Lake Gatun Peacock Bass (*Cichla pleiozona*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2011
Revised, October 2012 and June 2018
Web Version, 7/27/2018

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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2011):

"South America: Bolivian Amazon basin including the Rio Madre de Dios, Beni, Mamoré, and Guaporé river drainages of Bolivia and Brazil; and in Rio Jamari, a tributary of the Rio Madeira."

Status in the United States

There are no known introductions of *Cichla pleiozona* in the wild in the United States. A search of numerous online aquarium retailers failed to identify any retailers currently selling *C. pleiozona*. No other trade in this species is known in the United States.

Means of Introductions in the United States

No known introductions.

Remarks
Kullander and Ferreira (2006) spell the species name as both *Cichla pleiozona* and *C. pleizona*. Searches for information for this ERSS were conducted using both spellings.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing
From Froese and Pauly (2018):

"Biota > Animalia (Kingdom) > Chordata (Phylum) > Vertebrata (Subphylum) > Gnathostomata (Superclass) > Pisces (Superclass) > Actinopterygii (Class) > Perciformes (Order) > Labroidei (Suborder) > Cichlidae (Family) > Cichlinae (Subfamily) > *Cichla* (Genus) > *Cichla pleiozona* (Species)"

"Status accepted"

Size, Weight, and Age Range
From Froese and Pauly (2011):

"Max length: 34.0 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 (2011):

"South America: Bolivian Amazon basin including the Rio Madre de Dios, Beni, Mamoré, and Guaporé river drainages of Bolivia and Brazil; and in Rio Jamari, a tributary of the Rio Madeira."

Introduced
No known introductions.

Means of Introduction Outside the United States
No known introductions.

Short Description
From Froese and Pauly (2011):

"Similar to *C. kelberi* and *C. monoculus* and distinct from all remaining species of *Cichla* in possessing three dark vertical bars on side, presence of pronounced occipital bar in large specimens, absence of black or ocellated markings laterally on head, and presence of irregular dark blotches on anterior abdominal side. *Cichla pleiozona* have more scales in lateral row 84-93 (vs. 76-83 in *kelberi* and 68-87 in *monoculus*) and presence (with occasional exceptions) of dark vertical bar (bar 4) anteriorly on caudal peduncle which is typically absent in both *kelberi* and *monoculus*, and from *kelberi* by absence of light spots on anal and pelvic fins and lower lobe of caudal fin [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
Moore et al. (2010) assessed *C. pleiozona* as a species "known to modify or disturb habitat"; "known to impact other species through competition, aggression, predation"; and "likely to pose a significant genetic risk through hybridisation/introgression with exotic species" if introduced to Australia. No details are given on the sources used to make these assessments.

4 Global Distribution

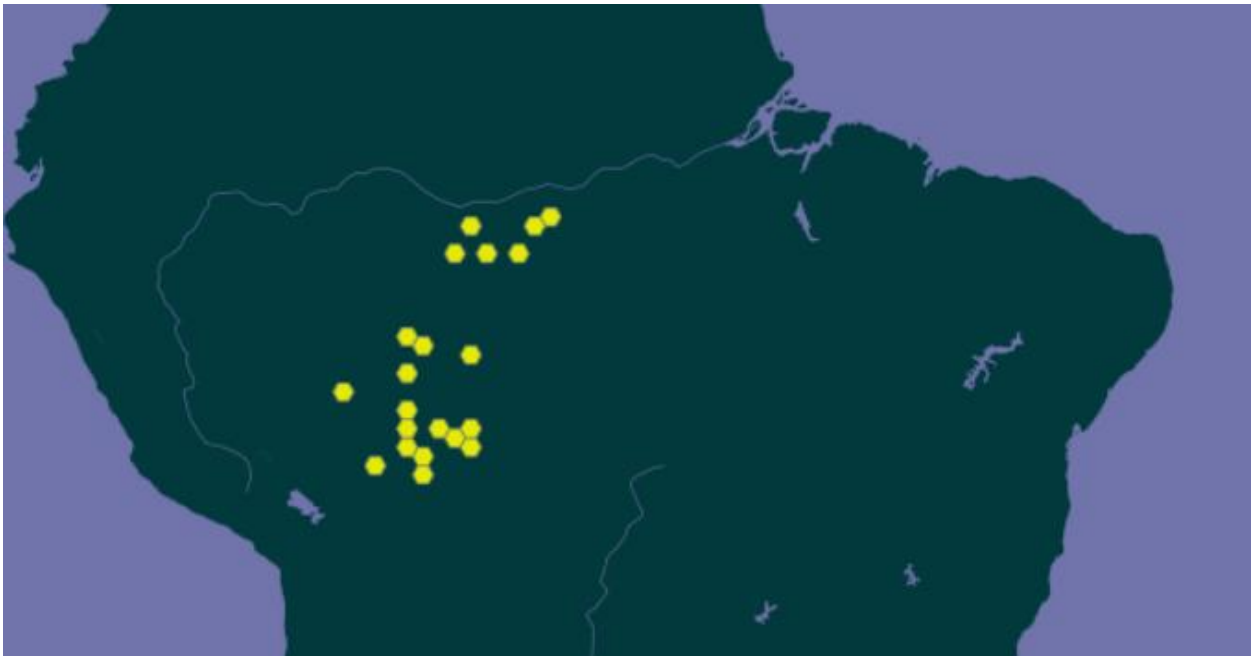

Figure 1. Known global distribution of *Cichla pleiozona*, reported in Brazil and Bolivia. Map from GBIF Secretariat (2017).

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 throughout the contiguous United States, reflected in a Climate 6 proportion of 0.005. The range for Climate 6 proportions indicating a low climate match is 0.000 to 0.005, inclusive. The highest match was 7 out of 10 which was found in Southern Florida. Florida was the only state to record a high match. The majority of the United States recorded 0 out of 10.

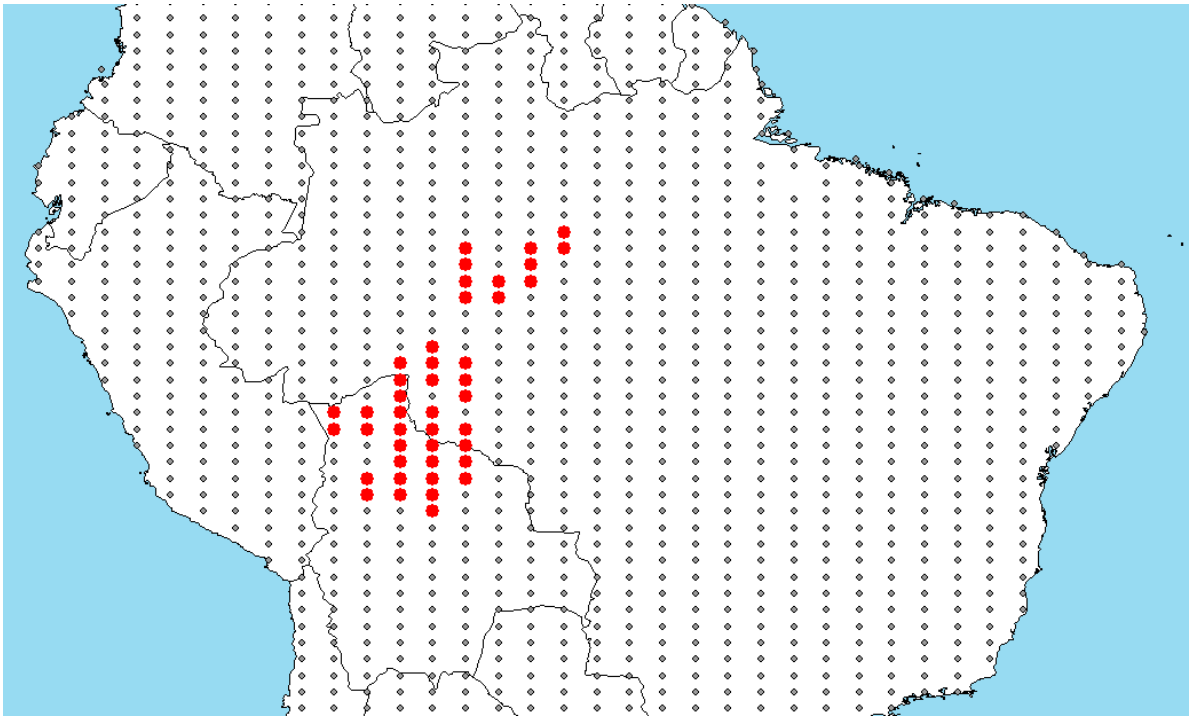

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Brazil and Bolivia) and non-source locations (gray) for *Cichla pleiozona* climate matching. Source locations from GBIF Secretariat (2017).

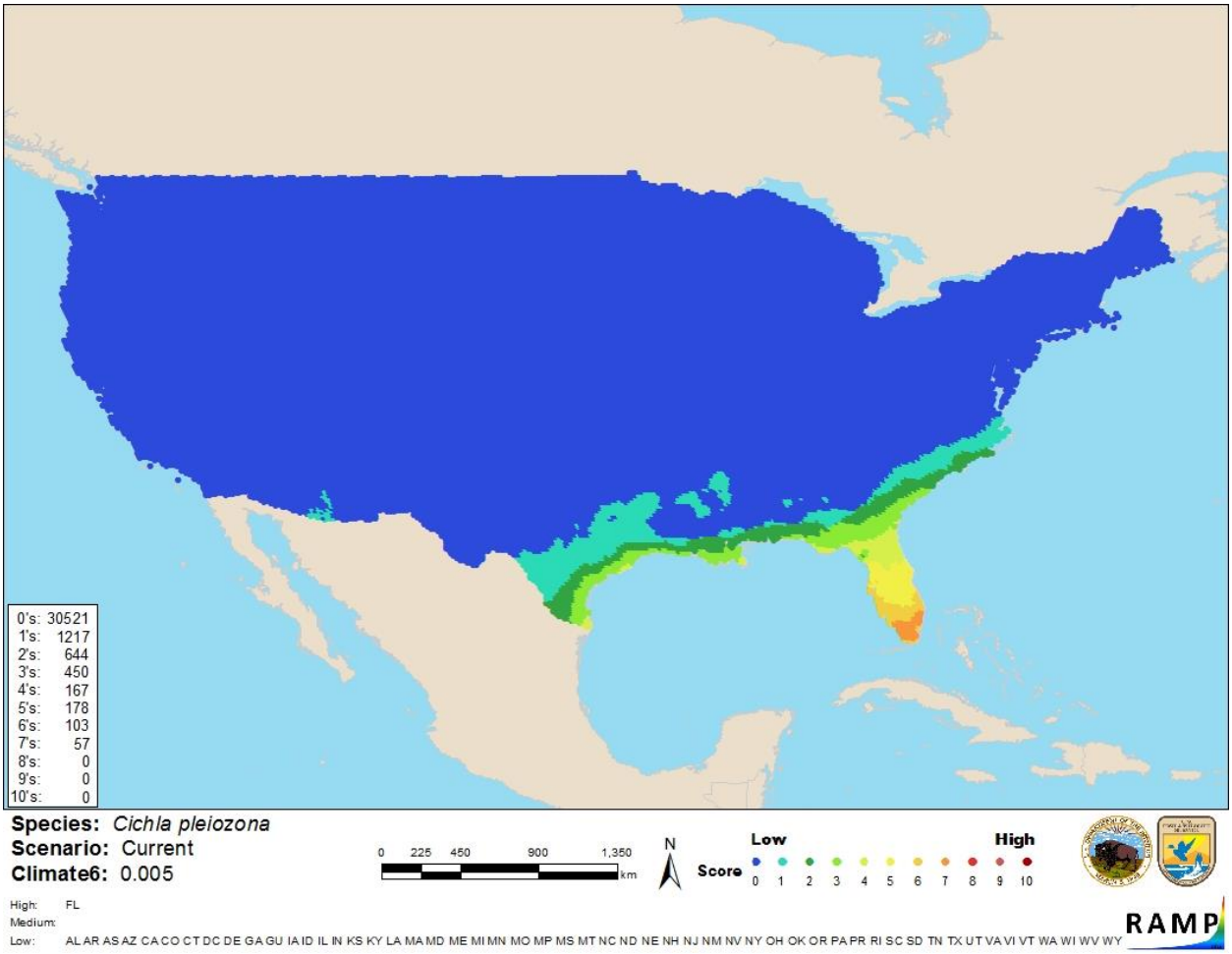

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Cichla pleiozona* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10=Highest match.

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

7 Certainty of Assessment

The biology and ecology of *Cichla pleiozona* are poorly known. There are no records showing introductions of this species outside of its native range. Little information is available to determine what kind of effect it would have if it were introduced. The only information available is an Australian government report identifying *C. pleiozona* as a species that has traits that may make them invasive if released (Moore et al. 2010). Due to lack of information, the certainty of assessment is low. More information is needed to increase the certainty of the assessment.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Lake Gatun Peacock Bass (*Cichla pleiozona*) is a fish native to parts of Brazil and Bolivia. Species in this genus are important food and game species. There are no records of introduction of *C. pleiozona* outside of its native range, and no data on impacts or lack thereof. Certainty of assessment is low. The history of invasiveness for *C. pleiozona* is uncertain as it has not been reported beyond its native range. Climate match with the contiguous United States is low overall, with a higher match in Florida. Overall risk for *C. pleiozona* 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

Froese, R., and D. Pauly, editors. 2011. *Cichla pleiozona* Kullander & Ferreira, 2006. FishBase. Available: http://www.fishbase.org/summary/Cichla-pleiozona.html. (October 2012).

Froese, R., and D. Pauly, editors. 2018. *Cichla pleiozona* Kullander & Ferreira, 2006. FishBase. *In* World Register of Marine Species. Available: http://www.marinespecies.org/aphia.php?p=taxdetails&id=1008930. (July 2018).

GBIF (Global Biodiversity Information Facility). 2017. GBIF backbone taxonomy: *Cichla pleiozona* Kullander & Ferreira, 2006. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/5208157. (June 2018).

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Moore, A., N. Marton, and A. McNee. 2010. A strategic approach to the management of ornamental fish in Australia Communication strategy and grey list review – a report to OFMIG. Bureau of Rural Sciences, Canberra, Australia.

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