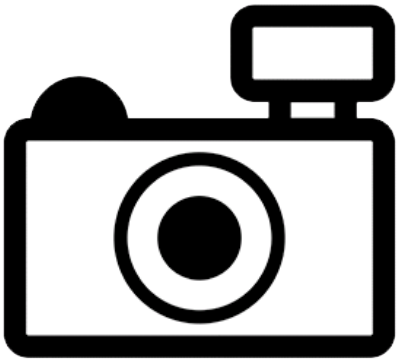
Ituglanis bambui (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, December 2016
Revised, February 2017
Web Version, 1/27/2018



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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

"South America: tributaries of the mainstream in the Angelica Cave in central 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 bambui"

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 bambui* Bichuette and Trajano, 2004"

"Taxonomic Status: valid"

Size, Weight, and Age Range

From Froese and Pauly (2016):

"Max length : 4.6 cm SL male/unsexed; [Bichuette and Trajano 2004] "

Environment

From Froese and Pauly (2016):

"Freshwater; benthopelagic; pH range: 7.9 - 8.6."

From Bichuette and Trajano (2004):

"Environmental variables measured in May, July and August 2000 (dry season): water temperature 23.6, 19.9 and 21.6 °C; pH 7.9, 8.6, and 8.0; dissolved oxygen 8.2, 7.7 and 6.6 mg • l^{-1}. The pH values are typical of a subterranean karst drainage (Culver, 1982)."

Climate/Range
From Froese and Pauly (2016):

"Tropical […]"

Distribution Outside the United States
Native
From Froese and Pauly (2016):

"South America: tributaries of the mainstream in the Angelica Cave in central 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 spines (total): 0; Dorsal soft rays (total): 10; Anal spines: 0; Anal soft rays: 9; Vertebrae: 36 - 37. Distinguished from its epigean and cave congeners by the combination of the following characters: small size (max. 4.63 cm SL); pigmentation pattern intermediate between epigean and cave *Ituglanis* species, with small light brown spots on body, spots twice larger than in *I. epikarsticus* and *I. ramiroi*; eyes relatively developed when compared to cave species but reduced when compared to the epigean ones, with diameter varying from 0.2-0.3 mm (3.4-6.1% HL) in adults to 0.5 mm (5.7% HL) in juveniles (vs. 0.8-1.1 mm, 10.4-13.7% HL in adults of epigean *Ituglanis* species; n=6, 5.57-6.3 cm SL). Maxilla with prominent medial-posterior projection; fronto-lachrymal as long as maxilla, posteriorly pointed; posterior process of palatine 1/2 of palatine length, with medial concavity accentuated; vomer elongate with a small constriction in neck; opercle with 11 odontodes and interopercle with 26 odontodes; caudal skeleton with upper hypural plate triangular and lower trapezoidal, neural spine of preural centrum with rounded extremity, dorsal procurrent rays 16 and ventral 14 [Bichuette and Trajano 2004]."

Biology
From Bichuette and Trajano (2004):

"*Ituglanis bambui* inhabits an upper vadose tributary of Angélica stream inside Angélica Cave, near the sinkhole end (where the epigean stream sinks into the cave). This tributary is characterized by slow-moving waters, 10-150 cm deep on average, and bottom formed basically by silt and clay with some rocky blocks. Based on visual censuses and on the area of the accessible fish habitat (approximately 250 m long and 4.5 m wide in average), minimum population density in the studied site was estimated around 0.04 indiduals per m^2. […] In all

occasions the individuals were observed solitary, with swimming activity on the bottom, in midwater and sometimes extending to the surface. No observed fish displayed cryptobiotic habits, never trying to hide or bury into the soft bottom when disturbed. Specimens of *Ituglanis*, probably also *I. bambui*, have been observed (but not collected) in a second upper tributary situated at the opposite end of the cave, near the stream resurgence"

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, so impacts of introductions are unknown.

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 bambui"

4 Global Distribution

Figure 1. Known global established location of *Ituglanis bambui* in Brazil. 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 bambui* was low throughout the contiguous U.S., reflected in a Climate 6 proportion of 0.0. The range of proportions indicating a low climate match is 0.000-0.005.

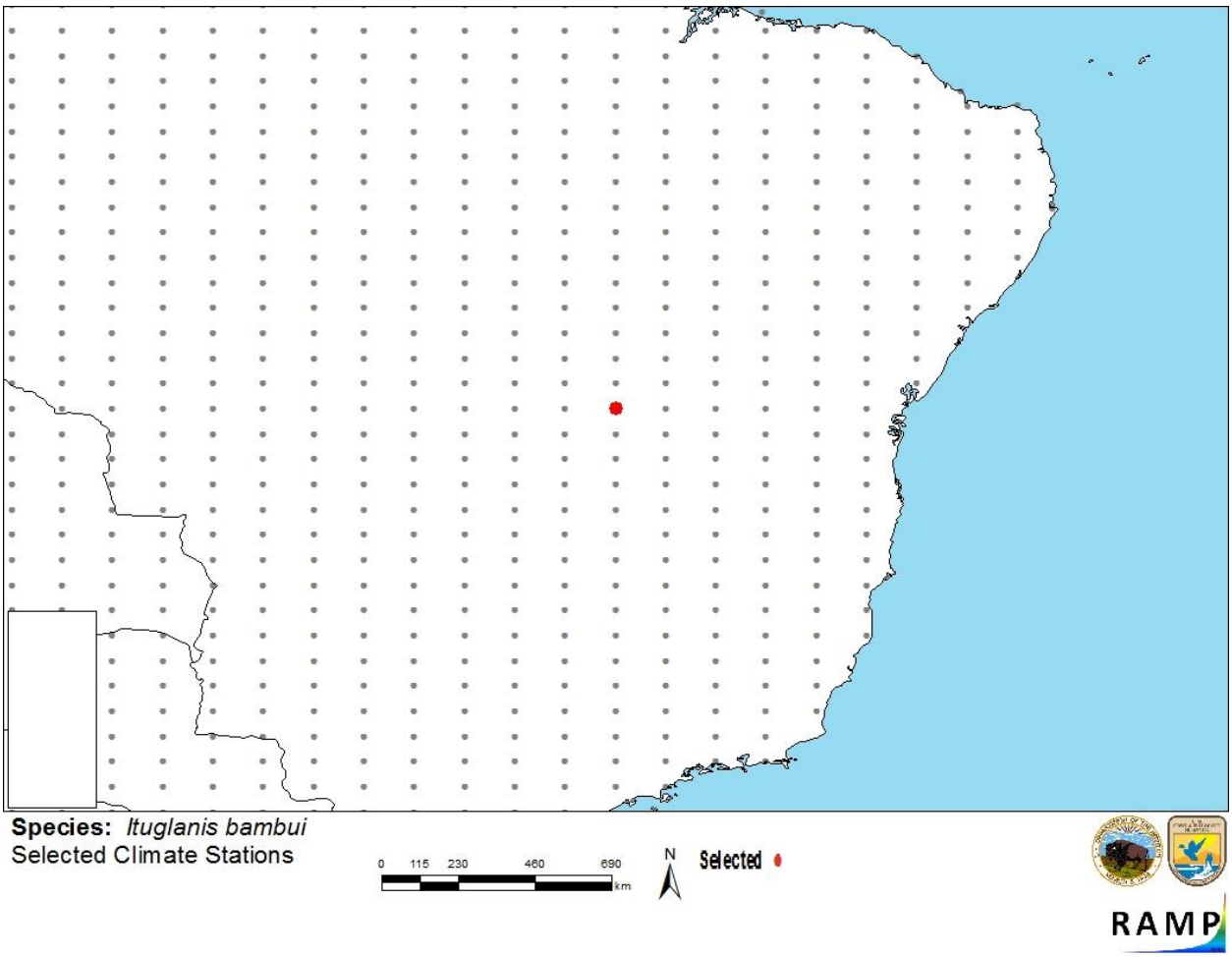

Figure 2. RAMP (Sanders et al. 2014) source map of eastern Brazil showing weather stations selected as source locations (red) and non-source locations (gray) for *Ituglanis bambui* climate matching. Source locations from GBIF (2016).

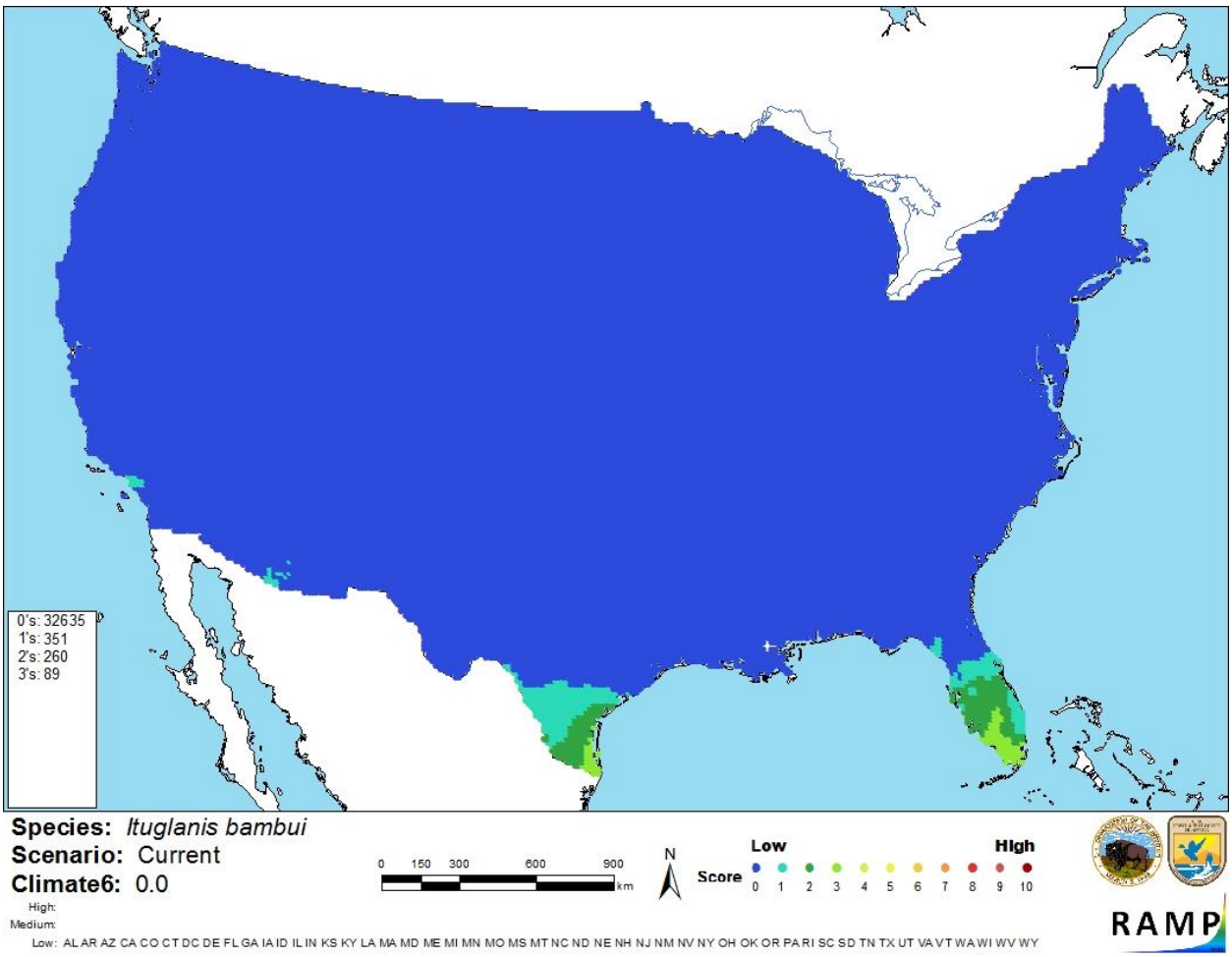

Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Ituglanis bambui* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

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

8 Risk Assessment

Summary of Risk to the Contiguous United States

Ituglanis bambui is a trichomycterid catfish native to a cave system in central Brazil. There have been no reports of this fish outside of its native range. Possession or transport of the species is prohibited in the state of Florida. Due to its low climate match 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

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.

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. 2016. *Ituglanis bambui* Bichuette & Trajano, 2004. FishBase. Available: http://www.fishbase.org/summary/Ituglanis-bambui.html. (December 2016).

GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Ituglanis bambui* Bichuette & Trajano, 2004. Global Biodiversity Information Facility, Copenhagen. Available: http://www.gbif.org/species/2342897. (December 2016).

ITIS (Integrated Taxonomic Information System). 2016. *Ituglanis bambui* Bichuette and Trajano, 2004. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic =TSN&search_value=682117#null. (December 2016).

Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. US 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.

Culver, D. C. 1982. Cave life, evolution and ecology. Harvard University Press, Cambridge, Massachusetts.