

# ***Serrasalmus odyssei* (a piranha, no common name)**

## **Ecological Risk Screening Summary**

U.S. Fish and Wildlife Service, May 2014  
Revised, January 2018  
Web Version, 6/14/2018

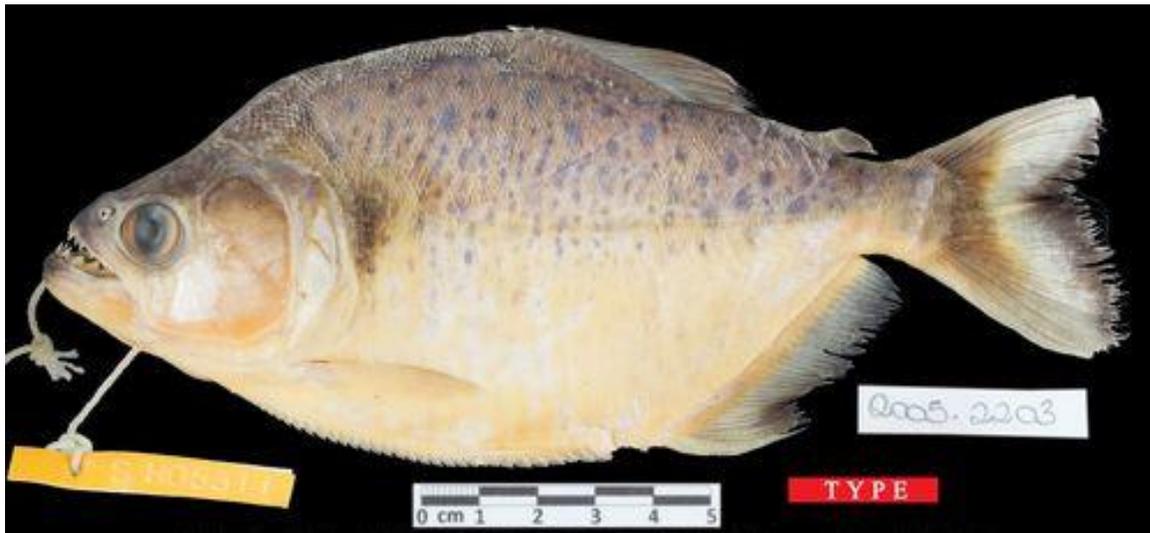


Photo: L. Randarihasipara (2017), Museum national d'histoire naturelle. Licensed under Creative Commons (CC BY-NC 4.0). Available: <https://www.gbif.org/occurrence/583670180>. (January 2018).

## **1 Native Range and Status in the United States**

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### **Native Range**

From Froese and Pauly (2017):

“South America: Bolivia.”

From Eschmeyer et al. (2018):

“Distribution: Rio San Martin and Rio Paragá, Bolivia.”

### **Status in the United States**

No information reported for this species. There is no indication that this species is in trade in the United States.

## Means of Introductions in the United States

No information reported for this species.

## Remarks

From Froese and Pauly (2017):

“*odyssei*: Name applied to the locally known piranha 'suave' and refers to the taxonomic confusion with this species at the beginning of the fieldwork during the present study.”

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From Froese and Pauly (2018):

“Biota > Animalia (Kingdom) > Chordata (Phylum) > Vertebrata (Subphylum) > Gnathostomata (Superclass) > Pisces (Superclass) > Actinopterygii (Class) > Characiformes (Order) > Serrasalminae (Family) > *Serrasalmus* (Genus) > *Serrasalmus odyssei* (Species)”

From Eschmeyer et al. (2018):

“Current status: Valid as *Serrasalmus odyssei* Hubert & Renno 2010.”

### Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length : 16.7 cm SL male/unsexed [Hubert and Renno 2010]”

### Environment

From Froese and Pauly (2017):

“Freshwater; pelagic.”

### Climate/Range

From Froese and Pauly (2017):

“Tropical”

### Distribution Outside the United States

Native

From Froese and Pauly (2017):

“South America: Bolivia.”

From Eschmeyer et al. (2018):

“Distribution: Rio San Martin and Rio Paragá, Bolivia.”

### Introduced

No information reported for this species.

### Means of Introduction Outside the United States

No information reported for this species.

### Short Description

From Froese and Pauly (2017):

“Dorsal soft rays (total): 13-15; Anal soft rays: 28 - 33. This species is distinguished from its congener in the Upper Amazon by the following set of characters: short supraoccipital spine 0.13-0.17% of SL (vs. typical range between 0.17-0.22% of SL in *Serrasalmus* but sometimes reaching 0.15 and 0.16 in *S. hollandi* and *S. altispinnis*); shallow body 0.45-0.57% of SL (vs. typical body height 0.50-0.62% in *Serrasalmus*); short dorsal fin, between 0.18-0.20% of SL and 13-15 branched rays (vs. 0.19-0.24% of SL in *Serrasalmus*); short anal fin, typical 0.32-0.37% of SL with 28-33 branched rays, but overlapping sometimes with other *Serrasalmus*); adipose fin located on the very posterior part of the body and distant from the dorsal fin end, typically R15 ranging between 0.19-0.22% of SL, but overlapping with other *Serrasalmus* with R15 ranging between 0.17-0.21% of SL); low number of scales between the lateral line and the dorsal fin, 23.5-29.5 (vs. 28.5-36.5 in other *Serrasalmus*); an intermediate number of prepelvic serrae 20-24 [Hubert and Renno 2010].”

### Biology

From Froese and Pauly (2017):

“This species is reported from the clear- to black-water rivers of the Upper Madeira where it seems to be scarce in white waters. Inhabits the shallow part of the river near the shores especially where dead woods accumulate and scarce in the running part of rivers. Apparently common in syntopy with young *S. rhombeus* individuals of equal size [Huber and Renno 2010].”

### Human Uses

No information reported for this species.

### Diseases

No information available. There are no known OIE reportable diseases for this species.

### Threat to Humans

From Froese and Pauly (2017):

“Harmless”

### 3 Impacts of Introductions

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No information reported for this species.

### 4 Global Distribution

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**Figure 1.** Map of known global distribution of *Serrasalmus odyssei*, reported from Bolivia. Map from GBIF Secretariat (2017).

### 5 Distribution Within the United States

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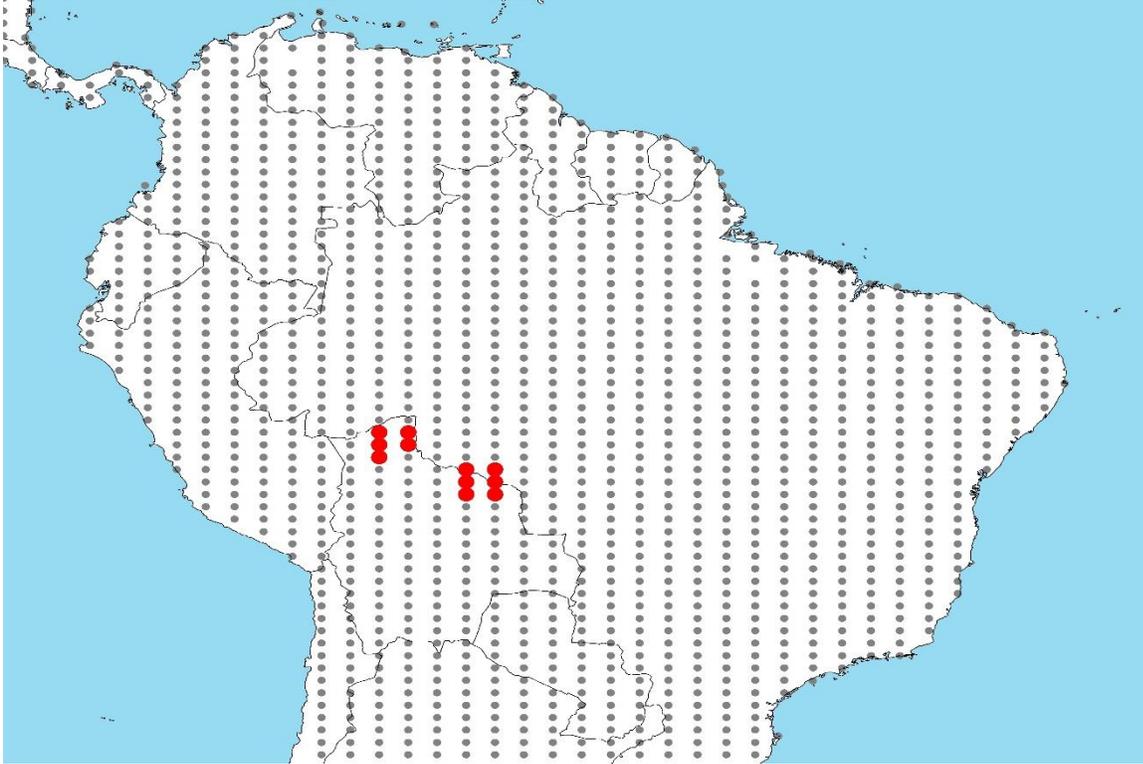
No introductions of this species have been reported within the United States.

### 6 Climate Matching

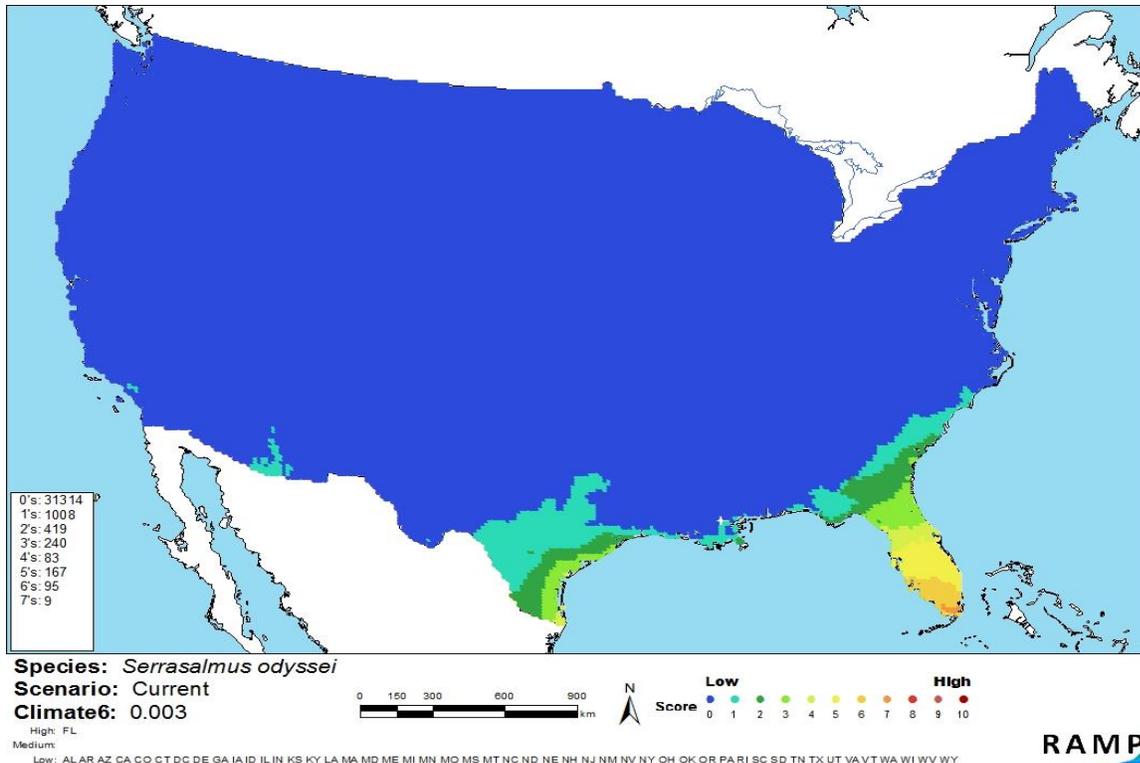
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#### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was medium in peninsular Florida, with the highest match in southern Florida. The far southern tip of Texas had a medium climate match as well. A low match was found throughout the rest of the United States. Climate 6 match indicated that the contiguous United States has a low climate match overall. The range for a low climate match is from 0.000 to 0.005, inclusive; Climate 6 match of *Serrasalmus odyssei* is 0.003.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations in Bolivia, South America selected as source locations (red) and non-source locations (gray) for *Serrasalmus odyssei* climate matching. Source locations from GBIF Secretariat (2017).



**Figure 3.** Map of RAMP (Sanders et al. 2017) climate matches for *Serrasalmus odyssei* 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
$0.000 < X < 0.005$	Low
$0.005 < X < 0.103$	Medium
$\geq 0.103$	High

## 7 Certainty of Assessment

*S. odyssei* is a valid species, however no reports of introductions currently exist. Scientific study is needed to evaluate the potential and actual impacts the species could have in introduced areas before certainty of assessment can be anything but low.

## 8 Risk Assessment

### Summary of Risk to the Contiguous United States

*Serrasalmus odyssei* is a freshwater fish species native to Bolivia, South America. *S. odyssei* is reported from the clear- to black-water rivers of the Upper Madeira where it seems to be scarce in white waters. It inhabits the shallow part of the river near the shores especially where dead woods accumulate and is scarce in the running part of rivers. It is common in syntopy with

young *S. rhombeus* individuals of equal size. No introductions for the species have been reported. Climate match with the contiguous United States is low overall. However, much of peninsular Florida has a medium match. More information is needed to fully understand the impacts from introductions of this species. Absence of this information makes the certainty of this assessment low. Overall risk posed by this species is uncertain at this time.

## 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

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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.**

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>. (January 2018).

Froese, R., and D. Pauly, editors. 2017. *Serrasalmus odyssei* Hubert & Renno, 2010. FishBase. Available: <http://www.fishbase.se/summary/Serrasalmus-odyssei.html>. (January 2018).

Froese, R., and D. Pauly, editors. 2018. *Serrasalmus odyssei* Hubert & Renno, 2010. In World Register of Marine Species. Available: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=1007985>. (June 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Serrasalmus odyssei* Hubert & Renno, 2010. Available: <https://www.gbif.org/species/2374545>. (January 2018).

Sanders, S., C. Castiglione, and M. H. 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.**

Hubert, N., and J. F. Renno. 2010. Evolution of the neotropical ichthyofauna - molecular and evolutionary perspectives about the origin of the fish communities in the Amazon. VDM Publishing House, Saarbrücken, Germany.