

# *Hypostomus peckoltoides* (a catfish, no common name)

## Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, January 2013

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## 1 Native Range and Status in the United States

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### Native Range

From Froese and Pauly (2018a):

“South America: known from its type locality, rio Cuiabá, upper rio Paraguay basin in Brazil.”

From Villafañe and Núñez (2013):

“The present work extends into Paraguay the distribution of *Hypostomus peckoltoides*, originally described from the Cuiaba River in Brazil, a tributary of the Paraguay River.”

### 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 United States.

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.”

This species was not found for sale from U.S.-based online aquarium retailers and it does not appear to be in trade in the United States.

## **Means of Introduction into 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 United States.

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).”

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From Froese and Pauly (2018b):

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

“Status accepted”

### Size, Weight, and Age Range

From Froese and Pauly (2018a):

“Max length: 11.1 cm SL male/unsexed; [Zawadzki et al. 2010]”

### Environment

From Froese and Pauly (2018a):

“Freshwater; demersal.”

### Climate/Range

From Froese and Pauly (2018a):

“Tropical”

### Distribution Outside the United States

Native

From Froese and Pauly (2018a):

“South America: known from its type locality, rio Cuiabá, upper rio Paraguay basin in Brazil.”

From Villafañe and Núñez (2013):

“The present work extends into Paraguay the distribution of *Hypostomus peckoltoides*, originally described from the Cuiaba River in Brazil, a tributary of the Paraguay River.”

Introduced

No introductions of this species have been reported.

### Means of Introduction Outside the United States

No introductions of this species have been reported.

## Short Description

From Zawadzki et al. (2010):

“*Hypostomus peckoltoides* is distinguished from all congeners, with exception of young specimens of *H. latifrons*, by the presence of wide dark transverse bars on body and bands on the fins (vs. body entirely dark or with pale or dark spots); and by the conspicuous dark vermiculations on abdominal region (vs. abdominal region entirely dark or with pale or dark spots). From *H. latifrons* it differs by having the dark bars on the sides and bands on the fins in adults (vs. spots present anteriorly and dark blotches posteriorly in adults), and by having just one pre-dorsal plate margining the supraoccipital (vs. three plates).”

## Biology

From Zawadzki et al. (2010):

“These environments have turbid water, rocky with sand substrate, and variable remnant riparian vegetation. The new species was found syntopically occurring with *H. boulengeri*, *H. cochliodon*, *H. latifrons*, *H. latirostris*, *H. regani* and another putative undescribed species of *Hypostomus*.”

## Human Uses

No information available.

## Diseases

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

## Threat to Humans

From Froese and Pauly (2018a):

“Harmless”

## 3 Impacts of Introductions

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No introductions of *H. peckoltoides* have been reported as introduced outside its native range so no impacts of introduction are known. However, unidentified members of the genus are established in the United States.

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 *Camptostoma 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

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**Figure 1.** Known global distribution of *H. peckoltoides*, reported from Mato Grosso State, Brazil. Map from GBIF Secretariat (2017).

## 5 Distribution within the United States

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There is currently no known distribution of *Hypostomus peckoltoides* within the United States; however, unidentified species of *Hypostomus* are established in Nevada, Florida, Texas, and Hawaii.

## 6 Climate Matching

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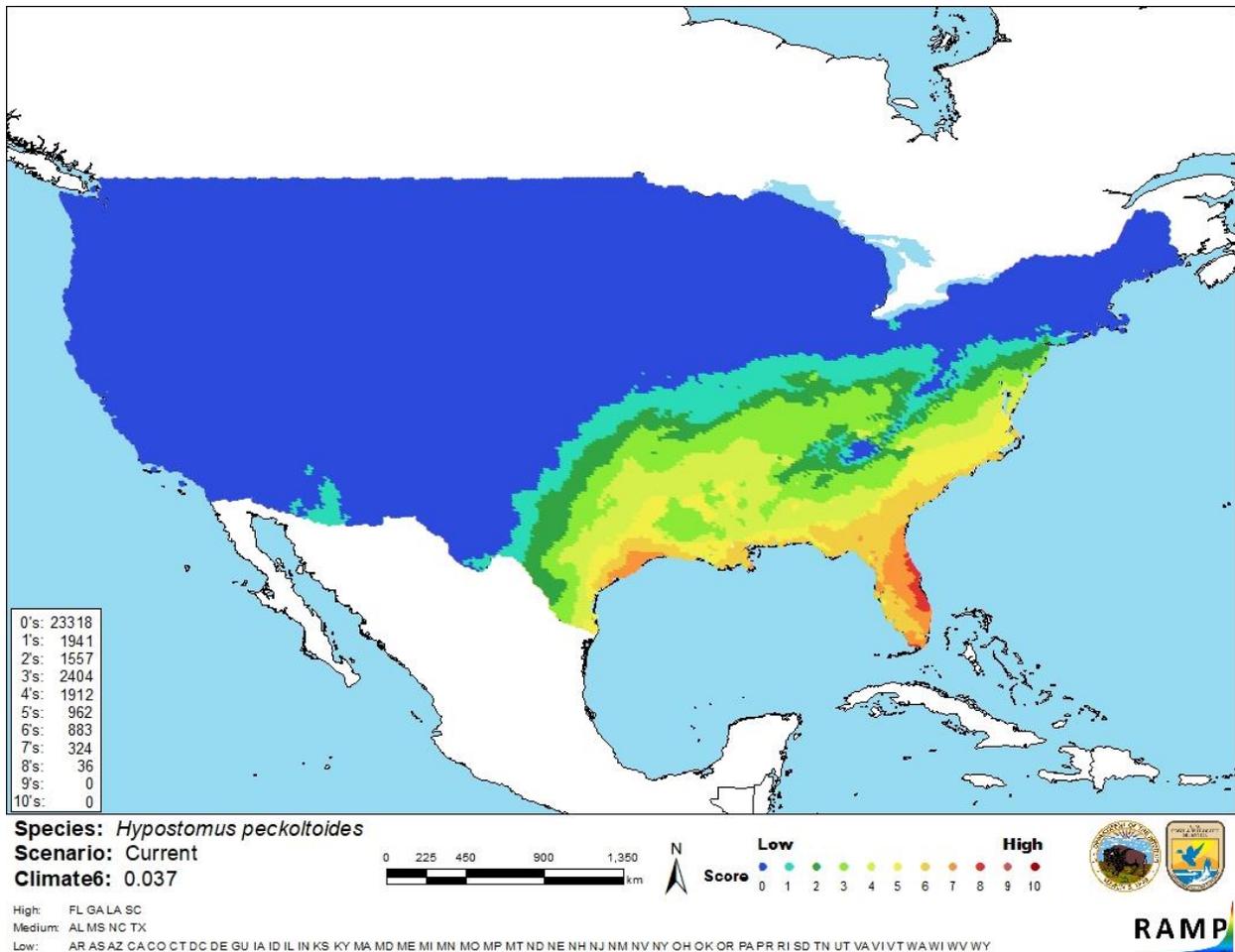
### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) was highest along the Atlantic coast of peninsular Florida, with matches as high as 8 (0-10 scale). High matches were present across most of peninsular Florida and in eastern coastal Texas. The climate match was medium in other areas of the Southeast and coastal Mid-Atlantic region from New Jersey to southern Texas. However, the majority of the contiguous United States showed a low climate match. Climate 6 score indicated that the contiguous United States has a medium climate

match overall. Scores between 0.005 and 0.103 are classified as medium match; Climate 6 score for *H. peckoltoides* was 0.037.



**Figure 2.** RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Brazil, Paraguay) and non-source locations (gray) for *H. peckoltoides* climate matching. Source locations from GBIF Secretariat (2017). Additional source location in Paraguay from Villafañe and Núñez (2013).



**Figure 3.** Map of RAMP (Sanders et al. 2018) climate matches for *H. peckoltoides* in the contiguous United States based on source locations reported by GBIF Secretariat (2017) and Villafañe and Núñez (2013). 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
$\geq 0.103$	High

## 7 Certainty of Assessment

Limited information was available on the biology and ecology of *H. peckoltoides*. It has not been reported as introduced outside its native range, so no impacts of introduction are known. 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. peckoltoides*. There is considerable uncertainty about the taxonomy of this genus and about species-level identification. Certainty of this assessment is low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Hypostomus peckoltoides* is a catfish native to the Paraguay River basin in Brazil and Paraguay. This species has no documented history of introduction in the United States or elsewhere outside its native range, and it is not known to be in trade. However, unidentified species of *Hypostomus* are established in the United States. Climate match to the contiguous United States was medium overall, with high matches in peninsular Florida and eastern coastal Texas. Because of the lack of documented introduction history and substantial taxonomic uncertainty, certainty of this assessment is low and overall risk is uncertain.

### Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Medium**
- **Certainty of Assessment (Sec. 7): Low**
- **Overall Risk Assessment Category: Uncertain**

## 9 References

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**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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## 10 References Quoted But Not Accessed

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**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.**

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