

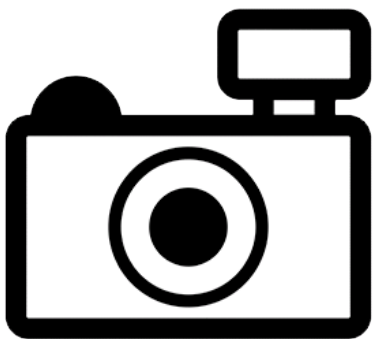
***Pygidianops cuao* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, January 2017

Revised, February 2017

Web Version, 4/5/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“South America: Rio Cuao drainage basin in Venezuela.”

Status in the United States

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

From 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. [...]

[The list of prohibited nonnative species includes] *Pygidianops cuao*”

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 GBIF (2016):

“KINGDOM Animalia
PHYLUM Chordata
CLASS Actinopterygii
ORDER Siluriformes
FAMILY Trichomycteridae
GENUS *Pygidianops*
SPECIES *Pygidianops cuao*”

“TAXONOMIC STATUS
accepted species”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 2.4 cm SL male/unsexed; [Schaefer et al. 2005]”

Environment

From Froese and Pauly (2016):

“Freshwater; demersal.”

From Schaefer et al. (2005):

“[...] occupy exclusively clear loose sand.”

Climate/Range

From Froese and Pauly (2016):

“Tropical, preferred ?”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“South America: Rio Cuao drainage basin in Venezuela.”

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):

“Dorsal spines (total): 0; Dorsal soft rays (total): 0; Anal spines: 0; Anal soft rays: 4 - 5; Vertebrae: 41. Diagnosed from its congeners by having diminutive eyes, posterior naris absent, presence of a triangular skin flap at mouth corner, dorsal and ventral fin fold deep and extending forward on the head to a vertical through tip of pectoral fin. Differs from *Pygidianops magoi* by the presence of six laterosensory pores on head, presence of pectoral and anal fins, presence of 12-13 caudal fin rays associated with the caudal plate [Schaefer et al. 2005].”

Biology

From Schaefer et al. (2005):

“A psammophilic habit for *Glanapteryx*, *Pygidianops*, and *Typhlobelus* has been presumed on the basis of anecdotal locality information and the extremely reduced morphologies of these species. However, until now, the exact microhabitats of the species of these genera have rarely been observed directly. [...] The degree of psammophilic adaptation in species of *Pygidianops* and *Typhlobelus* is remarkable, without parallel in siluriforms and perhaps in any other freshwater fishes. Specialization for life in sand is evident in several morphological traits, such as the loss or reduction of fins, pigment, and eyes. [...] species of *Pygidianops* and *Typhlobelus* are entirely disassociated from leaf litter, and occupy exclusively clear loose sand. Both *P. cuao* and *T. guacamaya* were found exclusively within the sand substratum, rather than on the sand surface or in the water column. Both were taken together in the top 1.5 m of sand using an aquarium net of 1.0 mm mesh in gently flowing water along the edges of banks and sandbars exposed during an exceptionally low water period. Specimens were discovered only by excavation, followed by carefully picking through the sand, as they did not emerge from the sand even when it was placed on the dry bank. [...] Approximately 64% of the sand particles were greater than 1 mm diameter, with the largest fraction by weight being 1–3 mm diameter. There is a surprising correspondence between sand grain size and body size in these fishes. The maximum width of the larger specimens of these species is within 1–2 mm, suggesting that body width and shape are adaptations to movement in confined interstices, such as would apply to life within the sand.”

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.

From 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. [...]

[The list of prohibited nonnative species includes] *Pygidianops cuao*”

4 Global Distribution

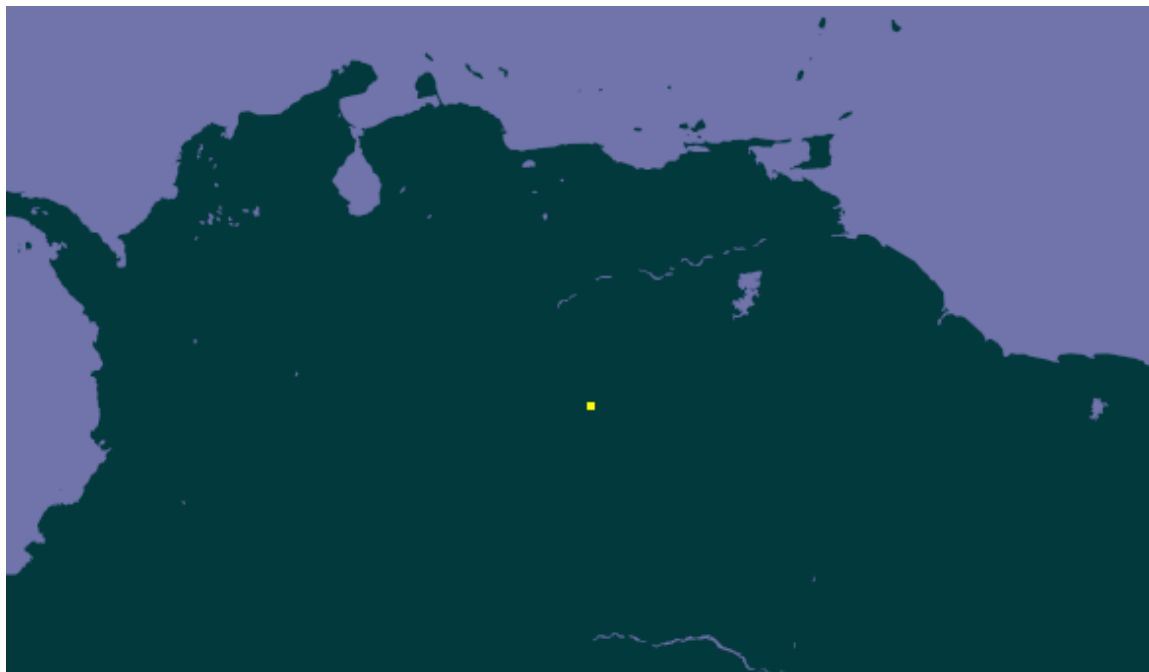


Figure 1. Known global established locations of *Pygidianops cuao* in Venezuela. Map from GBIF (2016).

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 6 score (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous U.S., reflected in a Climate 6 proportion of 0.0. The range for Climate 6 proportions indicating a low climate match is 0.000 to 0.005.

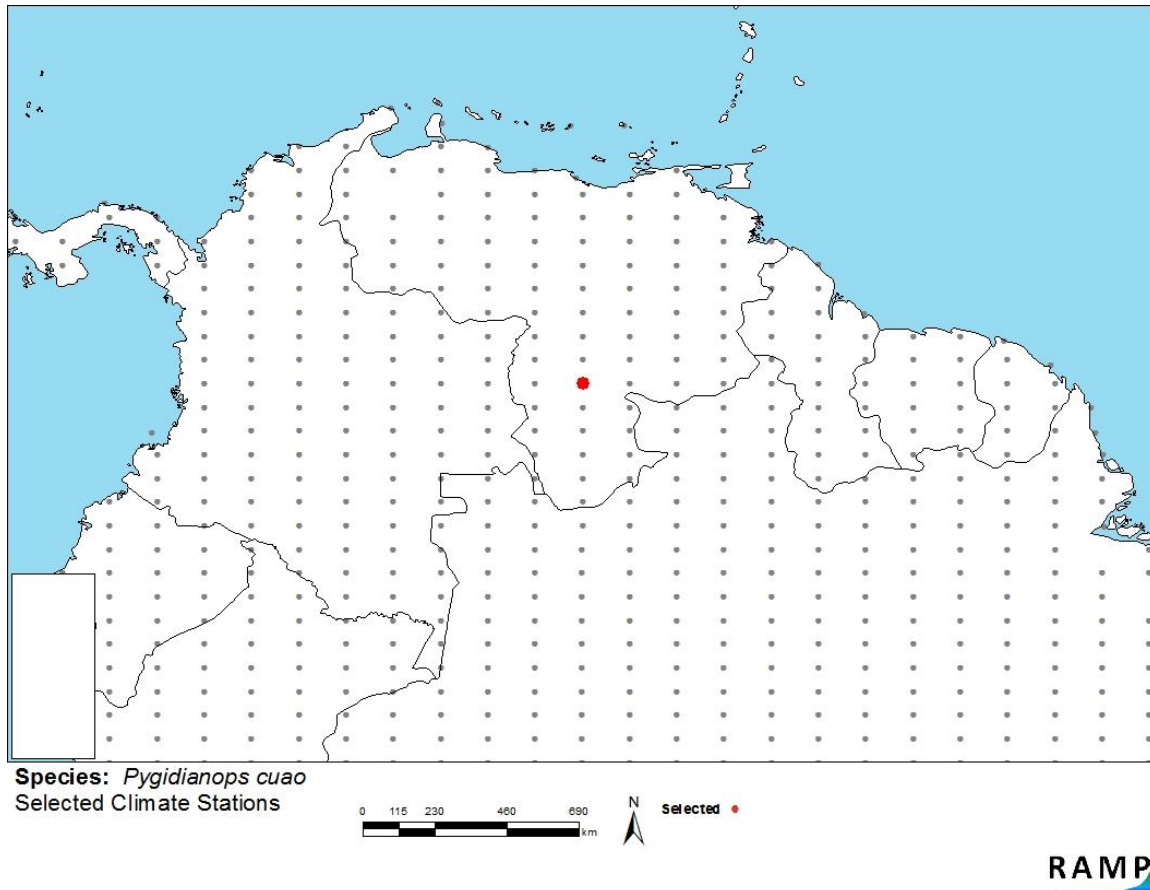


Figure 1. RAMP (Sanders et al. 2014) source map showing weather stations in southern Venezuela selected as source locations (red) and non-source locations (gray) for *Pygidianops cuao* climate matching. Source locations from GBIF (2016).

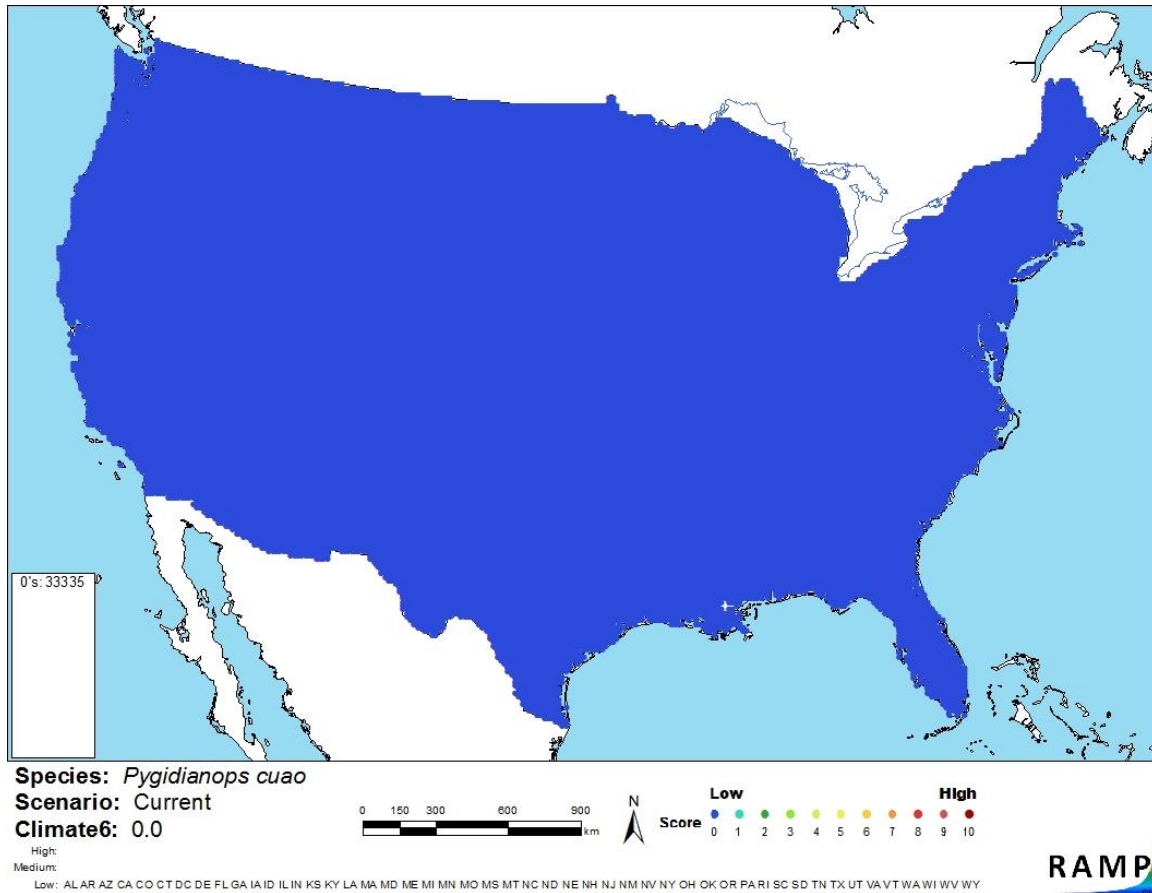


Figure 2. Map of RAMP (Sanders et al. 2014) climate matches for *Pygidianops cuao* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

7 Certainty of Assessment

There is very limited information available on the biology and distribution of *Pygidianops cuao*. The potential impacts of an introduction are unknown because no introductions of this species have been documented. Due to this lack of information, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Pygidianops cuao is a small, sandy substrate-dwelling catfish native to Venezuela. 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. Along with other trichomycterid catfish, it is classified as a prohibited species by the state of Florida and cannot be possessed in the state. Climate match to the contiguous U.S. is low. Overall risk posed by *P. cuao* 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

- 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/#nogo>. (December 2016).
- Froese, R., and D. Pauly, editors. 2016. *Pygidianops cuao* Schaefer, Provenzano, de Pinna & Baskin, 2005. FishBase. Available: <http://www.fishbase.org/summary/Pygidianops-cuao.html>. (January 2017).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Pygidianops cuao* Schaefer, Provenzano, de Pinna & Baskin, 2005. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2342892>. (January 2017).
- Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. 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* 3496:1-27.