

# ***Cichla nigromaculata* (South American cichlid, no common name)**

## **Ecological Risk Screening Summary**

U.S. Fish and Wildlife Service, August 2011  
Revised, September 2012, May 2018  
Web Version, 9/7/2018

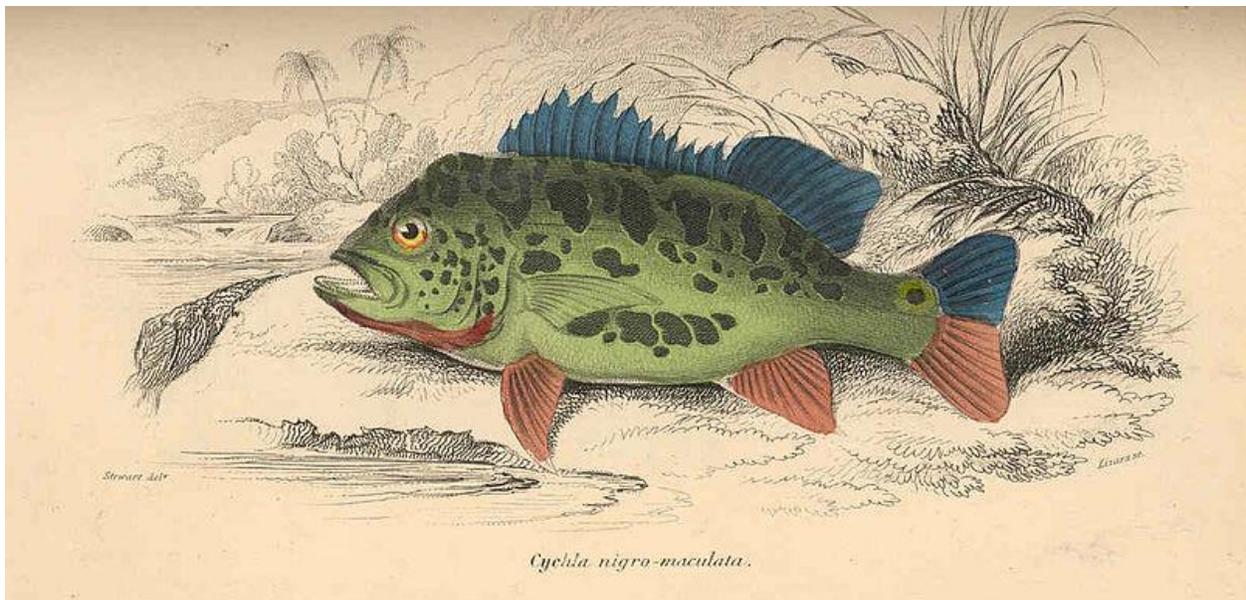


Photo: Robert Hermann Schomburgk. Licensed under Public Domain, Freshwater and Marine Image Bank at the University of Washington. Available: [https://commons.wikimedia.org/wiki/File:FMIB\\_38365\\_Cichla\\_nigro-maculata.jpeg](https://commons.wikimedia.org/wiki/File:FMIB_38365_Cichla_nigro-maculata.jpeg). (May 2018).

## **1 Native Range and Status in the United States**

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### **Native Range**

From Froese and Pauly (2018):

“South America: Upper Orinoco and Casiquiare tributaries and the middle Rio Negro [Brazil, Venezuela].”

## Status in the United States

No known occurrences. *C. nigromaculata* is mentioned on U.S.-based aquarium hobbyist forums, but it was not found for sale from U.S.-based online aquarium retailers.

## Means of Introductions in the United States

No known occurrences.

# 2 Biology and Ecology

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## 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* Bloch and Schneider, 1801”

From Eschmeyer et al. (2016):

“Current status: Valid as *Cichla nigromaculata*.”

## Size, Weight, and Age Range

From Froese and Pauly (2011):

“Max length: 26.3 cm SL male/unsexed; [Kullander and Ferreira 2006]”

## Environment

From Froese and Pauly (2011):

“Freshwater; benthopelagic”

## Climate/Range

From Froese and Pauly (2011):

“Tropical”

## Distribution Outside the United States

### Native

From Froese and Pauly (2018):

“South America: Upper Orinoco and Casiquiare tributaries and the middle Rio Negro [Brazil, Venezuela].”

### Introduced

No known introductions.

## Means of Introduction Outside the United States

No known introductions.

## Short Description

From Froese and Pauly (2018):

“Distinguished from its congeners except *C. intermedia*, *C. ocellaris*, *C. melaniae*, and *C. piquiti* by the presence of bars 1a and 2a; similar to *ocellaris* in possessing a dark blotch dorsally in bar 3. Differs from *piquiti* in lower scale count (E1 row scales 75-84, vs. 83-104), and in having bars relatively narrow and short instead of uniformly wide across the side and reaching to the lower abdominal side. Differs from *melaniae* by the presence of prominent dark blotch dorsally in bar 3, and absence of numerous small light spots on side and from *intermedia* by lower scale count (E1 row scales 75-85 vs. 96-108), absence of horizontal lateral band, and vertical bars most prominent on dorsum rather than along midaxis. It is different from *ocellaris* in possession of small black spots on dorsal side, discontinuous lateral line (vs. usually continuous); more scales (E1 scales 75-84 vs. 67-82); narrower caudal peduncle (depth 10.3-11.4 %SL vs. 11.9-13.2 %SL in specimens over 100 mm SL); vertical bars 1-3 wide dorsally, tapering to a point below middle of side (vs. usually relatively narrow and about equally wide from dorsum to ventral end); absence of postorbital markings (vs. presence); and presence of distinct occipital bar (vs. absent or indistinct) [Kullander and Ferreira 2006].”

## Biology

No information available.

## Human Uses

From Kullander and Ferreira (2006):

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

## Diseases

No information available. No OIE reportable diseases have been documented for this species.

## Threat to Humans

From Froese and Pauly (2011):

“Harmless”

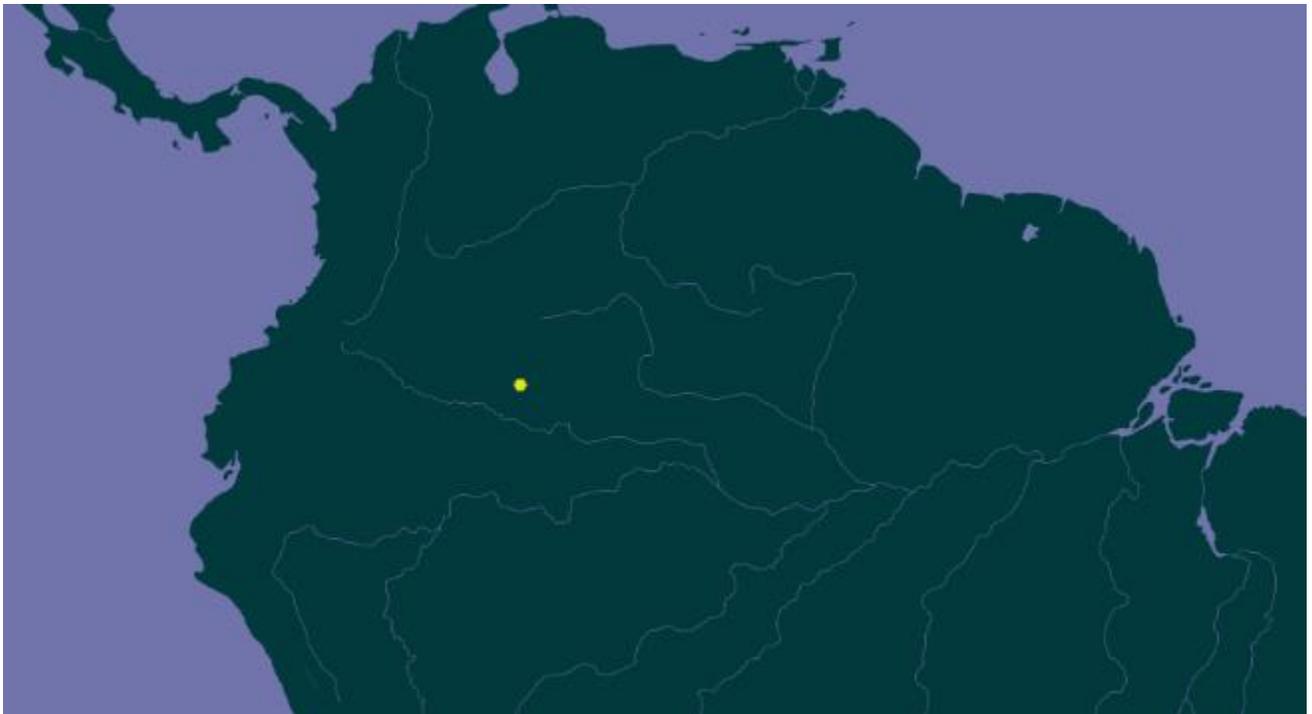
## 3 Impacts of Introductions

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Moore et al. (2010) states that *Cichla nigromaculata* 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

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**Figure 1.** Known global distribution of *Cichla nigromaculata*, reported from Colombia, South America. Map from GBIF Secretariat (2017). This occurrence is outside the known established range of *C. nigromaculata* and could not be verified, and was not included in the climate matching analysis.

## 5 Distribution Within the United States

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No known introductions.

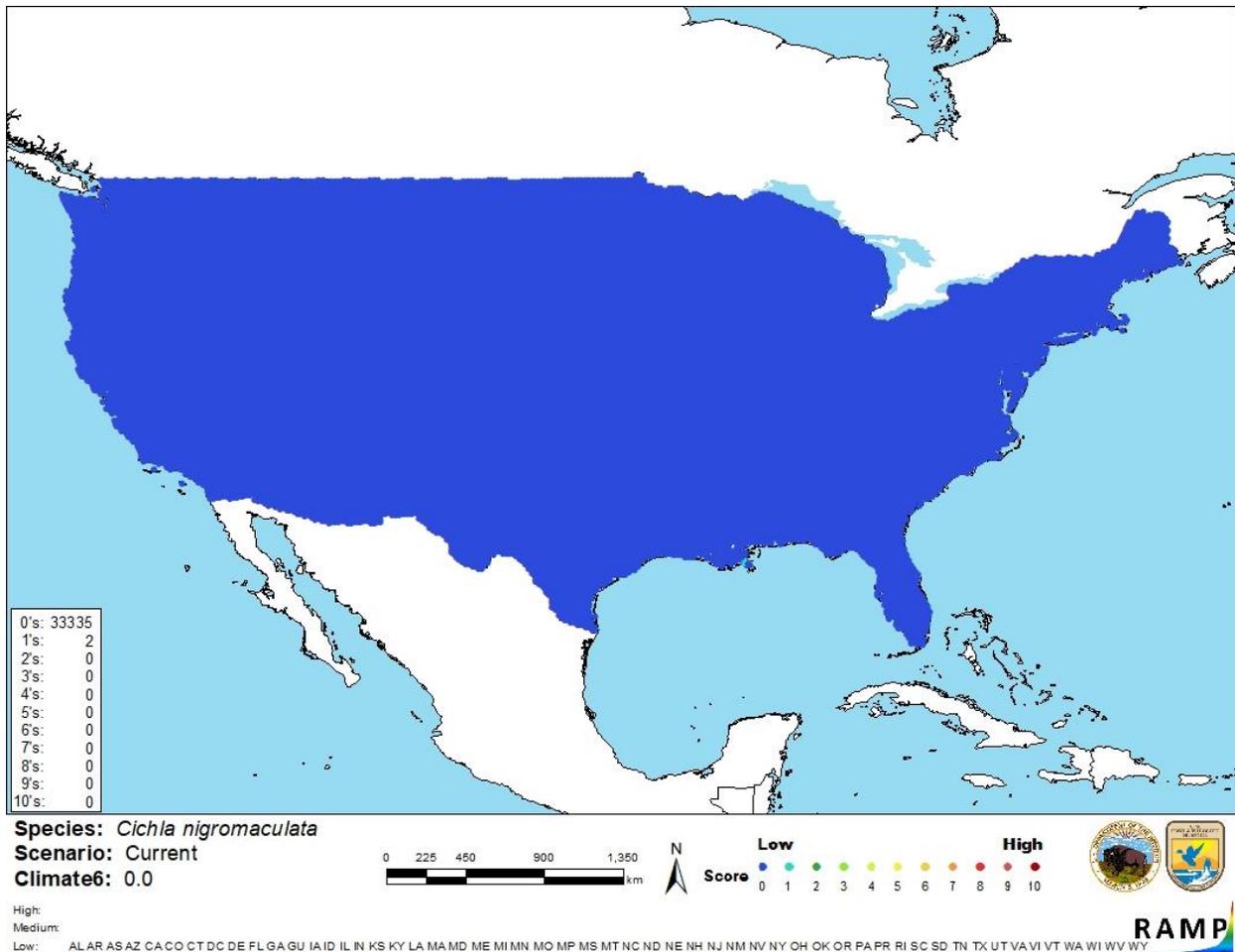
## 6 Climate Matching

### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) was low throughout the contiguous United States, reflected in a Climate 6 proportion of 0.0. The range for Climate 6 proportions indicating a low climate match is 0.000 to 0.005, inclusive.



**Figure 2.** RAMP (Sanders et al. 2018) source map showing weather stations in South America selected as source locations (red; Venezuela, Brazil) and non-source locations (gray) for *Cichla nigromaculata* climate matching. Source locations estimated based on map in Kullander and Ferreira (2006).



**Figure 3.** Map of RAMP (Sanders et al. 2018) climate matches for *Cichla nigromaculata* in the contiguous United States based on source locations reported by Kullander and Ferreira (2006). 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
$\geq 0.103$	High

## 7 Certainty of Assessment

The biology and ecology of *Cichla nigromaculata* are poorly known. There are no records showing introductions of this species outside of its native range. Little information is available 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 to medium or high certainty.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Cichla nigromaculata* is a South American cichlid found in Brazil and Colombia. Little information exists on the species. There is no recorded history of introduction and the climate matching analysis indicated low climate suitability throughout the contiguous United States. The overall risk assessment category for *Cichla nigromaculatus* 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

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- Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2016. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatget.asp?spid=49809>. (May 2018).
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- GBIF Secretariat. 2017. GBIF backbone taxonomy: *Cichla nigromaculata* Jardine & Schomburgk, 1843. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5208162>. (May 2018).
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- Kullander, S. O., and E. J. G. Ferreira. 2006. A review of the South American cichlid genus *Cichla*, with descriptions of nine new species. *Ichthyological Exploration of Freshwaters* 17: 289-398.
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