

Zebra Catfish (*Brachyplatystoma juruense*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, March 2014
Revised, December 2015, October 2017, November 2017
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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2014):

“South America: Amazon and Orinoco River basin.”

“Occurs in Ucayali, Marañon, and Samiria Rivers [in Peru].”

Barthem et al. (2017) state that mature *Brachyplatystoma juruense* are abundant “in turbid rivers at least 3,500 km upstream from the Amazon River mouth”.

From Barthem et al. (2017):

“Juvenile stages of *B. juruense* are most common in the central Amazon, approximately 2,000–2,500 km from the Amazon River mouth, though much less is known about this species than the

other goliath species considered and more collections are needed in the lower Amazon River, where juveniles are also known.”

“In contrast to *B. rousseauxii* and *B. platynemum*, neither adult nor larval *B. juruense* are known in the estuary [at the mouth of the Amazon River]”

Status in the United States

No records of *Brachyplatystoma juruense* in the wild in the United States were found; it is in trade in the United States.

From Bluegrass Aquatics (2018):

“False Tigrinus Catfish (*brachyplatystoma [sic] juruense*) – regular [...] \$79.48”

Means of Introductions in the United States

No records of *Brachyplatystoma juruense* in the United States were found.

Remarks

From Barletta et al. (2010):

“The Red Data Book for Venezuelan Fauna (Lasso, 2008) lists two Orinoco fish species as ‘vulnerable to extinction’, *Brachyplatystoma juruense* (Boulenger) and *Sorubimichthys planiceps* (Spix & Agassiz).”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Eschmeyer et al. (2017), *Brachyplatystoma juruense* (Boulenger 1898) is the valid name for this species. It was originally described as *Platystoma juruense*.

From ITIS (2014):

“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 Pimelodidae

Genus *Brachyplatystoma* Bleeker, 1862

Species *Brachyplatystoma juruense* (Boulenger, 1898)”

Size, Weight, and Age Range

From Froese and Pauly (2014):

“Max length : 60.0 cm TL male/unsexed; [Lundberg and Littmann 2003]”

Duque and Winemiller (2003) list the largest *Brachyplatystoma juruense* caught for the study as a female at 70cm standard length and 2.7kg.

Environment

From Froese and Pauly (2014):

“Freshwater; demersal. [...]; 22°C - 27°C [assumed to be recommended aquarium temperature] [Baensch and Riehl 1995]”

Climate/Range

From Froese and Pauly (2014):

“Tropical; [...]”

Barthem et al. (2017) state that *Brachyplatystoma juruense* are abundant between 55 and 250m in elevation.

Distribution Outside the United States

Native

From Froese and Pauly (2014):

“South America: Amazon and Orinoco River basin.”

“Occurs in Ucayali, Marañon, and Samiria Rivers [in Peru].”

Barthem et al. (2017) state that mature *Brachyplatystoma juruense* are abundant “in turbid rivers at least 3,500 km upstream from the Amazon River mouth”.

From Barthem et al. (2017):

“Juvenile stages of *B. juruense* are most common in the central Amazon, approximately 2,000–2,500 km from the Amazon River mouth, though much less is known about this species than the other goliath species considered and more collections are needed in the lower Amazon River, where juveniles are also known.”

“In contrast to *B. rousseauxii* and *B. platynemum*, neither adult nor larval *B. juruense* are known in the estuary [at the mouth of the Amazon River]”

Introduced

No records of *Brachyplatystoma juruense* introductions were found.

Xiong et al. (2015) list *Brachyplatystoma juruense* as present in the aquarium trade in China but do not indicate if there were any introductions to the wild as a result.

Youguang (2014) lists *Brachyplatystoma juruense* as present in the aquarium trade in Singapore.

Means of Introduction Outside the United States

No records of *Brachyplatystoma juruense* introductions were found.

Short Description

From Duque and Winemiller (2003):

“*B. juruense* has a deeper body and more striking pigmentation pattern than the other species, [...]”

From Lundberg and Akama (2005):

“Elongated caudal filaments persist in adults of *B. juruense*, *B. platynemum*, and *B. tigrinum* (Fig. 1[in source material]).”

“[...] *B. juruense* with uniformly fine, relatively straight and depressible teeth, [...]”

“[...] whereas *B. juruense* has nearly uniform densely packed, straight teeth [...]”

“Juveniles of the barred species, *B. juruense* and *B. tigrinum*, have small spots but only along the midlateral line that early in life expand into bars.”

“Broad dark vertical, oblique or branching bands, sometimes broken into spots; pale yellowish background; caudal fin blotched or barred.”

“[Adult maxillary barbel length] Below or little beyond dorsal-fin”

“Adipose-fin origin before anal-fin, its base about 1.3 times anal-fin base; adipose-fin height 3 times in its length.”

“[Anal fin rays] 17-19”

Biology

From Froese and Pauly (2014):

“Feeding type: mainly animals”

From Petrere et al. (2005):

“For the piraíba, baboso, piramutaba and flamengo (*Brachyplatystoma juruense*), reproduction occurs at the end of the flooding or during the dry season (Agudelo et al., 2000).”

From Barthem et al. (2017):

“Our study shows that spawning for at least *B. rousseauxii*, *B. juruense* and *B. platynemum* occurs in or near the Andes and demonstrates conclusively that long-distance downstream migration of their larvae and juveniles occurs.”

“In the Ucayali and Urubamba Rivers, ready-to-spawn *B. rousseauxii*, *B. juruense* and *B. platynemum* were most abundant in commercial fisheries during the rainy and warmer months corresponding to the higher river discharge period from October to March (Fig. 3).”

“For *B. juruense*, the available data indicate an increase in median length from the headwaters to the upper Madeira in Brazil, after which the median length decreases, indicating a wide spawning region for the species (Fig. 6).”

“In contrast to *B. rousseauxii* and *B. platynemum*, neither adult nor larval *B. juruense* are known in the estuary, and the nursery of the latter species appears to be in the central Amazon.”

From Duque and Winemiller (2003):

“Narrowest diets were observed for *G. platynema* and *B. juruense*, species that fed heavily on nocturnal, weakly electric knifefishes (gymnotiforms).”

“Local fishermen consistently reported that four species (*B. flavicans*, *B. juruense*, *B. vaillanti* and *G. platynema*) were never caught in off-channel habitats such as lagoons, sloughs and streams.”

“Benthic fishes comprised 86% of the identifiable prey consumed by *B. juruense*, [...]”

Human Uses

From Froese and Pauly (2014):

“Fisheries: minor commercial; aquarium: public aquariums”

“Exported as an aquarium fish [Tello and Sánchez].”

From Begossi et al (1999):

“Fish is consumed fresh or after being dried in the sun (conserved for about a month).”

Diseases

No records of OIE reportable diseases were found.

Poelen et al. (2014) lists *Desmidosperrmus mortenthaleri* as a parasite of *Brachyplatystoma juruense*.

Moravec et al. (2006) list *Brachyplatostoma juruense* as a host for *Alinema amazonicum*.

Threat to Humans

From Froese and Pauly (2014):

“Harmless”

3 Impacts of Introductions

Xiong et al. (2015) list *Brachyplatystoma juruense* as present in the aquarium trade in China.

Youguang (2014) lists *Brachyplatystoma juruense* as present in the aquarium trade in Singapore.

No records of *Brachyplatystoma juruense* introductions into the wild were found.

4 Global Distribution



Figure 1. Known global distribution of *Brachyplatystoma juruense*. Locations are in Colombia, Brazil, and Peru. Map from GBIF Secretariat (2017).



Figure 2. Known global distribution of *Brachyplatystoma juruense*. Locations are in Venezuela, Brazil, and Peru. Map from VertNet (2017).

5 Distribution Within the United States

No records of *Brachyplatystoma juruense* in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Brachyplatystoma juruense* was high in southern Florida and medium for the rest of Florida and parts of the Texas Gulf Coast. It was low everywhere else. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.008, medium, and Florida had an individually high climate match.

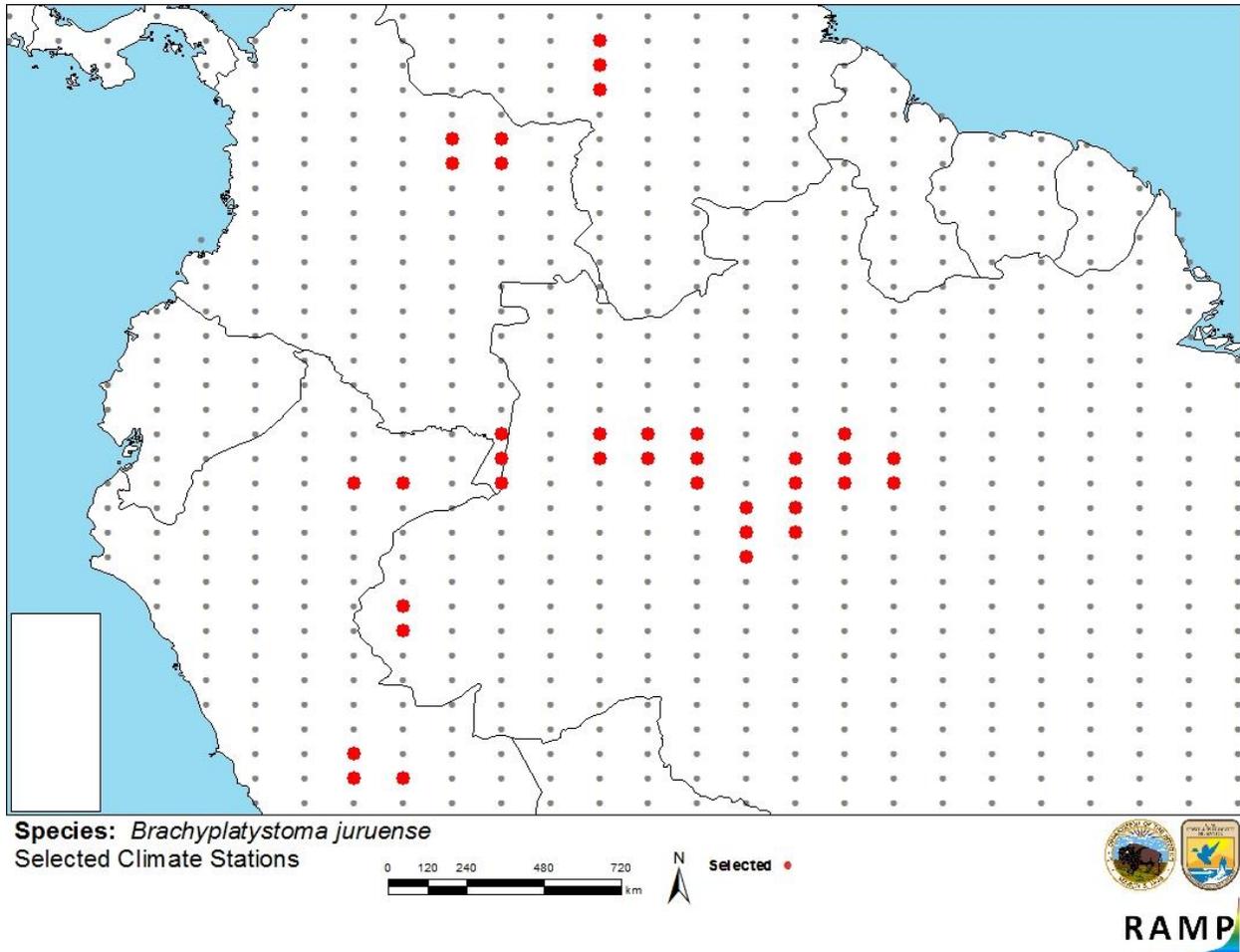


Figure 3. RAMP (Sanders et al. 2014) source map showing weather stations in northern South American selected as source locations (red; Venezuela, Colombia, Peru, Brazil) and non-source locations (grey) for *Brachyplatystoma juruense* climate matching. Source locations from GBIF Secretariat (2017) and VertNet (2017).

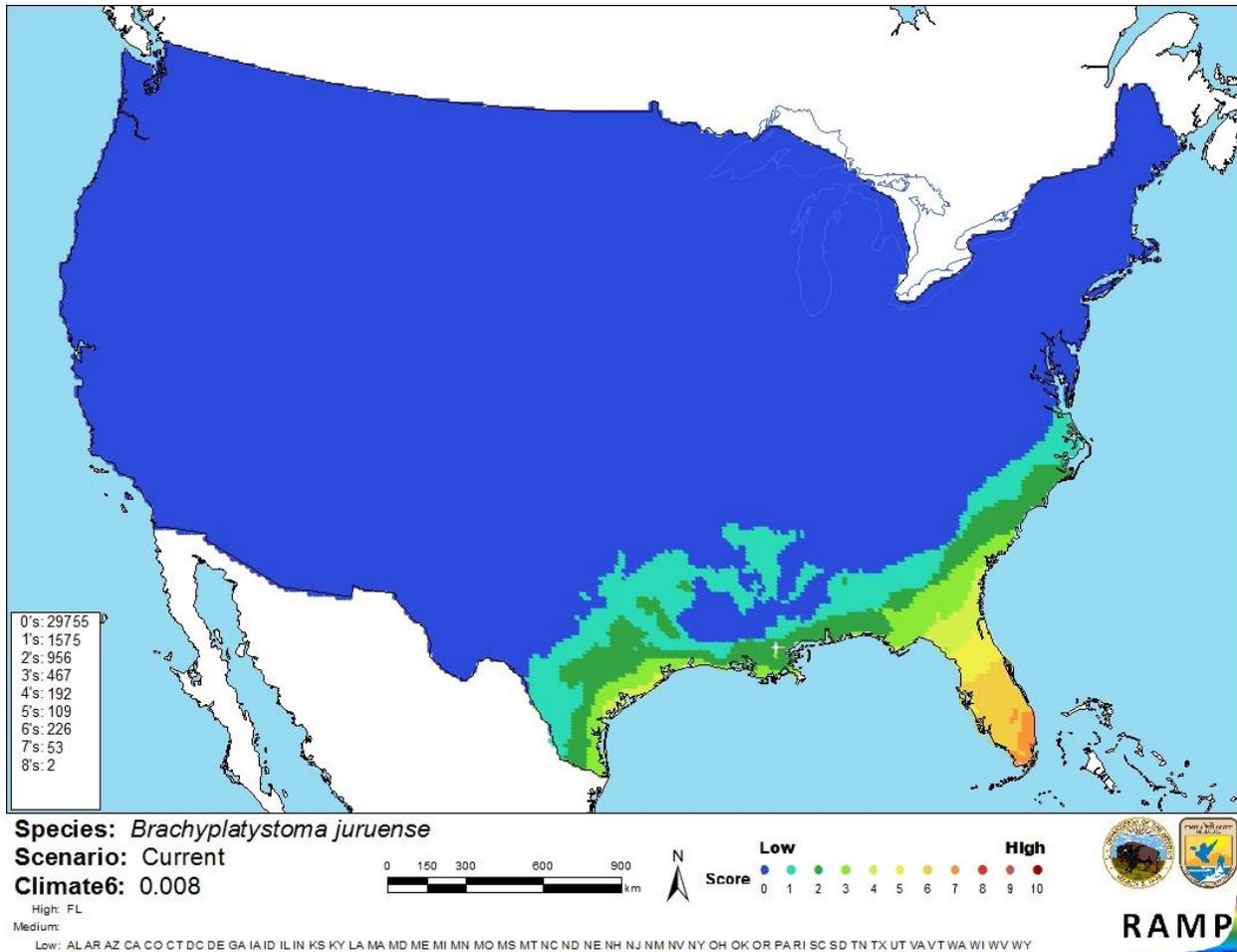


Figure 4. Map of RAMP (Sanders et al. 2014) climate matches for *Brachyplatystoma juruense* in the contiguous United States based on source locations reported by GBIF Secretariat (2017) and VertNet (2017). 0 = Lowest match, 10 = Highest match. Counts of climate match scores are tabulated on the left.

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

7 Certainty of Assessment

The certainty of this assessment is low. There was limited quality information available about *Brachyplatystoma juruense*. No records of introductions were found. Some information about the species' presence in international aquarium trade was found but no specific information on length of time in trade or the volume of trade was found.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The Zebra Catfish (*Brachyplatystoma juruense*) is a species of catfish native to rivers in northern South America. The species is used as a food source and in the aquarium trade. The history of invasiveness is uncertain. There were no records of *Brachyplatystoma juruense* introductions found and no details about this species' presence in the aquarium trade were available. The climate match was medium; Florida had an individually high climate match. The certainty of assessment is low. The overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Medium**
- **Certainty of Assessment (Sec. 7): Low**
- **Remarks/Important additional information** No additional remarks.
- **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.

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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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