Black Acara (*Cichlasoma bimaculatum*)
Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, January 2026
Revised, February 2026
Web Version, 3/3/2026

Organism Type: Fish
Overall Risk Assessment Category: Uncertain

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1 Native Range and Status in the United States

Native Range

From Nico et al. (2026):

"South America: Caroni River in the Orinoco basin in Venezuala [sic];Essequibo River in Guyana east to Sinnamary River in French Guiana; also Rio Branco drainage of Amazon basin (Kullander and Nijssen 1989; Kullander 2003)."

From Robins et al. (2020):

"Native to Venezuela, Guyana, Suriname, western French Guiana, and northern Brazil […]"

Status in the United States

From Nico et al. (2018):

"The species has been established in Florida since the early 1960s; it was first discovered in Broward County (Rivas 1965). The expanded geographic range of the species includes the counties of Broward (Courtenay et al. 1974; Courtenay and Hensley 1979a; museum specimens), Collier (Courtenay and Hensley 1979a; Courtenay et al. 1986; museum specimens), Glades (museum specimens), Hendry (Courtenay and Hensley 1979a; museum specimens), Highlands (Baber et al. 2002), Lee (Ceilley and Bortone 2000; Nico, unpublished), Martin (museum specimens), Miami-Dade (Kushlan 1972; Courtenay et al. 1974; Hogg 1976; Courtenay and Hensley 1979a; Loftus and Kushlan 1987; museum specimens), Monroe (Kushlan 1972; Courtenay et al. 1974; Courtenay and Hensley 1979a; Loftus and Kushlan 1987; museum specimens), Palm Beach (Courtenay et al. 1974; Courtenay and Hensley 1979a; museum specimens), Pasco (museum specimens), and Pinellas (museum specimens). It is established in Big Cypress National Preserve, Biscayne National Park, Everglades National Park (Kushlan 1972; Loftus and Kushlan 1987; Lorenz et al. 1997; Ellis et al. 2006), and in Florida Panther National Wildlife Refuge (USFWS 2005). Collected in 2008 in a modified wetland on the Archbold Reserve (O'Connor and Rothermel 2013)."

"Cultured in Florida possibly since the 1930s, *Cichlasoma bimaculatum* remained an important part of the aquarium trade until the late 1950s, and probably was the first aquarium fish to become established in open waters of Florida (Courtenay and Stauffer 1990). One of the most abundant introduced species in south Florida canal systems during the early 1970s, […] (Courtenay and Hensley 1979a, b; Loftus and Kushlan 1987)."

From Robins et al. (2020):

"Black Acara were of value to the aquarium trade in the 1950s but may have lost market share as jet aircraft cargo permitted the importation of a greater variety of exotic fishes, including more colorful forms (Courtenay and Stauffer 1990)."

Cichlasoma bimaculatum is readily available in live trade in the United States (e.g. Exotic Fish Shop 2026, Global Fish Co. 2026).

Regulations

C. bimaculatum is regulated in Hawaii (HDOA 2019). Please refer back to state agency regulatory documents for details on the regulations, including restrictions on activities involving this species. While effort was made to find all applicable regulations, this list may not be comprehensive. Notably, it does not include regulations that do not explicitly name this species or its genus or family, for example, when omitted from a list of authorized species with blanket regulation for all unnamed species.

Means of Introductions within the United States

From Nico et al. (2026):

"In southeastern Florida, introduction was the result of escapes and intentional releases from fish farms, probably during the mid- to late 1950s (Courtenay and Hensley 1979a). Some releases were deliberate attempts to dispose of unwanted and sometimes illegal fish stocks (Courtenay and Stauffer 1990)."

Remarks

This ERSS was previously published in April 2018. Revisions were completed to incorporate new information and conform to updated standards.

From Nico et al. (2026):

"This is a somewhat variable species that is very similar to *Cichlasoma amazonarum* (Kullander 1983). Distinguishing characteristics and photographs were given in Kullander (1983) and Kullander and Nijssen (1989); a few identifying characteristics also were provided by Page and Burr (1991). Kullander (1983) restricted the genus and provided a key to the 12 species, including *C. bimaculatum*, that he recognized as true *Cichlasoma*. Photographs of *C. bimaculatum* were given in Courtenay (1980). Many photographs in the aquarium literature are incorrectly captioned as *C. bimaculatum* (Kullander, personal communication), especially those of the superficially similar port cichlid, *Cichlasoma portalegrense* (formerly *Aequidens portalgrensis*) and its relatives."

"The first Florida specimens of *C. bimaculatum* were reported and identified as *Aequidens portalegrensis* (=*Cichlasoma portalegrense*) by Rivas (1965), Bailey et al. (1970), Kushlan et al. (1972)."

Mention of commercial products in this Ecological Risk Screening Summary does not entail endorsement by the U.S. Federal Government.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2026):

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* Swainson, 1839
Species *Cichlasoma bimaculatum* (Linnaeus, 1758)

According to Fricke et al. (2026), *Cichlasoma bimaculatum* (Linnaeus 1758) is the current valid name for this species.

Size, Weight, and Age Range

From Froese and Pauly (2026):

"Max length : 12.3 cm SL male/unsexed; [Kullander 2003]; 30.0 cm TL (female); common length : 12.0 cm TL male/unsexed; [Hugg 1996]"

Environment

From Froese and Pauly (2026):

"Freshwater; benthopelagic; pH range: 6.5 - 7.0; dH range: 3 - 10. […] 16°C - 24°C [Riehl and Baensch 1996; assumed to be recommended aquarium water temperature range]"

"Tolerates low oxygen."

From Schofield and Huge (2011):

"*Cichlasoma bimaculatum* lost equilibrium at 12.6°C and died [at] 8.6°C, similar to other cichlid fishes from south Florida."

From NatureServe (2017):

"Appears to have low salinity tolerance."

Climate

From Froese and Pauly (2026):

"Tropical; […] 12°N - 1°N"

Distribution Outside the United States

Native

From Nico et al. (2026):

"South America: Caroni River in the Orinoco basin in Venezuala [sic];Essequibo River in Guyana east to Sinnamary River in French Guiana; also Rio Branco drainage of Amazon basin (Kullander and Nijssen 1989; Kullander 2003)."

From Robins et al. (2020):

"Native to Venezuela, Guyana, Suriname, western French Guiana, and northern Brazil […]"

Introduced

From Sevruková et al. (2011):

"Dhora (2010) describes the occurrence of the South American Black acara (*Cichlasoma bimaculatum*) in Albania."

No further information was found on the status of *Cichlasoma bimaculatum* in Albania.

Means of Introduction Outside the United States

No information was found on means of introduction of *Cichlasoma bimaculatum* in the wild outside the United States.

Short Description

From FFWCC (2026):

"Small, stout, convex-headed, bream-looking body-shape with two black blotches on side, the larger blotch at mid-body and a smaller one near base of tail; color variable with gray-blue-silver-brown base, sometimes with light blue-green sheen."

From Robins et al. (2020):

"The Black Acara, *Cichlasoma bimaculatum* (Linnaeus, 1758), is an acara usually with four anal-fin spines. The Black Acara is gray to silver, beige, or yellow-gray to dark green in body color (Page and Burr 2011; Robins et al. 2018)."

Biology

From Froese and Pauly (2026):

"Occurs in canals and swamps [Mills and Vevers 1989]. […] Feeds on crustaceans and insects [Mills and Vevers 1989]. Males are bigger than females which become mature at 7 to 9 cm (20-25 g). Spawning occurs at the start of the rainy season. About 700 eggs are spawned on open substrate and are cared for by the parents."

From Nico et al. (2026):

"*Cichlasoma bimaculatum* is a generalist omnivore, consuming small crustaceans and insect larvae as juveniles (Mérigoux and Ponton 1998) and incorporating small fishes into their diet as adults."

"Throughout its south Florida range, it is much more common in disturbed habitats, mainly canals, than in natural habitats (Loftus and Kushlan 1987). Spawning has been observed during every month of the year in southeastern Florida (Courtenay 1989)."

Human Uses

From Froese and Pauly (2026):

"Fisheries: of no interest; gamefish: yes; aquarium: commercial"

From FFWCC (2026):

"Sporting Quality:
Sometimes provides a good kid's fishery when found in small pond [sic] without many predators; no bag or size limits."

"Edibility:
Too small to be of much value."

From Courtenay and Stauffer (1990):

"The black acara […] was an important component in the aquarium fish trade until the late 1950s. This species was one of the first aquarium fishes to be cultured in Florida, possibly in the 1930s (R. B. Socolof, personal communication). With the advent of jet cargo aircraft in the 1950s that facilitated importation of more colorful cichlids for sale or culture, it is likely that the market for black acara decreased substantially […]."

From Robins et al. (2020):

"Black Acara were of value to the aquarium trade in the 1950s but may have lost market share as jet aircraft cargo permitted the importation of a greater variety of exotic fishes, including more colorful forms (Courtenay and Stauffer 1990)."

Cichlasoma bimaculatum is readily available in live trade in the United States (e.g. Exotic Fish Shop 2026, Global Fish Co. 2026).

Diseases

No information was found associating *Cichlasoma bimaculatum* with any diseases listed by the World Organisation for Animal Health (2026).

From Řehulka et al. (2006):

"[…] [*Mycobacterium*] *simiae*, […] has so far only been isolated from the black acara (*Cichlasoma bimaculatum*) (Lansdell et al. 1993)."

"According to Lansdell et al. (1993), numerous reports in literature confirm that *M. simiae* is commonly found in environmental water sources. […] Wayne and Sramek (1992) isolated *M.*

simiae from water supply of a hospital in Gaza, and Howard et al. (1987) from tap water in Arizona. *M. simiae* has been isolated from a patient with pulmonary infection in Germany (Krümmel et al. 1989)."

From Francis-Floyd (2011):

"Mycobacterial diseases of fish are common, particularly in intensive aquaculture systems and display aquaria. These diseases are collectively referred to as "atypical mycobacteriosis" or simply "mycobacteriosis." The term "fish tuberculosis" has been used in the past to refer to this group of diseases, but the term is not appropriate and should not be used. […] Mycobacterial diseases are zoonotic, which means that they can affect humans who come in contact with infected fish or environments."

From Tavares-Dias et al. (2017):

"This study investigated the parasitic fauna of *Cichlasoma bimaculatum* of a tributary from the Amazon River system, northern Brazil. The prevalence of infection was 94.6 % and, in total, 428 267 parasites, such as *Ichthyophthirius multifiliis, Piscinoodinium pillulare* (Protozoa), *Gussevia arilla* (Monogenoidea), *Posthodiplostomum* sp. (Digenea) and *Procamallanus (Spirocamallanus) inopinatus* (Nematoda) were collected. However, the dominance was mainly of *I. multifiliis,* while *P. (S.) inopinatus* was the parasite species with the lower levels of prevalence and abundance of infection."

Poelen et al. (2014) report *C. bimaculatum* as a host to the following parasites: *Trinidactylus cichlasomatis*, *Gussevia alii*, *Gussevia dobosi*, *Gussevia cichlasomatis*, *Sciadicleithrum*.

Threat to Humans

From Froese and Pauly (2026):

"Harmless"

3 Impacts of Introductions

From Nico et al. (2026):

"Considered a competitor with native sunfish for spawning areas; juvenile bands of *C. bimaculatum* have been observed to surround spawning bluegill *Lepomis macrochirus* aggressively in attempts to feed on eggs (Hogg 1976)."

From FFWCC (2018):

"[…] early success of this fish in Florida led to an erroneous conclusion that it would have significant negative effects on native fishes."

From Trexler et al. (2000):

"We found little evidence of ecological effects of introduced fishes [including *C. bimaculatum*] on native freshwater fish communities in southern Florida, especially in wet prairies."

From Schofield and Loftus (2015):

"Kobza et al. (2004) demonstrated that small native fishes gradually disappeared over the dry season in solution holes that contained non-native fishes (especially *C. bimaculatum*). However, a native predator (*Amieurus* [sic] *natalis*) co-occurred with *C. bimaculatum* in some holes and it was not possible to discriminate the effects of the native versus non-native predators. Water quality declined in solution holes as the dry season progressed, but it was not evaluated independently as a contributing factor to native prey fish population declines."

From Crutchfield (2016):

"Initially, due to the species rapid expansion, it was feared that the Black Acara would become the dominant species across the southern part of the state. Courtenay predicted that at the turn of the century that Black Acara and other cichlids would be the dominant freshwater fishes in Florida. He is quoted as saying, "You can't get rid of them. They have spread too far." (Kahn 1980). It was also predicted that every indication pointed to the Black Acara becoming the dominant freshwater fish in South Florida within a decade (Courtenay et al. 1974). However, more recent studies have actually found that the Black Acara has declined in some locations after an initial population explosion. In the Everglades, it was found that the Black Acara and Pike Killifish (*Belonesox belizanus*) both displayed patterns of rapid population growth followed by decline and a stable lower population (Trexler et al. 2000). They are certainly established and expanding, but they have not taken over the waterways as of yet."

Cichlasoma bimaculatum is regulated in Hawaii (HDOA 2019*)*. See section 1.

4 History of Invasiveness

The History of Invasiveness for *Cichlasoma bimaculatum* is classified as Data Deficient. There are records of nonnative introductions in Florida that resulted in established populations. There is limited evidence of impacts of introductions beyond a few observations that suggest predation on and competitiveness with native fish. Additionally, some studies have suggested a lack of negative impacts of introduction from *C. bimaculatum*. However, these studies could not separate impacts of *C. bimaculatum* from those of other species.

5 Global Distribution

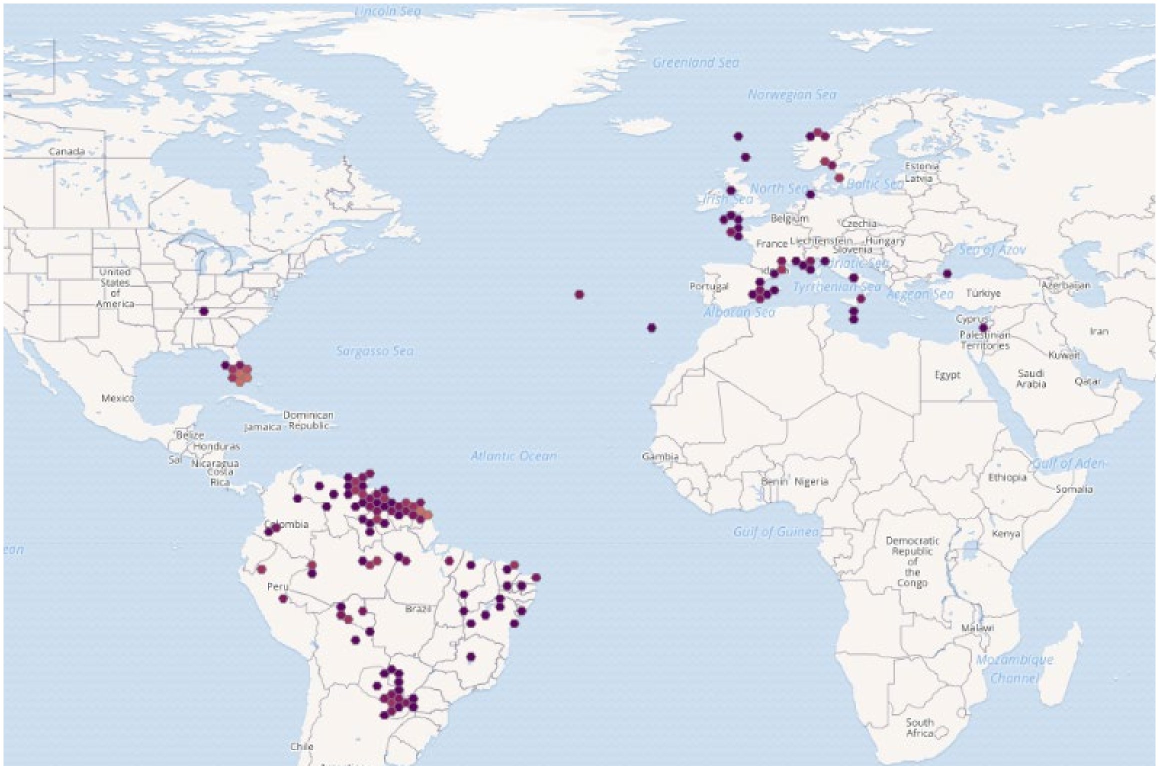

Figure 1. Reported global distribution of *Cichlasoma bimaculatum*. Map from GBIF Secretariat (2023). Observations are reported primarily from the United States, Europe, and South America, No literature was found to support the existence of established populations of *C. bimaculatum* in the wild outside of Florida and the species' native range (far northern Brazil, Venezuela, Guyana, Suriname, and French Guiana). It could not be determined whether points outside of the documented range of *C. bimaculatum* represent incomplete data, misidentification, or a database error; regardless, these points were not used for the climate matching analysis.

6 Distribution Within the United States

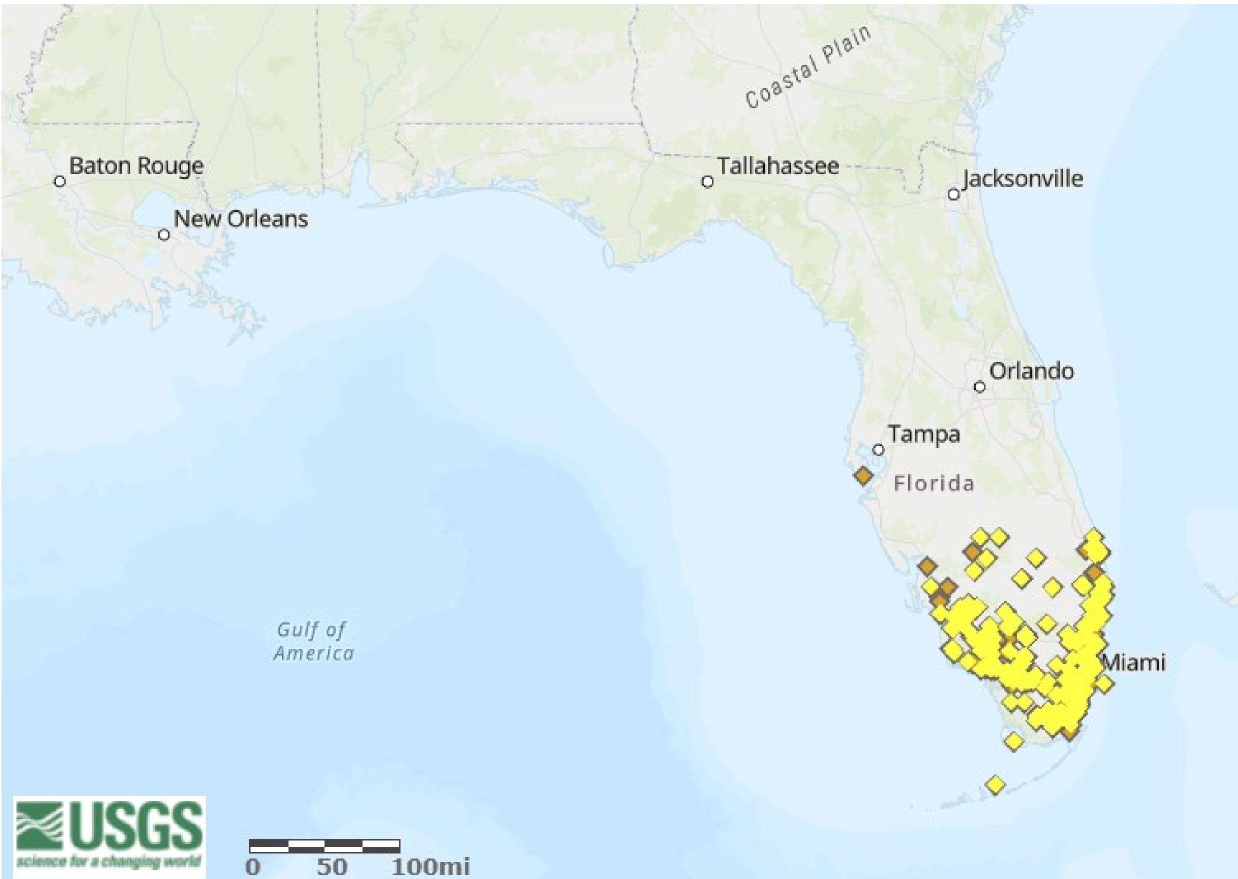

Figure 2. Reported distribution of *Cichlasoma bimaculatum* in the United States. Map from Nico et al. (2026). Observations are reported from southern Florida. Yellow points represent established nonnative populations of *C. bimaculatum* and orange points represent other reported nonnative occurrences. Only established populations were used to select source locations for the climate matching analysis.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Cichlasoma bimaculatum* to the contiguous United States was high in the Southeast, along the Gulf Coast spanning from Texas and Florida and along the Atlantic Coast to Virginia. The climate match was medium across much of the rest of the southeastern United States. The climate match across the upper Midwest, Great Plains, and western United States was very low for the most part, but slightly higher in areas of the Southwest and along the West Coast. The overall Climate 6 score (Sanders et al. 2023; 16 climate variables; Euclidean distance) for the contiguous United States was 0.040, indicating that Yes, there is establishment concern for this species. The Climate 6 score is calculated as: (count of target points with scores ≥ 6)/(count of all target points). Establishment concern is warranted for Climate 6 scores greater than or equal to 0.002 based on an analysis of the establishment success of 356 nonnative aquatic species introduced to the United States (USFWS 2024).

Projected climate matches in the contiguous United States under future climate scenarios are available for *Cichlasoma bimaculatum* (see Appendix). These projected climate matches are provided as additional context for the reader; future climate scenarios are not factored into the Overall Risk Assessment Category.

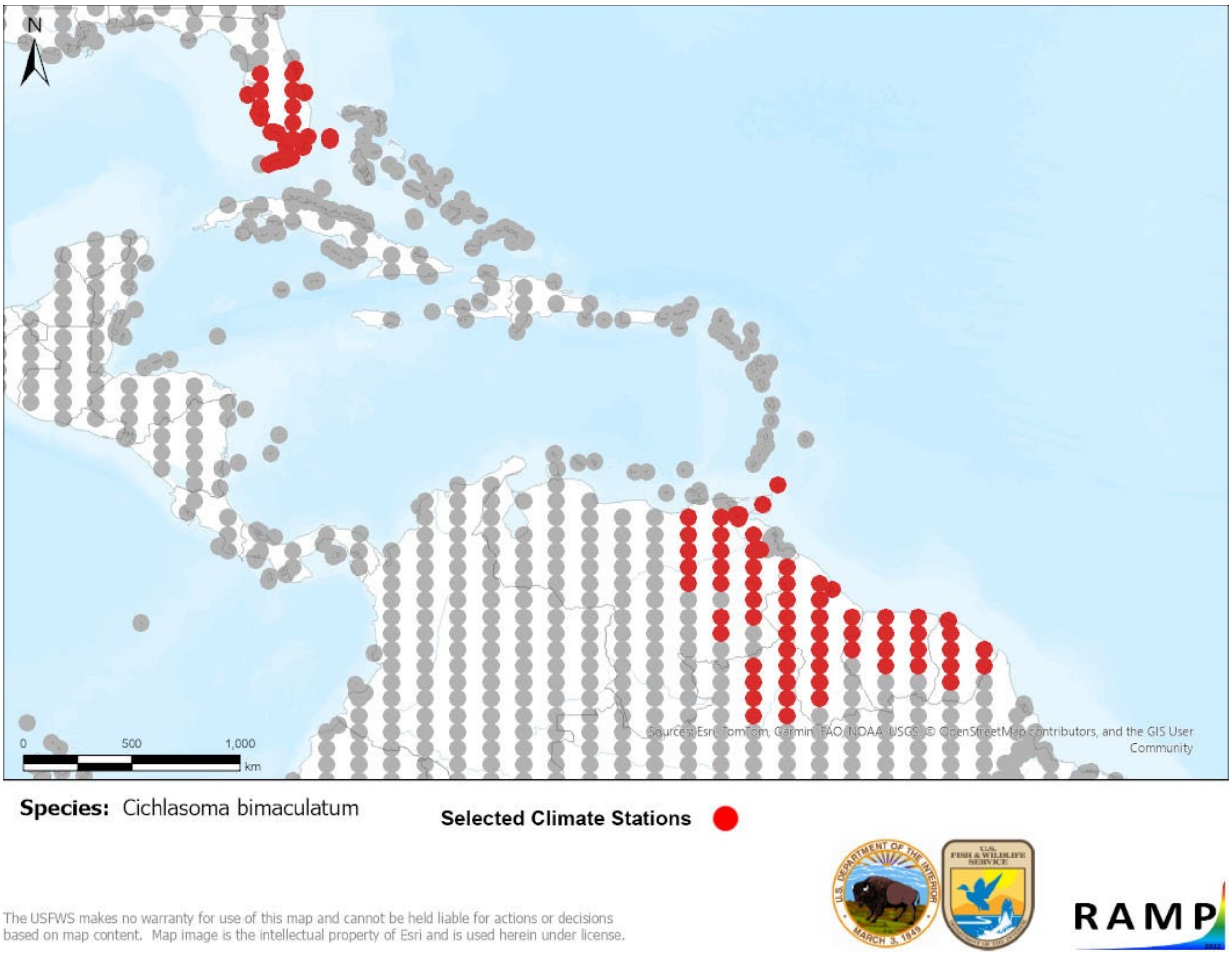

Figure 3. RAMP (Sanders et al. 2023) source map showing weather stations in North and South America selected as source locations (red; United States [Florida], Guyana, Suriname, French Guiana, Venezuela, Brazil) and non-source locations (gray) for *Cichlasoma bimaculatum* climate matching. Source locations from GBIF Secretariat (2023). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

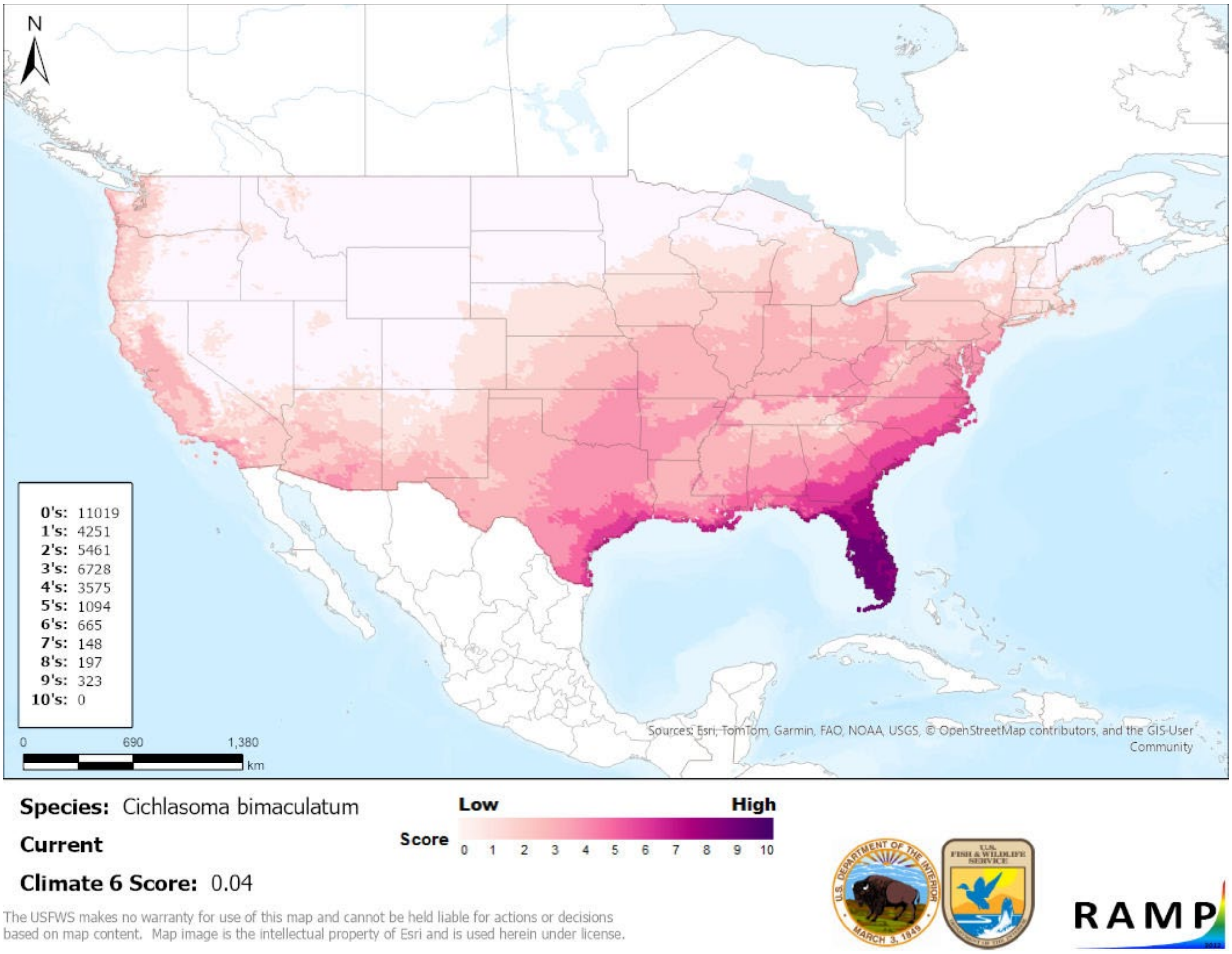

Figure 4. Map of RAMP (Sanders et al. 2023) climate matches for *Cichlasoma bimaculatum* in the contiguous United States based on source locations reported by GBIF Secretariat (2023). Counts of climate match scores are tabulated on the left. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

8 Certainty of Assessment

There is an adequate amount of information on the distribution and biology of this species. *Cichlasoma bimaculatum* has been introduced to and is established in Florida, but there is limited and contradictory information regarding the impacts of its introduction. Therefore, the Certainty of Assessment for *Cichlasoma bimaculatum* is classified as Low.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Cichlasoma bimaculatum, Black Acara, is a freshwater fish native to Venezuela, Guyana, Suriname, western French Guiana, and northern Brazil. It is a generalist omnivore that feeds on crustaceans, insects, smaller fish, and fish eggs. This species was introduced to Florida through the aquarium trade in the 1960s, when it was a popular aquarium fish being raised commercially there. Although *C. bimaculatum* is present in the aquarium trade today, it may not be as abundant in trade as it once was. This species is regulated in Hawaii. The History of Invasiveness for *Cichlasoma bimaculatum* is classified as Data Deficient due to the limited information regarding the ecological impacts of introductions. The climate matching analysis for the contiguous United States indicates establishment concern. The highest climate matches were found in Florida, where the species is already established, and in the coastal southeastern United States. The Certainty of Assessment for this ERSS is classified as Low, reflecting the limited and conflicting data on impacts of introduction. The Overall Risk Assessment Category for *Cichlasoma bimaculatum* in the contiguous United States is Uncertain.

Assessment Elements

- **History of Invasiveness (see Section 4): Data Deficient**
- **Establishment Concern (see Section 7): Yes**
- **Certainty of Assessment (see Section 8): Low**
- **Remarks, Important additional information: None**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

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

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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Appendix

Summary of Future Climate Matching Analysis

Future climate projections represent two Shared Socioeconomic Pathways (SSP) developed by the Intergovernmental Panel on Climate Change (IPCC 2021): SSP5, in which emissions triple by the end of the century; and SSP3, in which emissions double by the end of the century. Future climate matches were based on source locations reported by GBIF Secretariat (202).

Under the future climate scenarios (figure A1), on average, high climate match for *Cichlasoma bimaculatum* was projected to occur in the Southern Florida region of the contiguous United States. Areas of low climate match were projected to occur in the Colorado Plateau, Great Basin, Great Lakes, Northeast, Northern Pacific Coast, Northern Plains, Southern Plains, Southwest, and Western Mountains regions. All four climate scenarios showed similar patterns of high climate match in Florida and comparatively low climate match elsewhere. The climate match in both 2085 climate scenarios, which were similar to each other, appears slightly lower than in both 2055 scenarios, which were also similar to each other. The Climate 6 scores for the individual future scenario models (figure A2) ranged from a low of 0.021 (model: UKESM1-0-LL, SSP5, 2085) to a high of 0.054 (model: MRI-ESM2-0, SSP3, 2055). All future scenario Climate 6 scores were above the Establishment Concern threshold, indicating that Yes, there is establishment concern for this species under future scenarios. The Climate 6 score for the current climate match (0.040, figure 4) falls within the range of scores for future projections. The time step and climate scenario with the most change relative to current conditions was SSP5, 2085, the most extreme climate change scenario. Under one or more time step and climate scenarios, areas within the Great Lakes saw a large increase in the climate match relative to current conditions. Additionally, areas within the Appalachian Range, California, Colorado Plateau, Northeast, Northern Pacific Coast, Northern Plains, and Western Mountains saw a moderate increase in the climate match relative to current conditions. Under one or more time step and climate scenarios, areas within the Gulf Coast, Southern Atlantic Coast, and Southern Florida saw a moderate decrease in the climate match relative to current conditions. No large decreases were observed regardless of time step and climate scenarios. Additional, very small areas of large or moderate change may be visible on the maps (figure A3). An area of large climate match increase in the Great Lakes region is the most prominent attribute of the SSP5 2085 climate match scenario, while all scenarios show a decrease in Florida and, to a lesser extent, across the Southeast.

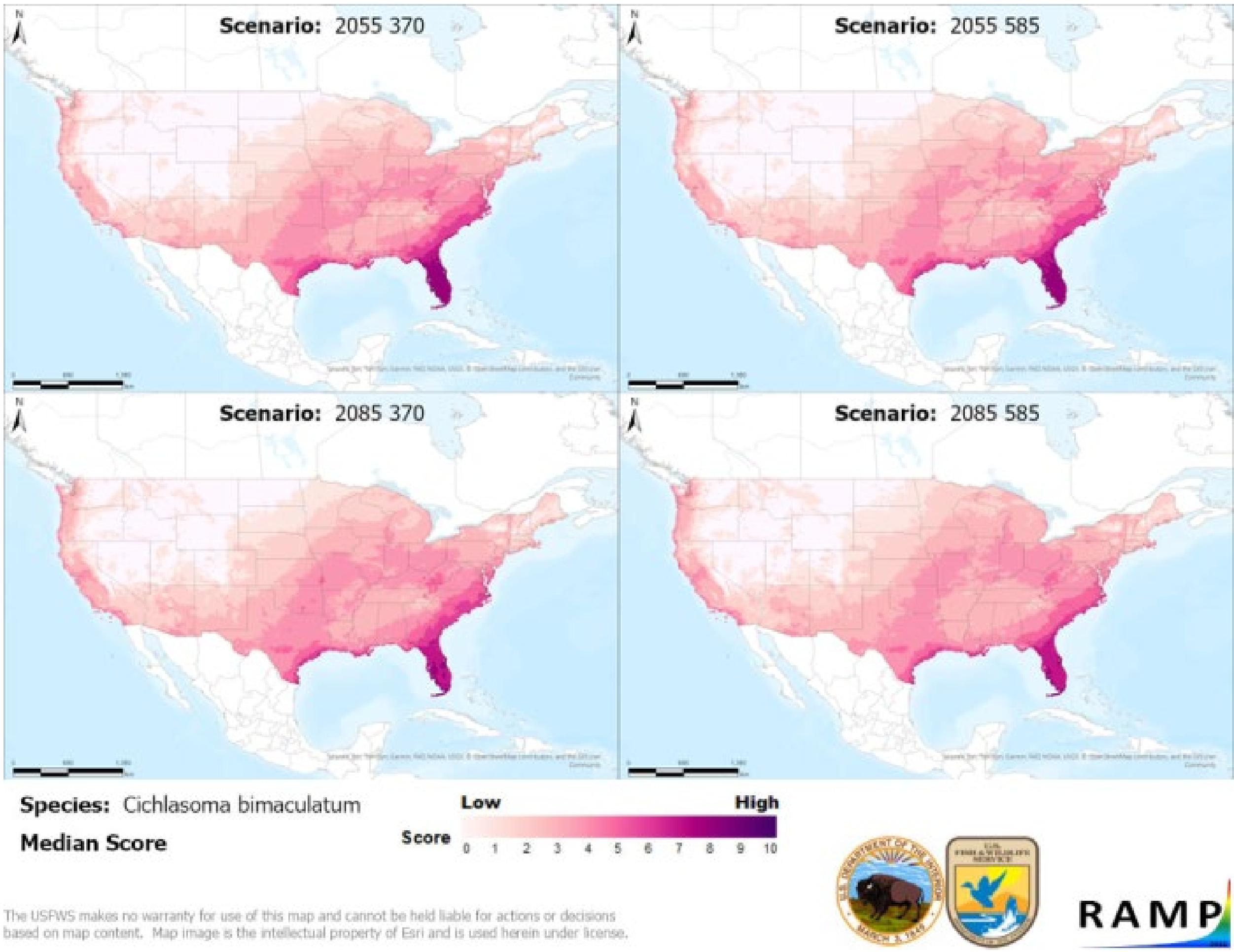

Figure A1. Maps of median RAMP (Sanders et al. 2023) climate matches projected under potential future climate conditions using five global climate models for *Cichlasoma bimaculatum* in the contiguous United States. Climate matching is based on source locations reported by GBIF Secretariat (2023). Shared Socioeconomic Pathways (SSPs) used (from left to right): SSP3, SSP5 (IPCC 2021). Time steps: 2055 (top row) and 2085 (bottom row). Climate source data from CHELSA (Karger et al. 2017, 2018); global climate models used: GFDL-ESM4, UKESM1-0-LL, MPI-ESM1-2-HR, IPSL-CM6A-LR, and MRI-ESM2-0. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

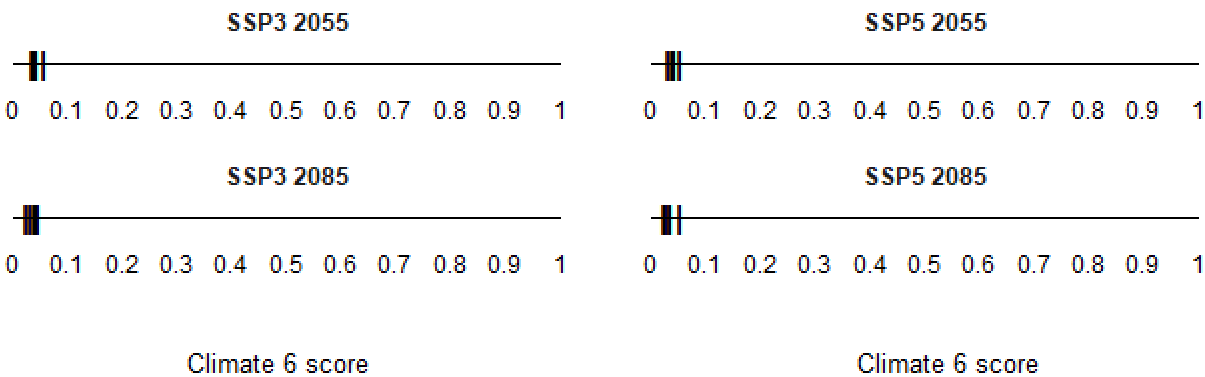

Figure A2. Comparison of projected future Climate 6 scores for *Cichlasoma bimaculatum* in the contiguous United States for each of five global climate models under four combinations of Shared Socioeconomic Pathway (SSP) and time step. SSPs used (from left to right): SSP3, SSP5 (Karger et al. 2017, 2018; IPCC 2021). Time steps: 2055 (top row) and 2085 (bottom row). Climate source data from CHELSA (Karger et al. 2017, 2018); global climate models used: GFDL-ESM4, UKESM1-0-LL, MPI-ESM1-2-HR, IPSL-CM6A-LR, and MRI-ESM2-0.

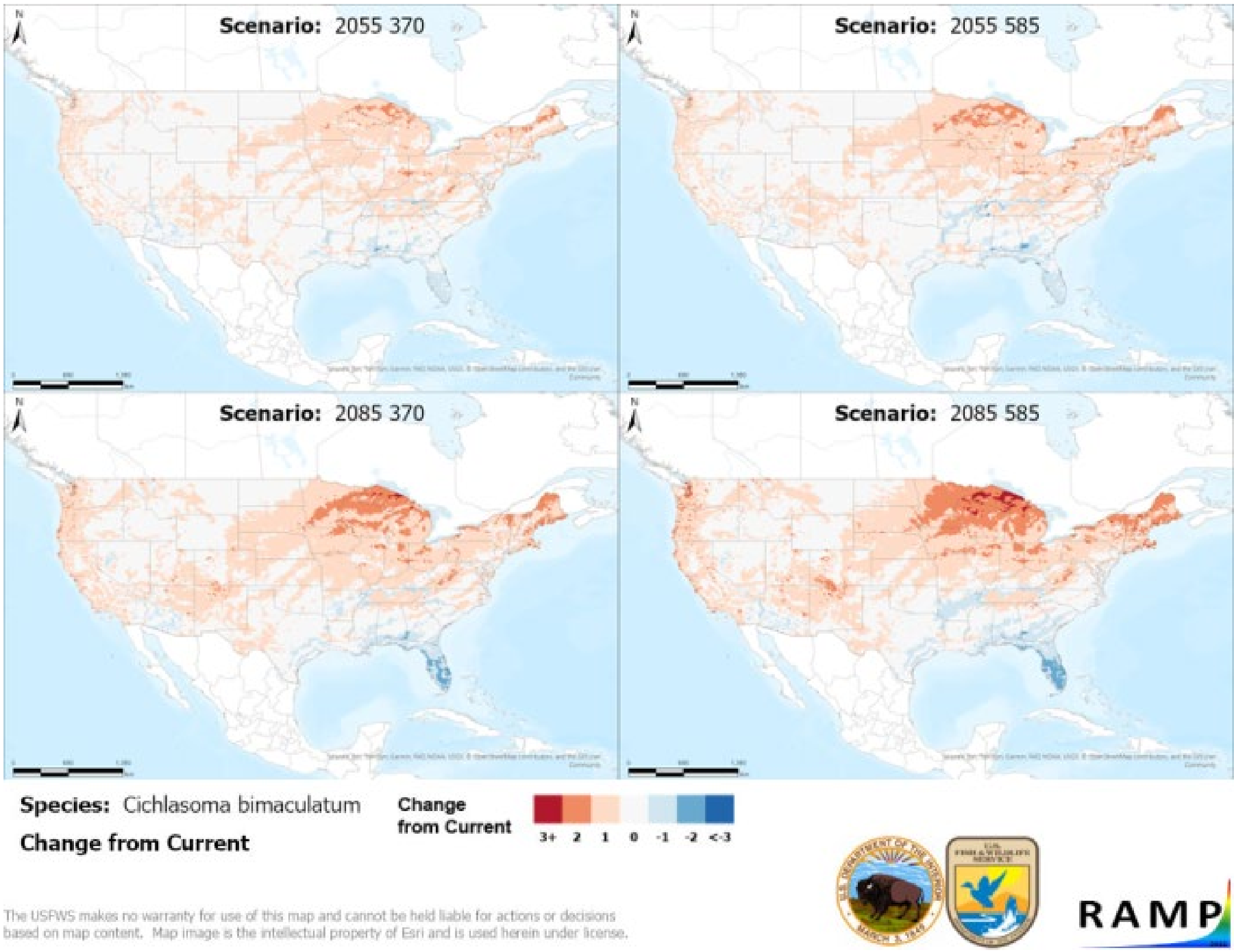

Figure A3. RAMP (Sanders et al. 2023) maps of the contiguous United States showing the difference between the current climate match target point score (figure 4) and the median target point score for future climate scenarios (figure A1) for *Cichlasoma bimaculatum* based on source locations reported by GBIF Secretariat (2023). Shared Socioeconomic Pathways (SSPs) used (from left to right): SSP3, SSP5 (IPCC 2021). Time steps: 2055 (top row) and 2085 (bottom row). Climate source data from CHELSA (Karger et al. 2017, 2018); global models used: GFDL-ESM4, UKESM1-0-LL, MPI-ESM1-2-HR, IPSL-CM6A-LR, and MRI-ESM2-0. Shades of blue indicate a lower target point score under future scenarios than under current conditions. Shades of red indicate a higher target point score under future scenarios than under current conditions. Darker shades indicate greater change.

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