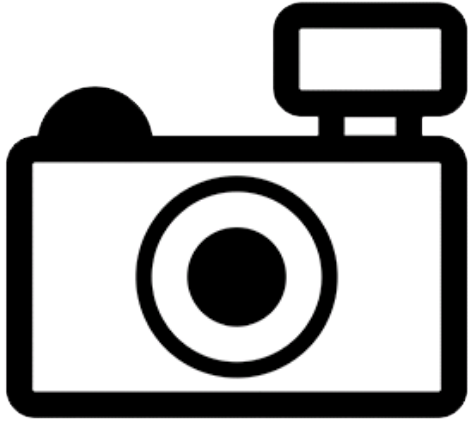


# Sapayo Cichlid (*Andinoacara sapayensis*)

## Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, web version – 4/2/2018



No Photo Available

## 1 Native Range and Status in the United States

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### Native Range

From Froese and Pauly (2015):

“South America: Pacific slope, in the Cayapas River drainage in northwestern Ecuador.”

From Kullander (2003):

“Rio Sapayo, N.W. Ecuador.”

From Arguello and Jimenez-Prado (2016):

“This species occurs in the Sapayo River in the Santiago-Cayapas basin in northwestern Ecuador (Barriga 2012, Wijkmark et al. 2012) and probably occurs in the Patia River of Colombia (Wijkmark et al. 2012). The type locality is the Rio Sapayo in northwestern Ecuador, an affluent of Rio Cayapas, Rio Santiago drainage (Wijkmark et al. 2012). This species occurs between 120 to 200 m asl.”

## Status in the United States

No records of *Andinoacara sapayensis* in the United States were found.

## Means of Introductions in the United States

No records of *Andinoacara sapayensis* in the United States were found.

## Remarks

*Aequidens sapayensis* is the accepted name for this species according to ITIS (2015). The accepted name according to Froese and Pauly (2015) and Eschmeyer et al. (2017) is *Andinoacara sapayensis*. Searches for information for this assessment were conducted using both names.

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From Eschmeyer et al. (2017):

“*sapayensis*, *Acara* Regan [C. T.] 1903:628 [Annals and Magazine of Natural History (Series 7) v. 12 (no. 72) (art. 64); [...]] Río Sapayo, northwestern Ecuador. Holotype (unique): BMNH 1902.7.29.56 [...]. •Valid as *Aequidens sapayensis* (Regan 1903) -- (Kullander in Reis et al. 2003:609 [...]). •Valid as *Andinoacara sapayensis* (Regan 1903) -- (Musilová et al. 2009:7 [...], Schindler & Morgenstern 2010:121 [...], Wijkmark et al. 2012:118 [...], Jiménez-Prado et al. 2015:329 [...]). **Current status:** Valid as *Andinoacara sapayensis* (Regan 1903). Cichlidae: Cichlinae.”

According to Froese and Pauly (2015), the following are synonyms for *Andinoacara sapayensis*: *Acara sapayensis* Regan, 1903, and *Aequidens sapayensis* (Regan, 1903).

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 sapayensis* (Regan, 1903)”

## Size, Weight, and Age Range

From Froese and Pauly (2015):

“Max length: 10.0 cm TL male/unsexed; [Kullander 2003]”

## Environment

From Froese and Pauly (2015):

“Freshwater; benthopelagic; pH range: ? - 7.0; dH range: ? - 12. [...]; 24°C - 26°C [assumed to be recommended aquarium temperature range] [Baensch and Riehl 1985]”

## Climate/Range

From Froese and Pauly (2015):

“Tropical; [...]”

From Arguello and Jimenez-Prado (2016):

“Lower elevation limit (metres): 120  
Upper elevation limit (metres): 200”

## Distribution Outside the United States

Native

From Froese and Pauly (2015):

“South America: Pacific slope, in the Cayapas River drainage in northwestern Ecuador.”

From Kullander (2003):

“Rio Sapayo, N.W. Ecuador.”

From Arguello and Jimenez-Prado (2016):

“This species occurs in the Sapayo River in the Santiago-Cayapas basin in northwestern Ecuador (Barriga 2012, Wijkmark et al. 2012) and probably occurs in the Patia River of Colombia (Wijkmark et al. 2012). The type locality is the Rio Sapayo in northwestern Ecuador, an affluent of Rio Cayapas, Rio Santiago drainage (Wijkmark et al. 2012). This species occurs between 120 to 200 m asl.”

## Introduced

No records of *Andinoacara sapayensis* introductions were found.

## Means of Introduction Outside the United States

No records of *Andinoacara sapayensis* introductions were found.

## Short Description

From Raghuvanshi et al. (2015):

“Body shape is elongate, body depth is 42% of standard length. Head length is 35 % of SL. Mouth is terminal. There are eleven rows of scales obliquely cross the body at its greatest height. The lateral line is interrupted as in all cichlids, the upper lateral runs through a row of 15-17 scales, while the lower lateral line is composed of 8-9 scales. There are 3 scales between upper lateral line and dorsal fin base and 8 scales between lower lateral line and anal fin base. Dorsal fin is placed at distant three-tenths of the entire length of body from the snout. There are 15 spines in dorsal fin and 10 soft rays. Anal fin commencing under the first soft ray of the dorsal. Anal fin has 3 spines which is a characteristic feature of this genus, there are 8 soft rays. Pectoral fins occur in pair, they are asymmetric, with rounded dorsal tip. Pelvic fin is pointed and has 12 spines. Caudal fin is rounded.”

“The ground color of this species is beige to yellow. A number of lines of sky-blue color, some of the lower of which are interrupted, obliquely cross the cheeks and pre-operculum in a posteriorly ascending direction. There are five vertical bands on the sides and a barely recognizable spot on the caudal peduncle.”

## Biology

From Froese and Pauly (2015):

“About 400 eggs. Male defends the territory [Baensch and Riehl 1985].”

From Raghuvanshi et al. (2015):

“In its native habitat *A. sapayensis* feeds on small insects and other carnivorous material.”

From Arguello and Jimenez-Prado (2016):

“This species is a pelagic fish that inhabit clear and turbid waters. It is an omnivorous fish.”

## Human Uses

From Froese and Pauly (2015):

“Fisheries: of no interest; aquarium: commercial”

From Arguello and Jimenez-Prado (2016):

“This species is locally consumed.”

## **Diseases**

No information on diseases of *Andinoacara sapayensis* was found.

## **Threat to Humans**

From Froese and Pauly (2015):

“Harmless”

## **3 Impacts of Introductions**

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No records of *Andinoacara sapayensis* introductions were found.

## **4 Global Distribution**

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Kullander (2003) stated that *Andinoacara sapayensis* was native to the Capayas River drainage in Ecuador. No map was available for use showing the river drainage.

## **5 Distribution Within the United States**

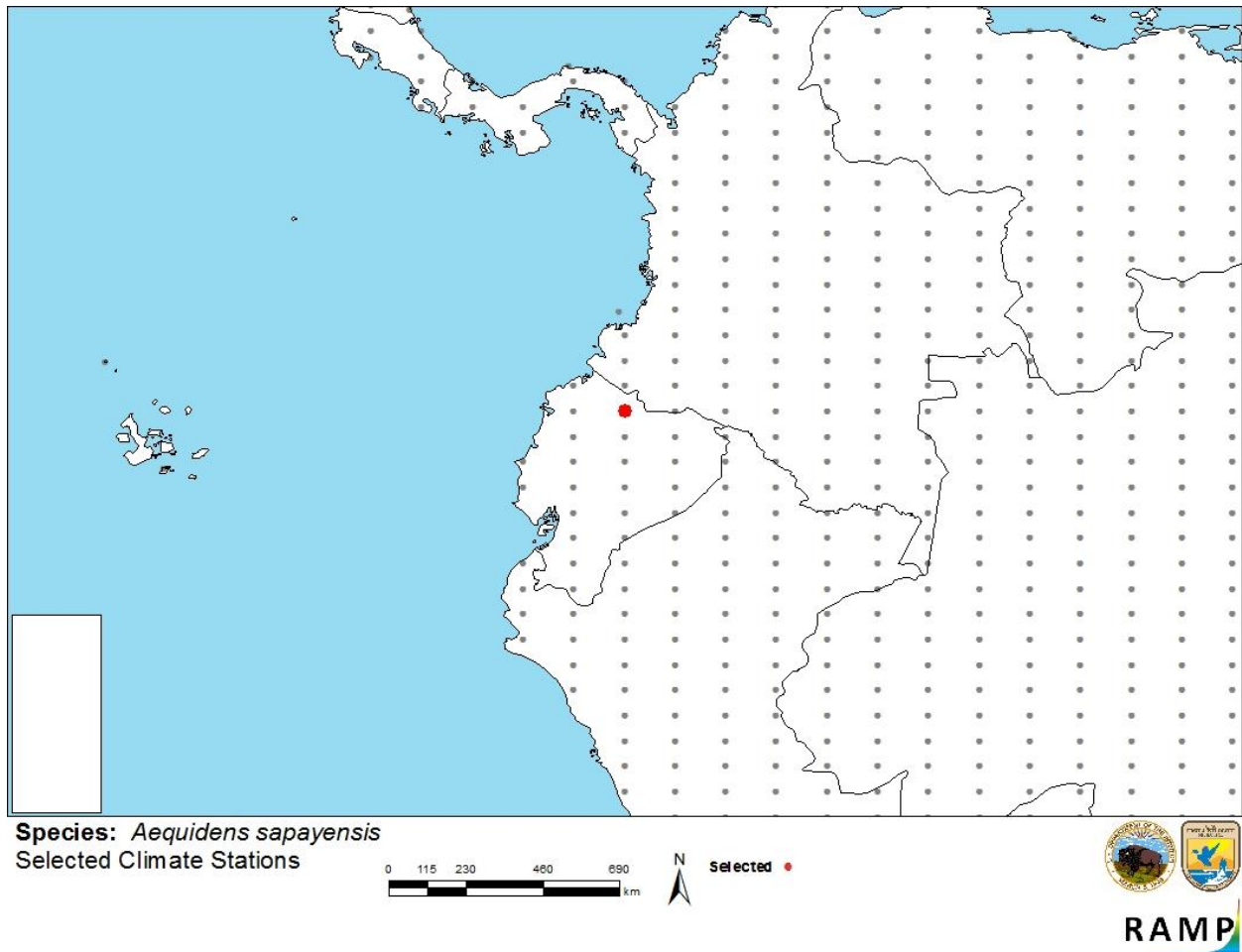
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No records of *Andinoacara sapayensis* in the United States were found.

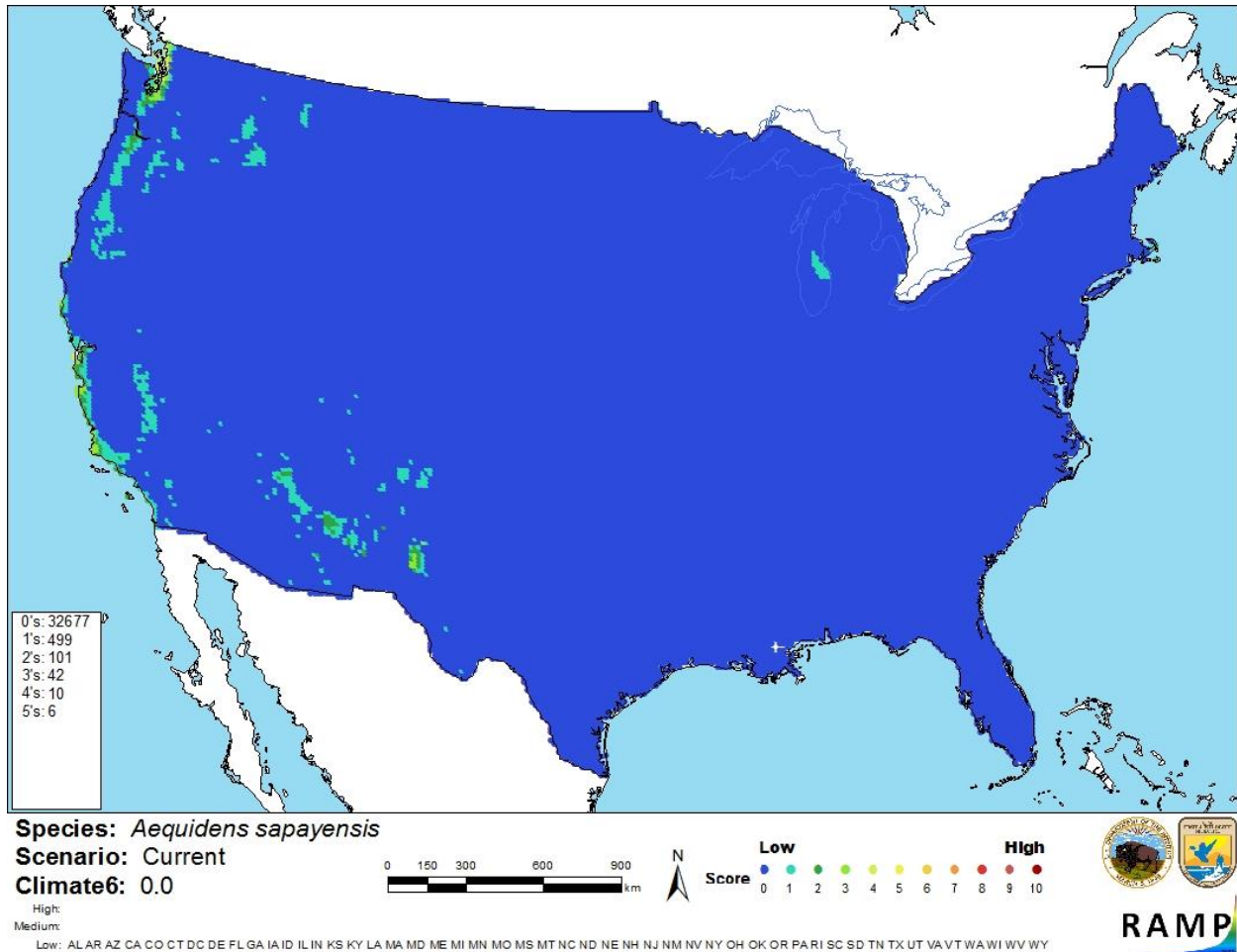
## 6 Climate Matching

### Summary of Climate Matching Analysis

The climate match for *Andinoacara sapayensis* was very low for the entire contiguous United States with very small patches of medium match along the Pacific Coast. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.000, low, and no state had an individually high climate match.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing the weather station in Ecuador selected as source locations (red) and non-source locations (grey) for *Andinoacara sapayensis* climate matching. Source location from Kullander (2003).



**Figure 3.** Map from RAMP (Sanders et al. 2014) of a current climate match for *Andinoacara sapayensis* in the contiguous United States based on the source location reported by Kullander (2003). 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
$\geq 0.103$	High

## 7 Certainty of Assessment

The certainty of this assessment is low. There was minimal information available for *Andinoacara sapayensis*. No records of introduction were found for *A. sapayensis*. The location used for climate matching was only an approximation of the distribution of the species based on the text description of the distribution.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

The history of invasiveness for *Andinoacara sapayensis* is uncertain. There were no records of introduction found. There is indication that this species is present in the pet trade but no information on the numbers present or for what length of time was found. The climate match is low, 0.000. There were only very small patches of medium match along the Pacific Coast; the rest of the country had a very low match. The certainty of assessment is low. The overall risk assessment 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

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

- Arguello, P., and P. Jimenez-Prado. 2016. *Andinoacara sapayensis*. The IUCN Red List of Threatened Species 2016: e.T64791043A66363672. Available: <http://www.iucnredlist.org/details/full/64791043/0>. (February 2017).
- Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2017. Catalogue of fishes. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (February 2017).
- Froese, R., and D. Pauly, editors. 2015. *Andinoacara sapayensis* (Regan, 1903). FishBase. Available: <http://www.fishbase.org/summary/Andinoacara-sapayensis.html>. (February 2015).
- ITIS (Integrated Taxonomic Information System). 2015. *Andinoacara sapayensis* (Regan, 1903). Integrated Taxonomic Information System, Reston, Virginia. Available: [http://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=648246](http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648246). (February 2015).
- 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.



Raghuvanshi, S., L. Langley, and D. Wenners. 2015. *Andinoacara sapaynensis*. Aquatic-nation. Available: [http://aquaticnation.org/library/Lib\\_Cich\\_sp\\_Andinoacara\\_sapaynensis.php](http://aquaticnation.org/library/Lib_Cich_sp_Andinoacara_sapaynensis.php). (February 2015).

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

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**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.

Barriga, R. 2012. Lista de peces de agua dulce e intermareales del Ecuador. *Revista Politécnica* 30(3):83–119. (In Spanish.)

Musilová, Z., O. Říčan, and J. Novák. 2009. 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.

Prado, P. J., W. Aguirre, E. L. Moncayo, R. N. Amaya, F. N. Salazar, E. R. Monsalve, E. Z. Hugo, A. T. Noboa, and J. V. Rivera. 2015. Guía de peces para aguas continentales en la vertiente occidental del Ecuador. Pontificia Universidad Católica del Ecuador Sede Esmeraldas; Universidad del Azuay y Museo Ecuatoriano de Ciencias Naturales del Instituto Nacional de Biodiversidad, Esmeraldas, Ecuador. (In Spanish.)

Regan, C. T. 1903. Descriptions of new South-American fishes in the collection of the British Museum. *Annals and Magazine of Natural History Series* 7 12(72):621–630.

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.

Schindler, I., and R. Morgenstern. 2010. Anmerkungen zur Taxonomie der *Andinoacara*-Arten. DCG-Informationen (Deutsche Cichliden-Gesellschaft) 41(5):114–124. (In German.)

Wijkmark, N., S. O. Kullander, and R. E. Barriga Salazar. 2012. *Andinoacara blombergi*, a new species from the río Esmeraldas basin in Ecuador and a review of *A. rivulatus* (Teleostei: Cichlidae). *Ichthyological Exploration of Freshwaters* 23(2):117–137.