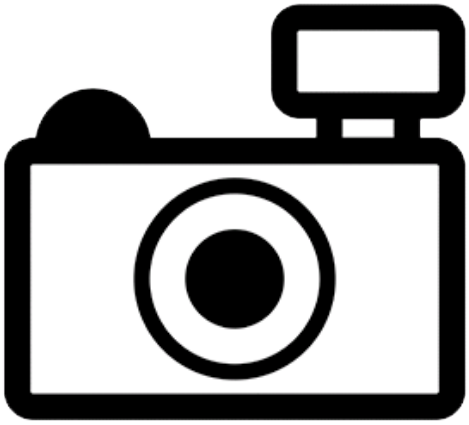
Hypostomus faveolus (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, January 2013
Revised, August 2018
Web Version, 9/11/2018



1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"South America: Rio Tocantins basin and the upper rio Xingu basin in central Brazil."

From Zawadzki et al. (2008):

"*Hypostomus faveolus* is known from several localities in the rio Tocantins basin and the upper rio Xingu basin in central Brazil. There is a single record for the species at the rio Meia Ponte, a tributary of rio Paranaíba, upper rio Paraná drainage in central Brazil. The rio Meia Ponte has its headwaters at the divide with the rio Araguaia basin, which might suggest a faunal interchange between the river basins."

Status in the United States

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

Means of Introductions in the United States
No records of *Hypostomus faveolus* in the wild in the United States were found.

Remarks
Hypostomus faveolus was first described in 2008 by Zawadzki et al.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing
According to Eschmeyer et al. (2018), *Hypostomus faveolus* Zawadzki, Birindelli, Lima 2008 is the valid name for this species; it is also the original name.

From Bailly (2017):

"Biota Animalia (Kingdom) > Chordata (Phylum) > Vertebrata (Subphylum) > Gnathostomata (Superclass) > Pisces (Superclass) > Actinopterygii (Class) > Siluriformes (Order) > Loricariidae (Family) > Hypostominae (Subfamily) > *Hypostomus* (Genus) > *Hypostomus faveolus* (Species)"

Size, Weight, and Age Range
From Froese and Pauly (2018):

"Max length : 20.6 cm SL male/unsexed; [Zawadzki et al. 2008]"

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: Rio Tocantins basin and the upper rio Xingu basin in central Brazil."

From Zawadzki et al. (2008):

"*Hypostomus faveolus* is known from several localities in the rio Tocantins basin and the upper rio Xingu basin in central Brazil. There is a single record for the species at the rio Meia Ponte, a tributary of rio Paranaíba, upper rio Paraná drainage in central Brazil. The rio Meia Ponte has its

headwaters at the divide with the rio Araguaia basin, which might suggest a faunal interchange between the river basins."

Introduced

From Zawadzki et al. (2008):

"However, it is a common practice among recreational fishermen and ranchers from Goiânia area (the capital of Goiás state) to release fishes from the rio Araguaia basin in artificial ponds in the rio Meia Ponte catchment area (A.P. Fialho and F. Tejerina-Garro, pers. comm.). The eventual rupture of those ponds might explain why this [*Hypostomus faveolus*] and other fish species from the rio Araguaia basin, such as *Hyphessobrycon moniliger* (Characidae) and *Pterygoplichthys joselimaianus* (Loricariidae) were recorded in the last few years in the rio Meia Ponte basin. We have not included this locality in the distribution map, since it likely represents an unnatural occurrence for the species […]."

Means of Introduction Outside the United States

From Zawadzki et al. (2008):

"However, it is a common practice among recreational fishermen and ranchers from Goiânia area (the capital of Goiás state) to release fishes from the rio Araguaia basin in artificial ponds in the rio Meia Ponte catchment area (A.P. Fialho and F. Tejerina-Garro, pers. comm.)."

Short Description

From Zawadzki et al. (2008):

"*Hypostomus faveolus* is distinguished from its congeners by the unique combination of pale blotches over a darker background in body and fins (vs. dark blotches over paler background in body and fins, in most congeners), and conspicuous keels on head, predorsal region and lateral plates (vs. conspicuous keels absent in all remaining pale-spotted species of *Hypostomus*)."

"Standard length of 234 examined specimens 22.6 to 206.0 mm. […] Dorsal profile convex from snout tip to dorsal-fin origin and almost straight from that point to end of adipose fin, then concave to caudal fin. Ventral profile almost straight from snout tip to caudal fin. Caudal peduncle in cross-section from trapezoidal on its anterior portion to elliptical posteriorly, slightly flattened dorsally and ventrally. Body width at cleithral region greater than head depth. Head broad, narrow anteriorly, covered dorsolaterally with dermal ossifications, except for small naked area on snout tip. Median elongated bulge associated with mesethmoid usually conspicuous from snout tip to transverse line between nares. Eye dorsolateral. Interorbital space slightly concave in transversal section view due to supraorbital arching. Conspicuous ridge originating laterally to the nares, passing through supraorbital, and extending to posterior portion of pterotic-supracleitrum. Pterotic-supracleitrum not distinctly granular. Parieto-supraoccipital with conspicuous median ridge, and relatively well-developed posterior process bordered by single, wide plate. Oral disk longitudinally ellipsoidal. Lower lip not reaching transverse line between gill openings, its ventral surface covered with numerous papillae, decreasing in size posteriorly. Maxillary barbel moderately developed, about same size as orbital diameter (smaller

than orbital diameter in specimens less than 100 mm SL). Mouth relatively small. Nineteen to 34 […] teeth in premaxilla, 21 to 35 […] teeth in dentary. Teeth long, moderately slender, bicuspid, and curved distally inward; mesial cusp with elongated crown and about twice length of lateral cusp, similar to *Hypostomus* aff. *derbyi* (Muller & Weber, 1992 […]). Dentary rami forming angle of approximately 90° Buccal papillae weakly to moderately developed."

"Body covered with five lateral rows of moderately spinulose dermal plates. Dorsal-fin base naked. Predorsal region with two conspicuous keels, area between keels flat. Dorsal series of lateral plates with keel from first plate to azygous plate before adipose fin. Mid-dorsal series of lateral plates with keel interrupted between third and fourth plate by ventral extension of first plate of dorsal series. Median series of plates with weak keel and bearing lateral line. Mid-ventral series of plates with keel more developed from first to fifth or sixth plate. Ventral surface of head covered with minute scutelets, except for area dorsal to lower lip. Scutelets present in proximal portion of upper lip. Abdomen completely covered with minute scutelets in specimens larger than 110 mm SL, with exception of small areas around pectoral and pelvic fin origins and at urogenital opening. Preanal plate ranging from completely exposed to completely covered with skin. Twenty-five (34) or 26*(4) dorsal plates, 25(29) or 26*(9) mid-dorsal plates, 24(1), 25(8), 26*(27) or 27(2) median plates, 25(9), 26*(8) or 27(1) mid-ventral plates, 21(7), 22(21) or 23*(10) ventral plates. Three predorsal plates, eight plates below dorsal fin, six plates between dorsal fin and adipose fin."

"Dorsal fin I,7, its origin situated approximately at midpoint between pectoral and pelvic fins, or slightly posterior to that point; its distal border convex. Last dorsal-fin ray reaching or almost reaching pre-adipose plate when adpressed. Adiposefin spine compressed and curved inward (spine more or less straight in specimens up to 70 mm SL). Pectoral fin I,6, its posterior border straight. Pectoral-fin spine slightly curved inward, covered with weak-developed odontodes, slightly more developed on its distal portion in larger specimens. Tip of adpressed pectoral fin reaching one-third of pelvic-fin spine length. Pelvic fin I,5, posterior border straight to slightly rounded. Pelvic-fin spine round in cross section, just surpassing anal-fin origin when adpressed. Anal fin I,4, tip reaching the fifth or sixth plate posterior to origin. Caudal-fin margin concave, 16 principal rays, inferior lobe longer than superior one."

"Color pattern of living specimens similar to preserved specimens, but blotches more conspicuous and yellowish ([…]; Glaser & Glaser, 1995: 22, 63; Stawikowski et al., 2004: 44)."

Biology

From Zawadzki et al. (2008):

"*Hypostomus faveolus* is a eurytopic species, and has been collected both in rapids and slow flowing portions of middle to large rivers, both in rocky and soft substrates. A few juvenile specimens were collected in small streams and oxbow lakes in the rio Culuene basin."

Human Uses

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

Diseases
No information on diseases of *Hypostomus faveolus* was found.

Threat to Humans
From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

No records of introduction impacts were found for *Hypostomus faveolus*, therefore there is no information on impacts of introduction.

4 Global Distribution

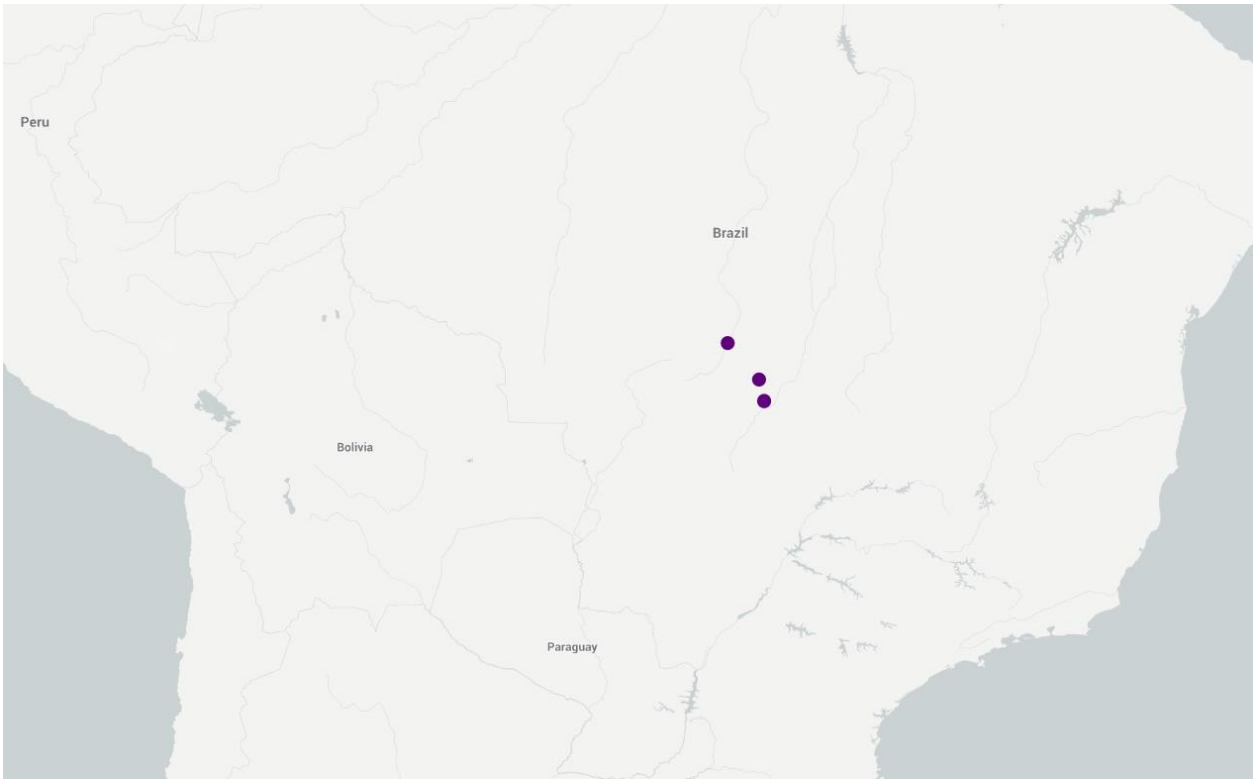


Figure 1. Known global distribution of *Hypostomus faveolus*. Locations are in Brazil. Map from GBIF Secretariat (2018).

5 Distribution Within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Hypostomus faveolus* was low for the majority of the contiguous United States with a small patch of medium match in southern Florida. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.00, low. All States had low individual climate scores.

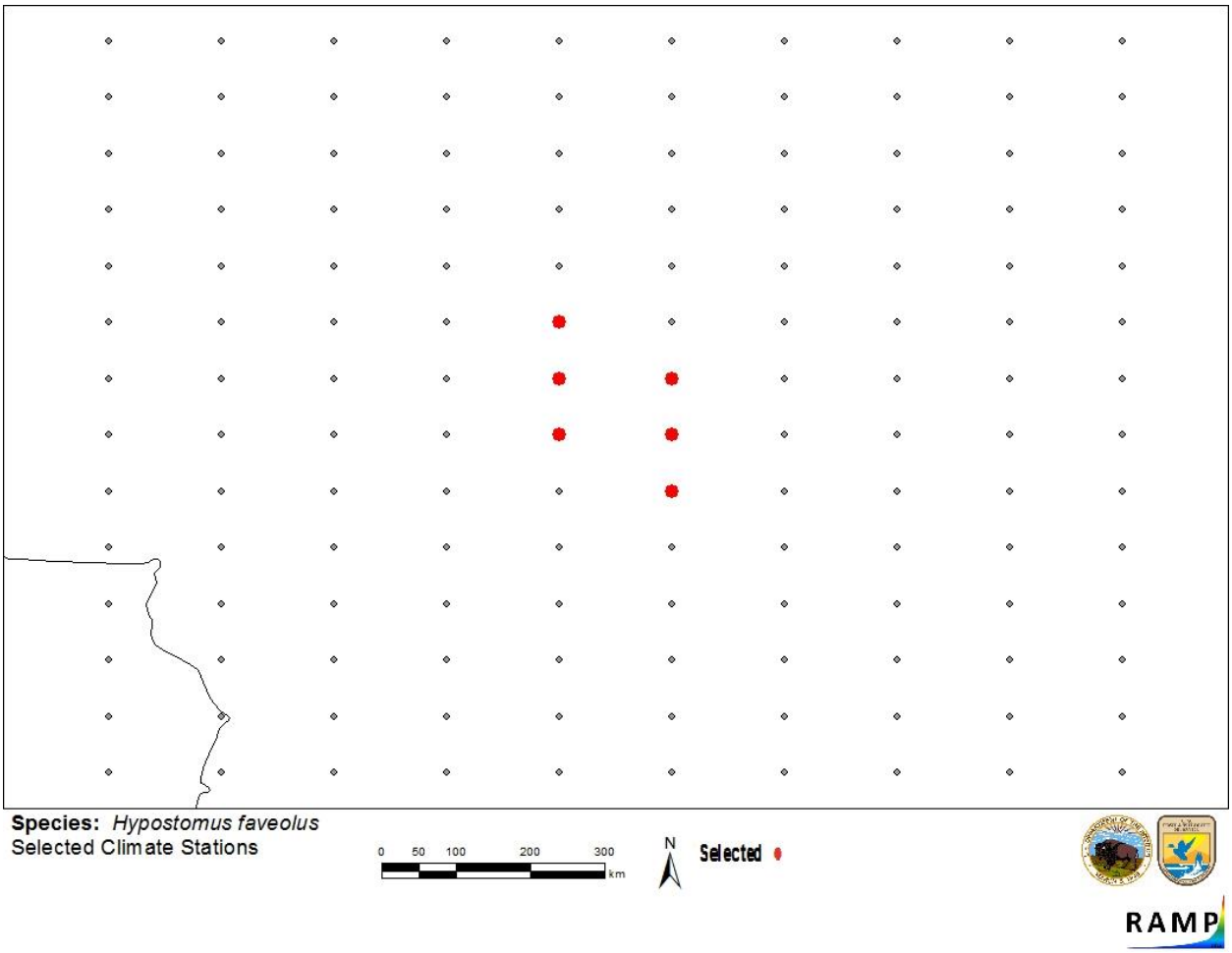


Figure 3. RAMP (Sanders et al. 2018) source map showing weather stations in Brazil selected as source locations (red) and non-source locations (gray) for *Hypostomus faveolus* climate matching. Source locations from GBIF Secretariat (2018).

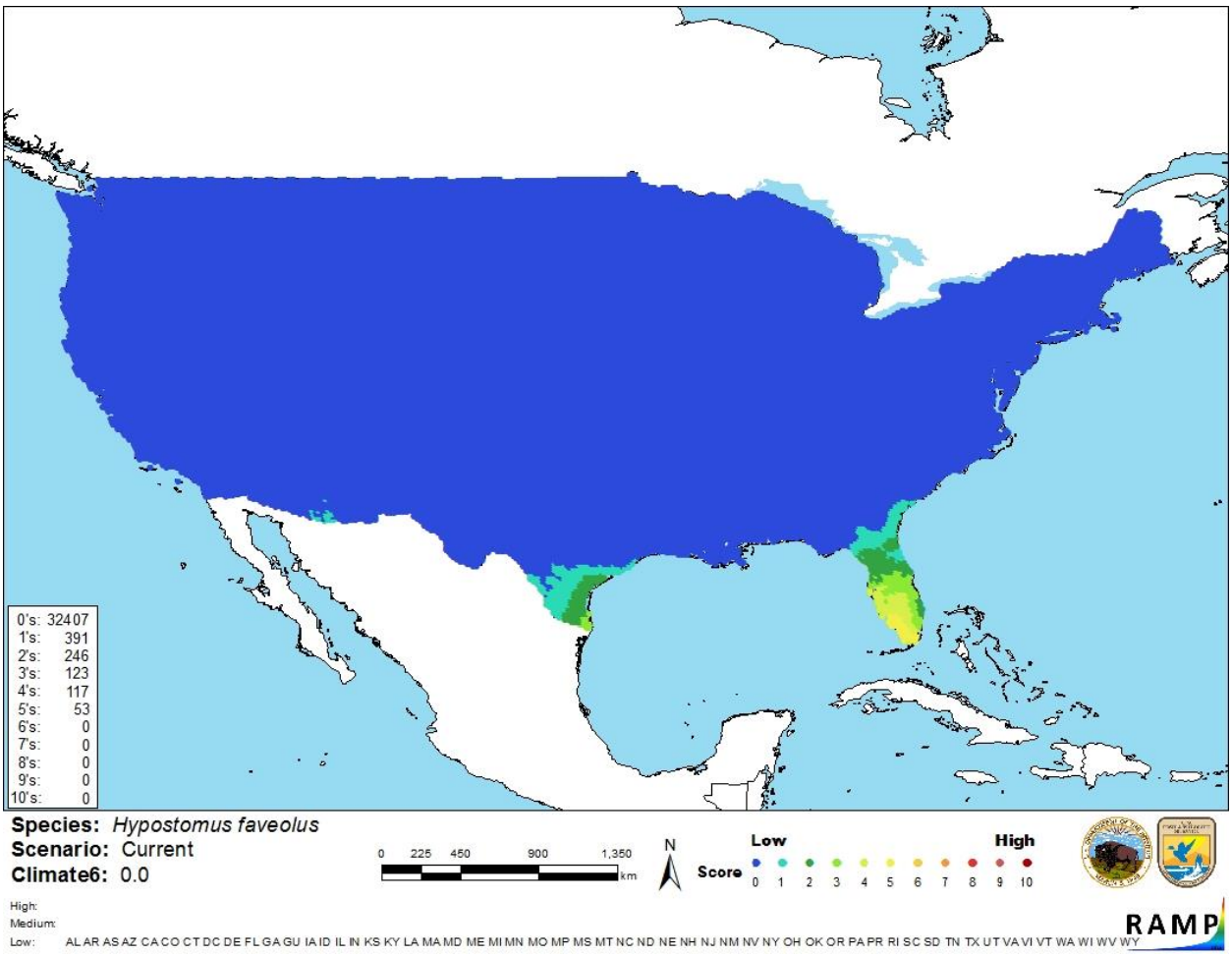


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Hypostomus faveolus* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0 = Lowest match, 10 = Highest match.

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 is low. There was minimal biological information available for this species. There were no records of introduction impacts found.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Hypostomus faveolus is a member of the suckermouth armored catfish family (*Loricariidae*), native to Brazil. The history of invasiveness is uncertain. No records of introduction impacts were found. The climate match was low for the contiguous United States with all States having a low individual climate score. 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:** This species was first described in 2008.
- **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.

Bailly, N. 2017. *Hypostomus faveolus*. *In* World Register of Marine Species. Available: http://www.marinespecies.org/aphia.php?p=taxdetails&id=1008412. (August 2018).

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (August 2018).

Froese, R., and D. Pauly, editors. 2018. *Hypostomus faveolus* Zawadzki, Birindelli & Lima, 2008. FishBase. Available: https://www.fishbase.de/summary/Hypostomus-faveolus.html. (August 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Hypostomus faveolus* Zawadzki, Birindelli & Lima, 2008. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/5202215. (August 2018).

Sanders, S., C. Castiglione, and M. Hoff. 2018. Risk assessment mapping program: RAMP, version 3.1. U.S. Fish and Wildlife Service.

Zawadzki, C. H., J. L. O. Birindelli, and F. C. T. Lima. 2008. A new pale-spotted species of *Hypostomus* Lacépède (Siluriformes: Loricariidae) from the rio Tocantins and rio Xingu basins in central Brazil. Neotropical Ichthyology 6(3):395–402.

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.

Glaser, U., and W. Glaser. 1995. Loricariidae – all L-numbers. Aqualog, Verlag A. C. S. GmbH.

Muller, S., and C. Weber. 1992. Les dents des sous-familles Hypostominae et Ancistrinae (Pisces, Siluriformes, Loricariidae) et leur valeur taxonomique. Revue suisse de Zoologie 99(4):747–754.

Stawikowski, R., A. Werner. and I. Seidel. 2004. L-Nummern. Alle LNummern: Lebensräume, Pflege & Ernährung. Die Aquarien und Terrarien-Zeitschrifft (DATZ), Sonderheft L-Nummern.