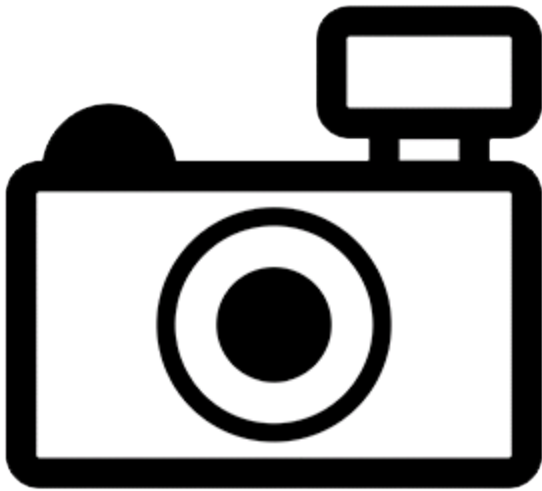


***Aequidens diadema* (a fish, no English common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, web version – 03/29/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2015):

“South America: Amazon River basin, in the upper Negro River; Orinoco River basin, in tributaries of the Orinoco River in Colombia and Venezuela.”

Status in the United States

No records of *Aequidens diadema* in the United States were found.

Means of Introductions in the United States

No records of *Aequidens diadema* in the United States were found.

Remarks

This genus is popular in the aquarium trade.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2014):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Genus *Aequidens*
Species *Aequidens diadema* (Heckel, 1840)”

From Eschmeyer et al. (2017):

“***diadema*, *Acara*** Heckel [J. J.] 1840:344 [...] [Annalen des Wiener Museums der Naturgeschichte v. 2] Marabitanos, River Negro, Venezuela. Syntypes: NMW 33791 (1), 33797 (1). •Valid as *Aequidens diadema* (Heckel 1840) -- (Kullander 1986:348 [...], Ortega & Vari 1986:20 [...], Lasso & Machado-Allison 2000:34 [...], Kullander in Reis et al. 2003:608 [...], Hernández-Acevedo et al. 2015:104 [...]). **Current status:** Valid as *Aequidens diadema* (Heckel 1840). Cichlidae: Cichlinae.”

Size, Weight, and Age Range

From Froese and Pauly (2015):

“Max length: 11.8 cm SL male/unsexed; [Kullander 2003]”

Environment

From Froese and Pauly (2015):

“Freshwater; benthopelagic; pH range: 7.0 - ? ; dH range: 15 - ?. [...]; 23°C - 28°C [assumed to be recommended aquarium temperature range] [Baensch and Riehl 1985]”

Climate/Range

From Froese and Pauly (2015):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2015):

“South America: Amazon River basin, in the upper Negro River; Orinoco River basin, in tributaries of the Orinoco River in Colombia and Venezuela.”

Introduced

No records of *Aequidens diadema* introductions were found.

Means of Introduction Outside the United States

No records of *Aequidens diadema* introductions were found.

Short Description

A short description of *Aequidens diadema* was not found.

Biology

From Froese and Pauly (2015):

“Spawns on substrate; after hatching, both parents take larvae into mouth [Stawikowski and Werner 1998].”

“In the Jenaro Herrera region, Peru, this species occurs in streams in aguajal-like conditions, clear water quebradas and black-water quebradites [Kullander 1986].”

Human Uses

From Froese and Pauly (2015):

“Aquarium: public aquariums”

Diseases

No records of OIE reportable diseases were found.

From Aguinaga et al. (2015):

“*Ichthyophthirius multifiliis* is a cosmopolitan and nonspecific freshwater parasite of fish relating to low temperature and poor water quality (LOM & DYKOVA, 1992). *Aequidens diadema* was the fish that was most parasitized by this protozoan in both seasons (Table 2 [in source material]).”

Threat to Humans

From Froese and Pauly (2015):

“Harmless”

3 Impacts of Introductions

No records of *Aequidens diadema* introductions were found.

4 Global Distribution

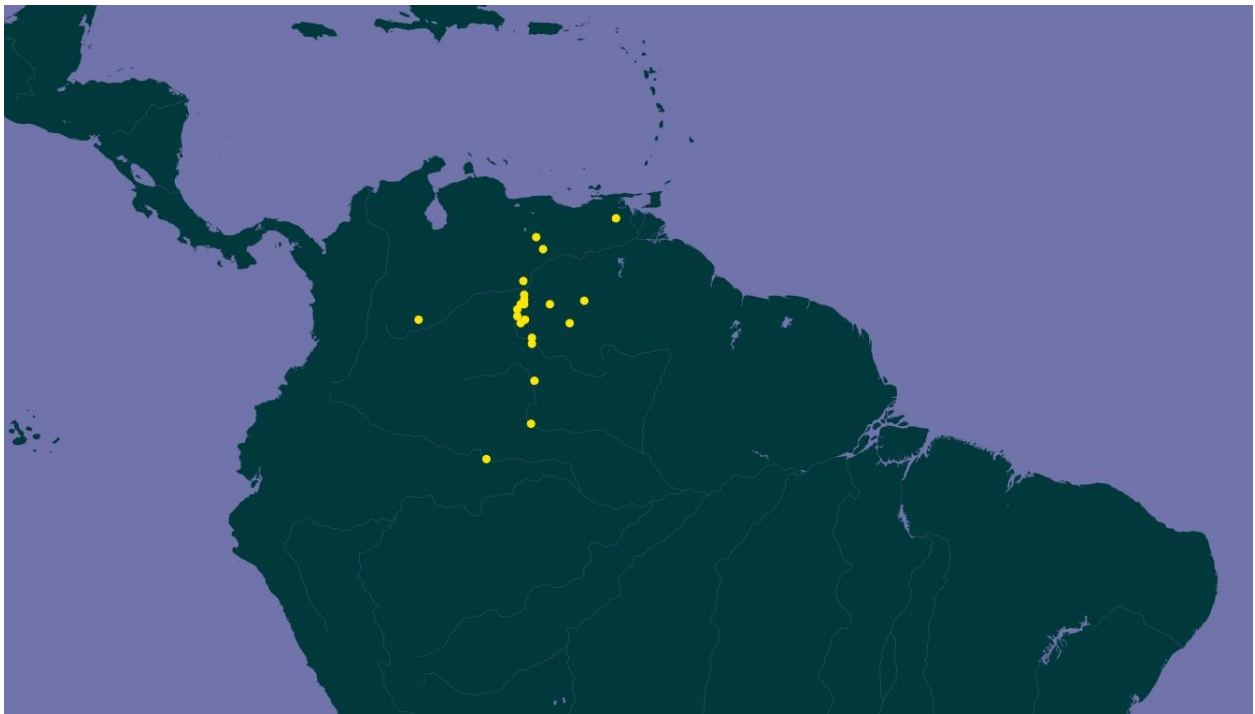


Figure 1. Known global distribution of *Aequidens diadema* in northern South America. Map from GBIF Secretariat (2017).

5 Distribution Within the United States

No records of *Aequidens diadema* in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Aequidens diadema* is low for most of the country. There are two areas of medium match, extreme southern Texas and southern Florida. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.001, low, and no states had an individually high climate match.

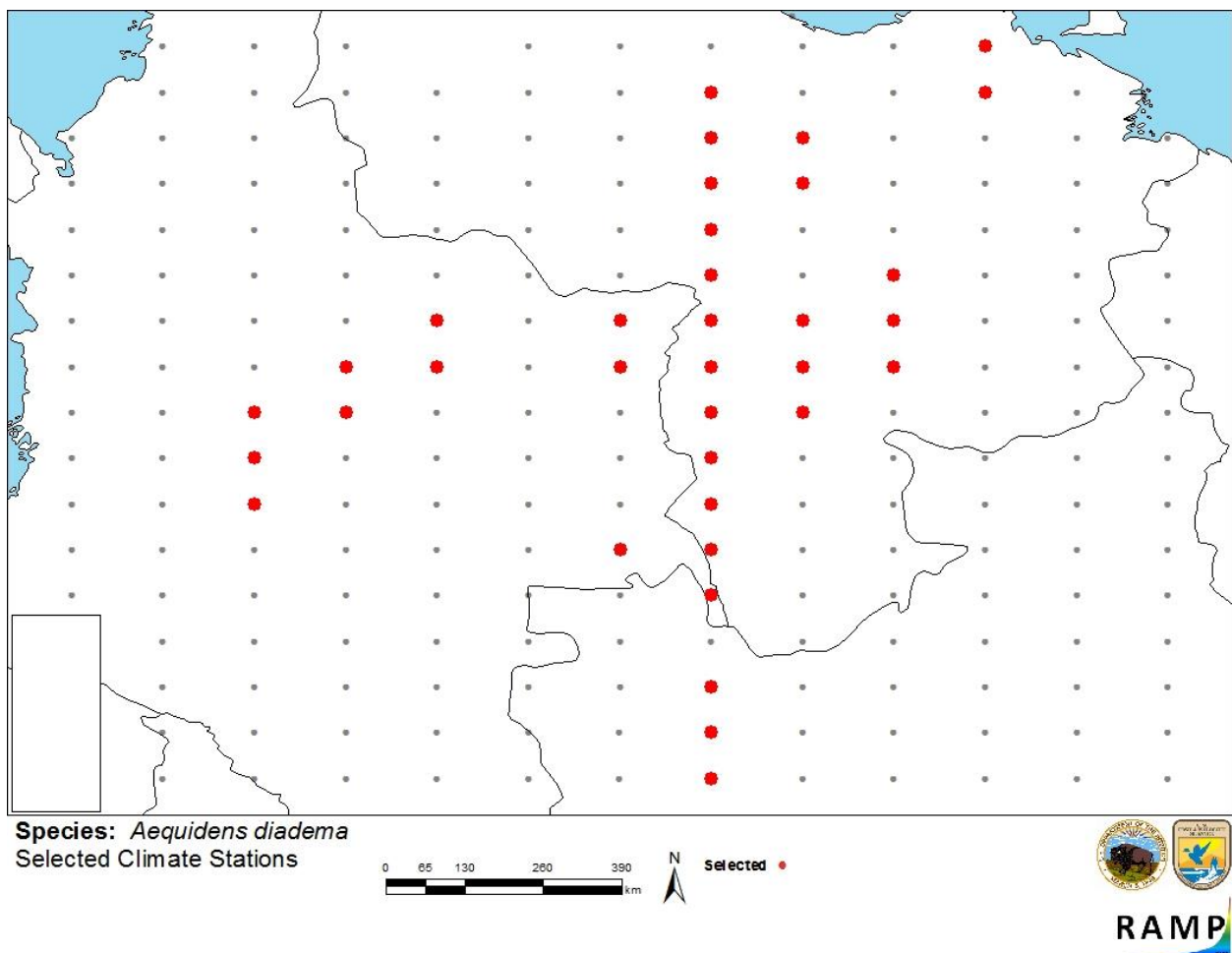


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in Colombia, Venezuela, and Brazil selected as source locations (red) and non-source locations (gray) for *Aequidens diadema* climate matching. Source locations from GBIF Secretariat (2017).

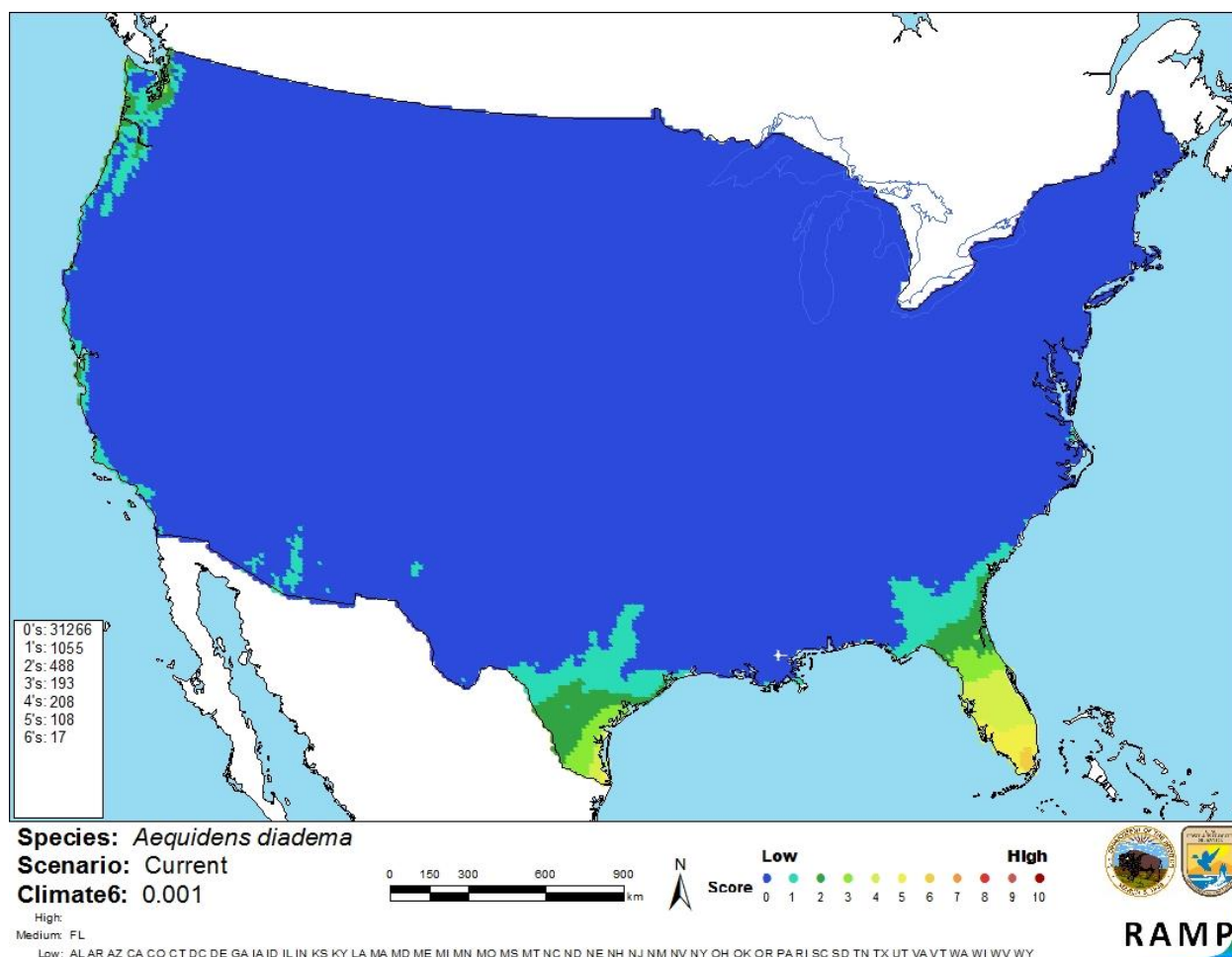


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Aequidens diadema* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0 = Lowest match, 10 = Highest match. Counts of climate match scores are tabulated on the left.

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
≥ 0.103	High

7 Certainty of Assessment

The certainty of assessment is low. There was minimal information available for this species. There was little information on distribution, habitat requirements, and biology. No records of introductions of this species were found.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The history of invasiveness is uncertain. There are no documented instances of introduction of *Aequidens diadema*. The climate match was low. There were only two small areas in the contiguous United States that had a medium match, extreme southern Texas and southern Florida. The certainty of assessment is low. The overall risk category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **Certainty of Assessment (Sec. 7): Low**
- **Remarks/Important additional information** No additional remarks.
- **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.

- Aguinaga, J. Y., P F. Marcusso, G. da Silva Claudiano, B. T. M. Lima, F. de Alexandre Sebastião, J. B. K. Fernandes, F. R. de Moraes, and J. R. E. de Moraes. 2015. Parasitic infections in ornamental cichlid fish in the Peruvian Amazon. *Brazilian Journal of Veterinary Parasitology*, Jaboticabal 24(1):82–86.
- Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2017. *Catalog of fishes: genera, species, references*. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (July 2017).
- Froese, R., and D. Pauly, editors. 2015. *Aequidens diadema* (Heckel, 1840). FishBase. Available: <http://www.fishbase.org/summary/Aequidens-diadema.html>. (January 2015).
- GBIF Secretariat. 2017. GBIF backbone taxonomy: *Aequidens diadema* (Heckel, 1840). Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/5208313>. (July 2017).
- ITIS (Integrated Taxonomic Information System). 2014. *Aequidens diadema* (Heckel, 1840). Integrated Taxonomic Information System, Reston, Virginia. Available: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648234. (October 2014).
- Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk assessment mapping program: RAMP. U.S. Fish and Wildlife Service.

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. Band 2. Mergus, Verlag für Natur-und Heimtierkunde GmbH, Melle, Germany.

Heckel, J. J. 1840. Johann Natterer's neue Flussfische Brasilien's nach den Beobachtungen und Mittheilungen des Entdeckers beschrieben (Erste Abtheilung, Die Labroiden). *Annalen des Wiener Museums der Naturgeschichte* 2:325–471.

Hernández-Acevedo, J. H., A. Machado-Allison, and C. A. Lasso. 2015. *Aequidens superomaculatum* (Teleostei: Cichlidae) una nueva especie del alto Orinoco y Río Negro, Venezuela. *Biota Colombiana* 16(2):96–106. (In Spanish, English abstract.)

Kullander, S. O. 1986. Cichlid fishes of the Amazon River drainage of Peru. Department of Vertebrate Zoology, Research Division, Swedish Museum of Natural History, Stockholm.

Kullander, S. O. 2003. Cichlidae (Cichlids). Pages 605–654 in R. E. Reis, S. O. Kullander, and C. J. Ferraris, Jr., editors. Checklist of the freshwater fishes of South and Central America. EDIPUCRS, Porto Alegre, Brazil.

Lasso, C. A., and A. Machado-Allison. 2000. Sinopsis de las especies de peces de la familia Cichlidae presentes en la cuenca del Rio Orinoco. Claves, diagnosis, aspectos bio-ecologicos e ilustraciones. Serie Peces de Venezuela. Universidad Central de Venezuela.

Lom, J., and I. Dykova. 1992. Protozoan parasites of fishes. Volume 26, Developments in Aquaculture and Fisheries Science. Elsevier, Amsterdam.

Ortega, H., and R. P. Vari. 1986. Annotated checklist of the freshwater fishes of Peru. *Smithsonian Contributions to Zoology* 437.

Reis, R. E., S. O. Kullander, and C. J. Ferraris, Jr., editors. 2003. Check list of the freshwater fishes of South and Central America. CLOFFSCA. EDIPUCRS, Porto Alegre, Brazil.

Stawikowski, R., and U. Werner. 1998. Die Buntbarsche Amerikas, Band 1. Verlag Eugen Ulmer, Stuttgart, Germany.