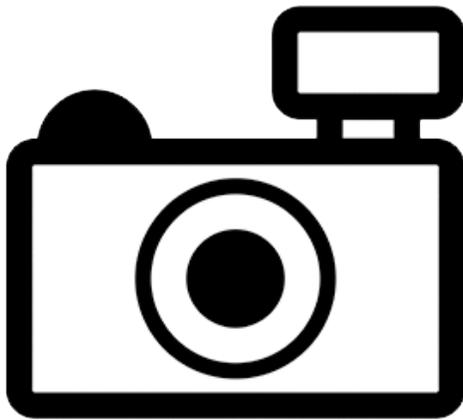


Ossubtus xinguense (a serrasalimid, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, September 2012
Revised, December 2018
Web Version, 6/9/2020

Organism Type: Fish
Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“South America: Xingu River basin in Brazil.”

From Andrade et al. (2016):

“*Ossubtus xinguense* is endemic to the Xingu River basin, and confirmed from the rapids of Volta Grande do Xingu and the lower Rio Iriri, near its confluence with the Rio Xingu [...]. In addition, local fishermen report *O. xinguense* from the Rio Iriri Extractive Reserve (Resex do Rio Iriri at Cachoeira do Julião, 4° 45'58"S 54°38'43"W), and from the Rio Xingu near the city São Félix do Xingu [...].”

Status in the United States

No records of *Ossubtus xinguense* in the wild or in trade in the United States were found.

Means of Introductions in the United States

No records of *Ossubtus xinguense* in the wild in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2018), *Ossubtus xinguense* Jégu 1992 is the current valid name and original name for this species.

From ITIS (2018):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Characiformes
Family Characidae
Genus *Ossubtus*
Species *Ossubtus xinguense* Jégu, 1992

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 25.0 cm TL male/unsexed; [Giarrizzo et al. 2015]; max. published weight: 379.30 g [Giarrizzo et al. 2015]”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic. [...]; 22°C - 25°C [Baensch and Riehl 1995] [assumed to be recommended aquarium temperature]”

From Jégu and Zuanon (2005):

“*Ossubtus xinguense* is a strictly rheophilic species. Young specimens of up to 40 mm SL could be observed in schools of 20–30 individuals, sheltered under broad stones in the rapids near Altamira. Large specimens can be captured by castnet in the rapids.”

Climate/Range

From Froese and Pauly (2018):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“South America: Xingu River basin in Brazil.”

From Andrade et al. (2016):

“*Ossubtus xinguense* is endemic to the Xingu River basin, and confirmed from the rapids of Volta Grande do Xingu and the lower Rio Iriri, near its confluence with the Rio Xingu [...]. In addition, local fishermen report *O. xinguense* from the Rio Iriri Extractive Reserve (Resex do Rio Iriri at Cachoeira do Julião, 4° 45'58"S 54°38'43"W), and from the Rio Xingu near the city São Félix do Xingu [...].”

Introduced

No records of introductions of *Ossubtus xinguense* were found.

Means of Introduction Outside the United States

No records of introductions of *Ossubtus xinguense* were found.

Short Description

From Jégu and Zuanon (2005):

“D 21–23, A 23–26, vertebrae 38. The body is ovoid. The profile of the snout is blunt. Among the serrasalmins this species is characterized by a series of synapomorphies linked to its uncommon rotation of the head plan during the early stages of life. The mouth is terminal in postlarval stage, slightly downturned in specimens of around 30 mmSL and strictly ventral in specimens larger than 50 mm SL. The lower edge of the eye is located very dorsally of the commissure of the mouth. The premaxillary has five teeth in the labial series and two in the lingual series. The two median teeth of the labial series are reduced to very short canines. The lower jaw has four incisiform teeth on [sic] a single series. The pectoral fins are placed in a very low position on the sides. There are 19–21 branched rays on the dorsal fin and 22–25 on the anal fin. The number of scales in the lateral line varies from 81 to 88 to the hypural. There are 36–42

series of circumpeduncular scales. There are 11–16 postpelvic serrae of which 5–9 pairs of spines are found around the cloaca, but there are no prepelvic serrae. The number of branchiospines varies from 9–10 on the upper branch of the first branchial arch and from 11 to 16 on the lower branch. Maximum SL about 176 mm.”

From Andrade et al. (2016):

“Predorsal profile steep. Dorsal profile of head markedly convex from upper lip to vertical through anterior nares, gently straight or nearly concave from that point to distal margin of supraoccipital spine, and slightly convex from that point to dorsal-fin origin. Greatest body depth at dorsal-fin origin, means 56.7% of SL in adults and 53.8% SL in juveniles. Dorsal-fin base straight to gently convex. Body profile straight from dorsal-fin terminus to adipose-fin origin. Ventral profile of head straight to gently convex. Ventral body profile distinctly convex. Anal-fin base convex. Caudal peduncle short, upper and lower profiles concave. Mouth subterminal to subinferior in juvenile specimens up to 50 mm SL (Fig 5B), and markedly inferior in larger specimens. Snout strongly rounded. First branchial arch with gill rakers elongated and recurved. Gill rakers in upper branch 10 (1), 11 (6), or 13 (2), and in lower branch 13 (1), 14 (5), or 15 (4); one gill raker at cartilage between upper and lower branches. Body fully covered with cycloid scales. Base of dorsal and anal fins covered by scaly sheath; dorsal fin with 2 (21) scale rows in sheath and anal fin with 6 (1), 7 (18), or 8 (2) scale rows in sheath.”

Biology

From Froese and Pauly (2018):

“Feeds on aquatic macrophytes and filamentous algae [Jégu 1992]. In the aquarium it will feed on flakes and frozen food, but will also hunt down a large shrimp. Females are aggressive towards other females and can have several males in following (Calum Chalmers, pers. comm. 2007).”

Human Uses

From Jégu and Zuanon (2005):

“In aquaria, the species exhibits high territoriality which results in a strong aggressiveness towards their congenics. Specimens observed in ornamental fish trade companies in Manaus and destined to be exported presented an advanced emaciated condition, probably resulting from prolonged starvation.”

“The commercial exploitation of this species for the aquarium trade is currently forbidden and should be maintained until more scientific data on its general and reproductive biology is gathered. At the same time, an information campaign among fishermen involved in the aquarium trade should be launched.”

Diseases

No records of OIE-reportable diseases (OIE 2020) were found for *Ossubtus xinguense*.

From Jégu and Zuanon (2005):

“This species is parasitized by a highly hot-specific isopod of the family Cymothoidae.”

From Andrade et al. (2016):

“In all specimens, intestines were infested with an abundance of the nematode *Rondonia rondoni*. This nematode is possibly a symbiont rather than a parasite (Andrade *et al.*, *in prep.*). Practically all fish are parasitized by metacercariae under the skin and scattered over body, head and fins, forming black spots known as “black-spot disease”. In addition, *O. xinguense* is parasitized by *Anphira xinguensis*, a gill isopod parasite exclusive to the species.”

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No records of introductions of *Ossubtus xinguense* were found; therefore there is no information on impacts of introductions.

4 History of Invasiveness

No introductions of *Ossubtus xinguense* were found. Therefore the history of invasiveness is No Known Nonnative Populations.

5 Global Distribution



Figure 1. Map of northeastern South America showing locations where *Osubtus xinguense* has been reported. Locations are in Brazil. Map from GIBF Secretariat (2018).

6 Distribution Within the United States

No records of *Osubtus xinguense* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Ossubtus xinguense* was low for the entire contiguous United States. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low, (scores between 0.000 and 0.005, inclusive, are classified as low). All States have a low individual climate score.

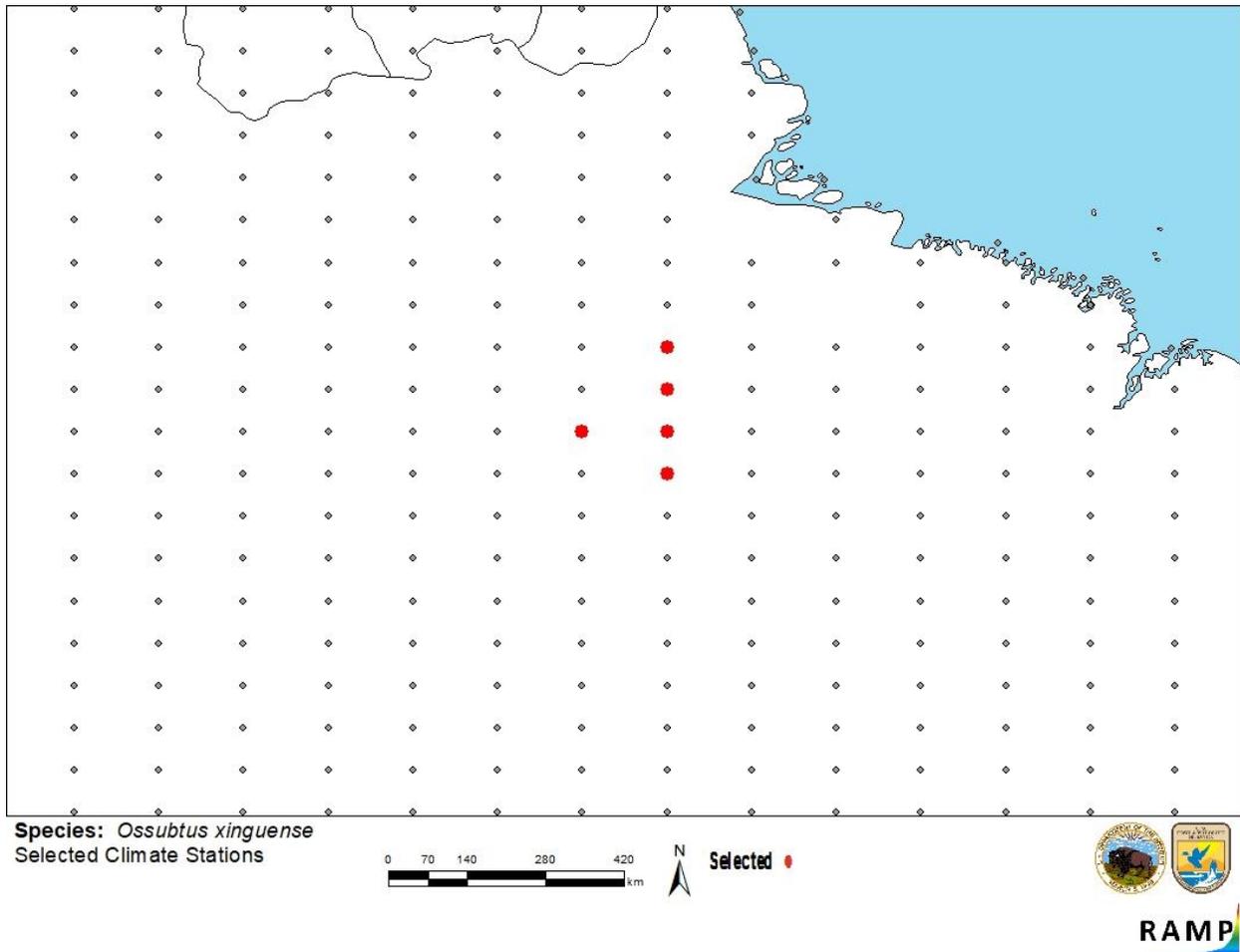


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Brazil selected as source locations (red) and non-source locations (gray) for *Ossubtus xinguense* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

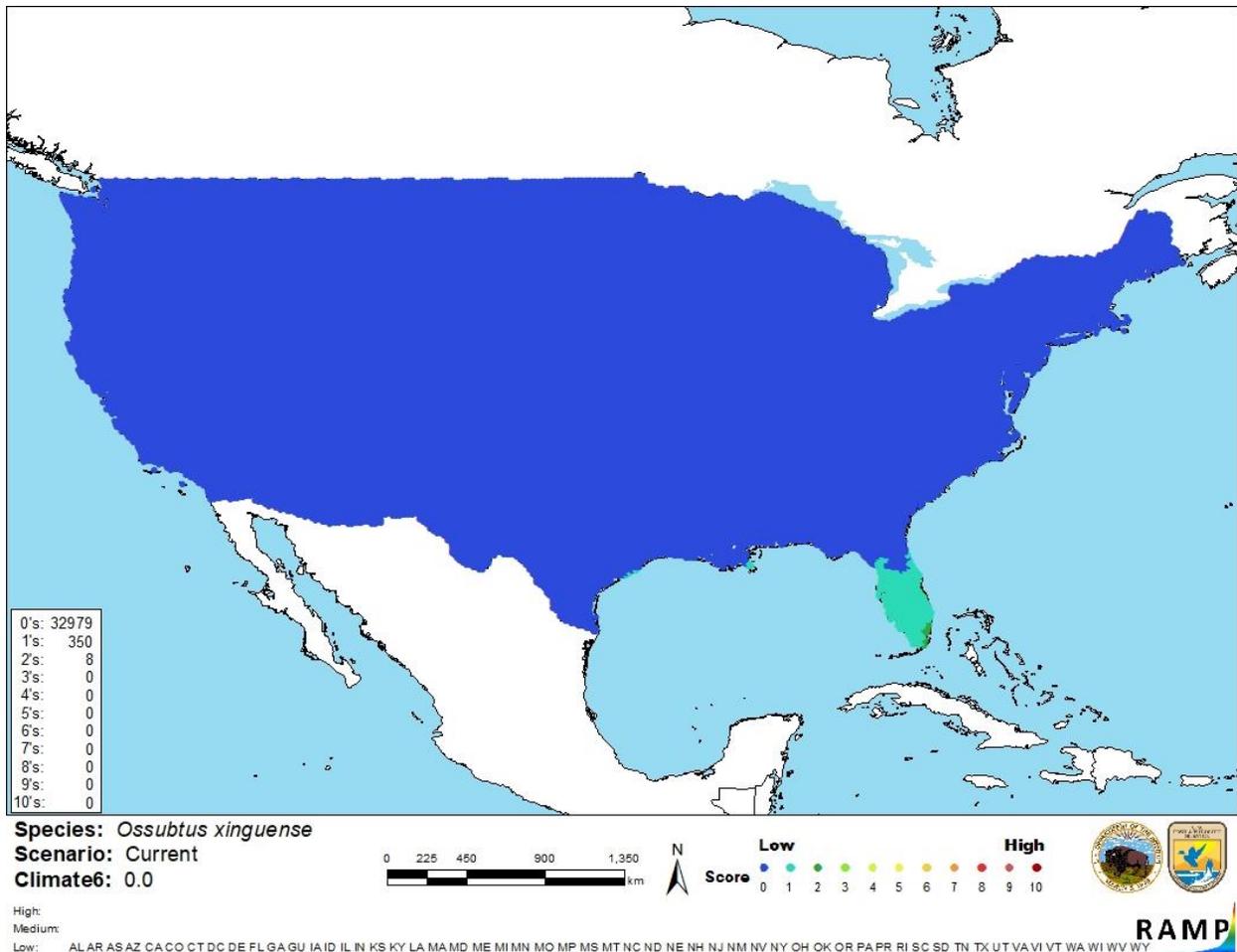


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Ossubtus xinguense* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

8 Certainty of Assessment

The certainty of assessment for *Ossubtus xinguense* is low. The small native range of the species is well described and represented by georeferenced observations. Information on the biology and ecology of the species was available. However, no records of introduction were found and therefore, there is no information on impacts of introductions.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Ossubtus xinguense is a South American pacu endemic to the Xingu River basin in Brazil. It may be present in the aquarium trade, although commercial trade in the species is banned. The history of invasiveness is No Known Nonnative Population. It has not been reported as introduced or established anywhere in the world outside of its native range. The climate match for the entire contiguous United States was low. The certainty of assessment is low due to a lack of information. The overall risk assessment category is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional remarks**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

Andrade MC, Sousa LM, Ota RP, Jégu M, Giarrizzo T. 2016. Redescription and geographical distribution of the endangered fish *Ossubtus xinguense* Jégu 1992 (Characiformes, Serrasalminidae) with comments on conservation of the rheophilic fauna of the Xingu River. PLoS ONE 11:1–29.

Fricke R, Eschmeyer WN, van der Laan R, editors. 2018. Catalog of fishes: genera, species, references. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (December 2018).

Froese R, Pauly D, editors. 2018. *Ossubtus xinguense* Jégu, 1992. FishBase. Available: <http://www.fishbase.org/summary/Ossubtus-xinguense.html> (December 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Ossubtus xinguense* Jégu, 1992. Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2353904>. (December 2018).

[ITIS] Integrated Taxonomic Information System. 2018. *Ossubtus xinguense* Jégu, 1992. Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=641525#null. (December 2018).

Jégu M, Zuanon J. 2005. Threatened fishes of the world: *Ossubtus xinguense* (Jégu, 1992) (Characidae: Serrasalminae). *Environmental Biology of Fishes* 73:414.

[OIE] World Organisation for Animal Health. 2020. OIE-listed diseases, infections and infestations in force in 2020. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2020/> (June 2020).

Sanders S, Castiglione C, Hoff M. 2018. Risk Assessment Mapping Program: RAMP. Version 3.1. U.S. Fish and Wildlife Service.

11 Literature Cited in Quoted Material

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.

Andrade et al., in preparation. [Source material did not give full citation for this reference].

Baensch HA, Riehl R. 1995. *Aquarien atlas*. Band 4. Melle, Germany: Mergus Verlag GmbH, Verlag für Natur-und Heimtierkunde.

Giarrizzo T, de Sena Oliveira RR, Andrade MC, Gonçalves AP, Barbosa TAP, Martins AR, Marques DK, dos Santos JLB, da S. Frois R de P, de Albuquerque TPO, Montag LF de A, Camargo M, de Sousa LM. 2015. Length-weight and length-length relationships for 135 fish species from the Xingu River (Amazon basin, Brazil). *Journal of Applied Ichthyology* 31:514–424.

Jégu M. 1992. *Ossubtus xinguense*, nouveaux genre et espèce du Rio Xingu, Amazonie, Brésil (Teleostei: Serrasalminidae). *Ichthyological Exploration of Freshwaters* 3:235–252.