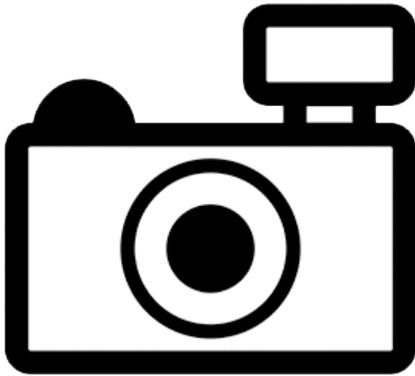


***Copionodon orthiocarinatus* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016
Web Version, 6/19/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: Mucujê River, tributary of the Paraguaçu River in Brazil.”

Status in the United States

This species has not been reported as introduced in the United States.

The parasitic catfish, *Copionodon orthiocarinatus*, is a prohibited nonnative species in Florida. According to the FFWCC (2016), “prohibited nonnative species 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

This species has not been reported as introduced in the United States.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2016):

“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 Bleeker, 1858
Subfamily Copionodontinae de Pinna, 1992
Genus *Copionodon* de Pinna, 1992
Species *Copionodon orthiocarinatus* de Pinna, 1992”

“Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Maturity: L_m ? range ? - ? cm

Max length : 7.5 cm SL male/unsexed; [de Pínna and Wosiacki 2003]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2016):

“Tropical, preferred ?”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: Mucujê River, tributary of the Paraguaçu River in Brazil.”

Introduced

No introductions of this species have been reported.

Means of Introduction Outside the United States

No introductions of this species have been reported.

Short Description

From Froese and Pauly (2016):

“Interopercle with 2 rows of odontodes; posterior region of interopercle distant to anterior margin of pectoral fin; interopercular patch of odontodes (26-31% HL). Adipose fin large, abruptly emerging after dorsal fin. Prepelvic (47-48% SL); predorsal (47-48% SL). Head wide 89-90% HL) [Campanario and de Pínna 2000].”

Biology

From Bichuette et al. (2008):

“Copionodontines occur exclusively in the Chapada Diamantina, a vast and complex plateau composed of Proterozoic terrain extending along a more or less north-south axis in the State of Bahia, northeastern Brazil. Much of the plateau is above 1000 m altitude, with several peaks reaching over 2000 m. The Chapada Diamantina is drained by four different basins, rio São Francisco to the west, rio de Contas to the south, rio Paraguaçu to the east and north and rio Itapicuru to the north. So far, copionodontines have been found exclusively in drainages associated with the rio Paraguaçu. However, much of the Chapada Diamantina is accessible only with difficulty and vast portions of it remain unsampled. It is possible that copionodontine catfishes will be found to occur also in suitable environments in headwaters of the other drainages in the plateau.”

“Copionodontines occupy the upper reaches of fast-flowing streams on rocky beds, often with tiny or no water flow in the dry season. Fish tend to concentrate on quiet deep pools, though some individuals lodge in narrow rock crevices in fast flowing sectors. Habitat preferences also vary according to species. Water in the upper reaches of the Chapada Diamantina is cool and usually black (tea-stained), but there are records of copionodontines in a few clear water streams as well. Usually they share their environment with few or no other fish species.”

From Zanata and Primitivo (2014):

“[...] the life history of copionodontines is poorly known, except for a few generalizations for the subfamily. Sazima (2004) cites that “Copionodon species ... are active during the day as well as at night, although these species are less nektonic than *T. longipinnis*”.”

Human Uses

No information available.

Diseases

No information available.

Threat to Humans

From Froese and Pauly (2016):

“Harmless”

3 Impacts of Introductions

No introductions of this species have been reported.

The parasitic catfish, *Copionodon orthiocarinatus*, is a prohibited nonnative species in Florida. According to the FFWCC (2016), “prohibited nonnative species 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.”

4 Global Distribution



Figure 1. Known global established locations of *Copionodon orthiocarinatus*, reported from eastern Brazil. Map from GBIF (2016).

5 Distribution Within the United States

This species has not been reported in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous U.S., reflected in a Climate 6 proportion of 0.001. The range for Climate 6 proportions indicating a low climate match is 0.000 to 0.005.



Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in eastern Brazil selected as source locations (red) and non-source locations (gray) for *Copionodon orthiocarinatus* climate matching. Source locations from GBIF (2016).

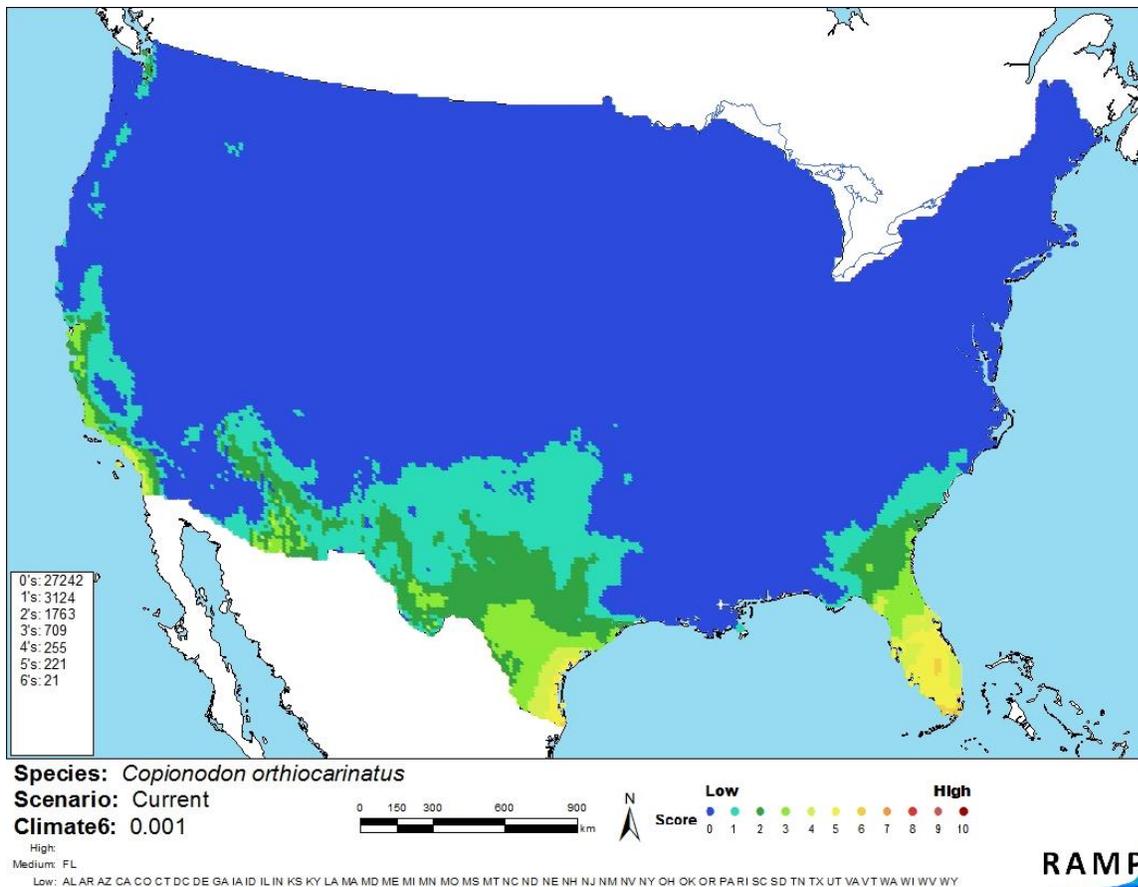


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Copionodon orthiocarinatus* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on left.

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

Information on the biology and range of *C. orthiocarinatus* is sparse. In addition, no introductions of the species have been reported so potential impacts are unknown. Given this lack of information, the certainty of assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Copionodon orthiocarinatus is a fish species native to eastern Brazil from the family Trichomycteridae. Very little is known about its biology, and it has not been reported as introduced outside its native range, so impacts of introduction are unknown. Climate match to the continental U.S. is low. Overall risk posed by *C. orthiocarinatus* is uncertain.

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

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

- Bichuette, M. E., M. C. C. de Pinna, and E. Trajano. 2008. A new species of *Glaphyropoma*: the first subterranean copionodontine catfish and the first occurrence of opercular odontones in the subfamily (Siluriformes: Trichomycteridae). *Neotropical Ichthyology* 6(3):301-306.
- FFWCC (Florida Fish and Wildlife Conservation Commission). 2016. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/>. (December 2016).
- Froese, R., and D. Pauly, editors. 2016. *Copionodon orthiocarinatus* de Pinna, 1992. FishBase. Available: <http://fishbase.org/summary/Copionodon-orthiocarinatus.html>. (December 2016).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Copionodon orthiocarinatus* de Pinna, 1992. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2342971>. (December 2016).
- ITIS (Integrated Taxonomic Information System). 2016. *Copionodon orthiocarinatus* de Pinna, 1992. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682100#null. (December 2016).
- Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.

Zanata, A. M., and C. Primitivo. 2014. Natural history of *Copionodon pectin*, an endemic trichomycterid catfish from Chapada Diamantina in northeastern Brazil. *Journal of Natural History* 48(3-4):203-228.

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.

Campanario, C. M., and M. C. C. de Pínna. 2000. A new species of the primitive trichomycterid subfamily Copionodontinae from northeastern Brazil (Teleostei: Trichomycteridae). *Ichthyological Exploration of Freshwaters* 11(4):369-375.

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, Brasil.

Sazima, I. 2004. Natural history of *Trichogenes longipinns*, a threatened trichomycterid catfish endemic to Atlantic forest streams in southeast Brazil. *Ichthyological Exploration of Freshwaters* 15:49-60.