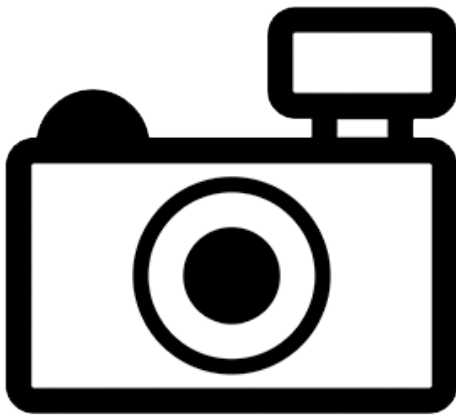


# ***Hypostomus carvalhoi* (a catfish, no common name)**

## **Ecological Risk Screening Summary**

U.S. Fish and Wildlife Service, December 2011  
Revised, September 2018  
Web Version, 2/1/2019



No Photo Available

## **1 Native Range and Status in the United States**

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### **Native Range**

From Froese and Pauly (2018):

“South America: Jaguaribe River basin.”

### **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).”

According to Fricke et al. (2018), the original name of this species was *Plecostomus carvalhoi*. Information searches for this report were conducted using both the original name and the currently accepted scientific name.

## 2 Biology and Ecology

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### 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 Ostariophysi  
Order Siluriformes  
Family Loricariidae  
Subfamily Hypostominae  
Genus *Hypostomus* Lacepède, 1803  
Species *Hypostomus carvalhoi* (Miranda Ribeiro, 1937)”

“Current Standing: valid”

### **Size, Weight, and Age Range**

From Froese and Pauly (2018):

“Max length : 14.2 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: Jaguaribe River basin.”

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**

No description available.

## **Biology**

No information available.

## **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 (2018):

“Harmless”

## **3 Impacts of Introductions**

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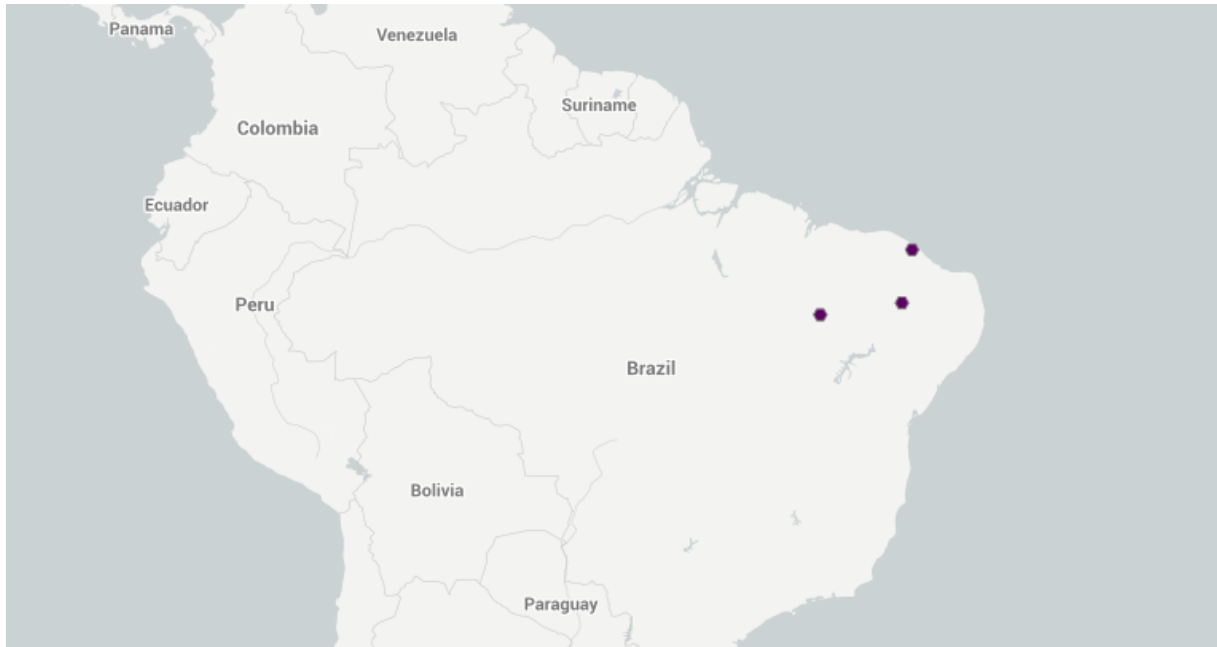
No introductions of *H. carvalhoi* have been reported as introduced outside its native range so no impacts of introduction are known. However, unidentified members of the genus are established in the United States.

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 *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

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**Figure 1.** Known global established locations of *H. carvalhoi*, reported from northeastern Brazil. Map from GBIF Secretariat (2017).

## 5 Distribution within the United States

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

## 6 Climate Matching

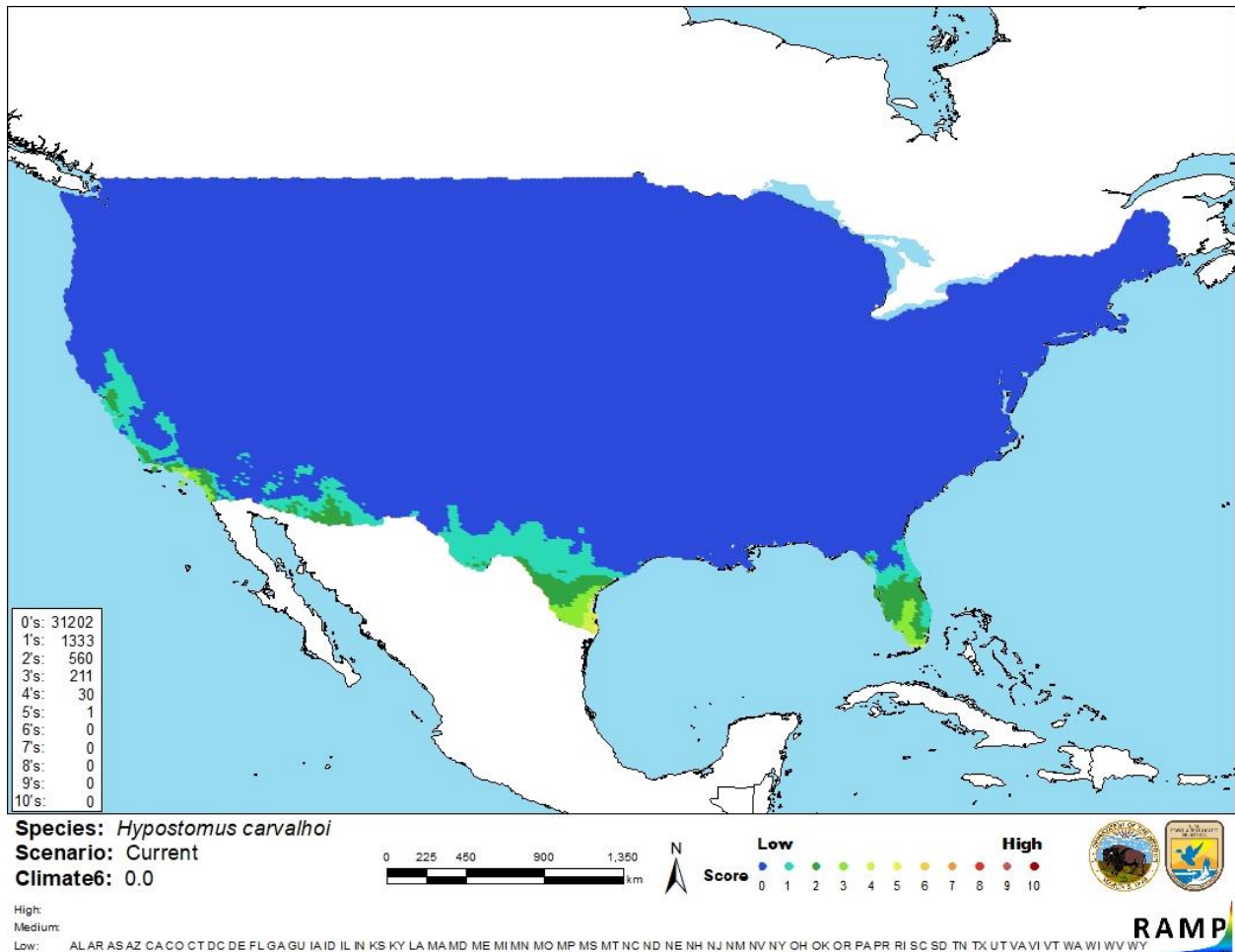
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### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) was low throughout most of the country. Medium matches occurred only in extreme southern Florida, southern Texas, and in the vicinity of Los Angeles, California. Climate 6 score indicated that the contiguous United States has a low climate match overall. Scores of 0.005 and below are classified as low match; Climate 6 score for *Hypostomus carvalhoi* was 0.000.



**Figure 2.** RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Brazil) and non-source locations (gray) for *Hypostomus carvalhoi* climate matching. Source locations from GBIF Secretariat (2017).



**Figure 3.** Map of RAMP (Sanders et al. 2018) climate matches for *Hypostomus carvalhoi* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). Counts of climate match scores are tabulated on the left. 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

Extremely limited information was available on the biology and ecology of *H. carvalhoi*. 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. carvalhoi*. 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 carvalhoi* is a catfish native to the Jaguaribe River basin in northeastern Brazil. This species has no documented history of introduction in the United States or elsewhere outside its native range. However, unidentified species of *Hypostomus* are established in the United States. *H. carvalhoi* does not appear to be present in trade in the United States or elsewhere. Climate match to the contiguous United States was low overall, with medium match only in small areas of Florida, Texas, and California. 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: Uncertain**
- **Climate Match: Low**
- **Certainty of Assessment: 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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