known on this species, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Ituglanis epikarsticus is a trichomycterid catfish with a very limited native distribution in central Brazil. There have been no reports of this fish outside of its native range. Possession or transport of this species is prohibited in the state of Florida. Due to its low climate match to the contiguous U.S. and absence of introduction history, the overall risk for 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

- Bichuette, M. E., and E. Trajano. 2004. Three new subterranean species of *Ituglanis* from central Brazil (Siluriformes: Trichomycteridae). *Ichthyological Exploration of Freshwaters* 15(3):243-256.
- 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/#nogo>. (December 2016).
- Froese, R., and D. Pauly, editors. 2016. *Ituglanis epikarsticus* Bichuette & Trajano, 2004. FishBase. Available: <http://www.fishbase.org/summary/Ituglanis-epikarsticus.html>. (December 2016).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Ituglanis epikarsticus* Bichuette & Trajano, 2004. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2342914>. (December 2016).
- ITIS (Integrated Taxonomic Information System). 2016. *Ituglanis epikarsticus* Bichuette and Trajano, 2004). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682119#null. (December 2016).
- Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.