

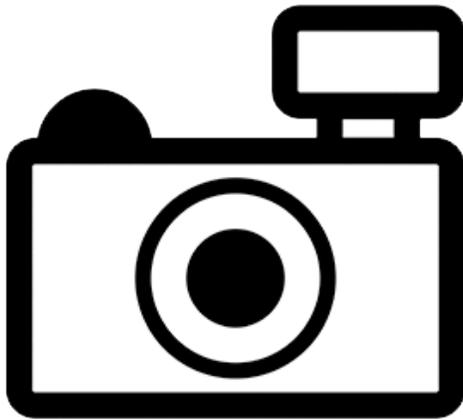
# ***Typhlobelus macromycterus* (a catfish, no common name)**

## **Ecological Risk Screening Summary**

U.S. Fish & Wildlife Service, December 2016

Revised, December 2018

Web Version, 8/30/2019



No Photo Available

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

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### **Native Range**

From Froese and Pauly (2018):

“South America: Tocantins River near Tucuruí, Pará, Brazil.”

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

*Typhlobelus macromycterus* has not been reported as introduced or established in the United States. No information was found on trade of *T. macromycterus* in the United States.

### **Means of Introductions in the United States**

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

## Remarks

From Schaefer et al. (2005):

“Costa and Bockmann [1994] based their description of *Typhlobelus macromycterus* on a single specimen from the Rio Tocantins of Brazil”

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From Eschmeyer et al. (2018):

“**Current status:** Valid as *Typhlobelus macromycterus* Costa & Bockmann 1994.”

From ITIS (2018):

“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 Glanapteryginae  
Genus *Typhlobelus*  
Species *Typhlobelus macromycterus* Costa and Bockmann, 1994”

### Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 2.2 cm SL male/unsexed [de Pínna and Wosiacki, 2003]”

### Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

From Schaefer et al. (2005):

“[...] occur in clear water [...] from the Tocantins”

“A psammophilic habit [loose sand] for *Glanapteryx*, *Pygidianops*, and *Typhlobelus* has been presumed on the basis of anecdotal locality information and the extremely reduced morphologies of these species.”

“[...] species of *Pygidianops* and *Typhlobelus* are entirely disassociated from leaf litter, and occupy exclusively clear loose sand.”

## **Climate/Range**

From Froese and Pauly (2018):

“Tropical”

## **Distribution Outside the United States**

Native

From Froese and Pauly (2018):

“South America: Tocantins River near Tucuruí, Pará, Brazil.”

Introduced

This species has not been reported as introduced or established outside of its native range.

## **Means of Introduction Outside the United States**

This species has not been reported as introduced or established outside of its native range.

## **Short description**

From de Pinna and Zuanon (2013):

“Anal fin present; pseudotympanus not modified into tympanic recess; opercular odontodes absent; three or four laterosensory pores on posterior side of head and anteriormost portion of trunk”

“Rostrum narrowing continuously from base to tip; margin of rostrum continuous with anterior margin of maxillary barbel; two nostrils on each side of head (i.e., anterior and posterior nostrils present); four branchiostegal rays; one pair of pleural ribs”

“Eye spots present; at least one premaxillary tooth present in each premaxilla; 60 vertebrae”

“Five branchiostegal rays; 10 principal caudal-fin rays”

From Costa and Bockmann (1994):

“Colouration. Body and head pale yellow, no dark pigmentation. Fins hyaline.”

## Biology

From Costa and Bockmann (1994):

“The only known specimen of the new species was found after deviation of the Rio Tocantins course, during the building of Tucuruí dam. The principal river canal previously about 20 m deep, was then reduced to a series of shallow pools, where bottom fishes (including *T. macromycterus*) were caught.”

## Human uses

No information available.

## Diseases

No information on parasites or pathogens of *Typhlobelus macromycterus* was found. **No OIE-reportable diseases (OIE 2019) have been documented for this species.**

## Threat to humans

From Froese and Pauly (2018):

“Harmless”

## 3 Impacts of Introductions

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This species has not been reported as introduced or established outside of its native range, so no impacts of introductions are known.

## 4 Global Distribution

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**Figure 1.** The general location of the range of *Typhlobelus macromycteris*. Map from Google (2018). *T. macromycteris* range description given by Froese and Pauly (2018).

A single georeferenced observation is given in Costa and Bockmann (1994). This location was used to select source points for the climate match.

## 5 Distribution within the United States

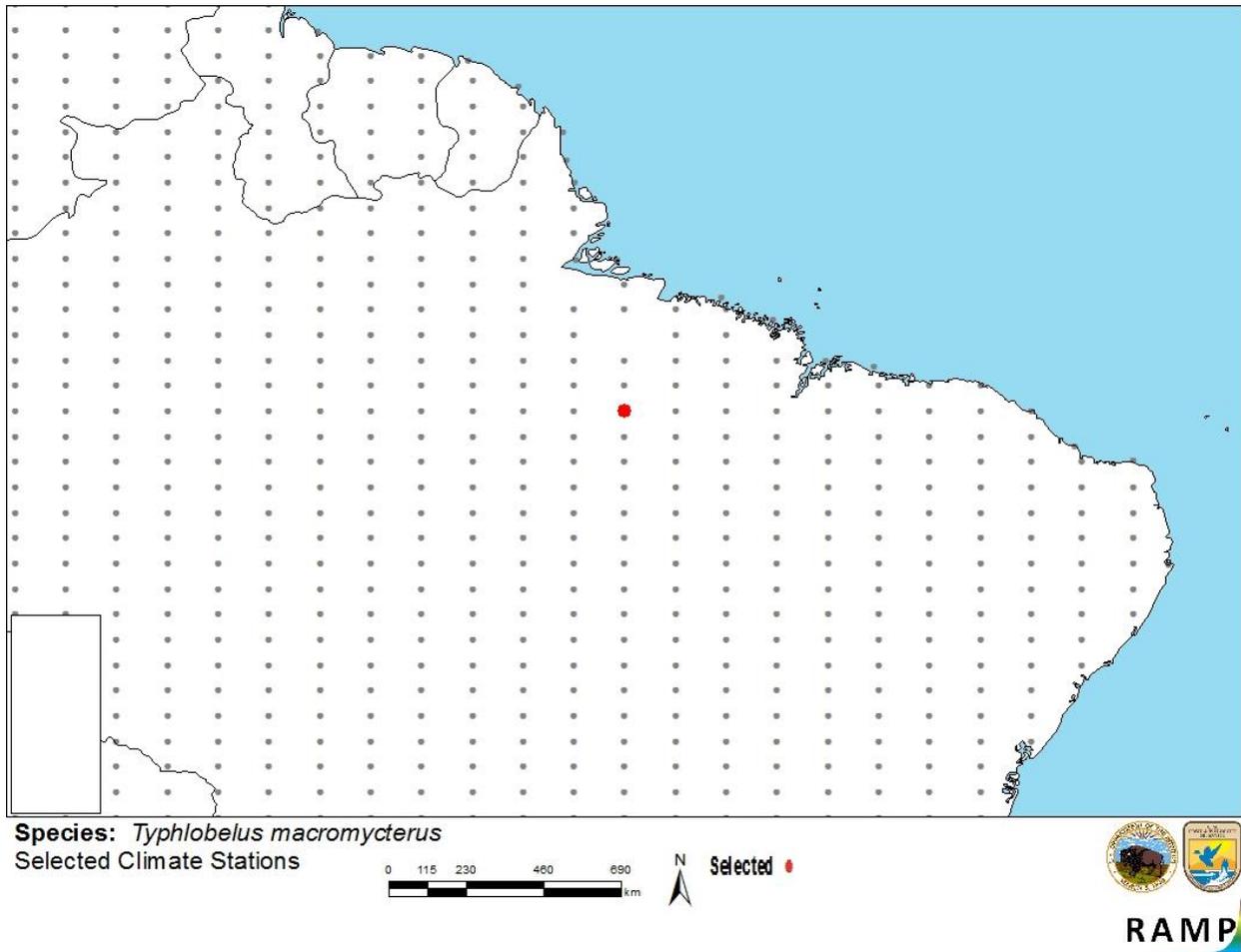
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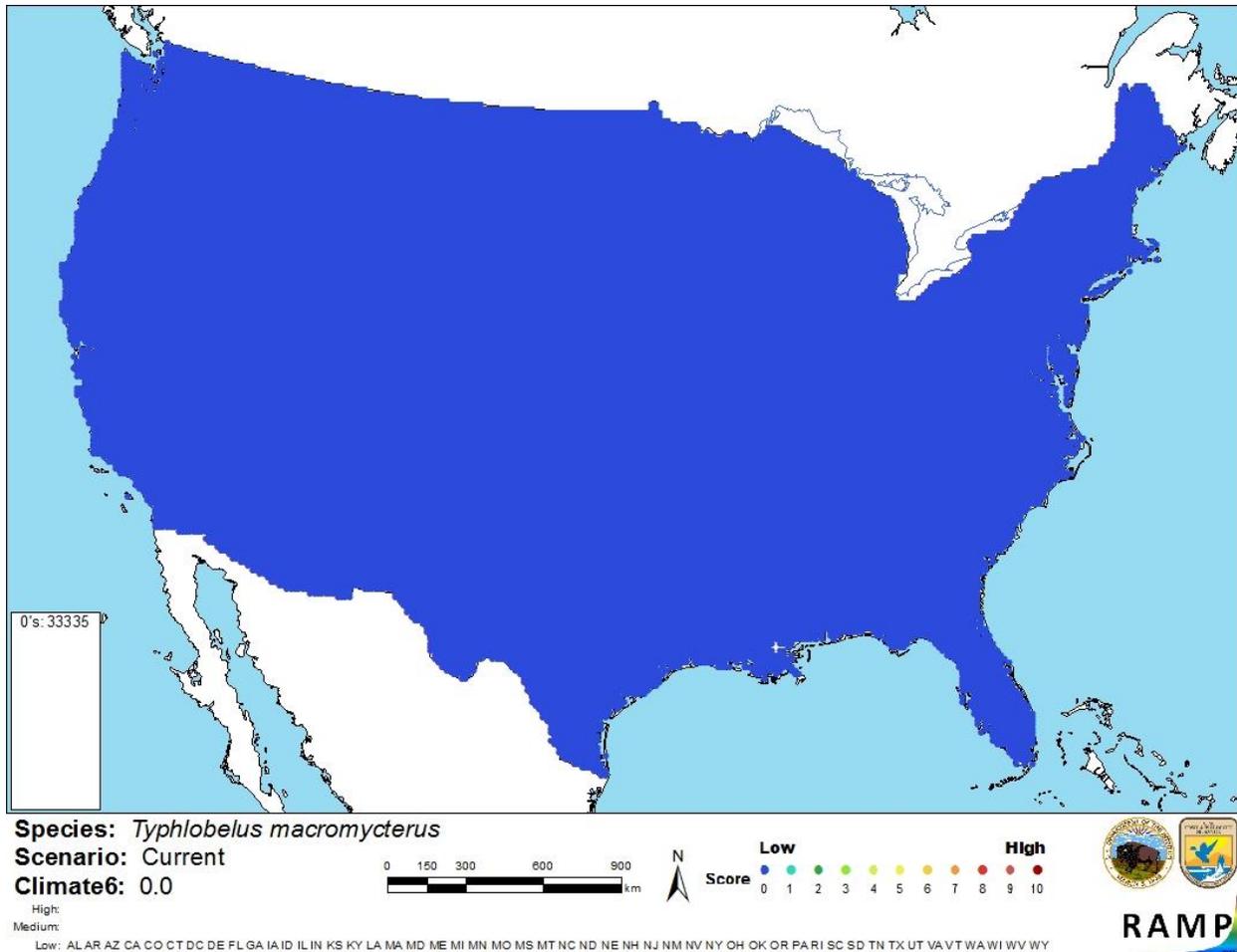
## 6 Climate Matching

### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the entire United States. The Climate 6 score for the contiguous United States was 0.00, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had low individual climate scores.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red: northern Brazil) and non-source locations (gray) for *Typhlobelus macromycterus* climate matching. Source locations from Costa and Bockmann (1994). 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. 2014) climate matches for *Typhlobelus macromycterus* in the contiguous United States based on source locations reported by Costa and Bockmann (1994). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the 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
$0.000 \leq X < 0.005$	Low
$0.005 < X < 0.103$	Medium
$\geq 0.103$	High

## 7 Certainty of Assessment

There is very little information available for the biology and ecology of *Typhlobelus macromycterus*. There are no records showing introductions of this species outside of its native range. Due to lack of information, the certainty of this assessment is low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Typhlobelus macromycterus* is native to South America and has been found in the Tocantins River near Tucuruí, Pará, Brazil. Fish belonging to the genus *Typhlobelus* are generally psammophilic (loose sand) in preference for habitat. *T. macromycterus* was described as a species from the one and only specimen ever found. There is no information or documentation on introductions outside of its native range; therefore, the history of invasiveness is uncertain. *T. macromycterus* has a low climate match within the contiguous United States. Due to lack of information about potential introductions, the certainty of assessment is low. The overall risk assessment category for this species 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

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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.**

Costa, W. J. E. M., and F. A. Bockmann. 1994. *Typhlobelus macromycterus*, a new blind glanapterygine fish (Siluriformes, Trichomycteridae) from the Rio Tocantins, Brazil. *Tropical Zoology* 7:67–72.

de Pinna, M. C. C., and J. Zuanon. 2013. The genus *Typhlobelus*: monophyly and taxonomy, with description of a new species with a unique pseudotympanic structure (Teleostei: Trichomycteridae). *Copeia* 2013(3):441–453.

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (June 2018).

Froese, R., and D. Pauly, editors. 2018. *Typhlobelus macromycterus* (Costa and Bockmann, 1994). FishBase. Available: <http://www.fishbase.se/summary/53719>. (June 2018).

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Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk Assessment Mapping Program: RAMP, version 2.81. U.S. Fish and Wildlife Service.

Schaefer, S. A., F. Provenzano, M. de Pinna, and J. N. Baskin. 2005. New and noteworthy Venezuelan Glanapterygine catfishes (Siluriformes, Trichomycteridae), with discussion of their biogeography and psammophily. *American Museum Novitates* 2496:1–27.

## 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.**

de Pinna, 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.