

# Speckled Pavon (*Cichla temensis*)

## Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, February 2011  
Revised, June 2019  
Web Version, 5/1/2020

Organism Type: Fish  
Overall Risk Assessment Category: Uncertain



Photo: Tiia Monto. Licensed under Creative Commons Attribution-Share Alike 3.0 Unported.  
Available: [https://commons.wikimedia.org/wiki/File:Cichla\\_temensis.jpg](https://commons.wikimedia.org/wiki/File:Cichla_temensis.jpg). (June 2019).

## 1 Native Range and Status in the United States

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### Native Range

From Froese and Pauly (2019):

“South America: Amazon River basin in the Negro and Uatumã River drainages [Brazil];  
Orinoco River basin in tributaries of the Orinoco River in Venezuela and Colombia.”

“Restricted to blackwater rivers and their tributaries of many localities along the Rio Negro [Brazil]. Specimens from Rio Jamari [...] and a small specimen from Lago Genipapo [...] on the Rio Aripuanã are questionably referred to *C. temensis* [Kullander and Ferreira 2006].”

“Reported from the Rio Branco drainage [Guyana].”

“Occurs in Río Cinaruco (Río Orinoco drainage of the southern Venezuelan llanos) and Río Pasimoni (Río Negro-Amazonas drainage) [Winemiller et al. 1997].”

## Status in the United States

According to Nico and Loftus (2019), nonindigenous occurrences of *Cichla temensis* have been reported in the following States, with range of years and hydrologic units in parentheses:

- Florida (1990; Florida Southeast Coast)
- Texas (1978–1992; Lake O’the Pines, Lower Colorado-Cummins, Lower Guadalupe, Middle Brazos-Lake Whitney, Yegua)

From Nico and Loftus (2019):

“Species successfully overwintered at least two years in south Florida canals, but it is apparently considered to be extirpated in Florida because it was not listed in a recent listing of non-native species [Shafland et al. 2008]. Some *Cichla* populations in Texas survived and reproduced for a brief period, but by 1992 all fish had died. *Cichla* species are unable to survive cold winters, and evidence indicates fish in one Texas reservoir also succumbed to high summer temperatures [Garrett 1982; Howells and Garrett 1992].”

*Cichla temensis* is in trade within the United States.

From Petzone (2019):

“Temensis Peacock Bass  
[...]  
\$39.99”

## Means of Introductions in the United States

Nico and Loftus (2019):

“Stocked by state agencies for as a [*sic*] sport fish. The Florida stocking reportedly involved only 110 fish, the last of which were released in 1988 [Larsen 1993].”

## Remarks

*Cichla temensis* has been intentionally stocked within the United States by State fishery managers to achieve fishery management objectives. State fish and wildlife management agencies are responsible for balancing multiple fish and wildlife management objectives. The potential for a species to become invasive is now one important consideration when balancing multiple management objectives and advancing sound, science-based management of fish and wildlife and their habitat in the public interest.

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

“**Current status:** Valid as *Cichla temensis* (Humboldt 1821).”

From ITIS (2019):

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 temensis* Humboldt in Humboldt and Valenciennes, 1821

### Size, Weight, and Age Range

From Froese and Pauly (2019):

“Max length : 99.0 cm TL male/unsexed; [IGFA 2001]; max. published weight: 12.2 kg [IGFA 2001]”

From Reiss et al. (2012):

“*Cichla temensis* is the largest species of the genus [...]”

### Environment

From Froese and Pauly (2019):

“Benthopelagic; freshwater; pH range: 5.5 - 6.5 [...] 27°C - 29°C [Baensch and Riehl 1997; assumed to be the recommended aquarium temperature]”

### Climate

From Froese and Pauly (2019):

“Tropical;”

## Distribution Outside the United States

### Native

From Froese and Pauly (2019):

“South America: Amazon River basin in the Negro and Uatumã River drainages [Brazil]; Orinoco River basin in tributaries of the Orinoco River in Venezuela and Colombia.”

“Restricted to blackwater rivers and their tributaries of many localities along the Rio Negro [Brazil]. Specimens from Rio Jamari [...] and a small specimen from Lago Genipapo [...] on the Rio Aripuanã are questionably referred to *C. temensis* [Kullander and Ferreira 2006].”

“Reported from the Rio Branco drainage [Guyana].”

“Occurs in Río Cinaruco (Río Orinoco drainage of the southern Venezuelan llanos) and Río Pasimoni (Río Negro-Amazonas drainage) [Winemiller et al. 1997].”

### Introduced

From Liew et al. (2012):

“Should this species be present in sufficiently large numbers, it is likely to form feral populations [in Singapore]. However, there is yet no evidence of this being so.”

## Means of Introduction Outside the United States

From Liew et al. (2012):

“Like *Cichla orinocensis*, which is believed to have been introduced by angling fans (Ng & Tan, 2010), *Cichla temensis* was probably brought into Singapore via the same pathway. Conversely, individuals found in the wild could also be escapees from the ornamental fish trade given that juveniles are sold as pets (pers. obs.).”

## Short Description

From Froese and Pauly (2019):

“Diagnosis: A large, elongate species with small scales (E1 row scales 98-128, usually more than 110, vs. usually less than 110 in other species of *Cichla*). Postorbital band is present, entire, may be irregular but does not consist of scattered spots, vs. absent or present as scattered spots in other species of *Cichla* species. Lateral line is usually continuous. It is most similar to *C. pinima* and *C. vazzoleri*, sharing subadult to young adult color pattern including dark midlateral band and four rows of regularly arranged light spots along side, but light spots slightly elongate instead of round. It is different from *C. pinima* and *C. vazzoleri* in lacking dark lateral blotches with intensified light margins; vertical bars when expressed entire, never forming round blotches; ocellated blotches on dorsal side absent at all sizes; postorbital band entire (vs. expressed as scattered dark blotches); dark blotch associated with preopercle absent (present in

*C. vazzoleri*); lateral line nearly always continuous (vs. usually discontinuous in *C. vazzoleri*) [Kullander and Ferreira 2006].”

From Reiss et al (2012):

“Its general body color is yellowish-gold, with brightly colored fins and a pattern of three sharply demarcated dark vertical bars on the trunk. [...] The other extreme, called the speckled peacock bass or tucunaré paca, is dark and cryptically colored. Its mostly grey or brown body is dappled with a prominent series of light spots but the bright colors are absent. The three vertical bars are faint or almost invisible in relation to the spots and background color.”

## Biology

From Froese and Pauly (2019):

“Occupies deeper littoral areas in lagoons and sandy and rocky banks of the main river channel. Feeds mainly on small fish (especially characids measuring <10 cm SL) [Santos and Haimovici 1997; Winemiller et al. 1997]. Oviparous [Breder and Rosen 1966]. Has been introduced to Florida and Texas, but is considered not established yet.”

## Human Uses

From Froese and Pauly (2019):

“Fisheries: commercial; aquaculture: commercial; gamefish: yes; aquarium: commercial”

From Reiss et al. (2012):

“[*Cichla temensis*] is of significant economic importance in the lowlands of Amazonia, both as a sportfish [Myatt et al. 2005; Holley et al. 2008] and for human consumption [Smith 1981; Goulding 1996].”

*Cichla temensis* is in trade within the United States.

From Petzone (2019):

“Temensis Peacock Bass  
[...]  
\$39.99”

## Diseases

No information on diseases of *Cichla temensis* was found. **No records of OIE-reportable diseases (OIE 2019) were found for *C. temensis*.**

## Threat to Humans

From Froese and Pauly (2019):

“Harmless”

### 3 Impacts of Introductions

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From Nico and Loftus (2019):

“Unknown. In their native habitats, members of this genus are diurnal piscivores that consume a variety of prey [Winemiller et al. 1997].”

### 4 History of Invasiveness

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*Cichla temensis* has been introduced in Florida and Texas in the United States and in Singapore. In the United States it was intentionally stocked prior to 1990 to enhance sport fisheries. The suspected means of introduction in Singapore is also for sport fishing but it may be due to escapes from the ornamental trade. All populations within the United States have become extirpated. Based on available information there does not seem to be an established wild population in Singapore. No information on actual impacts of introductions were found. The history of invasiveness for *C. temensis* is No Known Nonnative Population.

### 5 Global Distribution

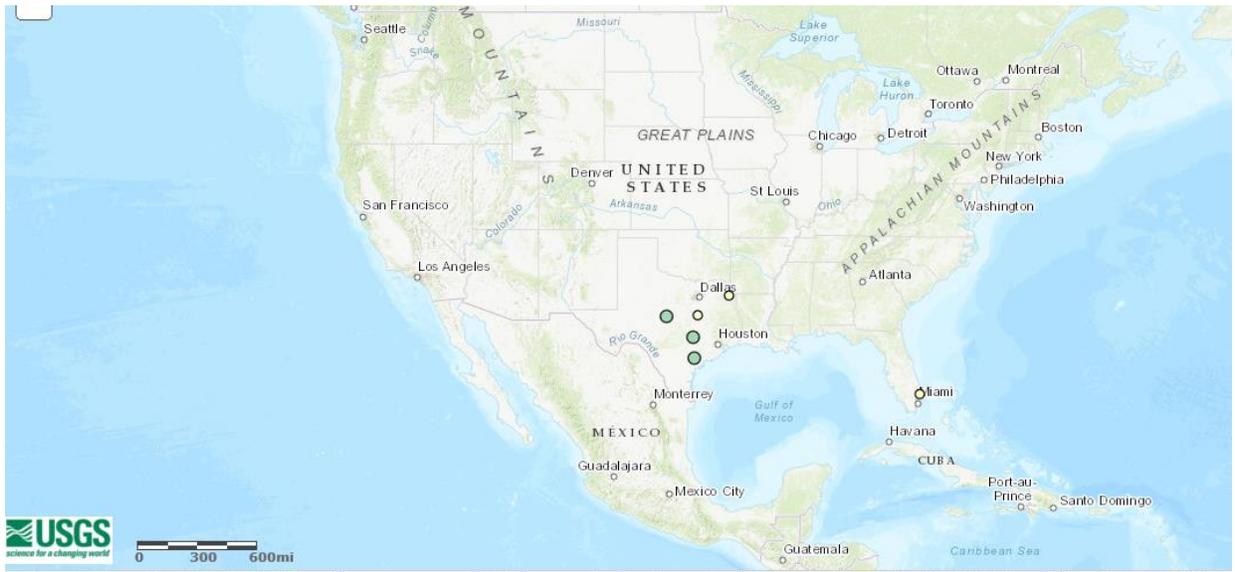
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**Figure 1.** Known global distribution of *Cichla temensis*. Map from GBIF Secretariat (2019). Points in Peru and southern Brazil could not be verified and the locations in the United States do not represent established populations; therefore, none of those locations were used to select source points for the climate match.

*Cichla temensis* has been reported from Singapore (Liew et al. 2012) but it is not believed to be established.

## 6 Distribution Within the United States

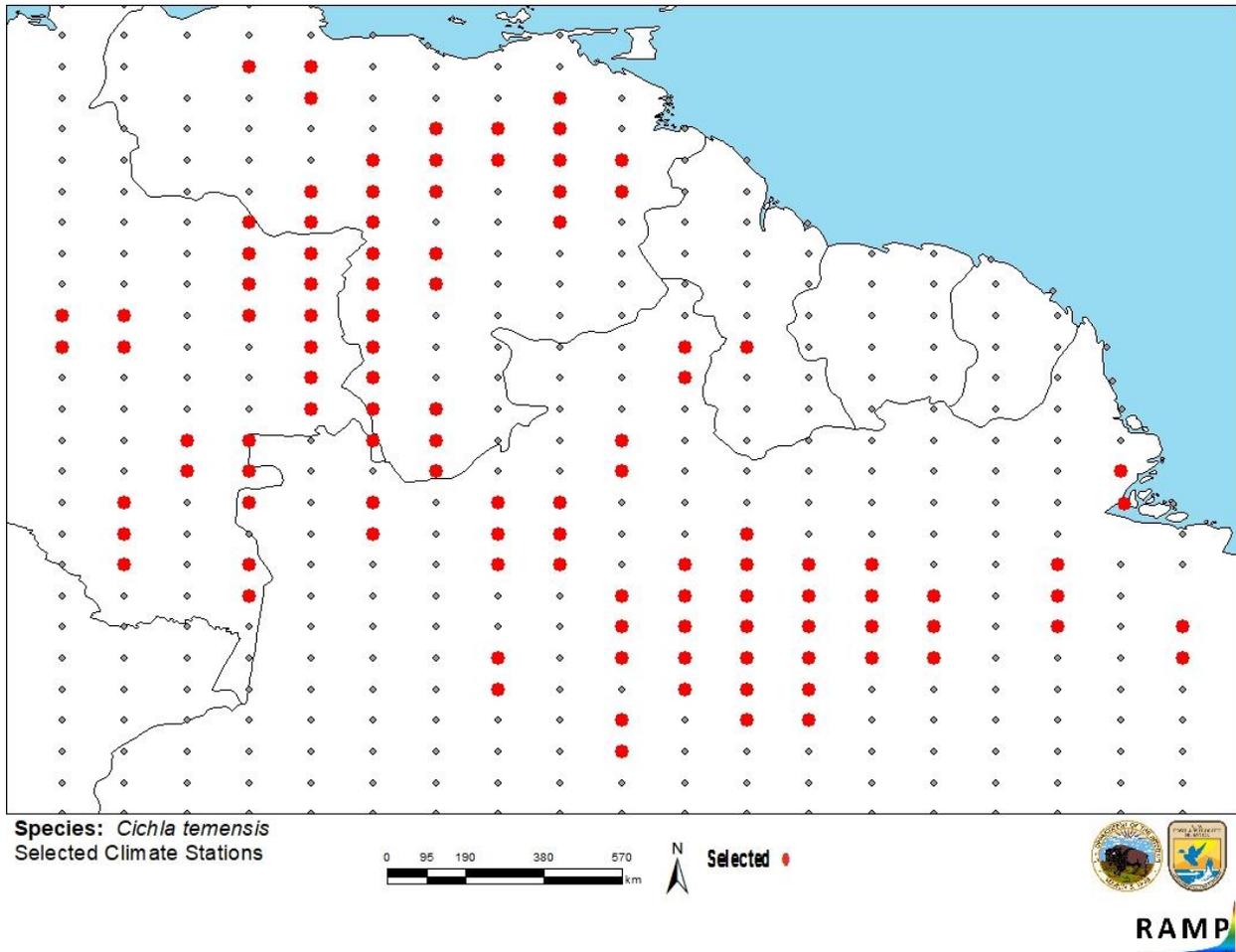


**Figure 2.** Known distribution of *Cichla temensis* in the United States. Map from Nico and Loftus (2019). The points that appear on the map do not represent established populations.

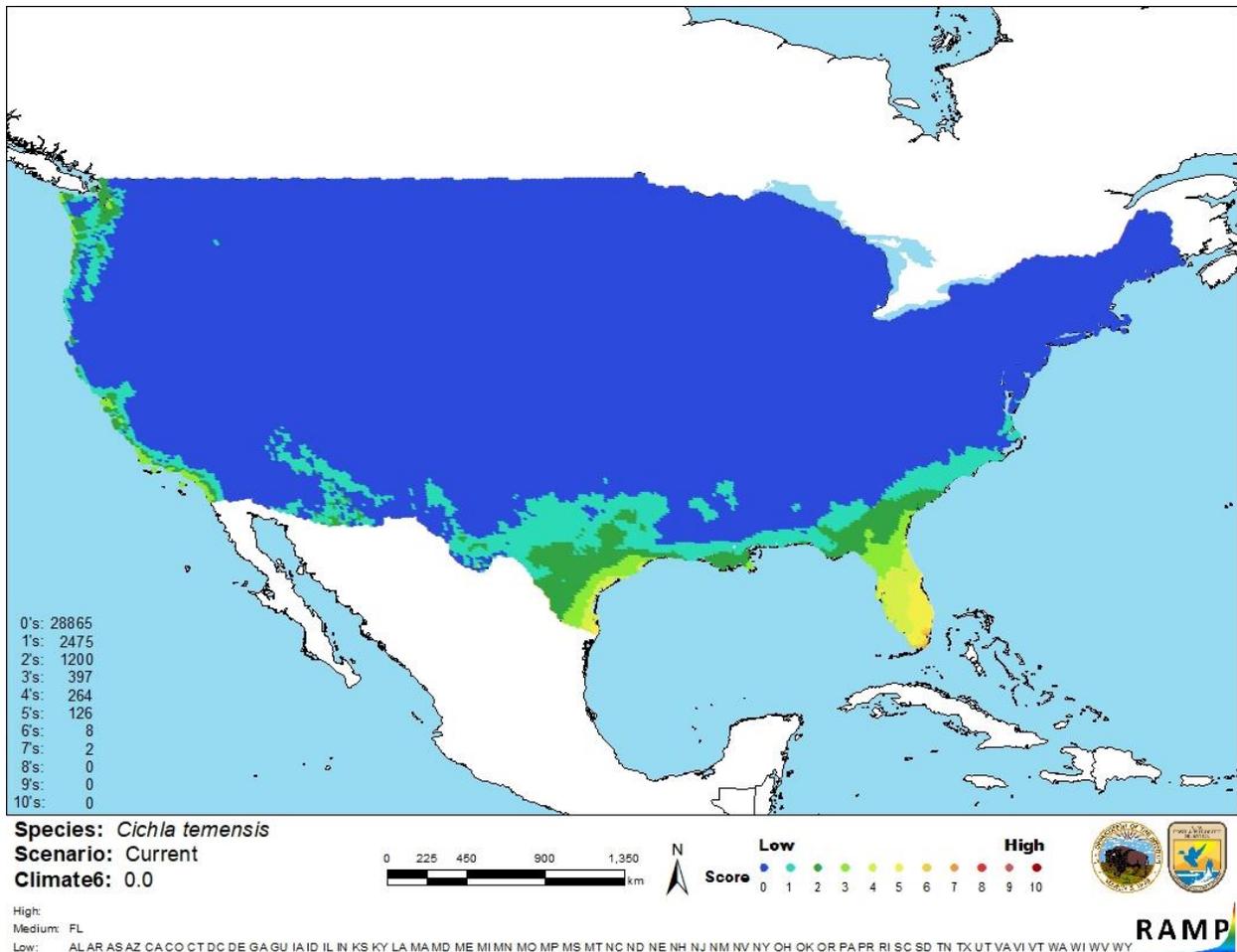
# 7 Climate Matching

## Summary of Climate Matching Analysis

The climate match for *Cichla temensis* was low for the vast majority of the United States. The only areas of medium match were in southern Florida and the Gulf Coast of Texas. There were no areas that had a high climate match. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low. (Scores between 0.000 and 0.005, inclusive, are classified as low.) All States had low individual Climate 6 scores except Florida, which had a medium individual score.



**Figure 3.** RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Colombia, Venezuela, Brazil, and Guyana) and non-source locations (gray) for *Cichla temensis* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.



**Figure 4.** Map of RAMP (Sanders et al. 2018) climate matches for *Cichla temensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
$\geq 0.103$	High

## 8 Certainty of Assessment

The certainty of assessment for *Cichla temensis* is low. There is some information available for this species but more is needed for a thorough assessment. Introductions have been reported in Texas and Florida but the impacts of those introductions were not been assessed and those populations are not currently established.

## 9 Risk Assessment

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### Summary of Risk to the Contiguous United States

The Speckled Pavon (*Cichla temensis*) is a freshwater fish native to northern South America. It is widely used as a sport fish, for human consumption, and is found in the aquarium trade both internationally and within the United States. The history of invasiveness is No Known Nonnative Population. It has been reported in Texas, Florida, and Singapore but there are not currently established populations in those locations. *C. temensis* was historically stocked in Florida as a sport fish. The climate match for the contiguous United States was low with only two small areas of medium match in southern Florida and southern Texas. The certainty of assessment is low because of a lack of information. The overall risk assessment category for *Cichla temensis* is uncertain.

### Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks, Important additional information:** No additional remarks.
- **Overall Risk Assessment Category: Uncertain**

## 10 Literature Cited

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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 11.**

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## 11 Literature Cited in Quoted Material

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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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