

Skunk Corydoras (*Corydoras arcuatus*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, July 2014
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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2014):

“South America: Upper Amazon River basin.”

From Britto et al. (2009):

“In this area, *Corydoras arcuatus* shows the largest range of distribution, with records from several tributary river basins of the Rio Solimões system (e.g., Río Caquetá, Río Napo, Río Purus, Río Tefé, Río Ucayali, Río Yavari; Nijssen and Isbrücker, 1980[b], 1986; Castro, 1987; Britto, 2007; Fig. 4, circles [in source material]).”

Status in the United States

From Vijayakumar et al. (2012):

“Observed the sound production in catfish, *Corydoras arcuatus* and *C. reticulatus* from US waters.” [More specific location information was not given.]

Means of Introductions in the United States

No further information was found pertaining to the potential population that was mentioned by Vijayakumar et al. (2012). No other records of introduction in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2017), *Corydoras arcuatus* Elwin 1938 is the valid name for this species; it is also the original name.

From ITIS (2014):

“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 Callichthidae
Subfamily Corydoradinae
Genus *Corydoras* Lacepède, 1803
Species *Corydoras arcuatus* Elwin, 1939”

Size, Weight, and Age Range

From Froese and Pauly (2014):

“Max length : 4.0 cm SL male/unsexed; [Reis 2003]”

Environment

From Froese and Pauly (2014):

“Freshwater; demersal; pH range: 6.0 - 8.0; dH range: 2 - 25. [...]; 22°C - 26°C [assumed to be recommended aquarium temperature] [Riehl and Baensch 1996]”

Climate/Range

From Froese and Pauly (2014):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2014):

“South America: Upper Amazon River basin.”

From Britto et al. (2009):

“In this area, *Corydoras arcuatus* shows the largest range of distribution, with records from several tributary river basins of the Rio Solimões system (e.g., Río Caquetá, Río Napo, Río Purus, Río Tefé, Río Ucayali, Río Yavari; Nijssen and Isbrücker, 1980[b], 1986; Castro, 1987; Britto, 2007; Fig. 4, circles [in source material]).”

Introduced

From FAO (2014):

“*Corydoras arcuatus* introduced to Philippines from [unknown]”

“Status of the introduced species in the wild: Unknown”

Corydoras arcuatus has been imported into China for the aquarium trade (Xiong et al. 2015). No indication of any established wild populations.

Corydoras arcuatus is present in the Singapore ornamental trade (Youguang 2014).

Means of Introduction Outside the United States

From FAO (2014):

“1) Ornamental”

Short Description

From Tencatt and Ohara (2016):

“[...] presence of a single arched black stripe on dorsal portion of flank in *C. arcuatus*; [...]”

Biology

From Froese and Pauly (2014):

“Occurs sympatrically with *C. narcissus*.”

“The female holds 2-4 eggs between her pelvic fins, where the male fertilizes them for about 30 seconds. Only then the female swims to a suitable spot, where she attaches the very sticky eggs. The pair repeats this process until about 100 eggs have been fertilized and attached [Riehl and Baensch 1991].”

Human Uses

From Froese and Pauly (2014):

“Fisheries: of no interest; aquarium: commercial”

Peru exported 210,965 individuals of *Corydoras arcuatus* in 2003 for the ornamental industry (Prang 2008). *C. arcuatus* is also approved for export in Brazil and Colombia (Prang 2008).

Corydoras arcuatus has been imported into China for the aquarium trade (Xiong et al. 2015). No indication of any established wild populations.

Corydoras arcuatus is present in the Singapore ornamental trade (Youguang 2014).

Diseases

No records of OIE reportable diseases were found.

From Froese and Pauly (2014):

“Fungal Infection (general), Fungal diseases”

Threat to Humans

From Froese and Pauly (2014):

“Harmless”

3 Impacts of Introductions

No records of impacts of introductions of *Corydoras arcuatus* were found.

4 Global Distribution



Figure 1. Known global distribution of *Corydoras arcuatus* in northern South America. Map from GBIF Secretariat (2017).

The location furthest east was not used as a source point. The record details for that occurrence indicate that the specimens were bought in the river, presumably from fisherman, with only very general descriptions of the location they were caught (GBIF Secretariat 2017). This point may not represent an established population.

5 Distribution Within the United States

A non-specific and unconfirmed mention of *Corydoras arcuatus* in the United States was found (Vijayakumar et al. 2012) but there was no location information available.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Corydoras arcuatus* was medium for the southern half of Florida and low everywhere else. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.001, low, and no states had an individually high climate match.

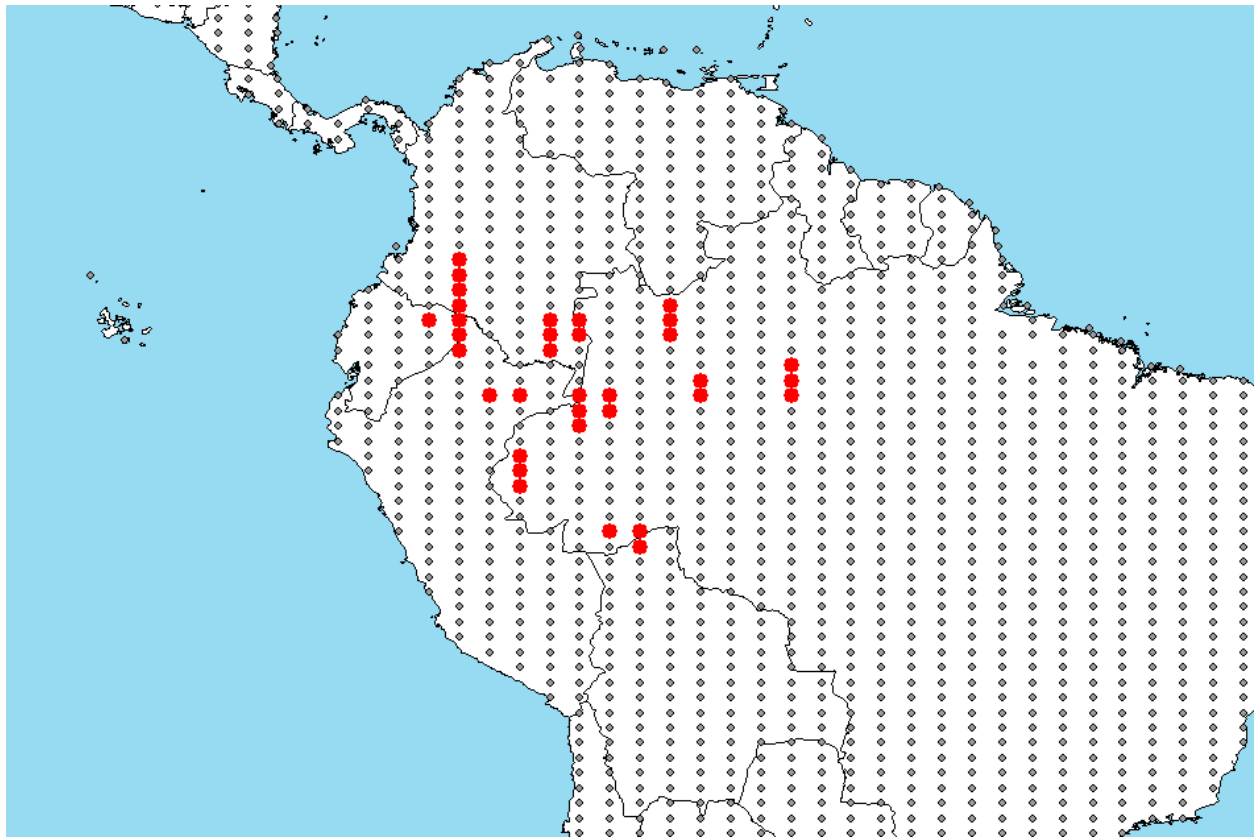


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Bolivia, Brazil, Colombia, Ecuador, Peru) and non-source locations (grey) for *Corydoras arcuatus* climate matching. Source locations from GBIF Secretariat (2017).

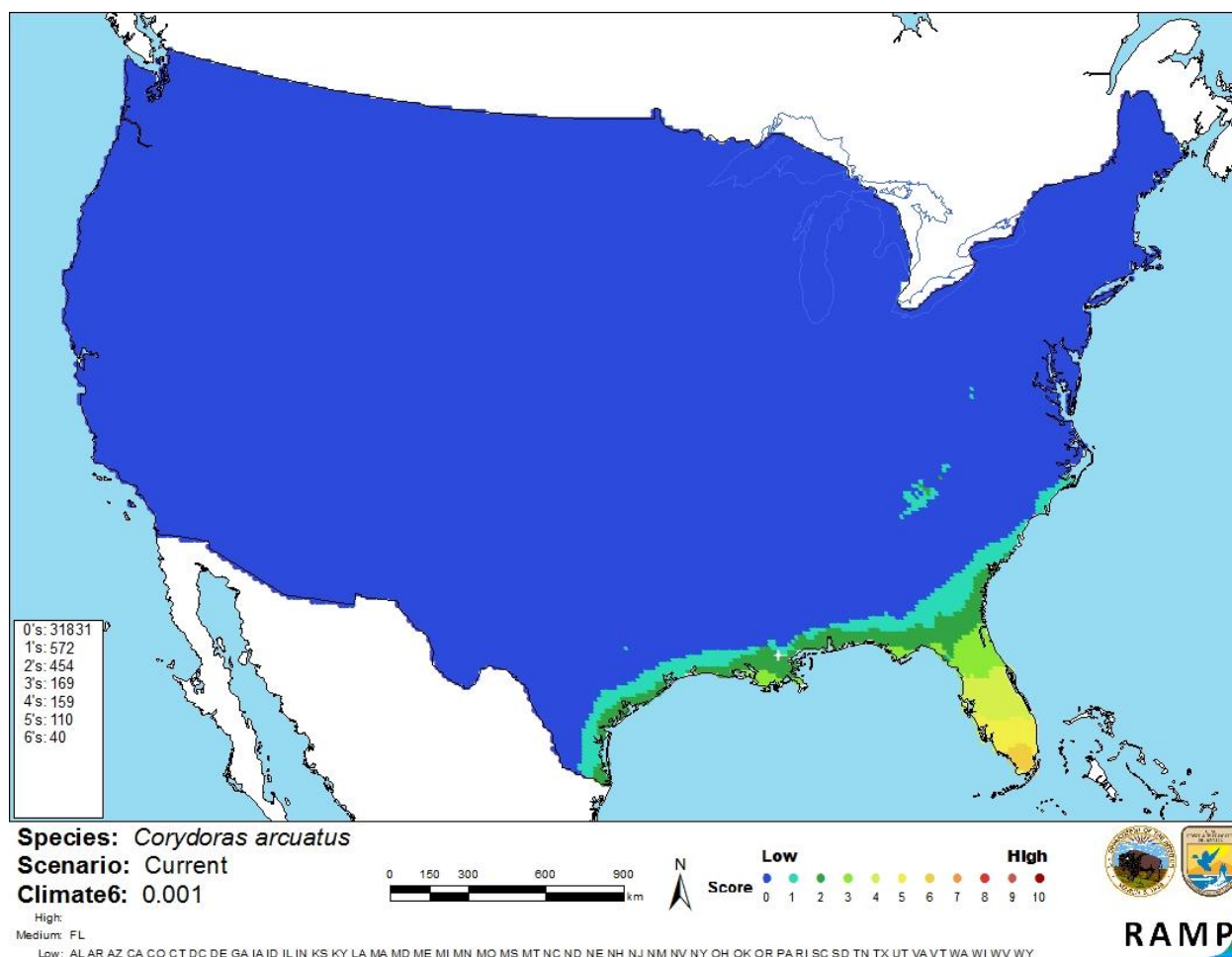


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Corydoras arcuatus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0 = Lowest match, 10 = Highest match. Counts of climate match scores are tabulated on the left.

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

The certainty of this assessment is low. A minimal amount of information was available about *Corydoras arcuatus*. Inconclusive and possibly questionable records of introductions were found but no records of possible impacts of those introductions were found. Some information on the presence of the species in trade and the volume of that trade was found.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The history of invasiveness for *Corydoras arcuatus* is not documented. A few generalized records of introductions were found but could not be substantiated and no records of impacts were found. This species is present in the international ornamental trade. In 2003, Peru exported over 200,000 individuals. The climate match was medium for southern Florida and low for everywhere else. 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.

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- Youguang, Y. 2014. Developing monitoring tools for tomorrow's invasives: species lists, DNA barcodes, and images for ornamental fish. Doctoral dissertation. National University of Singapore.

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.

- Britto, M. R. 2007. Callichthyidae. Pages 75–81 in P. A. Buckup, M. A. Menezes, and M. S. Ghazzi, editors. *Catálogo das Espécies de Peixes de Água Doce Do Brasil*. Rio de Janeiro, Brazil.
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