

Wolf Cichlid (*Parachromis dovii*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, February 2011

Revised, January 2018

Web Version, 1/3/2020



Photo: Sesamehoneytart. Licensed under [re-use license, e.g. CC BY-SA]. Available: https://commons.wikimedia.org/wiki/File:Parachromis_dovii_guapote.JPG. (January 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2017):

“Central America: Atlantic slope, from the Aguan River (Honduras) to the Moín River (Costa Rica); Pacific slope from the Yeguaré River (Honduras) to the Bebedero River (Costa Rica).”

Status in the United States

This species has not been reported as introduced or established in the United States. This species is in trade in the United States, for example:

From Imperial Tropicals (2015):

“Wolf Cichlid (*Parachromis Dovii*) [...] \$ 14.99”

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

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 *Parachromis*
Species *Parachromis dovii* (Günther, 1864)”

From Eschmeyer et al. (2018):

“Current status: Valid as *Parachromis dovii* (Günther 1864). Cichlidae: Cichlinae.”

Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length : 72.0 cm TL male/unsexed; [IGFA 2001]; max. published weight: 6.8 kg [IGFA 2001]”

Environment

From Froese and Pauly (2017):

“Freshwater; demersal; pH range: 7.0 - ? ; dH range: ? - 20; potamodromous [Riede 2004]. [...] 21°C - 37°C [Bussing 1998]”

Climate/Range

From Froese and Pauly (2017):

“Tropical;”

From Tabash and Guadamuz (2000):

“It occurs in streams waters and lakes between heights of 0 to 600 m., [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2017):

“Central America: Atlantic slope, from the Aguan River (Honduras) to the Moín River (Costa Rica); Pacific slope from the Yeguaré River (Honduras) to the Bebedero River (Costa Rica).”

Introduced

From Neilson and Fuller (2018):

“*Parachromis dovii* is commonly caught by anglers in Loiza Reservoir, Puerto Rico (F. Grana, pers. communication).”

“Established in Loiza Reservoir in eastern Puerto Rico since at least 2009.”

“This species is also introduced in El Salvador (McMahan et al. 2013)”

Means of Introduction Outside the United States

From Neilson and Fuller (2018):

“Aquarium release.”

Short Description

From Günther (1864):

“The fold of the lower lip is continuous in the middle. The height of the body is contained thrice in the total length (without caudal); the length of the head twice and three-fifths. Snout pointed, with the lower jaw very prominent. Both jaws with a pair of fangs, those of the upper being close together in the middle of the jaw, whilst the lower are separate. Scales on the cheek small, rather

irregularly arranged, in about eight series. The first dorsal spine is inserted behind the vertical from the upper end of the gill-opening. Dorsal and anal spines slender, the length of the twelfth of the dorsal fin being one-fourth of that of the head. Pectoral three-fifths as long as the head. Brown, irregularly marbled with darker; fins black; an indistinct black band along the operculum and the side of the trunk; an oblique blackish band descends from the eye towards the root of the pectoral; a black spot behind the angle of the mouth.”

Biology

From Froese and Pauly (2017):

“Inhabits lakes but also thrives in various lower and middle river valleys. This species is an avid cavern digger. Piscivorous, though also eats crustaceans and insects in smaller numbers [Bussing 1998].”

“Produces about 1000-1500 eggs. Altruism with males of other species while tending the young. [...] Min. 1000 eggs, sexual maturity is reached at 15 months and 20 cm [Baensch and Riehl 1985].”

From Neilson and Fuller (2018):

“*Parachromis dovii*, similar to other guapotes, is highly piscivorous, consuming characins, other cichlids, and poecilids, with aquatic invertebrates comprising a smaller portion of the diet, primarily in juveniles (Bussing 1987). It is considered to have medium fecundity with a minimum population doubling time of 1.4–4.4 years (Froese and Pauly, 2012).”

From Tabash and Guadamuz (2000):

“In general, *P. dovii* can be found in environments ranging from shallow waters to rapid currents where it hides behind rocks or overgrowths.”

Human Uses

From Froese and Pauly (2017):

“Made into fillets or eaten baked.”

“Fisheries: commercial; gamefish: yes”

This species is in trade in the U.S. For example:

From Imperial Tropicals (2015):

“Wolf Cichlid (*Parachromis Dovii*) [...] \$ 14.99”

Diseases

Poelen et al. (2014) lists *Sciadicleithrum mexicanum* and *Crassicutis cichlasomae* as parasites of *Parachromis dovii* (Strona et al. 2013, Wardeh et al. 2015).

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

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

From Neilson and Fuller (2018):

“Unknown.”

4 Global Distribution



Figure 1. Known distribution of *Parachromis dovii* in Central America. Map from GBIF Secretariat (2018).

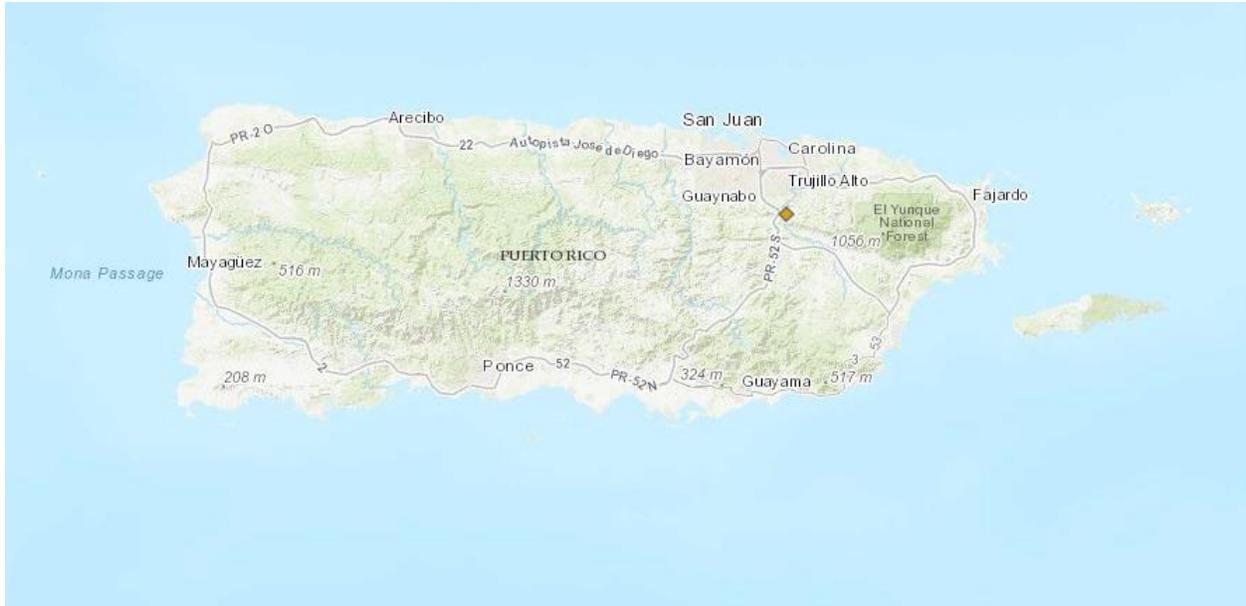


Figure 2. Map showing reported location of *Parachromis dovii* in Puerto Rico. Map from Neilson and Fuller (2018).

5 Distribution Within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.007, which is a medium climate match. The climate match was high in Florida and low in all other states. There was an area of medium-low match along the Gulf Coast.

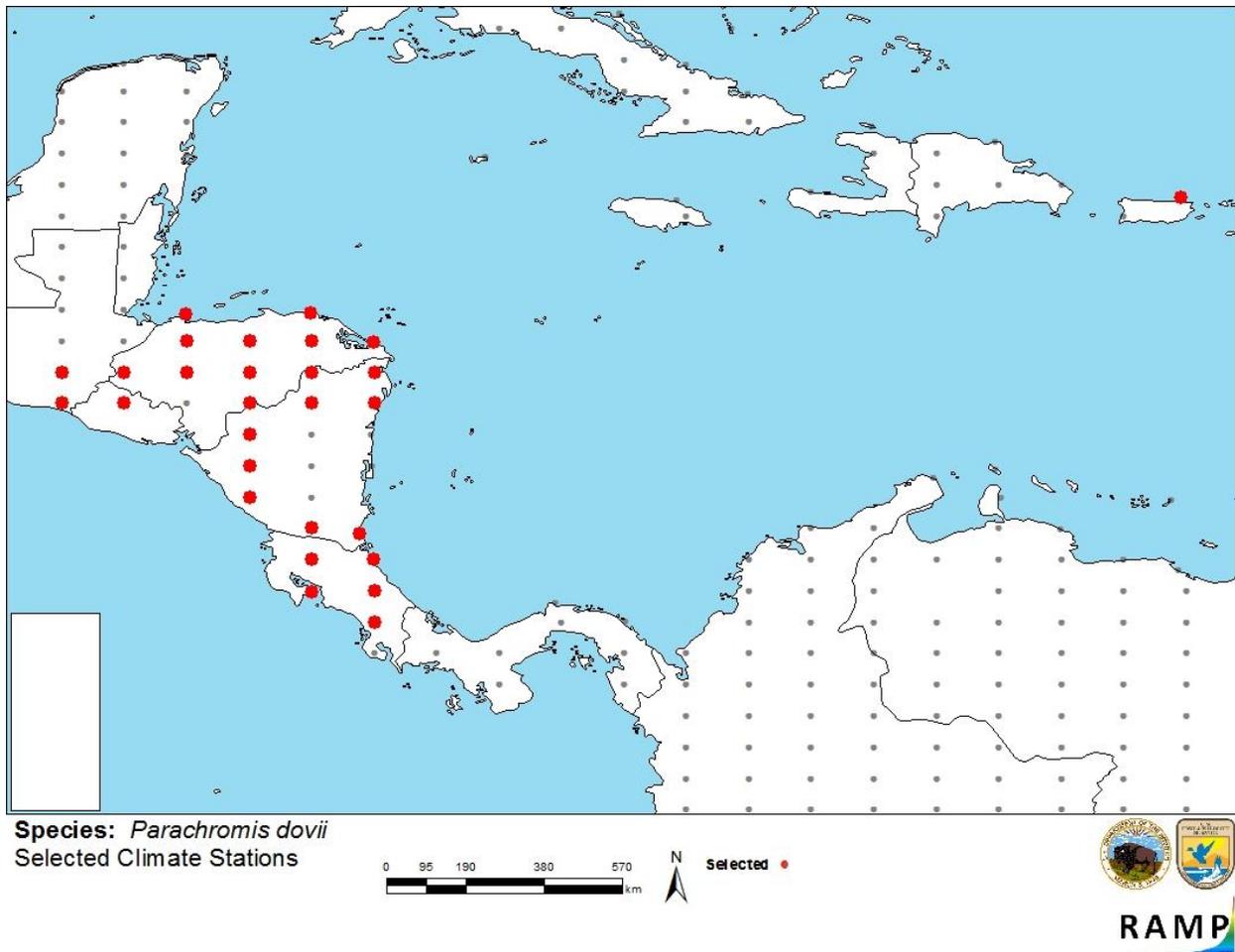


Figure 3. RAMP (Sanders et al. 2014) source map showing weather stations in Central America and the Caribbean selected as source locations (red; Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Puerto Rico) and non-source locations (gray) for *Parachromis dovii* climate matching. Source locations from GBIF Secretariat (2018) and Neilson and Fuller (2018).

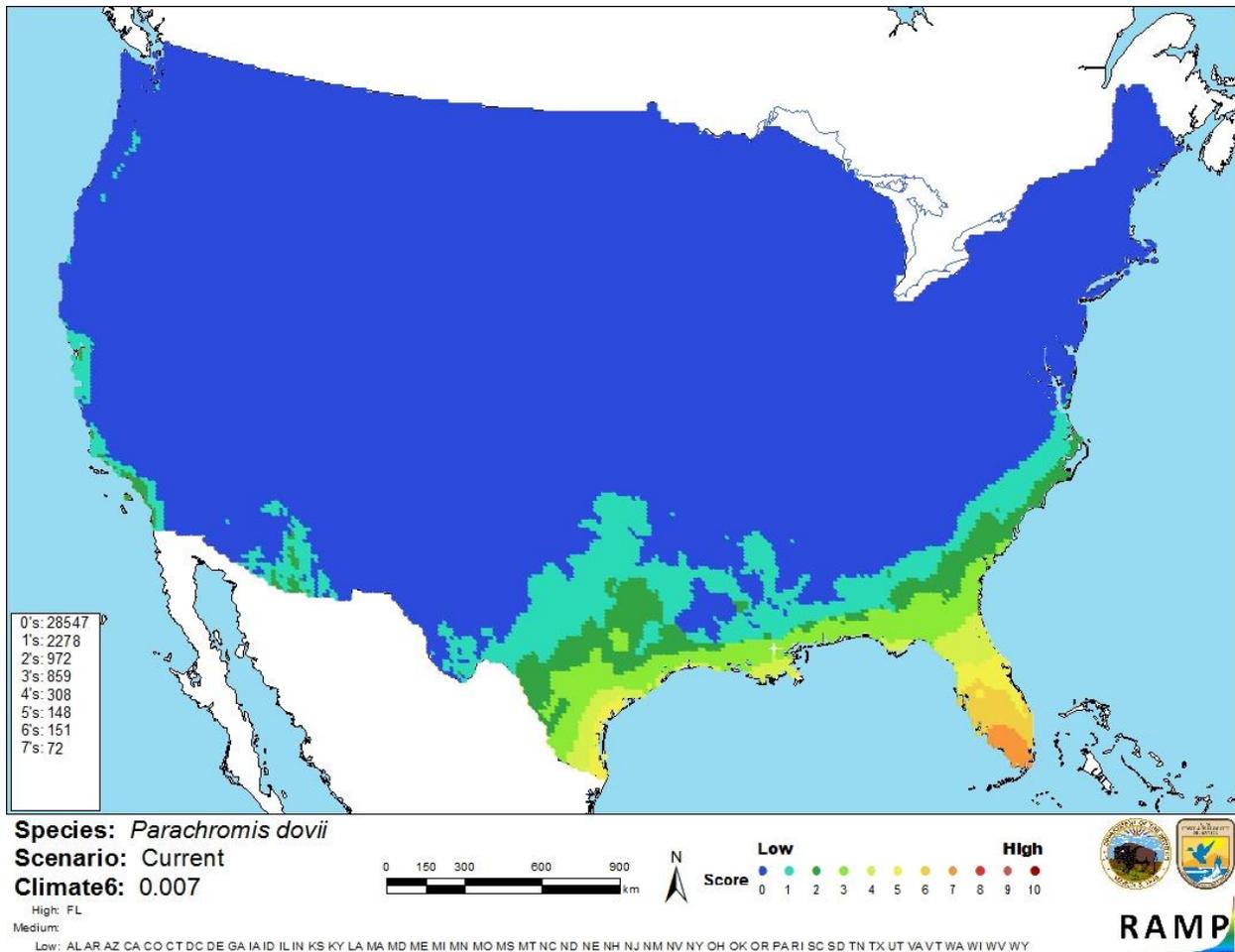


Figure 4. Map of RAMP (Sanders et al. 2014) climate matches for *Parachromis dovii* in the contiguous United States based on source locations reported by GBIF Secretariat (2018) and Neilson and Fuller (2018). Counts of climate match scores are tabulated on the left. 0= Lowest match, 10= Highest match.

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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

The distribution and biology of *Parachromis dovii* are well-documented. This species has been introduced to Puerto Rico, but no impacts of this introduction have been documented. Further information is needed to adequately assess the risk this species poses to the contiguous United States. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Parachromis dovii is a cichlid species native to Central America. This species is used in the aquarium trade and as a gamefish. *P. dovii* has been introduced to Puerto Rico, where it has become established, but it has not been reported as introduced or established anywhere else. *P. dovii* has a medium climate match with the contiguous United States, with a high match in Florida and a low match elsewhere. There have been no negative impacts from the introduction of this species documented. Due to a lack of information, certainty of this assessment is low, and the overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): None Documented**
- **Climate Match (Sec. 6): Medium**
- **Certainty of Assessment (Sec. 7): Low**
- **Overall Risk Assessment Category: Uncertain**

9 References

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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- Neilson, M., and P. Fuller. 2018. *Parachromis dovii* (Günther, 1864). U.S. Geological Survey, Nonindigenous Aquatic Species Database, Gainesville, Florida. Available: <https://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=2809>. (January 2018).
- Poelen, J. H., J. D. Simons, and C. J. Mungall. 2014. Global Biotic Interactions: an open infrastructure to share and analyze species-interaction datasets. *Ecological Informatics* 24:148-159.
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- Tabash, F. A., and E. Guadamuz. 2000. A management plan for the sport fishery of *Parachromis dovii* (Pisces: Cichlidae) (Gunther 1864) in Hule lake, Costa Rica. *Revista de Biología Tropical* 48(2-3):473-485.

10 References Quoted But Not Accessed

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.

- Baensch, H. A., and R. Riehl, 1985. *Aquarien atlas volume 2*. Mergus, Verlag für Natur-und Heimtierkunde GmbH, Melle, Germany.
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