

Golden Otocinclus (*Otocinclus affinis*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, January 2014
Revised, April 2019
Web Version, 6/9/2020

Organism Type: Fish
Overall Risk Assessment Category: Uncertain



Photo: Aleksandr Skopenko. Licensed under Creative Commons Attribution-Share Alike 3.0 Unported. Available: [https://commons.wikimedia.org/wiki/File:Otocinclus_affinis_\(2\).jpg](https://commons.wikimedia.org/wiki/File:Otocinclus_affinis_(2).jpg). (April 2019).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

“South America: vicinity of Rio de Janeiro, Brazil.”

Froese and Pauly (2019) report *Otocinclus affinis* as native to the Rio de Janeiro and São Paulo states of Brazil.

Status in the United States

There are no records of any wild or established populations of *Otocinclus affinis* in the United States. There were no records of *O. affinis* in trade in the United States.

Means of Introductions in the United States

There are no records of any wild or established populations of *Otocinclus affinis* in the United States.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

“**Current status:** Valid as *Otocinclus affinis* Steindachner 1877.”

From ITIS (2019):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Siluriformes
Family Loricariidae
Subfamily Hypoptopomatinae
Genus *Otocinclus*
Species *Otocinclus affinis* Steindachner, 1877

Size, Weight, and Age Range

From Froese and Pauly (2019):

“Max length : 5.0 cm SL male/unsexed; [Schaefer 2003]”

Environment

From Froese and Pauly (2019):

“Freshwater; demersal; pH range: 6.0 - 8.0; dH range: 5 - 19. [...] 20°C - 26°C [Riehl and Baensch 1991; assumed to be the recommended aquarium temperature]”

Climate/Range

From Froese and Pauly (2019):

“Tropical;”

Distribution Outside the United States

Native

From Froese and Pauly (2019):

“South America: vicinity of Rio de Janeiro, Brazil.”

Froese and Pauly (2019) report *Otocinclus affinis* as native to the Rio de Janeiro and São Paulo states of Brazil.

Introduced

There are no records of any wild or established populations of *Otocinclus affinis* outside of its native range.

Means of Introduction Outside the United States

There are no records of any wild or established populations of *Otocinclus affinis* outside of its native range.

Short Description

A short description of *Otocinclus affinis* was not found.

Biology

From Froese and Pauly (2019):

“Mainly nocturnal. Feeds on algae [Burgess 1989]. Aquarium keeping: feeds on plants and roots; in groups of 5 or more individuals; minimum aquarium size 60 cm [BMELF 1999].”

Human Uses

From Froese and Pauly (2019):

“Aquarium: highly commercial”

Diseases

There is no information available regarding diseases of *Otocinclus affinis*. **No records of OIE-reportable diseases (OIE 2020) were found for *O. affinis*.**

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

There are no records of any wild or established populations of *Otocinclus affinis* outside of their native range; therefore there is no information on impacts of introduction.

4 History of Invasiveness

There are no records of any wild or established populations of *Otocinclus affinis* outside of their native range. No information on the volume or duration of trade in this species was found. Therefore the history of invasiveness is “No Known Nonnative Population”.

5 Global Distribution

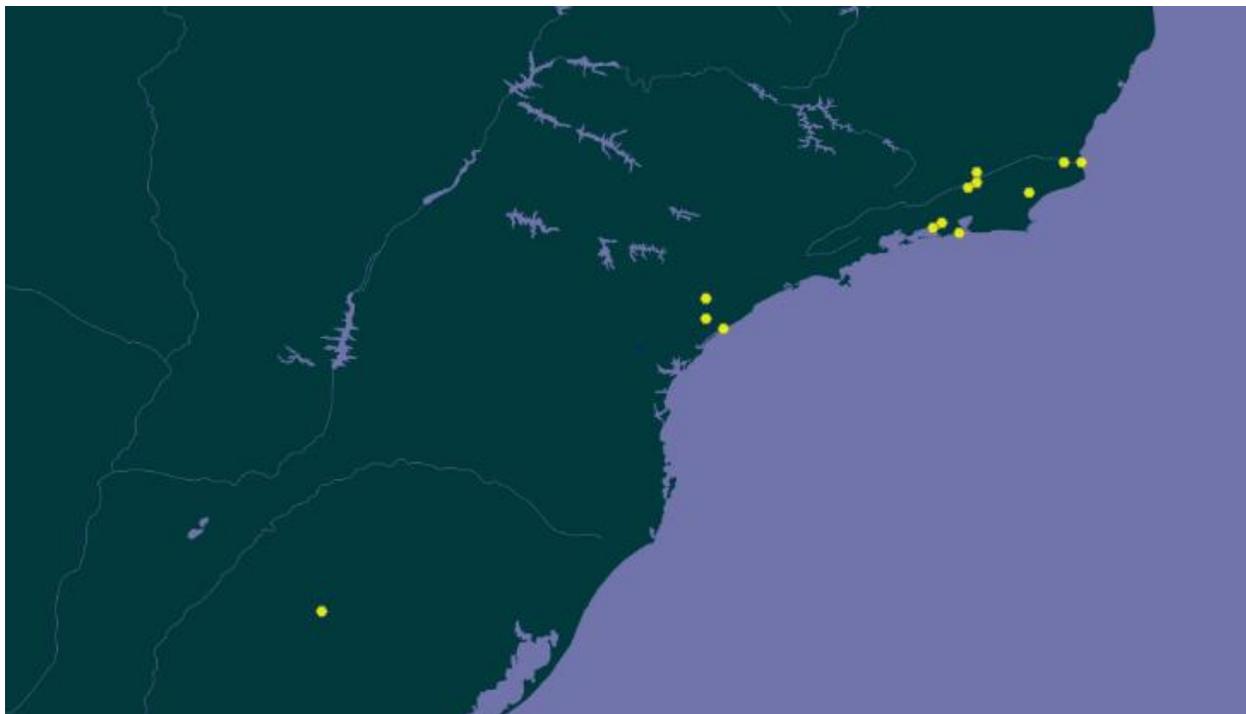


Figure 1. Known global distribution of *Otocinclus affinis*. Locations in southeastern Brazil. Map from GBIF Secretariat (2019).

6 Distribution Within the United States

There are no records of any wild or established populations of *Otocinclus affinis* in the United States.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Otocinclus affinis* was low for a majority of the contiguous United States. There were some patches of medium match in the southern states and along the southern coast from Texas to Florida and then up the east coast to North Carolina. Most of peninsular Florida had a high match. There were also areas of high match in southern Texas and Louisiana. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.017, medium (scores between 0.005 and 0.103, exclusive, are classified as medium). All States had low individual Climate 6 scores except Alabama, Mississippi, and Texas, which had a medium climate score, and Florida and Louisiana, which had a high climate score.

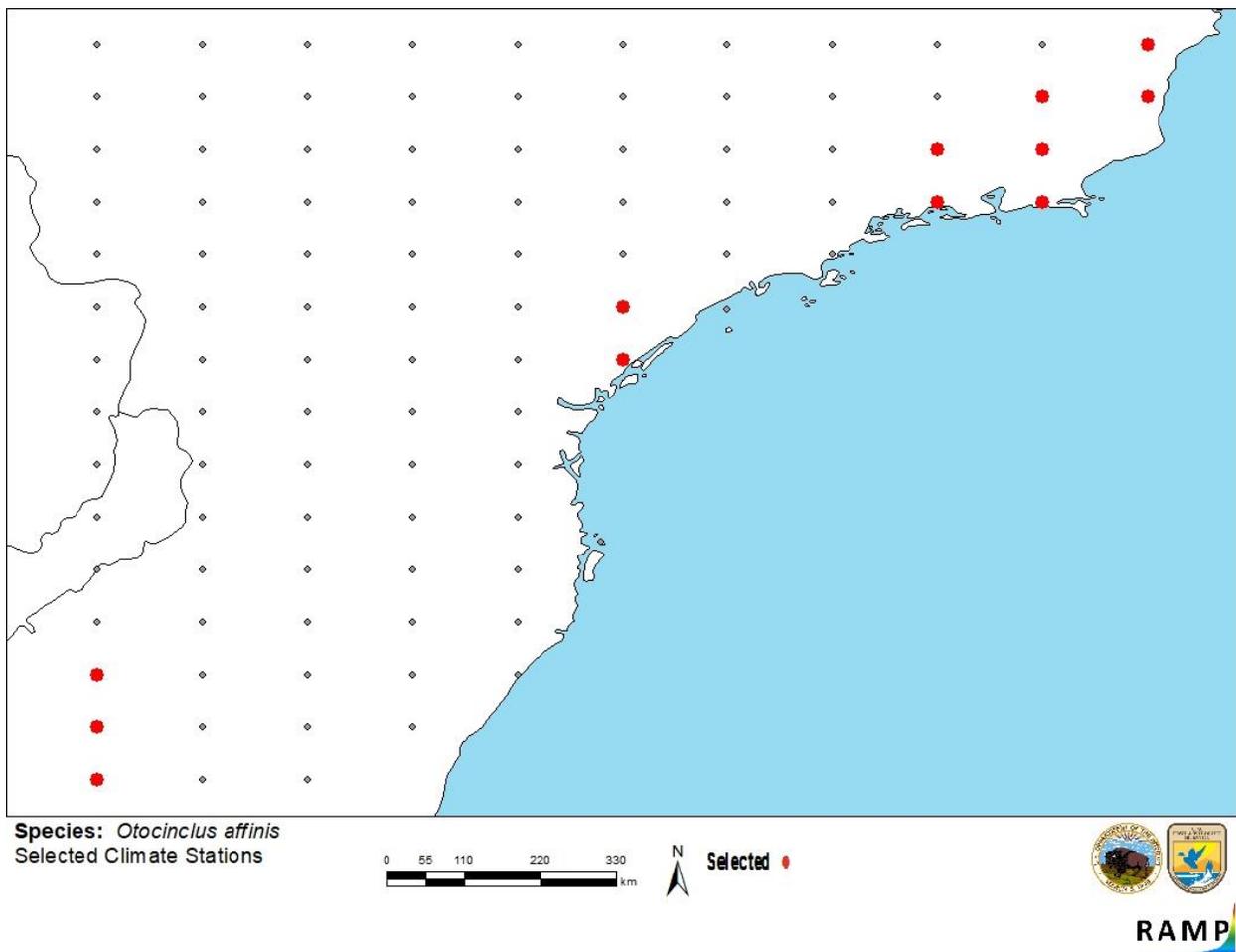


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Brazil selected as source locations (red) and non-source locations (gray) for *Otocinclus affinis* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.”

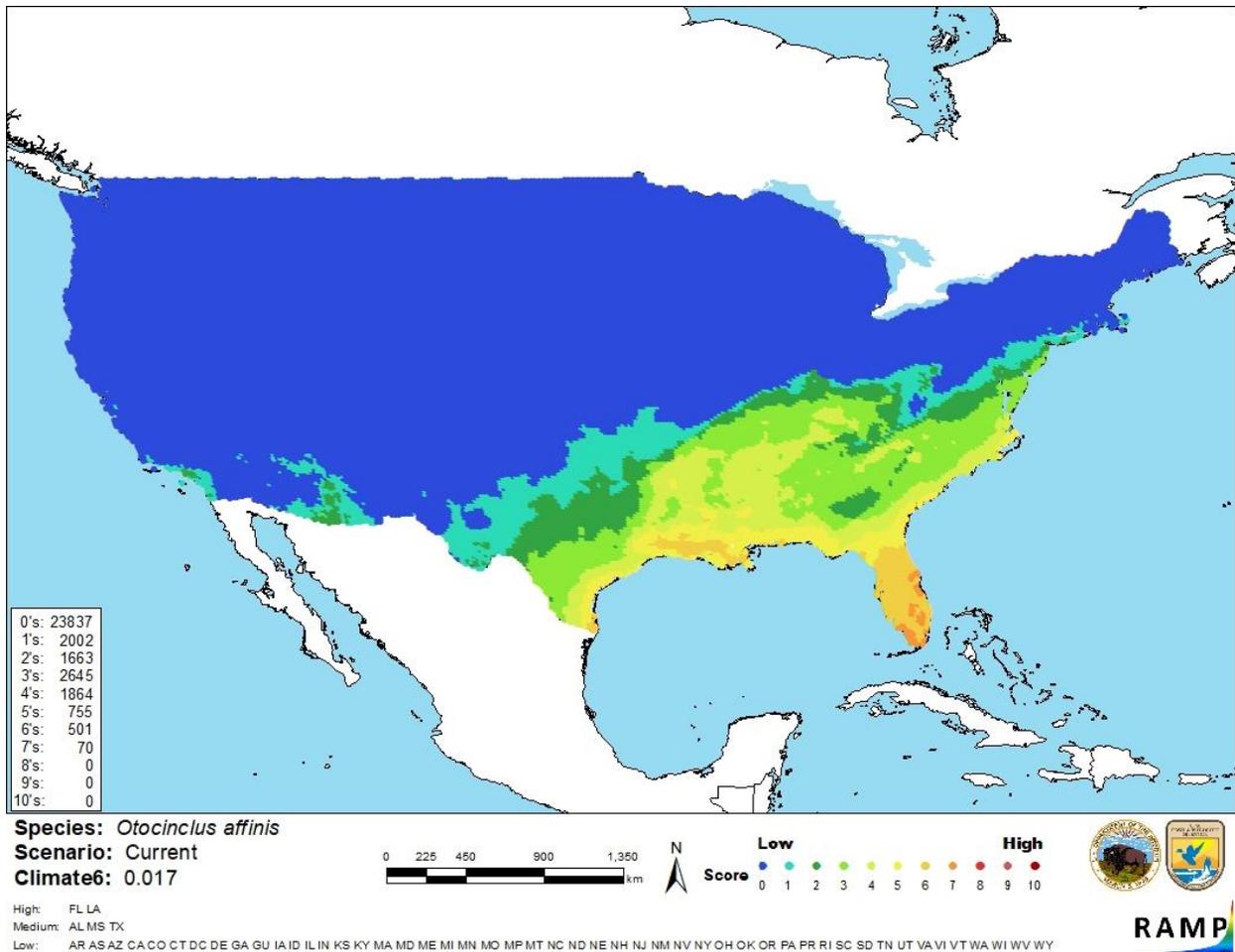


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Otocinclus affinis* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

8 Certainty of Assessment

There was some information on the biology and environment, but it was limited. *Otocinclus affinis* has not been reported as introduced outside of its native range; therefore there was no information on impacts of introductions. The certainty of assessment for *Otocinclus affinis* is low due to lack of information.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Golden Otocinclus (*Otocinclus affinis*) is a fish native to the Rio de Janeiro and São Paulo states in southeastern Brazil. *O. affinis* is mainly nocturnal and is known to feed on algae in its native range. The species is present in the aquarium trade. The history of invasiveness is No Known Nonnative Population. It has not been reported outside of its native range and there was no information available regarding the volume and duration of trade in the species. The climate match for the contiguous United States was medium. Most of the contiguous United States had a low climate match except the southeast and Gulf coasts which had areas of medium match with areas of high match in Florida, Louisiana, and Texas. The certainty of assessment is low due to lack of information. The overall risk assessment category for *Otocinclus affinis* is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Medium**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional remarks**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

Fricke R, Eschmeyer WN, van der Laan R, editors. 2019. Eschmeyer's catalog of fishes: genera, species, references. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (April 2019).

Froese R, Pauly D, editors. 2019. *Otocinclus affinis* Steindachner, 1877. FishBase. Available: <https://www.fishbase.de/summary/Otocinclus-affinis.html> (April 2019).

GBIF Secretariat. 2019. GBIF backbone taxonomy: *Otocinclus affinis* Steindachner, 1877. Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2339313>. (March 2019).

[ITIS] Integrated Taxonomic Information System. 2019. *Otocinclus affinis* Steindachner, 1877. Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=164355#null (April 2019).

[OIE] World Organisation for Animal Health. 2020. OIE-listed diseases, infections and infestations in force in 2020. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2020/> (June 2020).

Sanders S, Castiglione C, Hoff M. 2018. Risk Assessment Mapping Program: RAMP. Version 3.1. U.S. Fish and Wildlife Service.

11 Literature Cited in Quoted Material

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.

[BMELF] Bundesministerium für Ernährung, Landwirtschaft und Forsten. 1999. Gutachten über Mindestanforderungen an die Haltung von Zierfischen (Süßwasser). Bonn: Bundesministerium für Ernährung, Landwirtschaft und Forsten.

Burgess WE. 1989. An atlas of freshwater and marine catfishes. A preliminary survey of the Siluriformes. Neptune City, New Jersey: TFH Publications.

Riehl R, Baensch HA. 1991. Aquarien atlas. Band 1. Melle, Germany: Mergus, Verlag für Natur- und Heimtierkunde.

Schaefer SA. 2003. Loricariidae - Hypoptopomatinae (armored catfishes). Pages 321–329 in Reis RE, Kullander SO, Ferraris Jr. CJ, editors. Checklist of the freshwater fishes of South and Central America. Porto Alegre, Brazil: EDIPUCRS.