

Aimara (*Hoplerythrinus unitaeniatus*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, August 2011
Revised, February 2019
Web Version, 10/18/2019



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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

“Central and South America: São Francisco, Amazon, Paraná, Orinoco and Magdalena River basins [Panama, Trinidad and Tobago, Argentina, Bolivia, Brazil, Ecuador, Paraguay, Peru, Uruguay and Venezuela], and coastal rivers in Guyana, Suriname and French Guiana.”

Status in the United States

No wild populations of *Hoplerythrinus unitaeniatus* were found in the United States. No record of this species in trade in the United States was found.

Means of Introductions in the United States

No wild populations of *Hoplerythrinus unitaeniatus* were found in the United States.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2019) *Hoplerythrinus unitaeniatus* (Spix and Agassiz 1829) is the current valid name for this species. It was originally described as *Erythrinus unitaeniatus* (Spix and Agassiz 1829).

From ITIS (2019):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Characiformes
Family Erythrinidae
Genus *Hoplerythrinus*
Species *Hoplerythrinus unitaeniatus* (Spix and Agassiz, 1829)”

Size, Weight, and Age Range

From Froese and Pauly (2019):

“Maturity: Lm 16.5 range ? - ? cm
Max length : 25.0 cm TL male/unsexed; [Oyakawa 2003]”

Environment

From Froese and Pauly (2019):

“Freshwater; pelagic; pH range: 5.6 - 7.8; dH range: ? - 30.[]; 23°C - 27°C [Riehl and Baensch 1991; assumed to be recommended aquarium temperartue]”

Climate/Range

From Froese and Pauly (2019):

“Subtropical;”

Distribution Outside the United States

Native

From Froese and Pauly (2019):

“Central and South America: São Francisco, Amazon, Paraná, Orinoco and Magdalena River basins [Panama, Trinidad and Tobago, Argentina, Bolivia, Brazil, Ecuador, Paraguay, Peru, Uruguay and Venezuela], and coastal rivers in Guyana, Suriname and French Guiana.”

Introduced

No records of introductions outside of its native range have been found.

Means of Introduction Outside the United States

No records of introductions outside of its native range have been found.

Short Description

From Froese and Pauly (2019):

“Opercular ocellus present.”

Biology

From Froese and Pauly (2019):

“Inhabits swamps and creeks with little current [Planquette et al. 1996], as well as in flooded savannas [Boujard et al. 1997]. Regularly goes to the surface of the water to breathe. Can survive long periods out of the water. This behavior of breathing air at the surface makes the fish vulnerable to predation by electric eels [Boujard et al. 1997]. Is a predaceous omnivore of open waters. Feeds on aquatic invertebrates and to lesser degree, on fish. Specimens measuring 16 cm were found to be mature [Planquette et al. 1996].”

Human Uses

From Froese and Pauly (2019):

“Fisheries: commercial; aquarium: public aquariums”

Diseases

According to Poelen et al. (2014) *Hoplerythrinus unitaeniatus* is host to the parasites: *Quadrigyrus brasiliensis*, *Quadrigyrus nickoli*, *Quadrigyrus torquatus*, *Pterobothrium crassicolle*, *Proteocephalus mahnerti*, *Spirocamallanus krameri*, *Guyanema seriei*, and *Procamallanus*.

No OIE reportable diseases (OIE 2019) were found for *Hoplerythrinus unitaeniatus*.

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

No records of introductions outside of its native range have been reported.

4 Global Distribution



Figure 1. Known global distribution of *Hoplerythrinus unitaeniatus*. Locations in Argentina, Bolivia, Brazil, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela. Map from GBIF Secretariat (2019).

5 Distribution Within the United States

No records of established wild populations found in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Hoplerythrinus unitaeniatus* in the contiguous United States was low for the majority of the northern states. Areas of medium match are found throughout the southeastern states as well as in patches along the Pacific Coast. Areas of high match were found along the Gulf and Southern Atlantic coasts from Texas to South Carolina with the highest area of match being found on peninsular Florida. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.054, medium (scores greater than 0.005, but less than 0.103, are classified as medium). Most States had low individual Climate 6 scores, except for Florida, Georgia, Louisiana, South Carolina, and Texas, which had high individual scores, and Alabama, Mississippi, and North Carolina, which had medium individual scores.

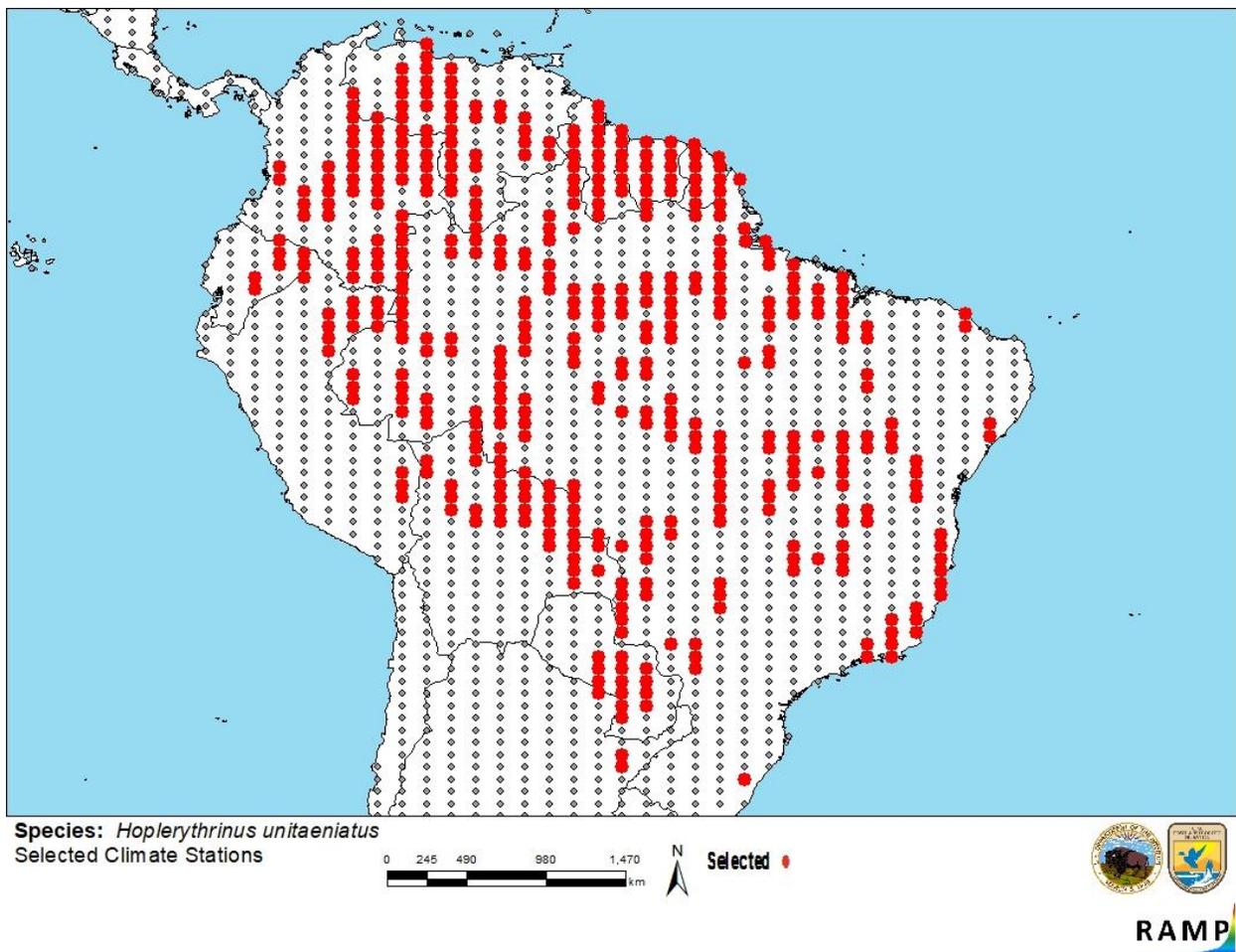


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in South America selected as source locations (red; Argentina, Bolivia, Brazil, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Trinidad and Tobago, Uruguay and Venezuela) and non-source locations (gray) for *Hoplerythrinus unitaeniatus* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

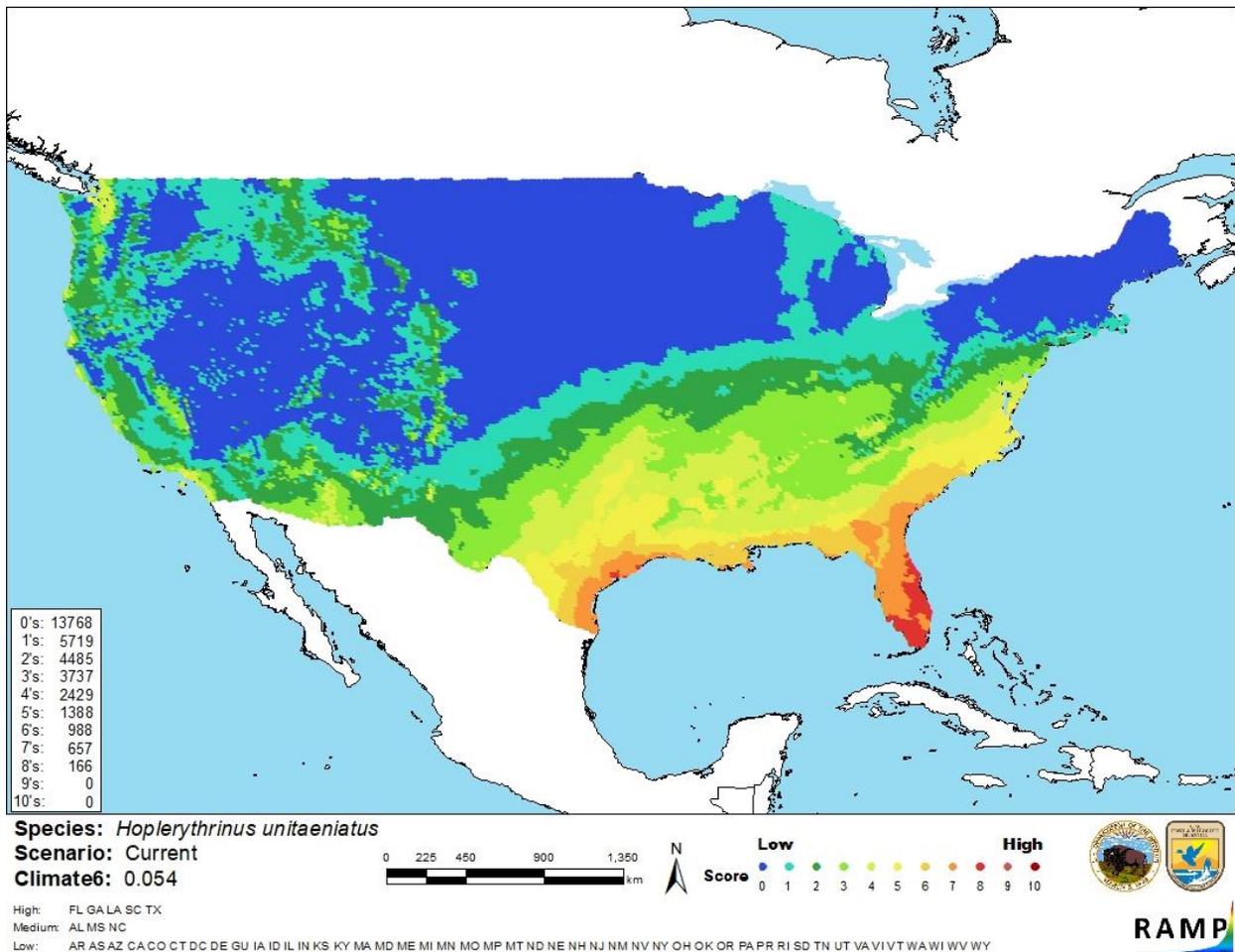


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Hoplerythrinus unitaeniatus* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0 = Lowest match, 10 = Highest match.

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 certainty of assessment for *Hoplerythrinus unitaeniatus* is low. There is minimal information available for this species. *H. unitaeniatus* has not been introduced anywhere outside of its native range and therefore there are no impacts of introduction.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Aimara (*Hoplerythrinus unitaeniatus*) is a South American air breathing fish that is native to Central and South America: São Francisco, Amazon, Paraná, Orinoco and Magdalena River basins [Panama, Trinidad and Tobago, Argentina, Bolivia, Brazil, Ecuador, Paraguay, Peru, Uruguay and Venezuela], and coastal rivers in Guyana, Suriname and French Guiana.

H. unitaeniatus prefers freshwater habitats with little current and can survive outside of water for extended periods of time. The history of invasiveness is uncertain since it has not been documented anywhere outside of its native range. The overall climate match for the contiguous United States was medium. The Gulf Coast and southeast had high to medium matches while most of the remainder of the contiguous United States had a low match. The certainty of assessment is low. The overall risk assessment category for *Hoplerythrinus unitaeniatus* is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Medium**
- **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.

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Sanders, S., C. Castiglione, and M. Hoff. 2018. Risk assessment mapping program: RAMP, version 3.1. 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.

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