

Hypostomus hermanni (a catfish, no common name)

Ecological Risk Screening Summary

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



Photo: Vieira and Renesto (2016). Licensed under Creative Commons BY-SA. Available: <https://pdfs.semanticscholar.org/fd90/cbe474ccf583624587b30a44e134a640c001.pdf>. (August 14, 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“South America: Tietê River basin [Brazil].”

From Vieira and Renesto (2016):

“*H. hermanni* is a loricariid species, inhabiting the upper Paraná River basin; [...]”

Status in the United States

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

Means of Introductions in the United States

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

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Hypostomus hermanni* (Ihering 1905) is the current valid name for this species. It was originally described as *Plecostomus hermanni*.

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
Subfamily Hypostominae
Genus *Hypostomus*
Species *Hypostomus hermanni* (Ihering, 1905)”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 24.0 cm TL 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: Tietê River basin [Brazil].”

From Vieira and Renesto (2016):

“*H. hermanni* is a loricariid species, inhabiting the upper Paraná River basin; [...]”

Introduced

No records of *Hypostomus hermanni* introductions were found.

Means of Introduction Outside the United States

No records of *Hypostomus hermanni* introductions were found.

Short Description

From Zawadzki et al. (2004):

“[...] *H. hermanni* bear a negative body coloration (black dots on body instead of white dots), [...]”

From Dias and Zawadzki (2018):

“Abdomen covered by bony plates; cleithral width 30.7–34.0% of standard length [...]”

Biology

Information on the biology of *Hypostomus hermanni* was not found.

Human Uses

Information on human uses of *Hypostomus hermanni* was not found.

Diseases

No records of OIE-reportable diseases were found for *Hypostomus hermanni*.

From Zica et al. (2011):

“*Hypostomus hermanni* and *H. margaritifer* were represented by only one specimen each but both had a high intensity of infection by [*Austrodiplostomum*] *compactum* metacercariae (27 and 35 metacercariae, respectively).”

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No records of *Hypostomus hermanni* introductions were found; therefore, there is no information on impacts of introductions.

4 Global Distribution

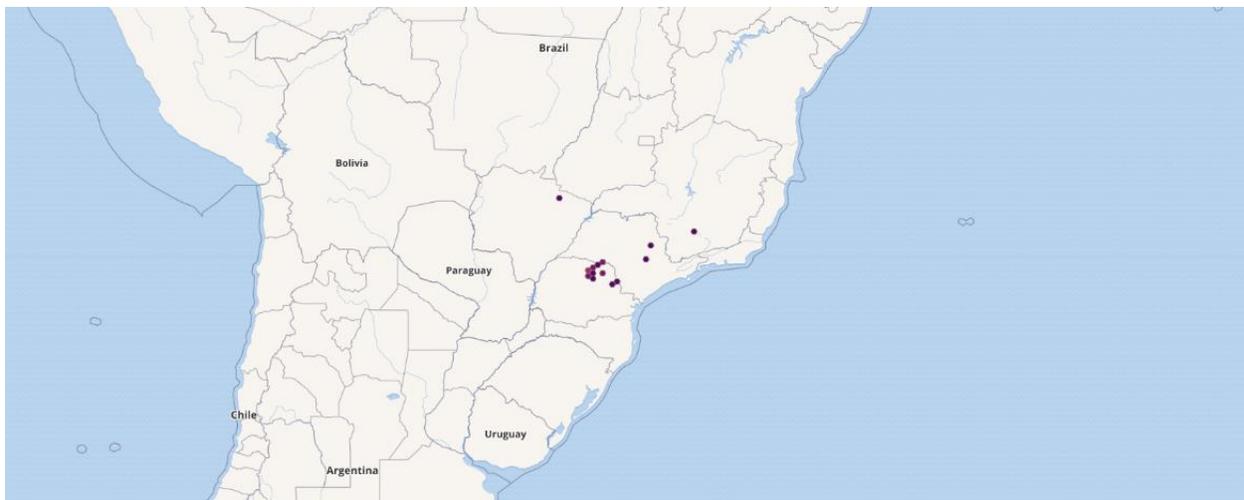


Figure 1. Known global distribution of *Hypostomus hermanni*. Locations are in Brazil. Map from GBIF Secretariat (2018).



Figure 2. Additional known distribution of *Hypostomus hermanni*. Locations are in southern Brazil. Map adapted from Vieira and Renesto (2016).

Additional locations in southern Brazil given in Zawadzki et al. (2004), Costa et al. (2013), de Paiva et al. (2013), Bueno et al. (2014), and Abilhoa et al. (2016).

5 Distribution Within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Hypostomus hermanni* was low in the Northeast, Midwest, and everywhere west of central Texas. The climate match was high for most of Peninsular Florida and in a few small patches along the Gulf Coast. The match was medium everywhere in between. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for contiguous United States was 0.033, medium. The following States had high individual climate scores: Florida, Georgia, Louisiana, North Carolina, and South Carolina.

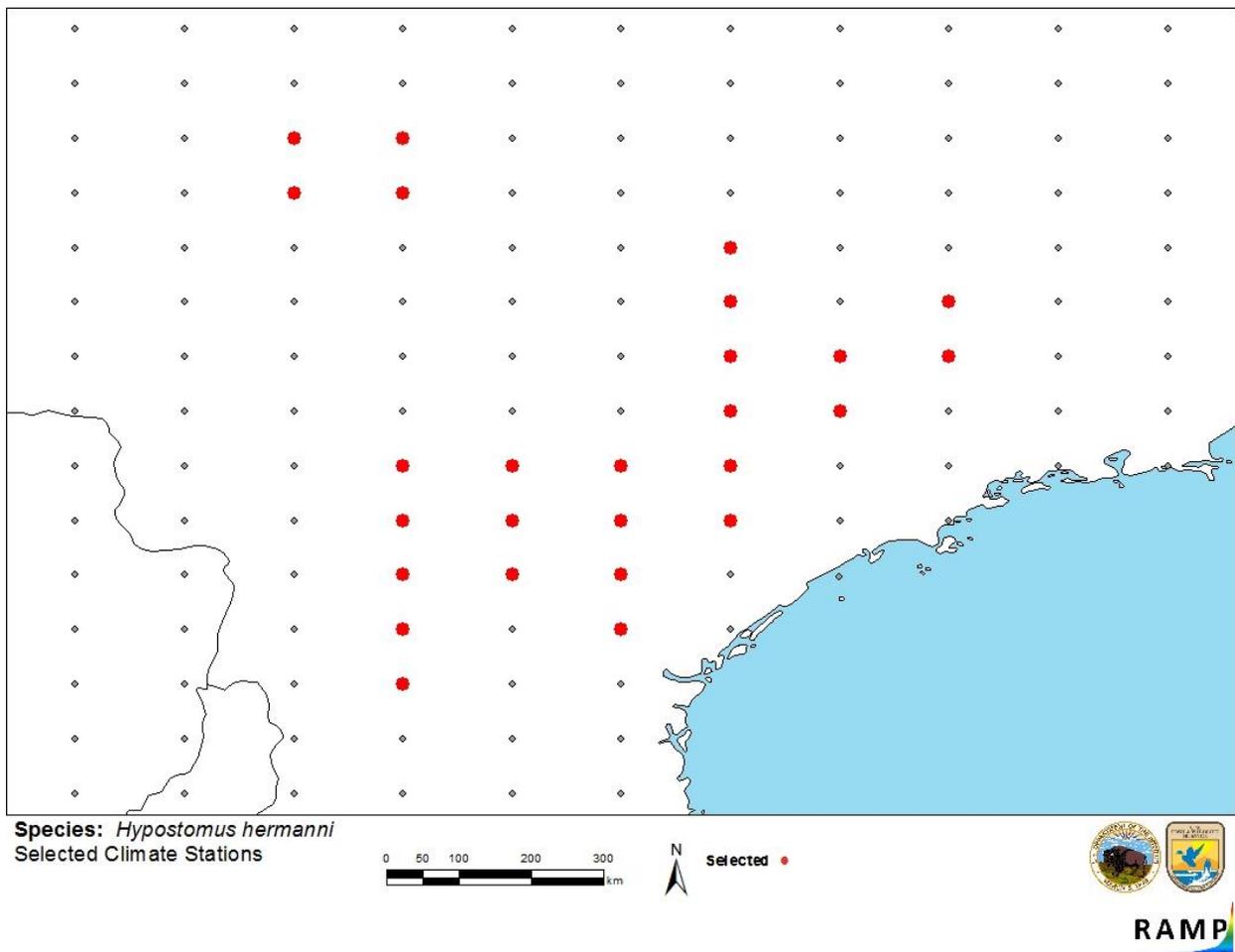


Figure 3. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Brazil) and non-source locations (gray) for *Hypostomus hermanni* climate matching. Source locations from Zawadzki et al. (2004), Costa et al. (2013), de Paiva et al. (2013), Bueno et al. (2014), Abilhoa et al. (2016), Vieira and Renesto (2016), and GBIF Secretariat (2018).

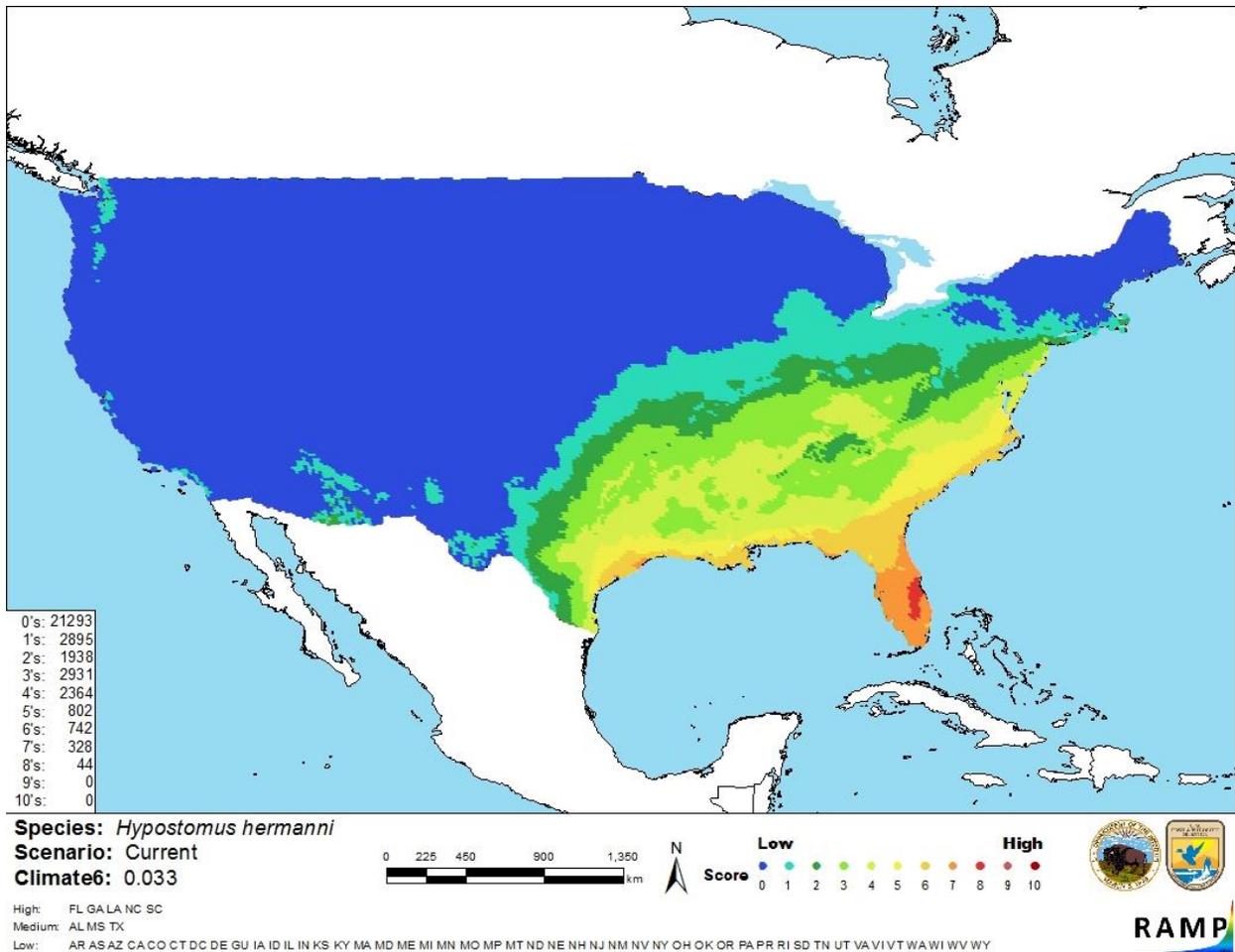


Figure 4. Map of RAMP (Sanders et al. 2018) climate matches for *Hypostomus hermanni* in the contiguous United States based on source locations reported by Zawadzki et al. (2004), Costa et al. (2013), de Paiva et al. (2013), Bueno et al. (2014), Abilhoa et al. (2016), Vieira and Renesto (2016), and GBIF 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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

The certainty of assessment for *Hypostomus hermanni* is low. There was minimal general information available for this species. No records of introduction were found, subsequently there is no information on impacts of introductions to be evaluated.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Hypostomus hermanni is an armored catfish native to southern Brazil. The history of invasiveness is uncertain. No records of introduction were found and no information on this species in trade was found. The climate match was medium. However, there were areas of high match in southern Florida and the Gulf Coast. Five States had high individual climate scores. The certainty of assessment is low. There is a general lack of information about this species. The overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Medium**
- **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.

- Abilhoa, V., M. O. Valduga, F. de A. Frehse, and J. R. S. Vitule. 2016. Use of food resources and resource partitioning among five syntopic species of *Hypostomus* (Teleostei: Loricariidae) in an Atlantic Forest river in southern Brazil. *Zoologia* 33(6):e20160062.
- Bueno, V., P. C. Venere, J. T. Konerat, C. H. Zawadzki, M. R. Vicari, and V. P. Margarido. 2014. Physical mapping of the 5S and 18S rDNA in ten species of *Hypostomus* Lacépède 1803 (Siluriformes: Loricariidae): evolutionary tendencies in the genus. *The Scientific World Journal* 2014:e943825.
- Costa, A. D. A., D. G. Ferreira, W. F. da Silva, A. S. Zanatta, O. A. Shibatta, and B. A. Galindo. 2013. Fishes (Osteichthyes: Actinopterygii) from the Penacho stream, upper Paraná River basin, Paraná State, Brazil. *Check List* 9(3):519–523.
- de Paiva, S., C. H. Zawadzki, M. C. C. Ruvulo-Takasusuki, A. S. Lapenta, and E. Renesto. 2013. Allozyme analysis of the four species of *Hypostomus* (Teleostei: Loricariidae) from the Ivaí river, upper Paraná river basin, Brazil. *Acta Scientiarum Biological Sciences* 35(4):571–578.
- Dias, A. C., and C. H. Zawadzki. 2018. Identification key and pictures of the *Hypostomus* Lacépède, 1803 (Siluriformes, Loricariidae) from the rio Ivaí, upper rio Paraná basin. *Check List* 14(2):393–414.

- 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 hermanni* (Ihering, 1905). FishBase. Available: <http://www.fishbase.se/summary/Hypostomus-hermanni.html>. (August 2018).
- GBIF Secretariat. 2018. GBIF backbone taxonomy: *Hypostomus hermanni* (Ihering, 1905). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5202195>. (August 2018).
- ITIS (Integrated Taxonomic Information System). 2018. *Hypostomus hermanni* (Ihering, 1905). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=680177#null. (August 2018).
- Sanders, S., C. Castiglione, and M. Hoff. 2018. Risk assessment mapping program: RAMP, version 3.1. U.S. Fish and Wildlife Service.
- Vieira, R. S., and E. Renesto. 2016. Genetic variability in three populations of *Hypostomus hermanni* (Teleostei: Loricariidae) found in the basins of Ivaí River, Tietê River, and Sapucaí-Mirim River of Brazil.
- Zawadzki, C. H., E. Renesto, S. de Paiva, and M. C. S. Lara-Kamei. 2004. Allozyme differentiation of four populations of *Hypostomus* (Teleostei: Loricariidae) from Ribeirão Keller, a small stream in the upper Rio Paraná basin, Brazil. *Genetica* 121:251–257.
- Zica, E. O. P., H. Brandão, C. H. Zawadzki, A. B. Nobile, E. D. Carvalho, and R. J. da Silva. 2011. The occurrence of *Austrodiplostomum compactum* (Lutz, 1928) (Digenea: Diplostomidae) metacercariae in the eyes of loricariid fish (Siluriformes: Osteichthyes: Loricariidae) from Brazil. *Journal of Helminthology* 85:73–79.

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.

- Weber, C. 2003. Loricariidae - Hypostominae (armored catfishes). Pages 351–372 in R. E. Reis, S. O. Kullander, and C. J. Ferraris, Jr., editors. Checklist of the freshwater fishes of South and Central America. EDIPUCRS, Porto Alegre, Brazil.