Hypostomus saramaccensis (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, January 2013
Revised, November 2018
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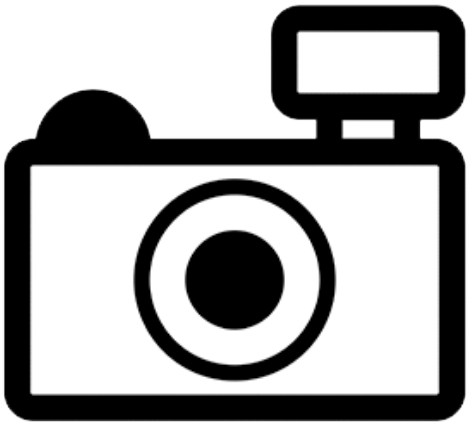

No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"South America: Guianan coastal drainages [Suriname]."

From Boeseman (1968):

"The species is only known to occur in the Saramacca River, but the extent of its distributional area remains to be ascertained; the type locality is still the only place in the Saramacca River basin where extensive collecting has taken place."

Status in the United States

No records of *Hypostomus saramaccensis* in the wild or in trade in the United States were found.

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."

Means of Introductions in the United States

No records of *Hypostomus saramaccensis* in the wild in the United States were found.

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

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)."

"The Nevada population was reported originally as *Plecostomus punctatus* by Minckley (1973) and as *Hypostomus plecostomus* by Deacon and Williams (1984), but was determined to be an unidentified species of *Hypostomus* (not *H. plecostomus*; J. Armbruster, pers. comm.). Populations from Texas (e.g., Hubbs et al. 1978; Whiteside and Berkhouse 1992) and Florida (e.g., Rivas 1965) occasionally have been reported as *Hypostomus plecostomus*. According to Courtenay et al. (1974), the Florida *Hypostomus* species in the Hillsborough County area was probably different than that reported from the southern part of the state. In addition, most early reports from south Florida, and possibly elsewhere in the state, probably were based on incorrect identifications of *Pterygoplichthys* (Loftus and Kushlan 1987; Ludlow and Walsh 1991; Nico, personal observation). Courtenay (personal communication) reviewed records of loricariid

catfishes from southeastern Florida and located only one specimen of the genus *Hypostomus* (UF 98938), collected from Coral Gables Canal at Red Road, Dade County, in 1960; he concluded that all other loricariids from Dade County were *Pterygoplichthys*. The *Hypostomus* inhabiting the Tampa area was reported as expanding its range into the Hillsborough River from Six Mile Creek (Courtenay and Stauffer 1990), but there are no supporting specimens, and these also may be based on misidentifications of *Pterygoplichthys* (Ludlow and Walsh 1991). Whitworth (1996) recorded the capture of specimens of an unidentified loricariid from the Thames River drainage, Connecticut, and listed it as *Hypostomus*. Unfortunately, he does not provide any information that might be useful in its positive identification. In his book, Whitworth included an illustration of a *Hypostomus*, but the drawing is from an old plate and not of the Connecticut fish. Distribution maps for *Hypostomus* found in the United States were given in Courtenay and Hensley (1979), Hensley and Courtenay (1980), and Courtenay and McCann (1981), but these maps most likely include records based on what is now recognized to be *Pterygoplichthys*."

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2018), *Hypostomus saramaccensis* (Boeseman, 1968) is the current valid and original name of this species.

From ITIS (2018):

"Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Siluriformes
Family Loricariidae Rafinesque, 1815
Subfamily Hypostominae
Genus *Hypostomus* Lacepède, 1803
Species *Hypostomus saramaccensis* Boeseman, 1968"

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 11.5 cm SL male/unsexed; [Weber 2003]"

Environment
From Froese and Pauly (2018):

"Freshwater; demersal."

Climate/Range
From Froese and Pauly (2018):

"Tropical"

Distribution Outside the United States
Native
From Froese and Pauly (2018):

"South America: Guianan coastal drainages [Suriname]."

From Boeseman (1968):

"The species is only known to occur in the Saramacca River, but the extent of its distributional area remains to be ascertained; the type locality is still the only place in the Saramacca River basin where extensive collecting has taken place."

Introduced
No records of introductions of *Hypostomus saramaccensis* were found.

Means of Introduction Outside the United States
No records of introductions of *Hypostomus saramaccensis* were found.

Short Description
From Boeseman (1968):

"Diagnosis. — Depth of caudal peduncle in interdorsal length 1.4-1.45 (average 1.4), the species thus belonging to the plecostomus-group, mandibular ramus in interorbital width 1.8-1.9, constant throughout the size range; deflated first dorsal fin usually just, seldom distinctly, reaching base of spine of second dorsal fin; spine of first dorsal fin slightly shorter than pre-dorsal length; ventral surface plain, body with moderate to small dark roundish spots, relatively larger and oblong on juveniles, smaller (but not minute) and round on head; all fins with numerous small spots, not regularly arranged, vague on distal first dorsal fin.

Description. — Apparently a medium-sized, moderately slender species, though with a rather stout caudal peduncle; the snout outline about ovate in dorsal view.

Depth of head at tip of occipital process 5.4-6.3 (av. 5.65), width at cleithra 2.9-3.4 (3.15), in standard length. Diameter of orbit 1.95-2.95 in snout, 1.1-1.75 in interorbital width, relatively decreasing with age."

Scutes in longitudinal lateral series invariably 26/26, with an additional elongate scute on caudal base. There are 5 interdorsal scutes, 2 between the second dorsal and caudal, and 12 or 13 post-anal, neglecting one or two small scutelets covering the origins of these fins. The post-occipital scute always single, even in the smallest specimen available without sutures. The belly is usually completely naked, or in larger examples with a few scutes at coracoidal region and near pectoral bases, and only in two examples of over 100 mm there are a rather well developed coracoidal band, the lateral parts more or less covered, and some scattered scutes elsewhere. In young specimens the lower surface of the head mostly naked, with only the usual lateral marginal cover and two narrow projections from the upper snout cover curving around the anterior snout margin and bordering the naked tip. About the same pattern is maintained in the larger examples, but there is an additional moderate, ovate or pear-shaped, patch just before each gillaperture [sic], while on the lower snout a transverse series of three small ovate patches is found immediately before the upper lip, possibly coalescing if the species attains a larger size or age.

The number of mandibular teeth found on each ramus appears to vary between 31 and 47, but especially to the lower counts a number of teeth hidden in the gums probably should be added. The deflated first dorsal fin almost invariably just reaches the base of the spine of the second dorsal fin, only in two examples reaching slightly beyond the anterior base of the spine.

The colour markings consist of rather small spots, equally covering body (except the plain belly), peduncle, and most of the fins, slightly smaller and more dense on the head, quite large on the pectoral spines, and forming more or less irregular cross-bands on the caudal fin. In the juveniles, the spots appear to be much larger, and slightly oblong on body and peduncle, but this is at least partly a result of the circumstance that, as usual in the Surinam species, the spots do not grow with the specimens. There is some variation in the size of the spots on the larger specimens."

Biology

From Boeseman (1968):

"All specimens available were collected together in a large shallow pool below extensive cataracts."

Human Uses

No information on human uses of *Hypostomus saramaccensis* was found.

Diseases

No information on diseases of *Hypostomus saramaccensis* was found. **No records of OIE-reportable diseases (OIE 2019) were found for *H. saramaccensis.***

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

No records of introductions of *Hypostomus saramaccensis* were found.

From Nico et al. (2018):

"The effects of these loricariid catfish is largely unknown. In Texas, Hubbs et al. (1978) reported possible local displacement of algae-feeding native fishes such as *Campostoma anomalum* by *Hypostomus*, and López-Fernández and Winemiller (2005) suggest that reductions in *Dionda diaboli* abundance in portions of San Felipe Creek are due to population increases of *Hypostomus*. Because of their abundance in Hawaii, introduced *Hypostomus*, *Pterygoplichthys*, and *Ancistrus* may compete for food and space with native stream species (Devick 1989; Sabaj and Englund 1999)."

4 Global Distribution

Figure 1. Map of northern South America showing locations where *Hypostomus saramaccensis* has been reported. Locations are in Suriname. Map from GBIF Secretariat (2018).

5 Distribution Within the United States

No records of *Hypostomus saramaccensis* in the wild in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Hypostomus saramaccensis* was low for the majority of the contiguous United States with a small patch of medium match in southeastern Florida. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had low individual Climate 6 scores.

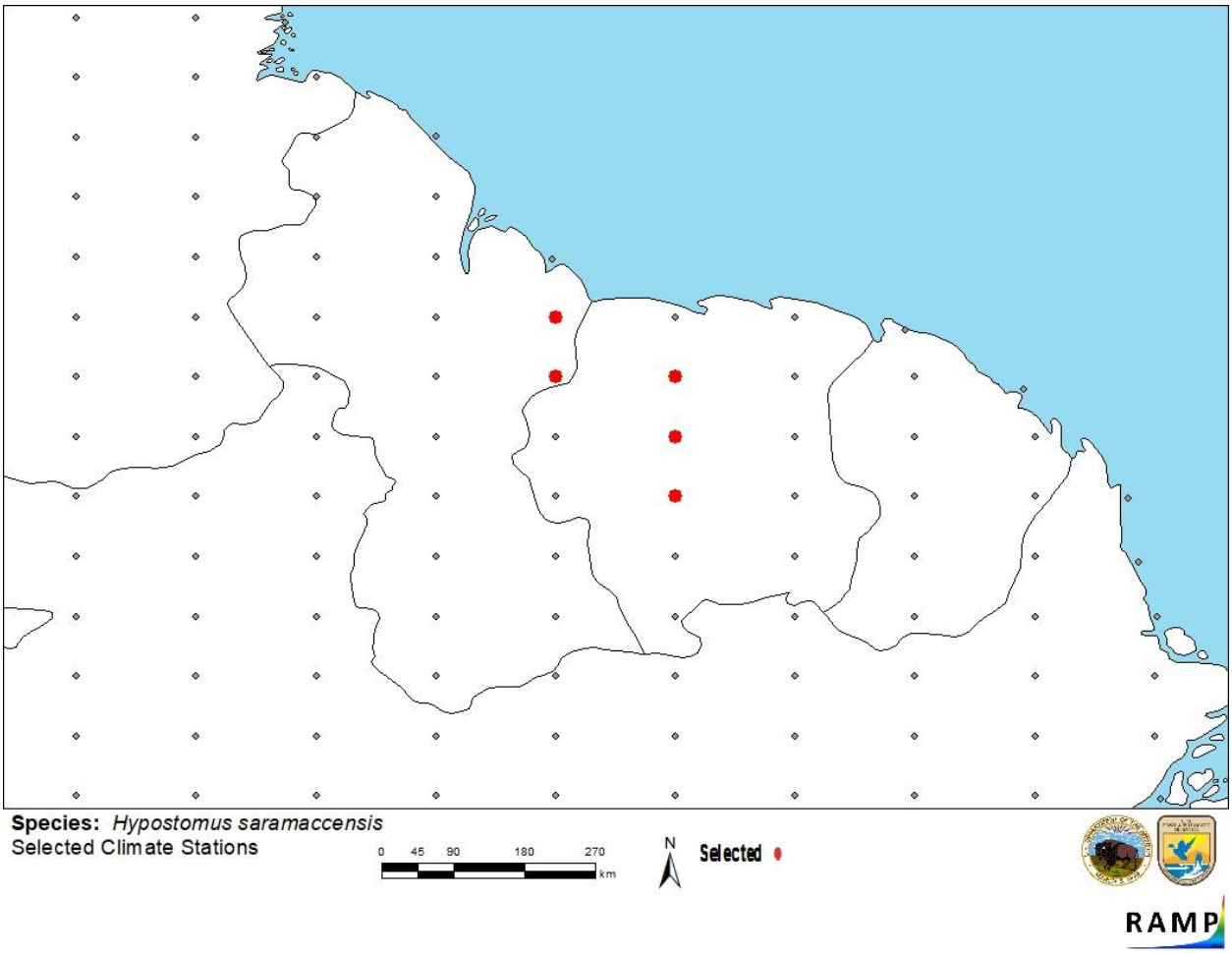

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in South America selected as source locations (red; Suriname) and non-source locations (gray) for *Hypostomus saramaccensis* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

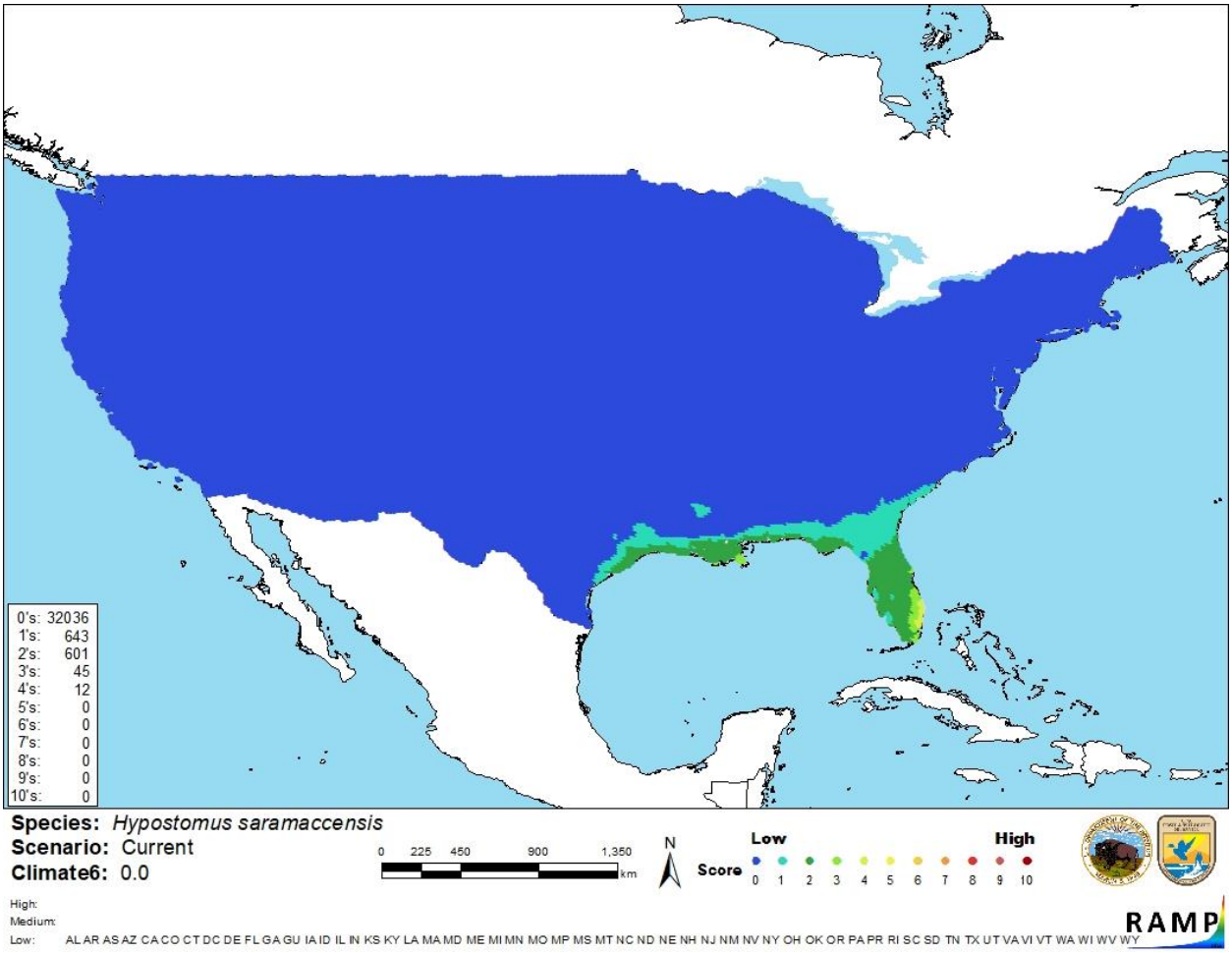

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Hypostomus saramaccensis* in the contiguous United States based on source locations reported from GBIF Secretariat (2018). 0 = Lowest match, 10 = Highest match.

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≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

7 Certainty of Assessment

The certainty of assessment for *Hypostomus saramaccensis* is low. There is minimal information available for this species. No records of introduction were found, therefore there is no information about impacts of introductions. However, unidentified species of *Hypostomus* have become established in the United States, and it is possible that one or more of those populations could be identified later as *H. saramaccensis*.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Hypostomus saramaccensis is a South American freshwater catfish native to Suriname. The history of invasiveness is uncertain. It has not been reported as introduced or established anywhere in the world, nor is it found in trade. However, unidentified species of *Hypostomus* are established in the United States. The overall climate match for the contiguous United States was low. There was one small area of medium match in southeastern Florida. 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 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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