

Panama Suckermouth (*Hypostomus aspidolepis*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, March 2012
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Available: <https://www.gbif.org/occurrence/1055441174>. (September 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Central America: Gatun River basin in the Caribbean coastal drainage of Panama.”

From Angulo et al. (2013):

“[In Costa Rica:] Atlantic slope: Río Frío [...] and Parismina (Molina *et al.* 2010, as *Hypostomus panamensis*). Pacific slope: Térraba and Coto.”

Status in the United States

This species has not been reported as introduced or established in the United States. However, unidentified members of the genus are established in the country.

From Nico et al. (2018):

“Several morphologically distinct but unidentified *Hypostomus* species have been recorded as established in the United States: these included populations in Indian Springs in Nevada; Hillsborough County in Florida; and the San Antonio River and San Felipe Creek in Texas (Courtenay and Deacon 1982; Courtenay et al. 1984, 1986; Courtenay and Stauffer 1990; Page and Burr 1991; López-Fernández and Winemiller 2005). A population of an unidentified *Hypostomus* species is firmly established in Hawaii (Devick 1991a, b). Reported from Arizona, Colorado, Connecticut, Louisiana, and Pennsylvania. Failed in Connecticut, Massachusetts, and Pennsylvania.”

There is no indication that this species is in trade 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. However, unidentified members of the genus are established in the country.

From Nico et al. (2018):

“Members of this genus have been introduced through a combination of fish farm escapes or releases, and aquarium releases (Courtenay and Stauffer 1990; Courtenay and Williams 1992). In Texas, the initial introduction occurred when *Hypostomus* entered local streams after escaping from pool and canal systems of the San Antonio Zoological Gardens in or before 1962 (Barron 1964); the Comal County introduction was probably due to an aquarium release (Whiteside and Berkhouse 1992).”

Remarks

Both the current valid name for this species, *Hypostomus aspidolepis*, and the synonym *Hemiancistrus aspidolepis* were used when researching in preparation of this report.

From Matamoros et al. (2016):

“*Hypostomus aspidolepis* was originally described in the genus *Hemiancistrus* because of the presence of hypertrophied odontodes set on evertible plates on the cheek (Evans 2002), and was recently moved to *Hypostomus* (Armbruster et al. 2015).”

From Nico et al. (2018):

“The genus *Hypostomus* contains about 116 species (Burgess 1989). Highlighting the serious need for additional taxonomic and systematic work, Armbruster (1997) concluded that it is currently impossible to identify most species in the genus. Several apparently different

Hypostomus species have been collected in the United States but not definitively identified to species level (Page and Burr 1991; Courtenay and Stauffer 1990). Distinguishing characteristics of the genus and a key to loricariid genera were provided by Burgess (1989) and Armbruster (1997). Photographs appeared in Burgess (1989) and Ferraris (1991). *Hypostomus* has officially replaced the generic name *Plecostomus*. The genus was included in the key to Texas fishes of Hubbs et al. (1991) and several identifying traits were also given by Page and Burr (1991).”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysii
Order Siluriformes
Family Loricariidae
Subfamily Hypostominae
Genus *Hemiancistrus*
Species *Hemiancistrus aspidolepis* (Günther, 1867)”

From Fricke et al. (2018):

“Current status: Valid as *Hypostomus aspidolepis* (Günther 1867). Loricariidae: Hypostominae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 40.0 cm SL male/unsexed; [Fisch-Muller 2003]”

Environment

From Froese and Pauly (2018):

“Freshwater; demersal. [...] 24°C - 29°C [Bussing 1998]”

Climate/Range

From Froese and Pauly (2018):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Central America: Gatun River basin in the Caribbean coastal drainage of Panama.”

From Angulo et al. (2013):

“[In Costa Rica:] Atlantic slope: Río Frío [...] and Parismina (Molina *et al.* 2010, as *Hypostomus panamensis*). Pacific slope: Terraba and Coto.”

Introduced

From Castillo-Pérez (2016):

“The Sabogal river and Medio Queso river (located in Los Chiles, Alajuela [Costa Rica]) were visited seven times between April 2014 and May 2016. [...] The presence of Panama suckermouth *H. aspidolepis* in both rivers was confirmed. The results suggest a high richness of fish species in Sabogal river and Medio Queso river, which may be threatened by the current land use and presence of the exotic fish *H. aspidolepis*.”

No information was found to confirm that *H. aspidolepis* has established a self-sustaining population in the rivers mentioned. The species is native to other parts of Costa Rica.

Means of Introduction Outside the United States

No information available.

Short Description

From Jordan and Evermann (1896):

“Head $3\frac{1}{3}$. D. 1, 7 ; A. 5 ; P. I, 6. Lat. line, 25. Head depressed, a little longer than broad ; snout very broad, rounded in front ; interorbital space nearly flat, 3 times diameter of the small eye ; interopercle with very few, short, setiform spines, the longest $\frac{1}{2}$ eye. Thorax and belly granulated, with naked patches. Seven scales between dorsals. Pectoral spine strong, longer than head, with setiform spinules ; 12 scutes between anal and caudal. Scutes of body with prominent keel, each keel with 4 to 7 short, setiform spines. Each scale variegated with dirty yellow and dark brown.”

Biology

No information available.

Human Uses

No information available.

Diseases

No information available. No OIE-reportable diseases have been documented for this species.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No information available.

4 Global Distribution



Figure 1. Known global distribution of *Hypostomus aspidolepis* reported from Panama and Costa Rica. Map from GBIF Secretariat (2017). Points in Panama may fall outside of the Gatun River basin but were included in climate matching because they all appeared to be legitimate records and because the exact extent of the basin could not be determined.

5 Distribution Within the United States

This species has not been reported as introduced or established 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) for the contiguous United States was 0.0, which is a low climate match. A Climate 6 score of 0.005 or below indicates a low match. The climate match was very low across almost the entire contiguous United States. Only southern Florida had a slightly higher, but still low, climate match.

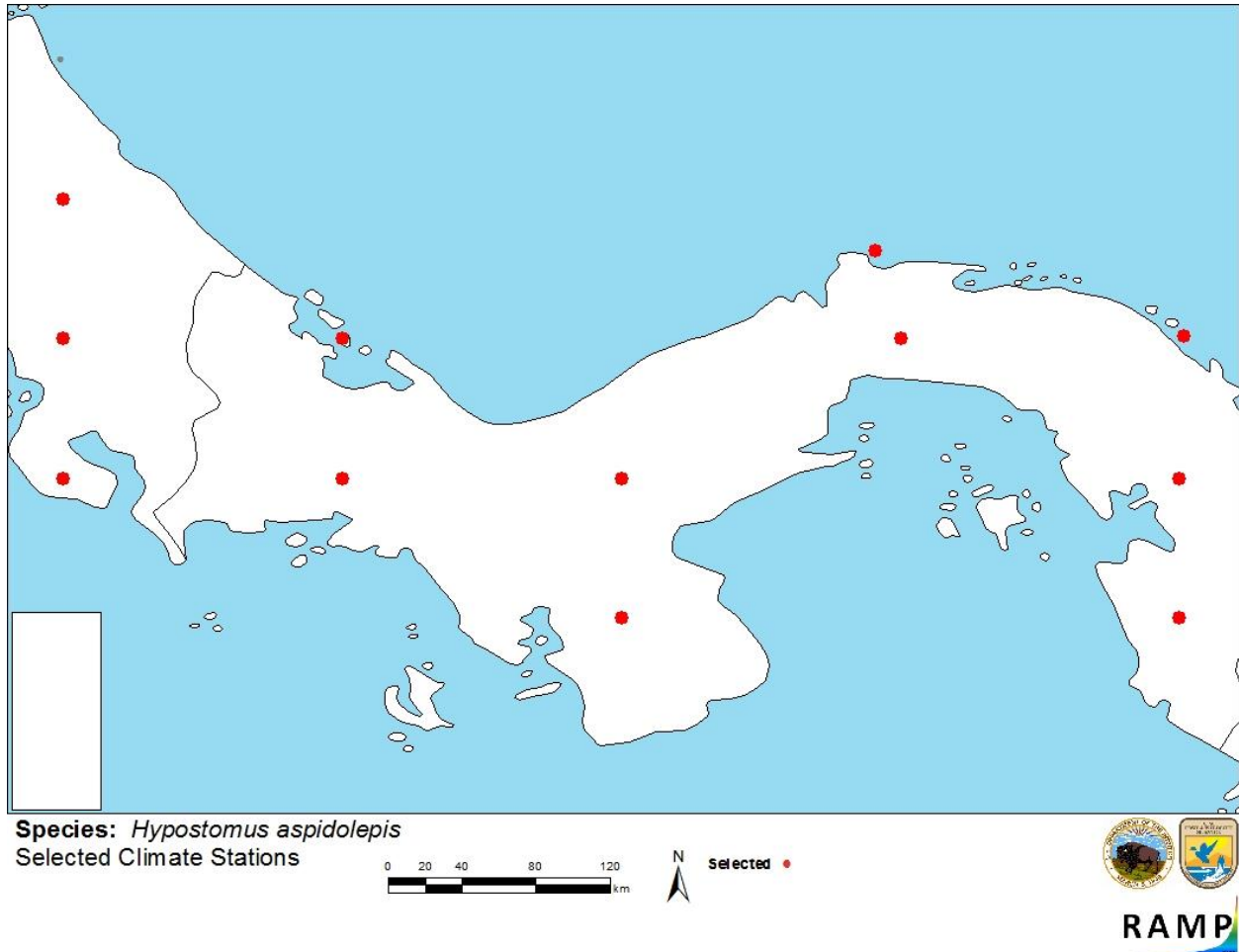


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Panama and Costa Rica) and non-source locations (gray) for *Hypostomus aspidolepis* climate matching. Source locations from GBIF Secretariat (2017).

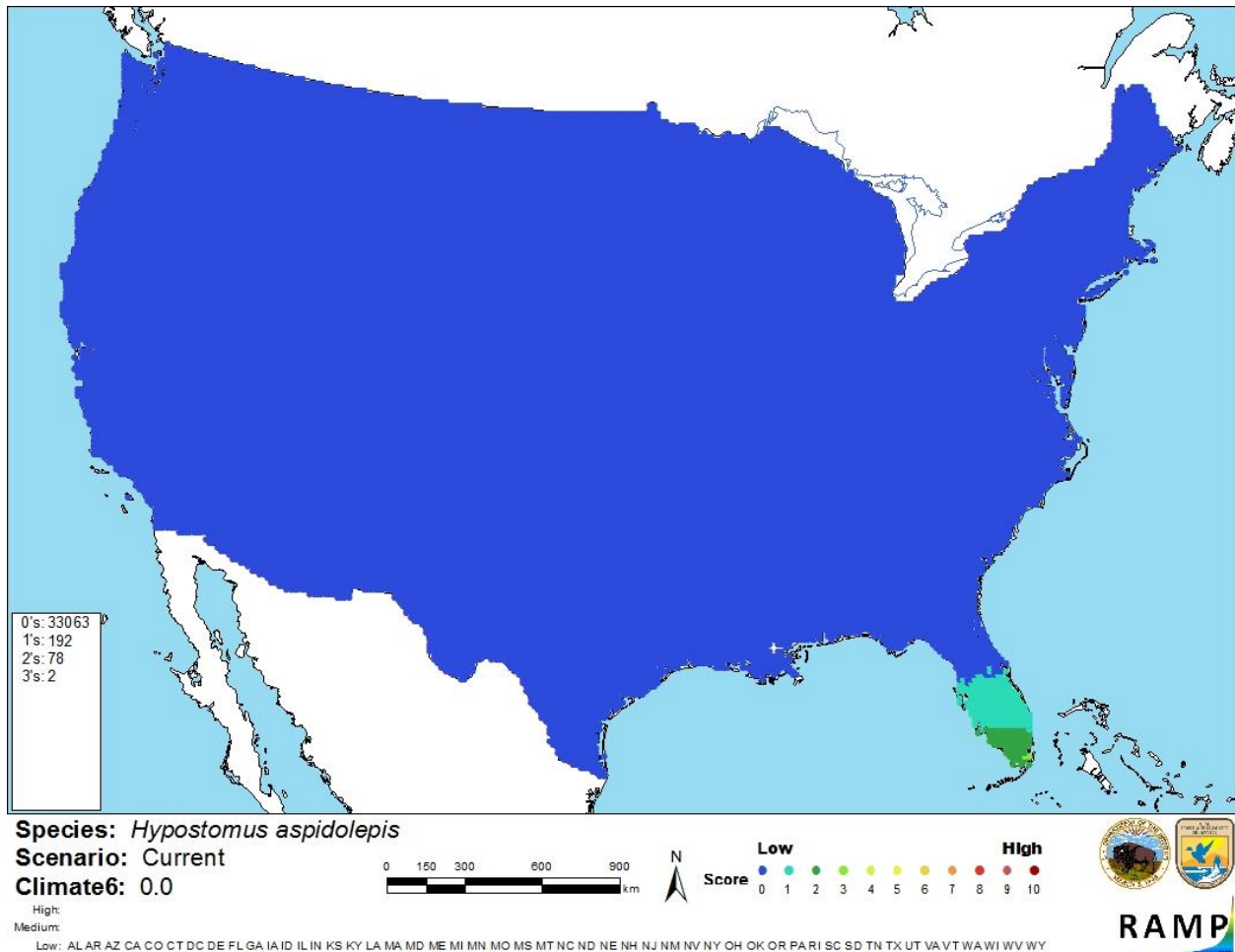


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Hypostomus aspidolepis* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match.

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

There is little information available about the biology and ecology of *Hypostomus aspidolepis*. This species has been reported outside of its native range, but there is no information available about the means, establishment status, or impact of the introduction. No negative impacts of introductions of this species have been documented. Because of the lack of information from which to base an assessment of the invasive potential of *H. aspidolepis*, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Hypostomus aspidolepis, the Panama Suckermouth, is an armored catfish species native to Panama and Costa Rica. It has been reported as introduced to two rivers in northern Costa Rica, but no information is available about the status or impacts of this introduction. History of invasiveness is uncertain. It has not been reported from the United States and there is no indication that it is in trade in the United States. *H. aspidolepis* has a low climate match with the entire contiguous United States. Because there is so little information available about this species, the certainty of this 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**
- **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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