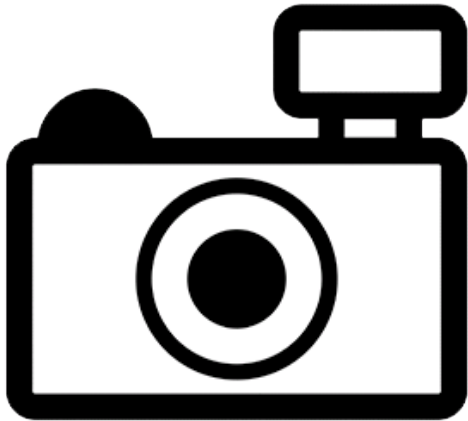


***Aequidens tubicen* (a fish, no English common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, web version – 03/30/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2015):

“South America: Amazon River basin, restricted to Trombetas River close to Cachoeira Porteira, Brazil.”

From Kullander and Ferreira (2005):

“Several other cichlid species are known only from the cachoeira Porteira and/or a short distance upstream in the Trombetas, viz. *Aequidens tubicen* Kullander & Ferreira (1991), *Crenicichla heckeli* Ploeg (1991), *C. pydanielae* Ploeg (1991), and *C. tigrina* Ploeg et al. (1991).”

Status in the United States

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

Means of Introductions in the United States

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

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2015):

“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 tubicen* Kullander and Ferreira, 1991”

From Eschmeyer et al. (2017):

“**tubicen**, *Aequidens* Kullander [S. O.] & Ferreira [E. J. G.] 1991:427 [...], Fig. 4 [Zoologica Scripta v. 19 (no. 4) [1990]] Igarapé at kilometer 4 on the road to Perimetral Norte, Reserva Biológica de Trombetas, Pará State, Brazil. Holotype: MZUSP 15887. Paratypes: INPA 2201-05 (1, 5, 2, 12, 3); MZUSP 39086 (2); NRM 23969 [ex MZUSP 15887] (1), 23980 [ex INPA 2204] (5). More paratypes at MZUSP and NRM. •Valid as *Aequidens tubicen* Kullander & Ferreira 1991 -- (Kullander in Reis et al. 2003:609 [...]). **Current status:** Valid as *Aequidens tubicen* Kullander & Ferreira 1991. Cichlidae: Cichlinae.”

Size, Weight, and Age Range

From Froese and Pauly (2015):

“Max length: 11.6 cm SL male/unsexed; [Kullander 2003]”

Environment

From Froese and Pauly (2015):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2015):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2015):

“South America: Amazon River basin, restricted to Trombetas River close to Cachoeira Porteira, Brazil.”

From Kullander and Ferreira (2005):

“Several other cichlid species are known only from the cachoeira Porteira and/or a short distance upstream in the Trombetas, viz. *Aequidens tubicen* Kullander & Ferreira (1991), *Crenicichla heckeli* Ploeg (1991), *C. pydanielae* Ploeg (1991), and *C. tigrina* Ploeg et al. (1991).”

Introduced

No records of *Aequidens tubicen* introductions were found.

Means of Introduction Outside the United States

No records of *Aequidens tubicen* introductions were found.

Short Description

From Froese and Pauly (2015):

“This species is moderately large (to almost 12 cm) with triserial predorsal scale pattern, relatively long pectoral fin (32.5-37.7% of SL) and 25-26 scales in the E1 row. It is most similar to *A. pallidus*, both with an enhanced, wide, light spot anterior to the caudal spot, lateral band high on side, posteriorly positioned midlateral spot and high vertebral number (usually 14 + 13 = 27). It differs from *A. pallidus* in colour pattern which includes characteristics unique for the genus: an irregularly rounded blackish spot at the corner of the preopercle and adjacent cheek; lateral band running from head to dorsal margin of caudal peduncle, interrupted by a large, elongate midlateral spot and subdivided into 2 or 3 elongate spots posteriorly; midlateral spot contiguous with or only narrowly separated from a wide dark bar running dorsally to the base of the dorsal fin, the spot and bar together forming a strongly oblique, backwards slanting vertical marking [Kullander and Ferreira 1990].”

Biology

From Kullander (2015):

“*Aequidens tubicen* is collected in small clearwater fast flowing forest streams, near small waterfalls and rapids, always associated with rocky or sand bottom. Specimens collected on the banks of the Rio Trombetas were taken in rocky pools formed when the river level drops and which are not connected to the river.”

“Stomachs of a few specimens taken from a small stream contained small fishes, insects and plant debris (Kullander & Ferreira, 1991).”

From Froese and Pauly (2015):

“Prefers small, fast running creeks and rapids. Feeds on fish, insects and plant detritus.”

From Kullander and Ferreira (2005):

“[...] whereas *Aequidens tubicen*, *C. pydanielae*, and *Apistogramma salpinction* were collected in lentic habitats.”

Human Uses

Anecdotal evidence for use in aquarium trade.

Diseases

Information on pathogens and parasites known to be carried by *Aequidens tubicen* was not found.

Threat to Humans

From Froese and Pauly (2015):

“Harmless”

3 Impacts of Introductions

No records of *Aequidens tubicen* introductions were found.

4 Global Distribution

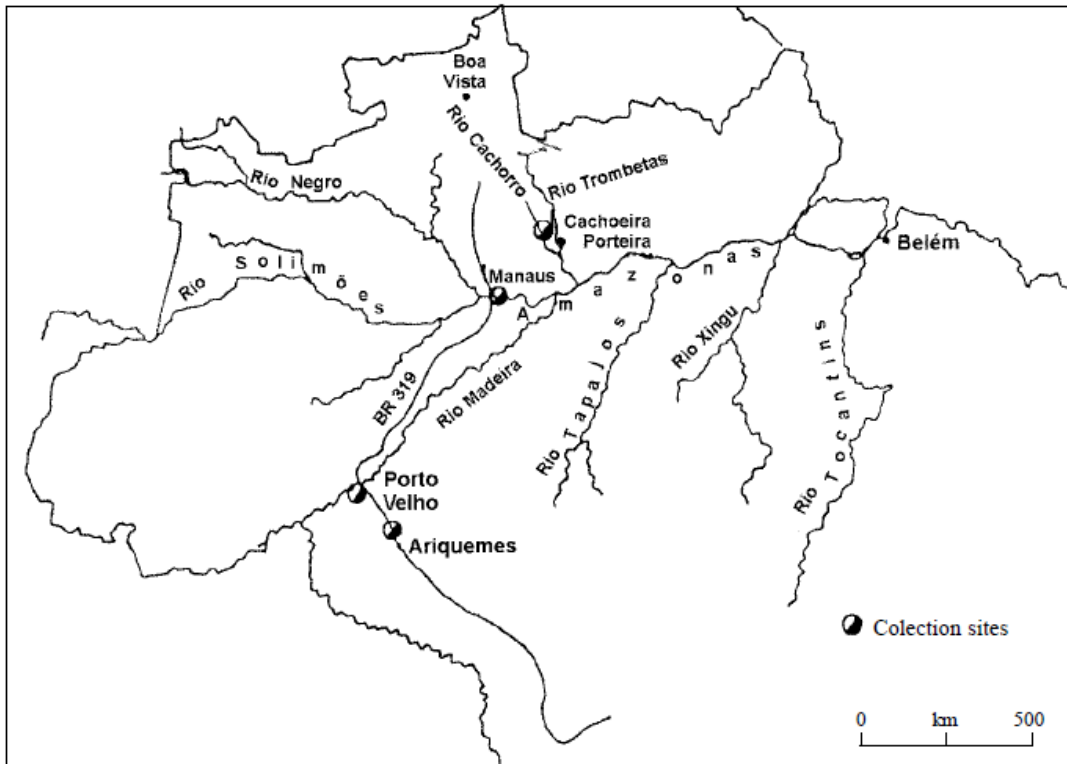


Figure 1. Location of Rio Trombetas and Cachoeira Porteira, in the Amazon River Basin of Brazil, indicating the distribution of *Aequidens tubicen*. Map from Santos et al. (1999).

5 Distribution Within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Aequidens tubicen* was low across the contiguous United States. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.000, low, and no states had individually high climate matches.

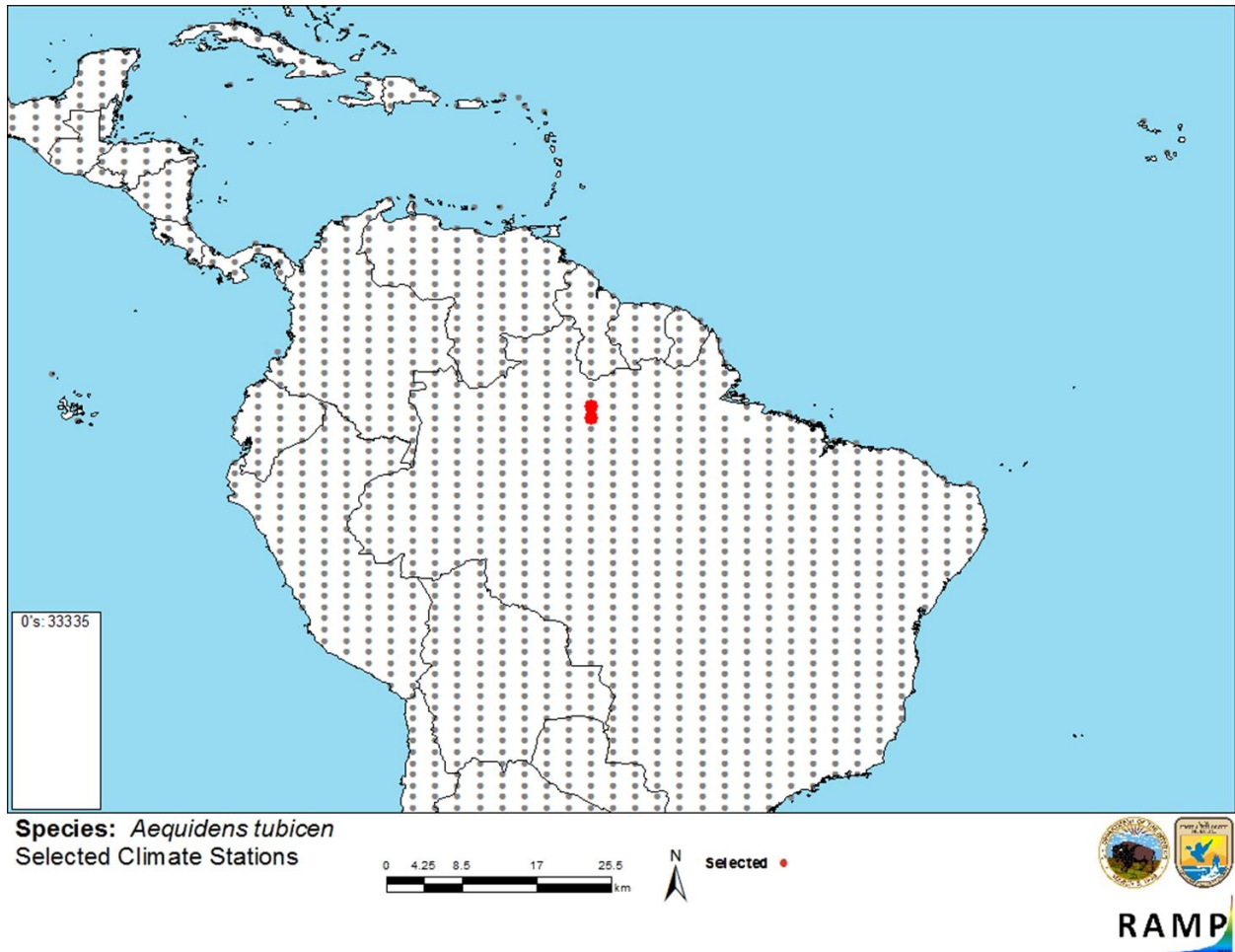


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in Brazil selected as source locations (red) and non-source locations (gray) for *Aequidens tubicen* climate matching. Source locations from Santos et al. (1999).

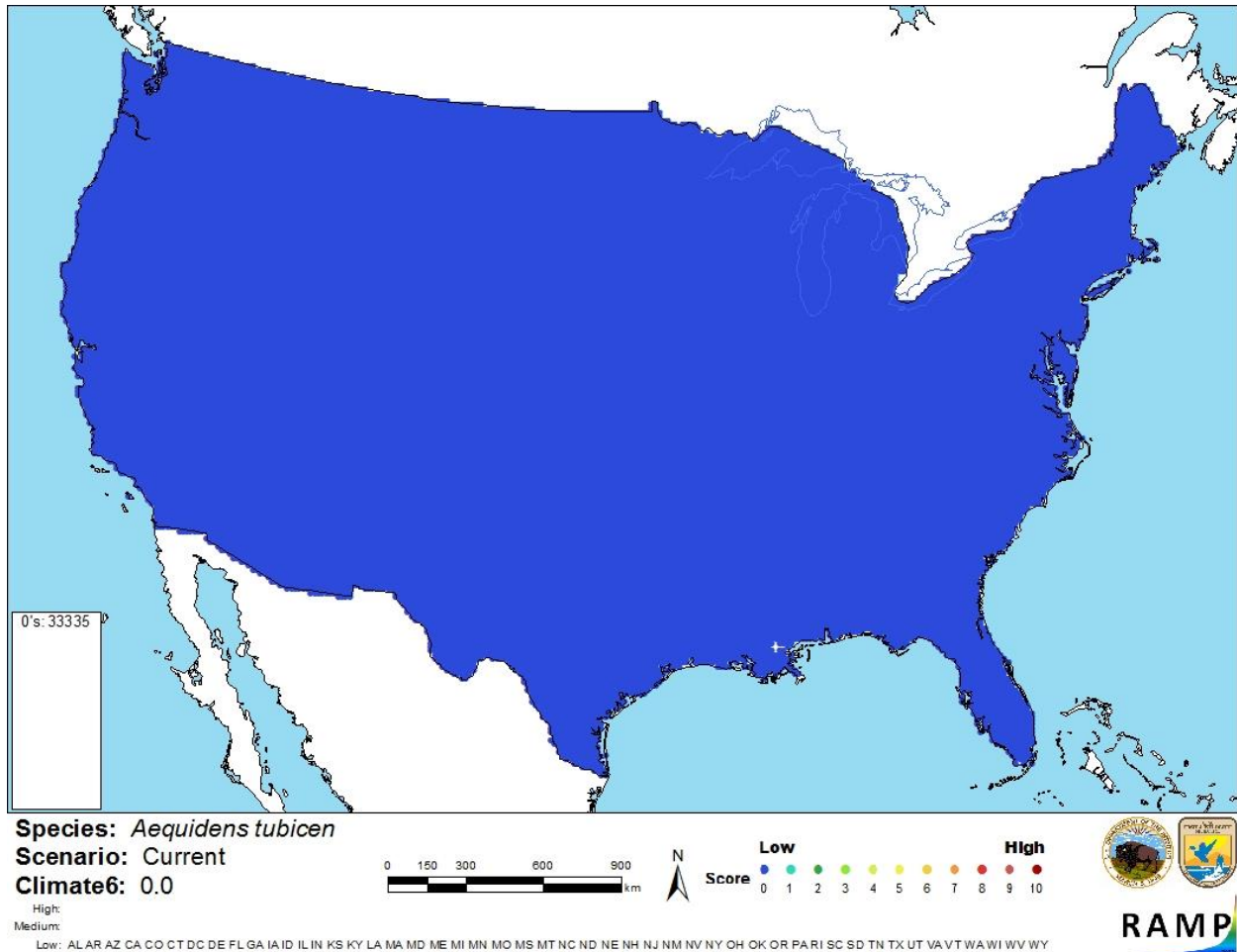


Figure 3. Map from RAMP (Sanders et al. 2014) of a current climate match for *Aequidens tubicen* in the contiguous United States based on source locations reported by Santos et al. (1999). 0 = Lowest match, 10 = Highest match

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

The certainty of assessment is low. There was limited information available for *Aequidens tubicen*. No history of introductions was found. Georeferenced distributional data was not available. The climate match was performed using an approximation of a text based distribution.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The history of invasiveness is uncertain. There were no records of introduction found. The climate match was low. Climate 6 score was 0.0000. The climate match was performed with an approximation of the distribution of the species based on text description of collection locations. The certainty of assessment is low. There was limited biological and distributional information. 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** If georeferenced distributional data should become available, the climate match should be repeated.
- **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. 2017. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (August 2017).

Froese, R., and D. Pauly, editors. 2015. *Aequidens tubicen* Kullander & Ferreira, 1991. FishBase. Available: <http://fishbase.de/summary/Aequidens-tubicen.html>. (March 2015).

ITIS (Integrated Taxonomic Information System). 2015. *Aequidens tubicen* Kullander & Ferreira, 1991. Integrated Taxonomic Information System, Reston, Virginia. Available: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648247. (March 2015).

Kullander, S. O. 2015. *Aequidens tubicen* Kullander and Ferreira. Swedish Museum of Natural History. Available: http://www2.nrm.se/ve/pisces/acara/ae_tubic.shtml. (March 2015).

Kullander, S. O., and E. J. G. Ferreira. 2005. Two new species of *Apistogramma* Regen (Teleostei: Cichlidae) from the rio Trombetas, Pará State, Brazil. Neotropical Ichthyology 3(3):361–371.

Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk assessment mapping program: RAMP. U.S. Fish and Wildlife Service.

Santos, J. M. M., J. A. Lobo, W. P. Tadei, and E. P. B. Contel. 1999. Intrapopulation genetic differentiation in *Anopheles (N.) darling* Root, 1926 (Diptera: Culicidae) in the Amazon region. *Genetics and Molecular Biology* 22(3):325–331.

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.

Kullander, S. O., and E. J. G. Ferreira. 1990. A new *Aequidens* species from the Rio Trombetas, Brasil, and redescription of *Aequidens pallidus* (Teleostei, Cichlidae). *Zoologia Scrip* 19(4):425–433.

Kullander, S. O., and E. J. G. Ferreira. 1991. A new *Aequidens* species from the Rio Trombetas, Brasil, and redescription of *Aequidens pallidus* (Teleostei, Cichlidae). *Zoologica Scripta* 19(4):425–433.

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.