Orinoco Peacock Bass (*Cichla orinocensis*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2011
Revised, September 2012, May 2018
Web Version, 9/10/2018

Photo: Renata E. Minematsu. Licensed under Creative Commons (BY-NC 3.0). Available: http://eol.org/data_objects/26103896. (May 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"South America: Orinoco River basin, in tributaries of the Orinoco River in Colombia and Venezuela; Amazon River basin, in the Negro River basin, Brazil."

Status in the United States

This species has not been reported as introduced or established in the United States. This species is present in the aquarium trade in the United States. For example:

From AquaScapeOnline (2018):

"Orino Bass 2" (*Cichla orinocensis*) […]
Our Price: $20.00"

Means of Introductions in the United States

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

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

"Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Genus Cichla
Species *Cichla orinocensis* Humboldt in Humboldt and Valenciennes, 1821"

"Taxonomic Status:
Current Standing: valid"

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Maturity: L_m ?, range 26 - 30 cm
Max length : 61.7 cm SL male/unsexed; [Kullander 2003]; max. published weight: 6.2 kg [Machacek 2007]"

Environment

From Froese and Pauly (2018):

"Freshwater; benthopelagic; pH range: 5.5 - 6.5. […] 27°C - 29°C [Baensch and Riehl 1997; presumed to represent recommended aquarium water temperature]"

Climate/Range

From Froese and Pauly (2018):

"Tropical; […]"

Distribution Outside the United States

Native

From Froese and Pauly (2018):

"South America: Orinoco River basin, in tributaries of the Orinoco River in Colombia and Venezuela; Amazon River basin, in the Negro River basin, Brazil."

Introduced

Froese and Pauly (2018) state that this species was introduced and became established in Singapore.

Means of Introduction Outside the United States

From Froese and Pauly (2018):

"Unknown"

Short Description

From Froese and Pauly (2018):

"Differs from its congeners by typical presence of three large dark ocellated blotches along side, but occasionally blotches 2 and 3 irregularly developed or not ocellated. Lateral band abbreviated in juveniles. Differs from other species of *Cichla* with abbreviated juvenile lateral band by absence (vs. presence) of well-defined vertical bars in adults; from *ocellaris* also by lateral line nearly always discontinuous vs. nearly always continuous, by absence (vs. presence) of bars 1a and 2a and absence (vs. presence) of abdominal blotches; from *kelberi*, *monoculus*, and *pleiozona* also by absence (vs. presence) of abdominal blotches and occipital bar, and presence (vs. absence) of postorbital markings; from *nigromaculata* also by absence (vs. presence) of bars 1a and 2a, and absence (vs. presence) of small black blotches on dorsum [Kullander and Ferreira 2006]."

Biology

From Froese and Pauly (2011):

"Inhabits rivers [Axelrod 1993]. Is usually captured in shallow near-shore areas of lagoons and slow moving reaches of the river channel. Feeds mainly on small characiform fish [Santos and Haimovici 1997; Winemiller et al. 1997]."

Human Uses

From Kullander and Ferreira (2006):

"Species of the genus *Cichla* are among the major food and game fishes in South America."

This species is present in the aquarium trade in the United States. For example:

From AquaScapeOnline (2018):

"Orino Bass 2" (*Cichla orinocensis*) […]
Our Price: $20.00"

Diseases

From Mathews et al. (2018):

"[…] *E*[*rgasilus*] *coatiarus* was also reported parasiting *Cichla orinocensis* Humboldt, 1821 and *Cichla temensis* Humboldt, 1821 [Araujo et al. 2009; Tavares-Dias et al. 2015]."

No OIE reportable diseases have been documented in this species.

Threat to Humans

From Froese and Pauly (2011):

"Harmless"

3 Impacts of Introductions

Moore et al. (2010) state that *Cichla orinocensis* may have biological or ecological traits that lead to high risk of negative impact if introduced. However, no scientific studies are cited to support this risk characterization.

4 Global Distribution

Figure 1. Known global distribution of *Cichla orinocensis* in Brazil, Colombia and Venezuela. Map from GBIF Secretariat (2017). The occurrence in western Colombia was excluded from the climate matching analysis because it is located outside the Amazon and Orinoco River basins where *C. orinocensis* is known to be established (Froese and Pauly 2018).

5 Distribution Within the United States

No known occurrences.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) was low across much of the contiguous United States. Medium matches were recorded in southwestern Florida and extreme southern Texas. Climate 6 score indicated that the contiguous United States has a low climate match overall. Scores of 0.005 and below are classified as low match; Climate 6 score for *C. orinocensis* was 0.000.

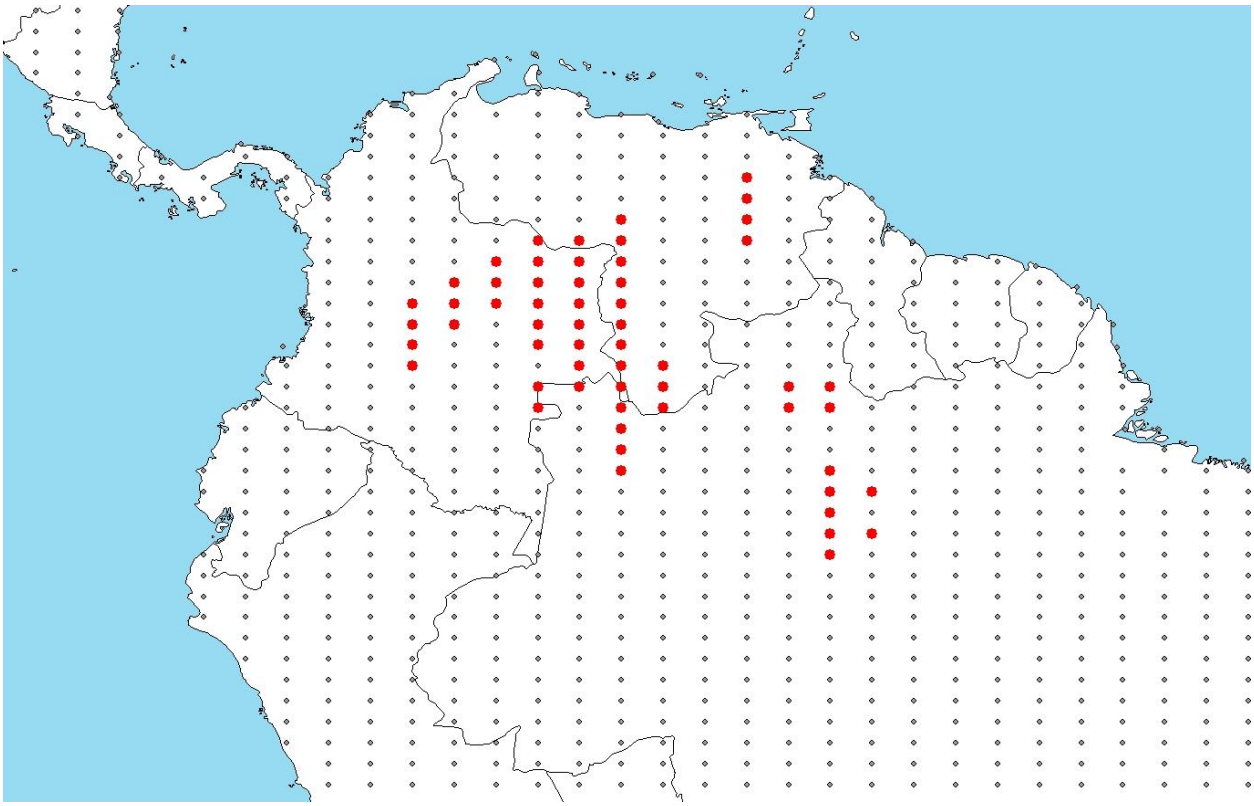

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Brazil, Colombia and Venezuela) and non-source locations (gray) for *Cichla orinocensis* climate matching. Source locations from GBIF Secretariat (2017).

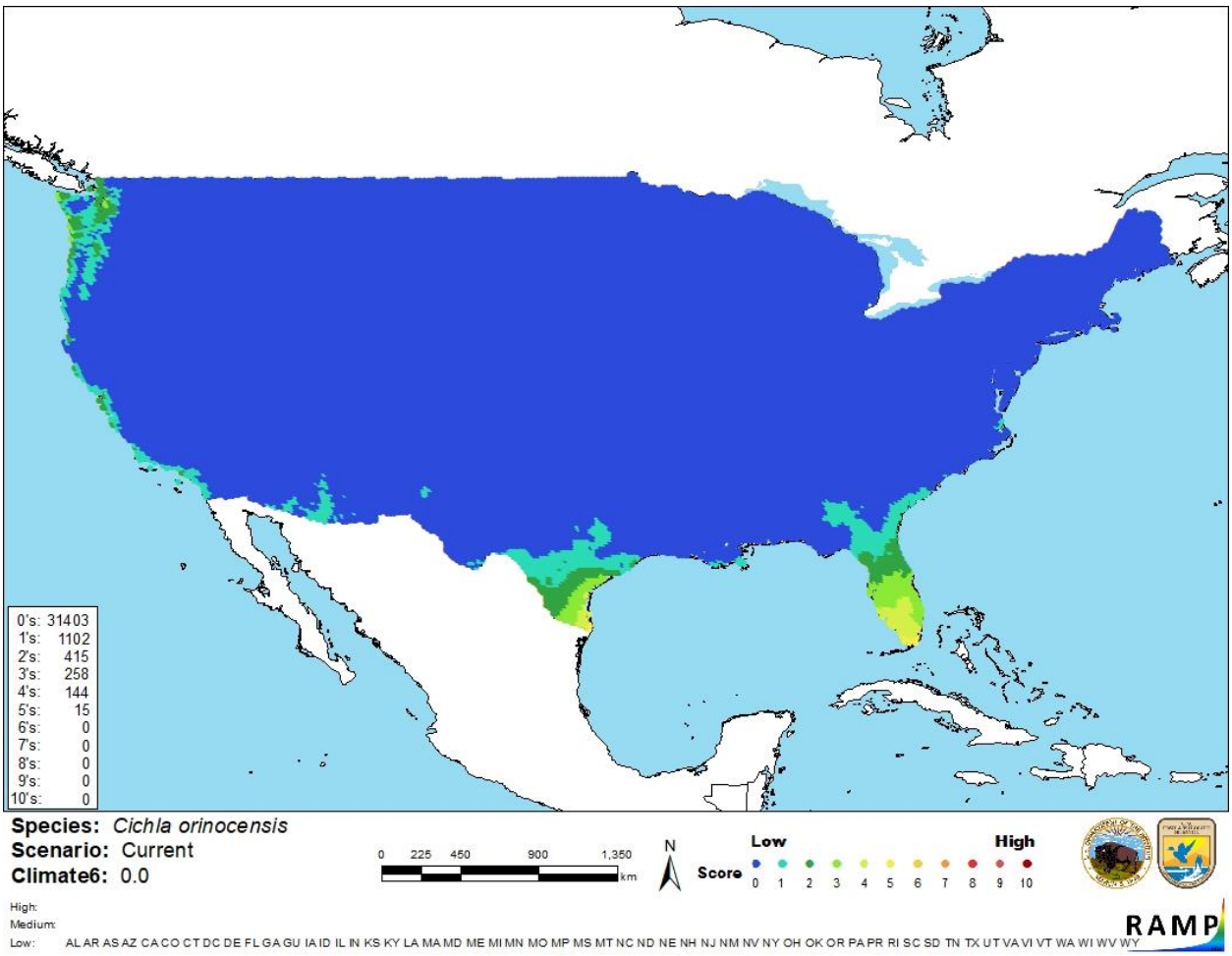

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Cichla orinocensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10= Highest match. Counts of climate match scores are tabulated on the left.

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≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

7 Certainty of Assessment

The biology and ecology of *Cichla orinocensis* are poorly known. This species was recorded as introduced in Singapore but no information is known about this introduction. Little information is known to conclude what kind of effect it could have if it were introduced. Due to lack of information, the certainty of assessment is low. More information is needed to elevate the assessment certainty.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cichla orinocensis is a South America cichlid found in Brazil, Venezuela, and Colombia. Little information exists on the invasiveness of this species; *C. orinocensis* is established in Singapore, but no other information is known about this introduction. The overall climate match score indicates low risk. Majority of the United States recorded climate match scores of 0 out of 10 with southern Florida recording the highest match (5 out of 10). The overall risk assessment for *Cichla orinocensis* 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.

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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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