

***Andinoacara biseriatus* (a cichlid, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, March 2014

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Photo: El Acuarista. Licensed under Creative Commons CC-BY-NC-SA. Available: <http://atlas.elacuarista.com/peces/ficha/aequidens-biseriatus-regan-1913>. (June 2018).

1 Native Range, and Status in the United States

Native Range

From Eschmeyer et al. (2018):

“Distribution: Atrato, San Juan and Baudó River basins, Pacific coast of Colombia.”

From Villa-Navarro (2016):

“Its type locality is Río Condoto, a tributary of the Rio San Juan in northwestern Colombia (Regan 1913).”

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:

A. biseriatus is listed as for sale from the New Jersey-based Tangled Up in Cichlids (Rapps 2016) at a cost of \$25 per 1.5"-long individual.

Means of Introductions in the United States

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

Remarks

From Musilová et al. (2009a):

“*Andinoacara* species were previously placed within the genus *Aequidens* Eigenmann & Bray, 1894. [...] We demonstrate that *Andinoacara* species are not synonymous with *Aequidens* and have to be placed in a different genus.”

Species information for this report was collected by searching on both the accepted scientific name, *Andinoacara biseriatus*, and the synonym, *Aequidens biseriatus*.

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 Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Genus *Aequidens*
Species *Aequidens biseriatus*”

From Eschmeyer et al. (2018):

“Current status: Valid as *Andinoacara biseriatus* (Regan 1913).”

Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length : 8.0 cm TL male/unsexed; [Kullander 2003]; 12.0 cm TL (female)”

“Maximum length 16.0 cm [Stawikowski and Werner 1998].”

Environment

From Froese and Pauly (2017):

“Freshwater; benthopelagic; pH range: 5.5 - 6.7; dH range: ? - 3.”

“[...] 24°C - 29°C [Stawikowski and Werner 1998; unknown if this temperature range refers to natural or aquarium temperatures, and air or water temperatures]”

Climate/Range

From Froese and Pauly (2017):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2017):

“South America: Atrato, San Juan and Baudó River basins in Colombia.”

From Villa-Navarro (2016):

“Its type locality is Río Condoto, a tributary of the Rio San Juan in northwestern Colombia (Regan 1913)”

Introduced

This species has not been reported as introduced outside of its native range.

Means of Introduction Outside the United States

This species has not been reported as introduced outside of its native range.

Short Description

From Raghuvanshi (2017):

“Color on body is uniformly dark or with dark longitudinal stripes or series of spots along the row of scales. Paler specimens show cross-bars also. There is a a [*sic*] lateral blotch, and a small spot at base of caudal; a blackish spot or ocellus on dorsal fin between 10th and 12th spine.

There is often another blotch in front of behind it [*sic*]. Dorsal fin has a pale edge and dark intra marginal stripe; soft dorsal fin is spotted; lower fins are dark edged.”

“Dorsal fin has 15 spines and 9-10 rays, fifth to 12 the spines are unequal. Dorsal fin is placed 1/3 length of head, and last dorsal spine is placed 2/5 length of head. Soft Dorsal fin is pointed and extends to front-middle of Caudal fin. There are no scales in Dorsal fin.”

“Anal fin has three spines which is characteristic [*sic*] of this genus and 7-8 rays. There are no scales on Anal fin.”

“Pectoral fin is nearly as long as head, extending to origin of anal fin.”

“Pelvic fin reaches anal.”

“Caudal fins [*sic*] is rounded. Caudal peduncle 1/2 to 2/3 as long as deep.”

From Musilová et al. (2009b):

“This species [*A. biseriatus*] differs from *A. stalsbergi* by the possession of dark rimmed scales on its nape (versus scales without dark posterior rim), a dark dot in the centre of each scale on body and opercle (versus dark edges, but no dark dots in *A. stalsbergi*), a caudal fin with a narrow reddish margin (versus caudal fin with broad whitish margin), a lateral spot positioned more dorsally than in *A. stalsbergi*, an additional spot (more prominent in females) in the dorsal fin above the bar with lateral spot (versus no such spot in *A. stalsbergi*) and, according to REGAN (1913), frequently 2 rows of scales on its cheek (versus 3 rows of scales in *A. stalsbergi*).”

Biology

From Villa-Navarro (2016):

“This species inhabits creeks and rivers. The quality of this species' habitat is presumed to be declining due to pollution and sedimentation from mining activities.”

From Musilová et al. (2009a):

“Andinoacara are substrate spawning non-oral brooders as all other Cichlasomatini.”

Human Uses

This species is present in the aquarium trade in the United States. For example:

A. biseriatus is listed as for sale from the New Jersey-based Tangled Up in Cichlids (Rapps 2016) at a cost of \$25 per 1.5”-long individual.

Diseases

No information available. No OIE reportable diseases have been documented for this species.

Threat to Humans

From Froese and Pauly:

“Harmless”

3 Impacts of Introductions

There are no reported introductions for this species. Data on the impacts of introductions are lacking.

4 Global Distribution



Figure 1. Known global distribution of *Andinoacara biseriatus*, reported from Colombia. Map from GBIF Secretariat (2017). The location near the Colombia-Panama border is noted as having an issue with the reported coordinates (GBIF Secretariat 2017), so it was not included in the climate matching analysis.

5 Distribution Within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) was medium for the Atlantic Coast of Florida. All remaining areas of the United States matched low. Climate 6 match indicated that the contiguous U.S. has a low climate match overall. The range for a low climate match is from 0.0 to 0.005, inclusive; climate match of *Andinoacara biseriatus* is 0.000.



Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations near the Pacific coast of Colombia selected as source locations (red) and non-source locations (blue) for *Andinoacara biseriatus* climate matching. Source locations from GBIF Secretariat (2017).

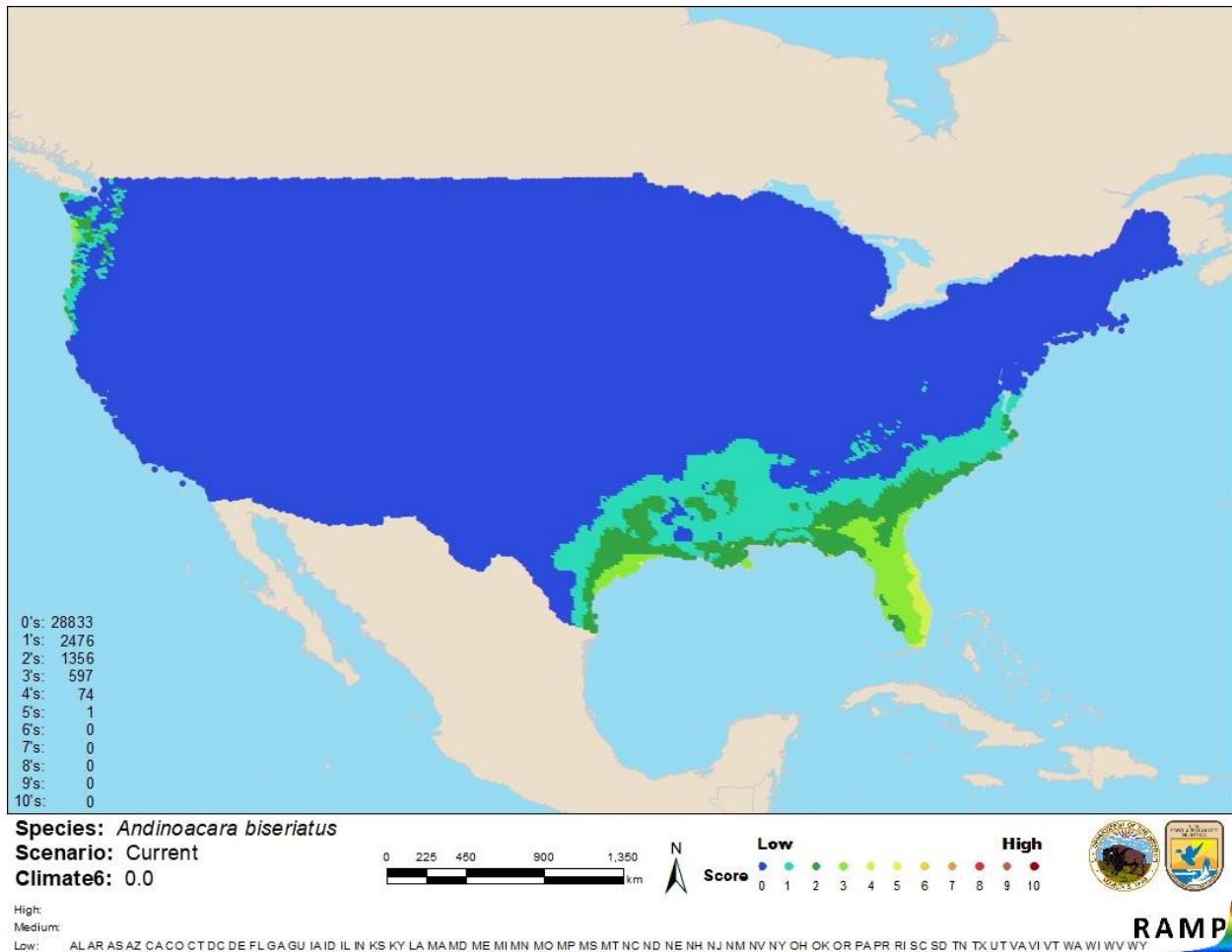


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Andinoacara biseriatus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match.

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

7 Certainty of Assessment

Information on the biology and distribution of *A. biseriatus* is not widely available. No introductions of this species have been reported and scientific information on the impacts of introductions are lacking. Absence of this information makes the certainty of this assessment low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Andinoacara biseriatus is a freshwater fish native to Colombia. It is present in the aquarium trade, but no data were available on trade volume. No introductions of this species have been reported. Data on impacts of introductions are lacking; absence of this information makes the certainty of this assessment low. Climate match with the contiguous United States is low. Overall risk posed by this species 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

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (January 2018).

Froese, R., and D. Pauly, editors. 2017. *Andinoacara biseriatus* (Regan 1913). FishBase. Available: <http://www.fishbase.us/summary/Andinoacara-biseriatus.html>. (January 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Andinoacara biseriatus* (Regan 1913). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5852992>. (June 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Aequidens biseriatus* (Regan 1913). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648231#null. (January 2018).

Musilová, Z., O. Říčan, and J. Novák. 2009a. Phylogeny of the Neotropical cichlid fish tribe Cichlasomatini (Teleostei: Cichlidae) based on morphological and molecular data, with the description of a new genus. *Journal of Zoological Systematics and Evolutionary Research* 47(3):234-247.

- Musilová, Z., I. Schindler, and W. Staeck. 2009b. Description of *Andinoacara stalsbergi* sp. n. (Teleostei: Cichlidae: Cichlasomatini) from Pacific coastal rivers in Peru, and annotations on the phylogeny of the genus. *Vertebrate Zoology* 59(2):131-141.
- Raghuvanshi, S. 2017. *Andinoacara biseriatus*: cichlid species. Aquatic-nation. Available: http://aquaticnation.org/library/Lib_Cich_sp_Andinoacara_biseriatus.php. (June 2018).
- Rapps, J. 2016. Tangled Up in Cichlids. Available: <http://www.tangledupincichlids.com/home.html>. (June 2018).
- Sanders, S., C. Castiglione, and M. Hoff. 2018. Risk Assessment Mapping Program: RAMP, version 3.1. U.S. Fish and Wildlife Service.
- Villa-Navarro, F., L. Mesa-Salazar, and P. Sanchez-Duarte. 2016. *Andinoacara biseriatus*. The IUCN Red List of Threatened Species 2016: e.T64790978A64890425. Available: <http://www.iucnredlist.org/details/64790978/0>. (January 2018).

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.

- 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.
- Regan, C. T. 1913. The fishes of the San Juan River, Colombia. *Annals and Magazine of Natural History* 8(12):462-473.
- Stawikowski, R., and U. Werner. 1998. Die Buntbarsche Amerikas, volume 1. Verlag Eugen Ulmer, Stuttgart, Germany.