

Golden Pencilfish (*Nannostomus beckfordi*)

Ecological Risk Screening Summary

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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: native in the rivers of Guyana south to the Amazon basin and up the Amazon River to the Negro River.”

Froese and Pauly (2016) list *Nannostomus beckfordi* as native to Brazil, French Guiana, Guyana, and Suriname.

Status in the United States

No records of *Nannostomus beckfordi* in the United States were found.

Means of Introductions in the United States

No records of *Nannostomus beckfordi* in the United States were found.

Remarks

No additional remarks.

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 Characiformes
Family Lebiasinidae
Subfamily Pyrrhulininae
Tribe Nannostomini
Genus *Nannostomus*
Species *Nannostomus beckfordi* Günther, 1872”

From Eschmeyer et al. (2017):

“*beckfordi*, *Nannostomus* Günther [A.] 1872:146 [Proceedings of the Zoological Society of London 1872 (pt 1) (art. 5) (for 6 Feb. 1872)[...]] Coast of Demerara, Guyana. Holotype (unique): BMNH 1871.12.28.10. •Valid as *Nannostomus beckfordi* Günther 1872 -- (Weitzman 1966:12 [...], Weitzman & Cobb 1975:14 [...], Planquette et al. 1996:174 [...], Keith et al. 2000:14 [...], Géry & Zarske 2002:36 [...], Weitzman & Weitzman in Reis et al. 2003:244 [...], Zarske 2009:11 [...], Zarske 2011:287 [...], Melo et al. 2016:133 [...]). **Current status:** Valid as *Nannostomus beckfordi* Günther 1872. Lebiasinidae: Pyrrhulininae.”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length: 6.5 cm SL male/unsexed; [Mills and Vevers 1989]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic; pH range: 6.0 - 8.0; dH range: 5 - 19. [...]; 24°C - 26°C [assumed to be recommended aquarium temperature range] [Riehl and Baensch 1991]”

Climate/Range

From Froese and Pauly (2016):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: native in the rivers of Guyana south to the Amazon basin and up the Amazon River to the Negro River.”

Froese and Pauly (2016) list *Nannostomus beckfordi* as native to Brazil, French Guiana, Guyana, and Suriname.

Introduced

No records of introductions of *Nannostomus beckfordi* were found.

Means of Introduction Outside the United States

No records of introductions of *Nannostomus beckfordi* were found.

Short Description

From Netto-Ferreira (2012):

“Among examined lebiasinids, breeding tubercles are also present in *Nannostomus beckfordi*, *N. bifasciatus*, *N. limatus*, *N. marginatus*, and *N. nitidus*, but in these species the tubercles are restricted to the anteroventral surface of the head, instead of distributed along the body.”

From Butler (2016):

“This elongated fish, varies greatly in color depending on the geographical location from which it originated. A thick, dark band extends from the snout to the base of the caudal fin. The tall dorsal fin ranges in color depending on the fish's body color.”

Biology

From Froese and Pauly (2016):

“Forms groups where the males dominate to defend their territory [...]. Feeds on worms, crustaceans and insects [Mills and Vevers 1989].”

“At spawning time in captivity, male and female swim alongside one another. Several batches of 1 to 5 eggs are laid among the fine-leaved plants, with a total of up to 200 eggs in some cases; eggs hatch in 30 to 40 hours and fry are free-swimming about six days after [Mills and Vevers 1989]. Between 24°-27°C, eggs hatch in 24 hours [Breder and Rosen 1966].”

“Inhabits small rivers with little current and in swamps where they are very common.”

Human Uses

From Froese and Pauly (2016):

“Is highly appreciated by aquarists [Planquette et al. 1996] [...]. Aquarium keeping: in groups of 5 or more individuals; minimum aquarium size 60 cm [BMELF 1999].”

Diseases

No records of OIE reportable diseases were found.

From Froese and Pauly (2016):

“Livoneca Infestation, Parasitic infestations (protozoa, worms, etc.)”

Threat to Humans

From Froese and Pauly (2016):

“Harmless”

3 Impacts of Introductions

No records of introductions of *Nannostomus beckfordi* were found.

4 Global Distribution



Figure 1. Known global distribution of *Nannostomus beckfordi* in South America. Map from GBIF Secretariat (2016).

5 Distribution Within the United States

No records of *Nannostomus beckfordi* in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Nannostomus beckfordi* was low for most of the contiguous United States, with a pocket of a medium climate match at the very southern tip of Florida. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.000, low, and no states had an individually high Climate 6 score.

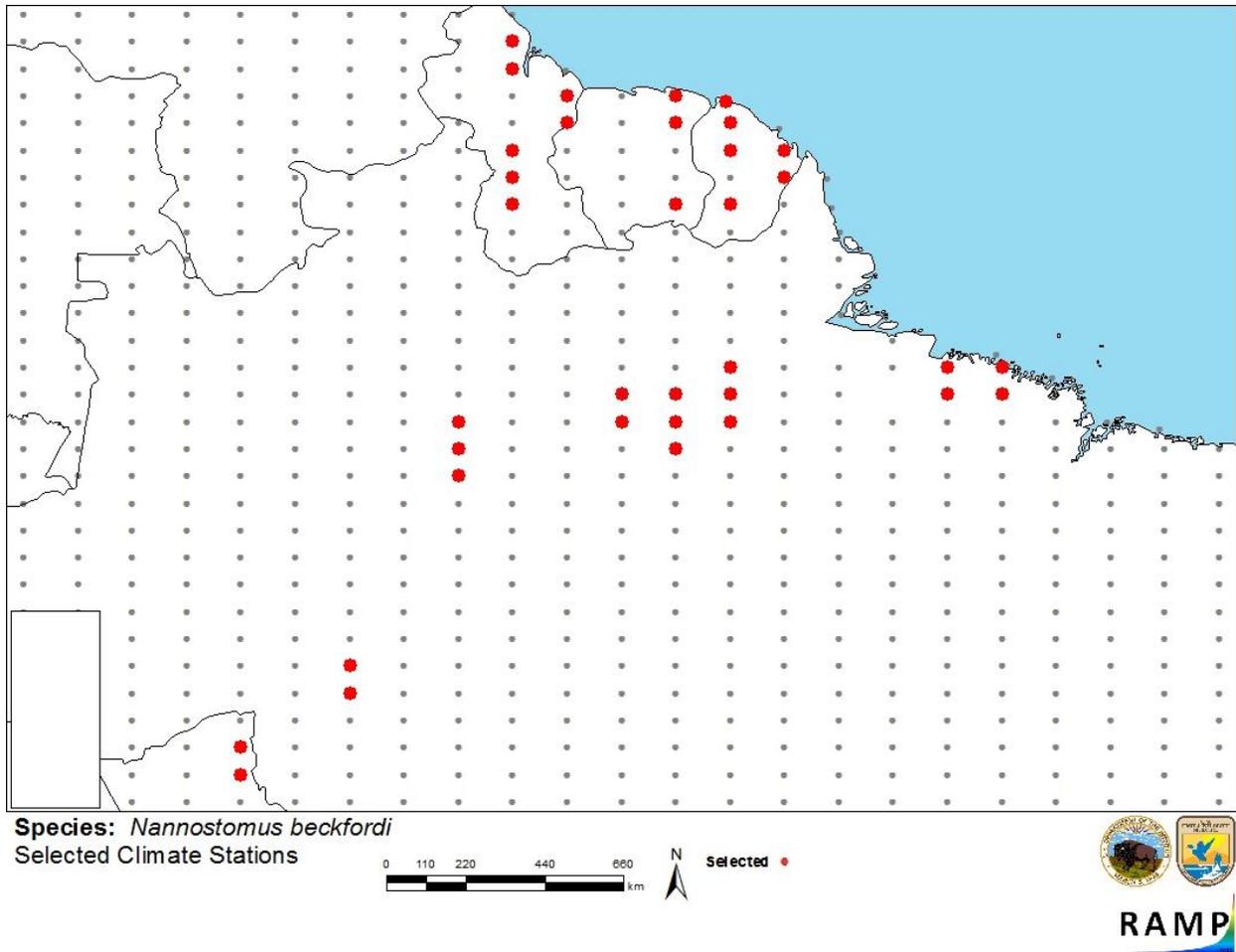


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (grey) for *Nannostomus beckfordi* climate matching. Source locations from GBIF Secretariat (2016).

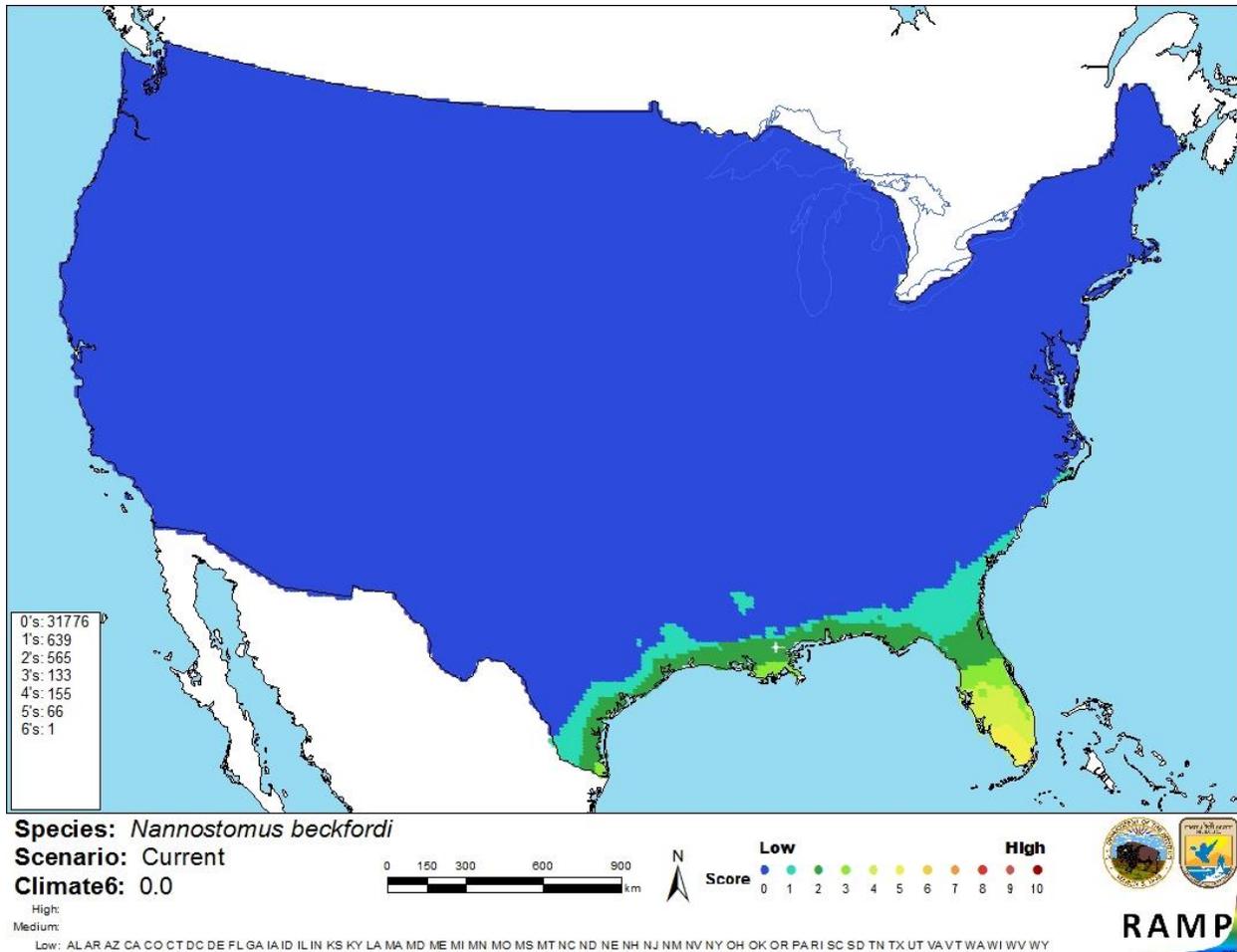


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Nannostomus beckfordi* in the contiguous United States based on source locations reported by GBIF Secretariat (2016). 0 = Lowest match, 10 = Highest match.

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

7 Certainty of Assessment

The certainty of the assessment of *Nannostomus beckfordi* is medium. There was adequate quality biological and ecological information available. No records of introductions were found.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Nannostomus beckfordi is a small freshwater fish that is native to the Amazon River basin in South America. This species is also popular in the aquarium trade. The history of invasiveness for *N. beckfordi* is uncertain. No records of introductions were found. The climate match for the contiguous U.S. is low. The results of the climate match indicate that only a very small area of the country may have the necessary climatic conditions to be able to support a sustained population of *N. beckfordi*. The certainty of assessment is medium. 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): Medium**
- **Remarks/Important additional information** No additional information.
- **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.

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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.

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