

# ***Cichlasoma paranaense* (a cichlid, no common name)**

## **Ecological Risk Screening Summary**

U.S. Fish and Wildlife Service, August 2011  
Revised, September 2018  
Web Version, 12/19/2018



Photo: A. R. Manzotti. Licensed under CC BY-NC 3.0. Available:  
<https://www.fishbase.de/summary/Cichlasoma-paranaense.html>. (September 2018).

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

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### **Native Range**

From Froese and Pauly (2018):

“South America: Paraná River basin, upper Paraná River drainage above Guaira, Brazil.”

### **Status in the United States**

This species has not been reported as introduced or established in the United States. There is no indication that this species is in trade in the United States.

### **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

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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 *Cichlasoma*  
Species *Cichlasoma paranaense* Kullander, 1983”

From Fricke et al. (2018):

“Current status: Valid as *Cichlasoma paranaense* Kullander 1983. Cichlidae: Cichlinae.”

### Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 9.5 cm SL male/unsexed; [Nobile et al. 2015]”

### Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

### Climate/Range

From Froese and Pauly (2018):

“Tropical”

### Distribution Outside the United States

Native

From Froese and Pauly (2018):

“South America: Paraná River basin, upper Paraná River drainage above Guaira, Brazil.”

## Introduced

This species has not been reported as introduced or established outside of its native range.

## Means of Introduction Outside the United States

This species has not been reported as introduced or established outside of its native range.

## Short Description

From Kullander and Silfvergrip (1991):

“Vertical bars: Most South American cichlids have a more or less prominent pattern of dark pigmented vertical areas recognized as vertical bars. These generally descend vertically from the countershaded dark back and reach the middle or lower sides.”

“Surveying other cichlids, it seems to us that among cichlasomine cichlids there is an underlying basic pattern irrespective of the very expression of the bar pattern in particular taxa. We note that as a rule there are eight, serially homologous, vertical dark markings across the caudal fin base and the flanks [...]”

“*Cichlasoma* species mostly have one more body bar. In Kullander (1983, [...]), bars shown as Bars 4 and 5 correspond in position to a split of bar 5 in the basic cichlasomine pattern. *Cichlasoma paranaense* Kullander and *C. sanctifranciscense* Kullander, however, have the basic pattern.”

## Biology

From Santos et al. (2012):

“The fact of the fish species *Apareiodon* sp., *Cichlasoma paranaense*, *Oreochromis niloticus* and *Prochilodus lineatus* (Valenciennes, 1836) are the most representative in the diet [of *Lontra longicaudis*, the Neotropical Otter] in the streamlet may be explained because they are sedentary life style, detritivorous and live close to the margins (Moriarty et al., 1973; Hahn et al., 1997; Abelha et al., 2001; Shibatta et al., 2002).”

From Fernandes et al. (2009):

“[...] a checkerboard unit represents the number of patches in which species A is present and species B is absent, and vice-versa (Stone and Roberts 1990, 1992).”

“[...] a high number of checkerboards was also observed among piscivorous species [...], such as *Acestrorhynchus lacustris* against *Cichlasoma paranaense* and *H. malabaricus* [...], suggesting possible competitive interactions.”

“[...] *C. paranaense* live in close association with aquatic macrophytes or bottom structures [...].”

## Human Uses

No information available.

## Diseases

From Silva-Souza and Ludwig (2005):

“A total of 1,582 individuals belonging to 36 fish species from the Taquari river were examined. Of these species, only *Cichlasoma paranaense* Kullander, 1983 (Perciformes, Cichlidae) and *Gymnotus carapo* Linnaeus, 1814 (Gymnotiformes, Gymnotidae) were found to have yellow spot disease. In both species, parasitism was the result of encystment of metacercariae of the digenetic trematode *Clinostomum complanatum* (Rudolphi, 1814) (Digenea, Clinostomidae).”

From Santos et al. (2008):

“Acanthocephala fam. gen. sp. (unidentified specimens)—larva and adult  
Hosts and habitats: [...] *Cichlasoma paranaense* (FW), [...]”

No OIE-reportable diseases have been documented for this species.

## Threat to Humans

From Froese and Pauly (2018):

“Harmless”

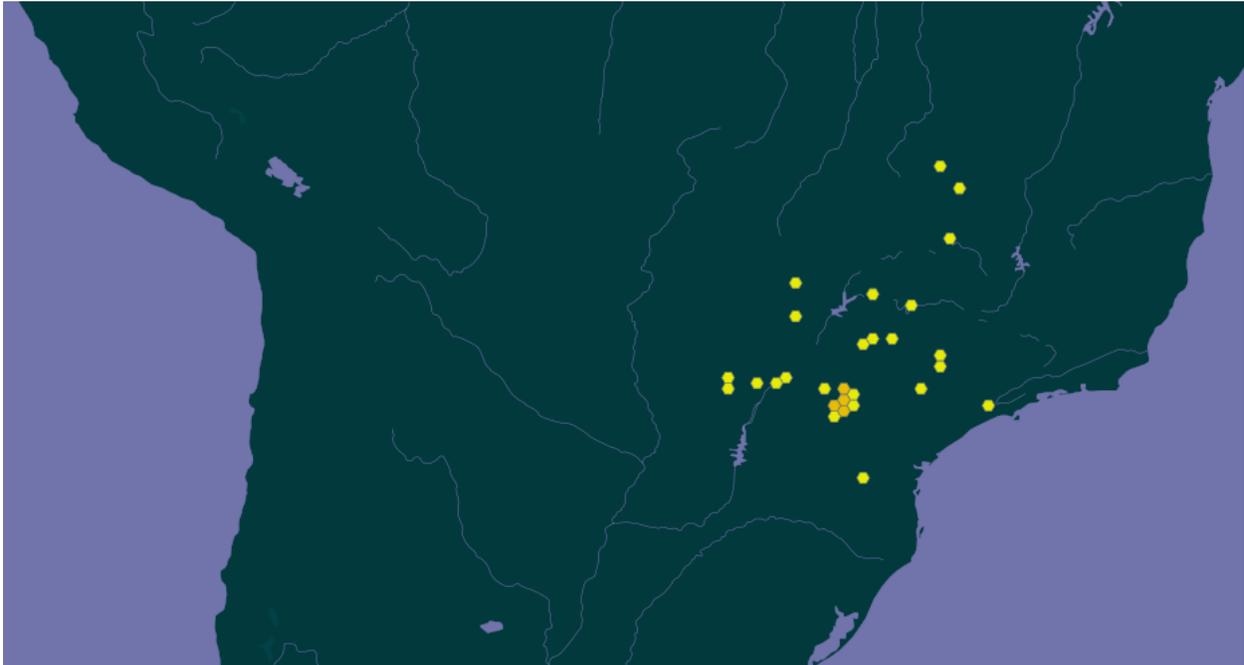
## 3 Impacts of Introductions

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This species has not been reported as introduced or established outside of its native range.

## 4 Global Distribution

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**Figure 1.** Known global distribution of *Cichlasoma paranaense*, reported from southeast Brazil. Map from GBIF Secretariat (2018).

## 5 Distribution Within the United States

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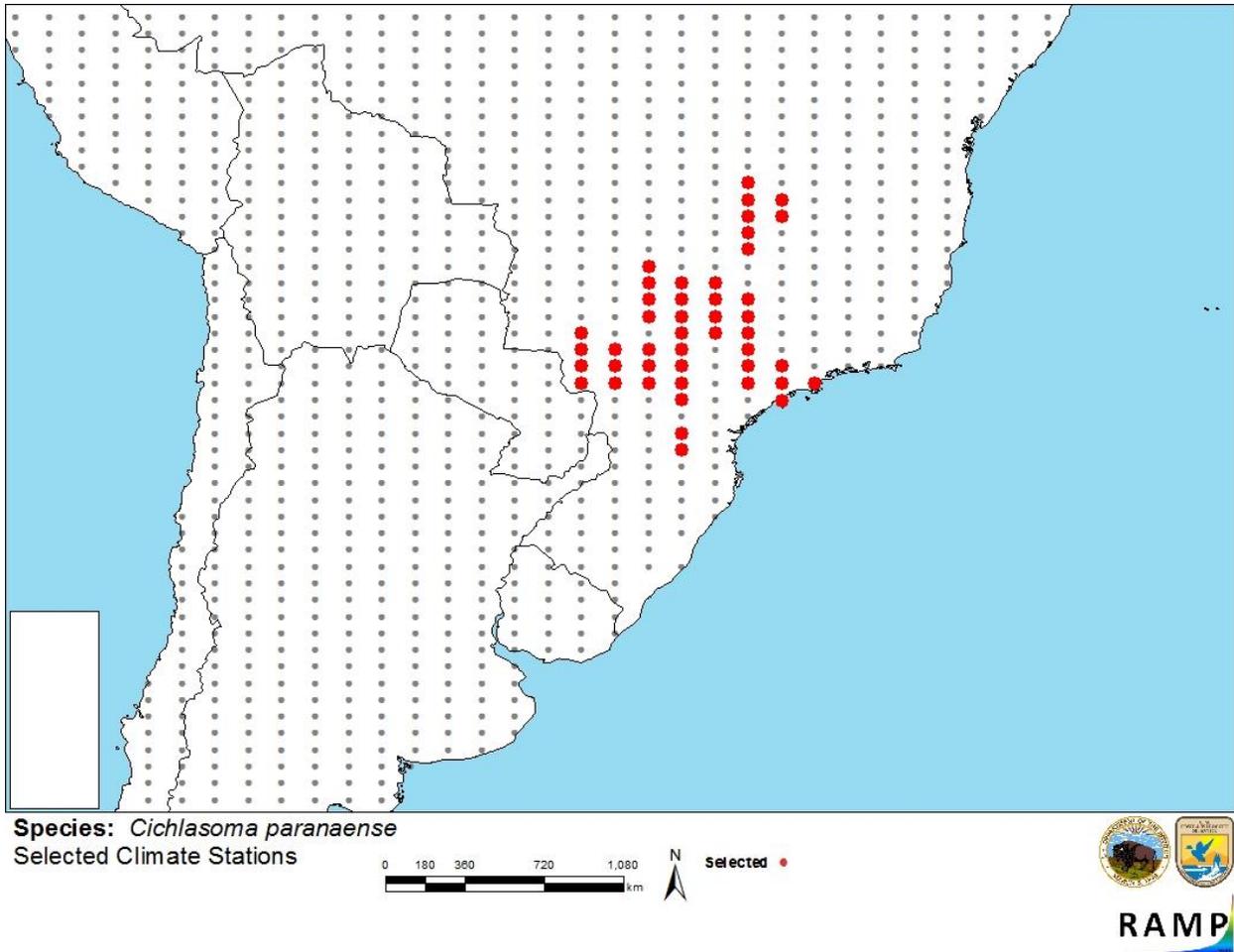
This species has not been reported as introduced or established in the United States.

## 6 Climate Matching

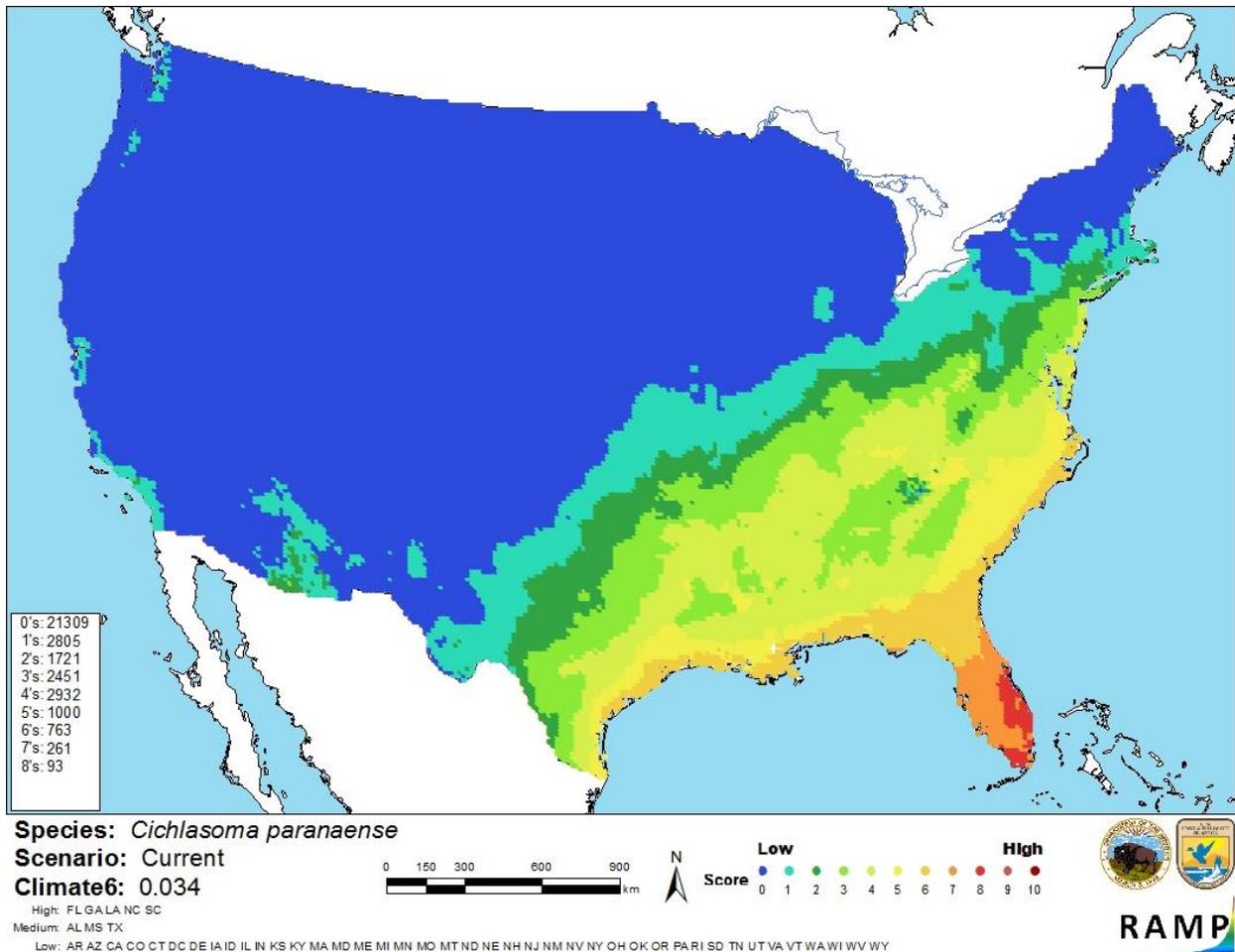
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### Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.034, which is a medium climate match. The range for a medium climate score is between 0.005 and 0.103. The climate score was high for Florida, Georgia, Louisiana, North Carolina, and South Carolina. It was medium for Alabama, Mississippi, and Texas. All other states had a low climate score. In general, the climate match was very low outside the Eastern and Southeastern United States. There is a high match in southern Florida and a medium match in most other areas of the mid-Atlantic and Southeast from New Jersey to Texas.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Brazil) and non-source locations (gray) for *Cichlasoma paranaense* climate matching. Source locations from GBIF Secretariat (2018).



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *Cichlasoma paranaense* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0=Lowest match, 10=Highest match.

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

There is some information available about the biology of *Cichlasoma paranaense*, and its range has been well-documented, with many georeferenced points available from which to base a climate match. Nevertheless, no further information is available relevant to assessing the risk this species poses if introduced to the contiguous United States. Because of this, the certainty of this assessment is low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Cichlasoma paranaense* is a cichlid species native to the Paraná River basin in southeast Brazil. This species is not known to be utilized in trade or as a food fish, and it has never been reported as introduced or established outside of its native range. History of invasiveness is uncertain. *C. paranaense* has a medium climate match with the contiguous United States. Southern Florida and other coastal areas in the Southeast had the highest climate match. Because of a lack of information from which to assess the invasive potential of this species, the certainty of this 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**
- **Overall Risk Assessment Category: Uncertain**

## 9 References

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**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

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**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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