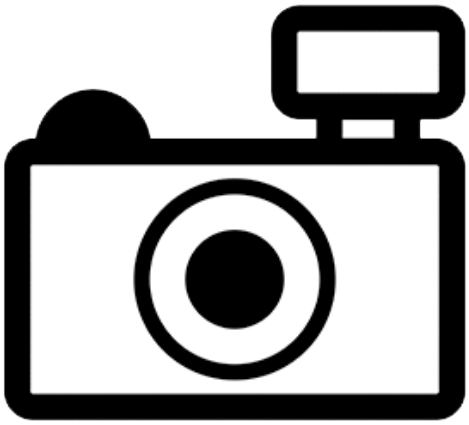
U.S. Fish & Wildlife Service

Apomatoceros alleni (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, March 2015
Revised, September 2017, October 2017
Web Version, 7/13/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2015):

"South America: Amazon River basin [Brazil, Peru]."

Status in the United States

No records of *Apomatoceros alleni* in the United States were found. No indication of trade in *A. alleni* in the United States was found.

The Florida Fish and Wildlife Conservation Commission has listed the parasitic catfish *A. alleni* as a prohibited species. Prohibited nonnative species (FFWCC 2016), "are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities."

Means of Introductions in the United States

No records of *Apomatoceros alleni* 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 Ostariophysi
Order Siluriformes
Family Trichomycteridae
Subfamily Stegophilinae
Genus *Apomatoceros*
Species *Apomatoceros alleni* Eignmann, 1922"

According to Eschmeyer et al. (2017), *Apomatoceros alleni* Eigenmann 1922 is the valid name for this species, it is also the original name.

Size, Weight, and Age Range

From Froese and Pauly (2015):

"Max length: 14.6 cm SL male/unsexed; [de Pínna and Wosiacki 2003]"

Environment

From Froese and Pauly (2015):

"Freshwater; demersal."

Climate/Range
From Froese and Pauly (2015):

"Tropical"

Distribution Outside the United States
Native
From Froese and Pauly (2015):

"South America: Amazon River basin [Brazil, Peru]."

Introduced
No records of *Apomatoceros alleni* introductions were found.

Means of Introduction Outside the United States
No records of *Apomatoceros alleni* introductions were found.

Short Description
From Baskin et al. (1980):

"Most of the species of this subfamily have a sucker-like mouth, formed by an enlarged upper lip, which contains long rows of numerous needle-like teeth […]."

From Eigenmann (1921):

"Head 8; depth 9; depth of head 16; eye 5.33 in the length of the head, interocular equals snout and half eye; pectoral 11 in the length; upper caudal lobe equal to length of the head; lower a little longer. Depth of caudal peduncle 2.4 in its length; D. 9; A. 8, base of anal nearly twice as long as base of dorsal. Compressed behind the pectorals, greatly depressed in front, the pectorals nearly horizontal.

Mouth very large, subcircular, the upper jaw flexible, curling inward, prolonged backward to near the tips of the interopercular spines; terminal barbel of the maxillary reaching tips of the opercular spines, the lower barbel very small, scale-like in shape; the lower jaw firm, not reaching forward to middle of eye. The upper jaw can evidently be expanded into a disk for attachment; seven very regularly arranged, concentric rows of teeth in the upper jaw; shorter rows interpolated in the middle by a naked area.

Four rows of similar teeth in the lower jaw; those of the two rami separated by a considerable space free from teeth. Gill membranes united and joined to the isthmus, but with a wide free membrane across the isthmus. Distance between anterior nares more than twice the distance between the posterior. A dermal median keel from base of the last ventral ray to between the tips of the pectorals.

Interopercle with a series of five straight spines […]. No opercular spines […].

A black spot on the nape, a narrow black band across the base of the caudal, a broad silvery lateral band, otherwise translucent.

The alimentary canal is a thin-walled tube, containing many fish scales toward the end."

Biology

From Baskin et al. (1980):

"Fish scales are reported from the stomachs of *Apomatoceros alleni* (Eigenmann and Allen 1942) and *Pseudostegophilus nemurus* (pers. obs.)."

From Adriaens et al. (2010):

"Stegophilines, on the other hand, have been demonstrated to be ectoparasitic mucus feeding and scale eating fishes, adhering themselves to host fish species (Baskin et al. 1980, Winemiller 1989). Some of them even posses [*sic*] a highly specialised oral jaw apparatus with numerous rows of long, needle-like teeth (Baskin 1973), perhaps used for this feeding (e.g. *Apomatoceros alleni*) […] (Eigenmann 1918a)."

Human Uses

No human uses of *Apomatoceros alleni* were found.

Diseases

No parasites or pathogens of *Apomatoceros alleni* were found.

Threat to Humans

From Froese and Pauly (2015):

"Harmless"

3 Impacts of Introductions

No records of *Apomatoceros alleni* introductions were found.

4 Global Distribution

Figure 1. Known global distribution of *Apomatoceros alleni*. Locations are in Brazil and Peru. Map from GBIF Secretariat (2017).

Figure 2. Additional known global distribution of *Apomatoceros alleni*. Locations are in Brazil and Peru. Map from VertNet (2017).

5 Distribution Within the United States

No records of *Apomatoceros alleni* in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Apomatoceros alleni* was low across the contiguous United States. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low. No states had an individually high climate match.

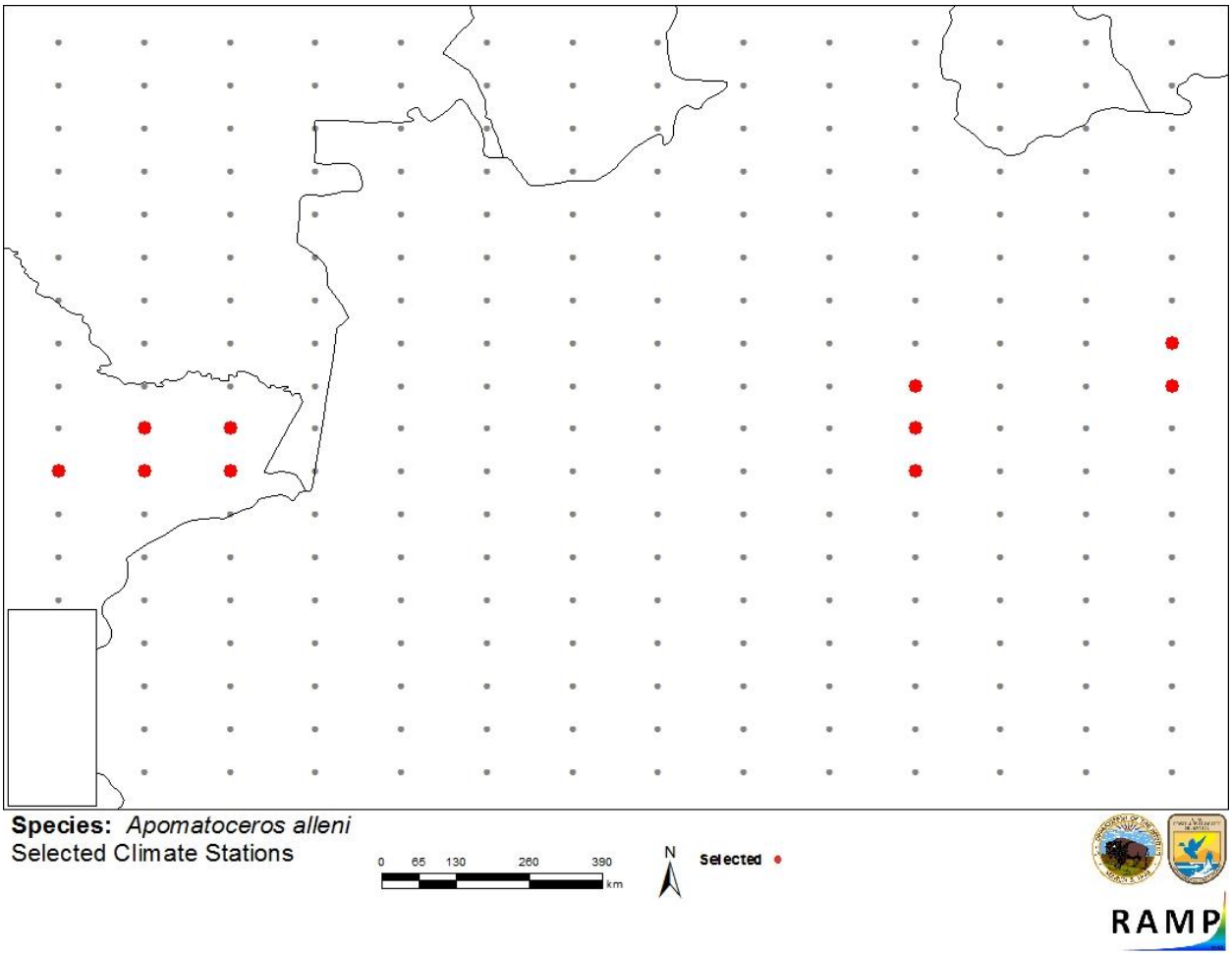


Figure 3. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Brazil, Peru) and non-source locations (grey) for *Apomatoceros alleni* climate matching. Source locations from GBIF Secretariat (2017) and VertNet (2017).

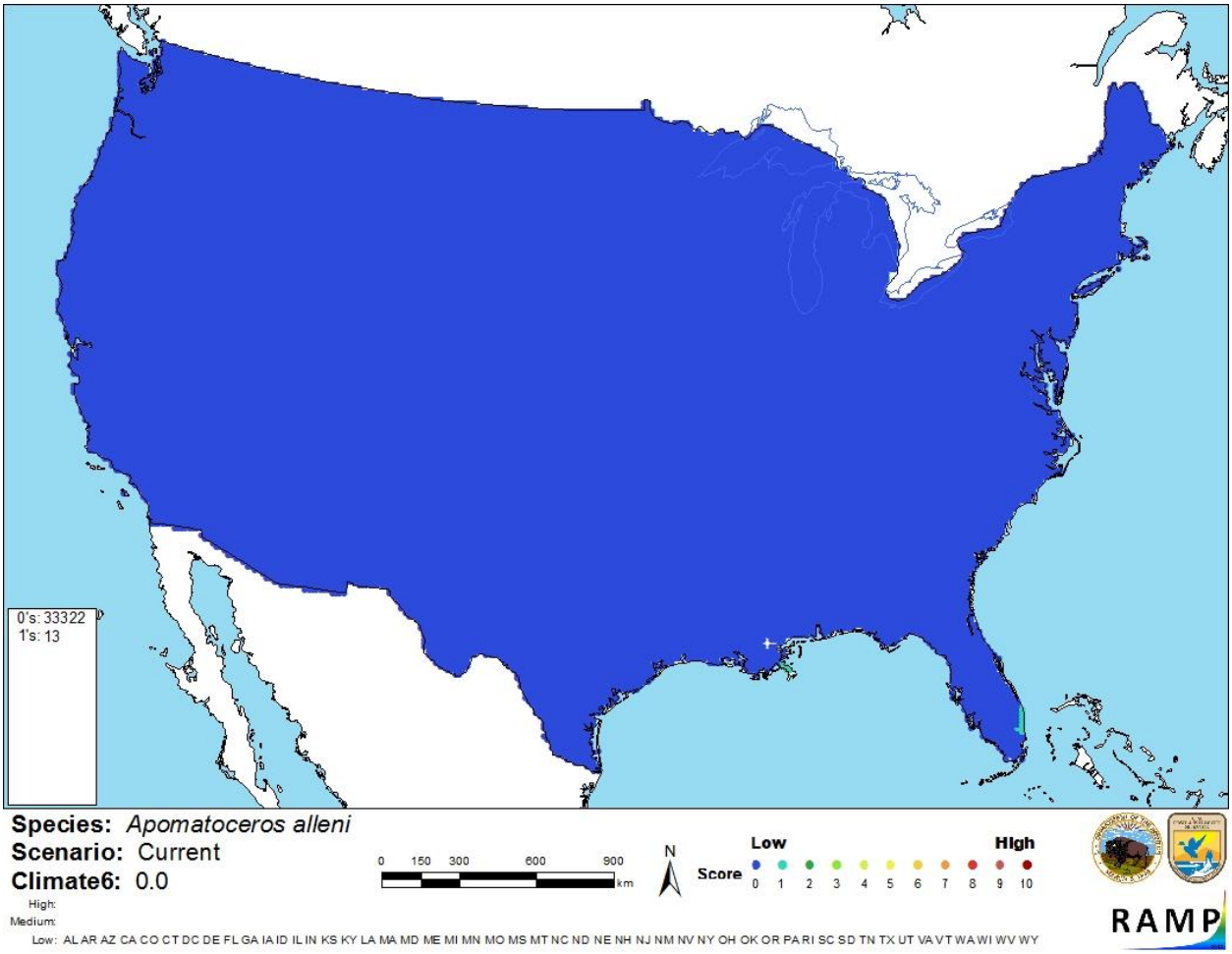


Figure 4. Map from RAMP (Sanders et al. 2014) of a current climate match for *Apomatoceros alleni* in the contiguous United States based on source locations reported by GBIF Secretariat (2017) and VertNet (2017). 0 = Lowest match, 10 = Highest match.

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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

The certainty of this assessment is low. There was limited but quality biological, ecological, and distribution information available for *Apomatoceros alleni*. No records of introductions were found so impacts of introduction are unknown.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Apomatoceros alleni is a catfish native to the Amazon River basin of South America. The history of invasiveness is uncertain. There were no records of introduction found for *A. alleni*. The Climate 6 score is 0.000, low. The climate match is low across the contiguous United States. 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

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

Adriaens, D., J. N. Baskin, and H. Coppens. 2010. Evolutionary morphology of trichomycterid catfishes: about hanging on and digging in. Pages 337–362 *in* J. S. Nelson, H.-P. Schultze, and M. V. H. Wilson, editors. Origin and phylogenetic interrelationships of teleosts. Friedrich Pfeil, Munich, Germany.

Baskin, J. N., T. M. Zaret, and F. Mago-Leccia. 1980. Feeding of reportedly parasitic catfishes (Trichomycteridae and Cetopsidae) in the Rio Portuguesa Basin, Venezuela. Biotropica 12(3):182–186.

Eigenmann, C. H. 1921. On a new genus and two new species of Pygididae, a family of South American nematoghaths. Pages 377–379 *in* The centennial expedition of Indiana University to Peru. Science N. S. LIII.

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. (September 2017).

FFWCC (Florida Fish and Wildlife Conservation Commission). 2018. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/. (April 2018).

Froese, R., and D. Pauly, editors. 2015. *Apomatoceros alleni* Eignmann, 1922. FishBase. Available: http://fishbase.de/summary/Apomatoceros-alleni.html. (March 2015).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Apomatoceros alleni* Eignmann, 1922. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/2342934. (September 2017).

ITIS (Integrated Taxonomic Information System). 2015. *Apomatoceros alleni* Eignmann, 1922. Integrated Taxonomic Information System, Reston, Virginia. Available: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682097. (March 2015).

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

VertNet. 2017. VertNet. Available: http://portal.vertnet.org/search?q=Apomatoceros+alleni. (September 2017).

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.

Baskin, J. N. 1973. Structure and relationships of the Trichomycteridae. Doctoral dissertation. City University of New York, New York.

de Pínna, M. C. C., and W. Wosiacki. 2003. Trichomycteridae (pencil or parasitic catfishes). Pages 270–290 *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.

Eigenmann, C. H. 1918a. The Pygidiidae, a family of South American catfishes. Memoirs of the Carnegie Museum 7:259–398.

Eigenmann, C. H. 1922. On a new genus and two new species of Pygidiidae, a family of South American nematognaths. Bijdragen tot de Dierkunde 22:113–114.

Eigenmann, C. H., and W. R. Allen. 1942. Fishes of western South America. University of Kentucky, Lexington.

Winemiller, K. O. 1989. Obligate mucus-feeding in a South American trichomycterid catfish (Pisces: Ostariophysi). Copeia 1989(2):511–514.