Hypostomus laplatae (a catfish, no common name)
Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, March 2017
Revised, August 2017
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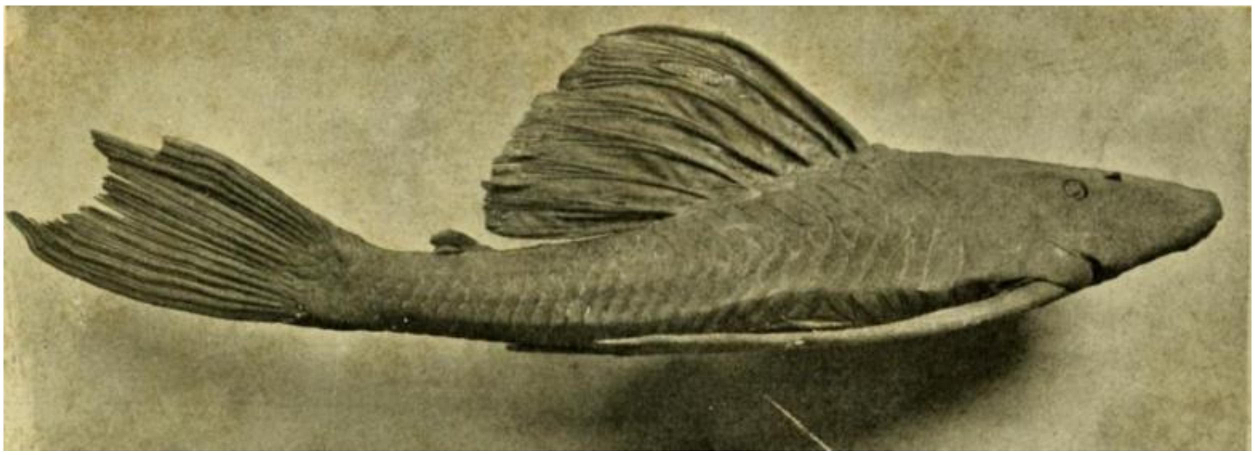

Photo: C. H. Eigenmann, 1907. Public domain. Available: http://www.biodiversitylibrary.org/page/8875091#page/519/mode/1up. (March 2017).

1 Native Range and Status in the United States

Native Range

From Eschmeyer et al. (2017):

"La Plata River basin: Argentina and Uruguay."

Status in the United States

This species has not been reported as introduced or established in the United States.

Means of Introductions in the United States

This species has not been reported as introduced or established in the United States.

Remarks

From Nico et al. (2017):

"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)."

From GBIF (2016):

"BASIONYM
Plecostomus laplatae Eigenmann, 1907"

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

"Kingdom Animalia
  Subkingdom Bilateria
    Infrakingdom Deuterostomia
      Phylum Chordata
        Subphylum Vertebrata
          Infraphylum Gnathostomata
            Superclass Osteichthyes
              Class Actinopterygii
                Subclass Neopterygii
                  Infraclass Teleostei
                    Superorder Ostariophysi
                      Order Siluriformes
                        Family Loricariidae
                          Subfamily Hypostominae
                            Genus *Hypostomus*
                              Species *Hypostomus laplatae* (Eigenmann, 1907)"

From Eschmeyer et al. (2017):

"Current status: Valid as *Hypostomus laplatae* (Eigenmann 1907). Loricariidae: Hypostominae."

Size, Weight, and Age Range

From Froese and Pauly (2017):

"Max length : 69.0 cm TL male/unsexed; [Weber 2003]"

Environment
From Froese and Pauly (2017):

"Freshwater; demersal."

Climate/Range
From Froese and Pauly (2017):

"Temperate, preferred ?"

Distribution Outside the United States
Native
From Eschmeyer et al. (2017):

"La Plata River basin: Argentina and Uruguay."

Introduced
This species has not been reported as introduced or established outside of its native range.

Means of Introduction Outside the United States
This species has not been reported as introduced or established outside of its native range.

Short Description
From Eigenmann (1907):

"Depth 5 in length; head 3.4 (3.28 in cotype); D. 1, 7 (not counting the fulcrum); A. 1, 4; scutes 31+1 caudal scute; depth of head 1.75 (1.66); width of head 1.2 in its length (1+); length of snout equaling depth of head (1.5 in head); interorbital 2.8 in head (2.66); length of mandibular ramus 3 in interorbital (2+); barbel more than half length of eye; snout spatulate, rounded; supraorbital margin not raised; supraoccipital ridge very feeble, temporal plates not carinate; scutes of sides little keeled, spinulose, 7 between dorsal and adipose, 14 to 16 between anal and caudal; supraocciptal bordered by a median and two or three lateral scutes. Lower surface of head and belly entirely granulose in the type, partly naked between the base of pectoral and ventral. First dorsal ray about equal to length of head, last ray .66 (.5) length of head; base of dorsal equal to its distance from end of second scute beyond tip of adipose spine; pectoral extending to second sixth of the ventrals; caudal distinctly emarginate; caudal peduncle a little more than 3 times as long as deep."

"Color of type: Sides, ventral surface and head profusely spotted, the spots largest on the belly, minute on the head; lightish streaks along the lateral keels; dorsal dusky with one or two rows of spots between every two rays; caudal unspotted, the lower part dusky; anal dark, unspotted; ventrals and pectorals dusky, the former with large spots, the basal two thirds of the latter with very numerous minute spots similar to those of head."

“Color of cotype: Ventral surface plain; sides with obscure large spots, the light streaks along the keels much more evident; head profusely covered with spots much larger than those in the type; dorsal with a series of large spots on the posterior half of each interradial membrane; caudal sooty, anal obscurely spotted; entire upper surfaces of ventrals and pectorals spotted, the spots of the pectoral more numerous and smaller, but not as small as those of the head.”

Biology

From Cataldo (2015):

“Iliophagous species typically feed on organic matter-rich sediments, but they also consume small particulate periphytic material scraping the surface of objects covered by an organic film. Organic films on hard substrata often encompass mussels, and these bivalves have become an occasionally important component of the diet of iliophagous fishes. Among the species that depict this feeding behavior, the members of the family Loricariidae are very important because of their abundance and diversity ([including] *Hypostomus laplatae* […]). The sucking, ventrally located mouths of these species are adapted to scraping the surface of leaves, rocks, branches, and other objects collecting adhering material […]”

Human Uses

No information available.

Diseases

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

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

The following information discusses the impacts of loricariid, or suckermouth, catfishes in general. *Hypostomus laplatae* is assumed to have similar traits and behave similarly to other members of its family, but there is no information available to confirm this assumption.

From Nico et al. (2017):

“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).”

From Hoover et al. (2014):

“Suckermouth catfishes burrow into banks and bottom sediments to create chambers in which females lay eggs and males guard the developing mass of eggs (Burgess 1989; Ferraris 1991). Burrows may be especially evident in highly disturbed urban ponds (ERDC) and streams (Tompkins 2004). When burrows are dense, erosion, sedimentation, and elevated turbidity may result (Devick 1988, 1989, 1991[b]). Bank failure, shoreline collapse, and a characteristic terracing have been observed in Mexico, Texas, and Florida where burrow densities were high […] Not all infested waters, however, exhibit significant erosion.”

“[…] sheer numbers of these large, grazing animals can create problems for other animals (e.g., competition for food or space with like-sized aquatic organisms, or interference with other animals. Competition has apparently taken place in Hawaiian streams where native species no longer exist in the presence of high densities of suckermouth catfishes (Englund et al. 2000) or are threatened by low water quality after fishkills (Honolulu Advertiser 2006).”

“Suckermouth catfishes produce copious and conspicuous feces (Sandford and Crow 1991, Ferraris 1991 […]) which, in aquatic systems, transforms and translocates nutrients, alters sediment characteristics, and impacts microbial and benthic communities (Wotton and Malmqvist 2001), notably so in subtropical environments (e.g., Iovino and Bradley 1969, Frouz et al. 2004).”

“Economic impacts of suckermouth catfishes have been quantified for commercial tilapia fishing in Florida and for Mexico (Mendoza-Alfaro et al. 2009). In Florida, during the period 1993-2006, tilapia catch in six lakes decreased from 45- 80% to 17-30% after suckermouth catfishes became established, after which they represented 11-65% of the commercial catch.”

“Social impacts resulting from economic impacts have been most pronounced in Mexico, where thousands of livelihoods in the Balsas Basin have been affected by the collapse of commercial fisheries. The collapse has impacted health status (e.g., wounds, infections, vaccinations), unemployment, emigration, and has created changes in household structure (Mendoza-Alfaro et al. 2009).”

4 Global Distribution

Figure 1. Known global distribution of *Hypostomus laplatae* in Argentina. Map from GBIF (2016).

5 Distribution Within the United States

This species has not been reported as introduced or established in the U.S.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.035, which is a medium climate match. Climate 6 scores between 0.005 and 0.103 are classified as medium match. The climate match was medium in the Southeast, Mid-Atlantic, and southern Midwest; elsewhere, the climate match was low.

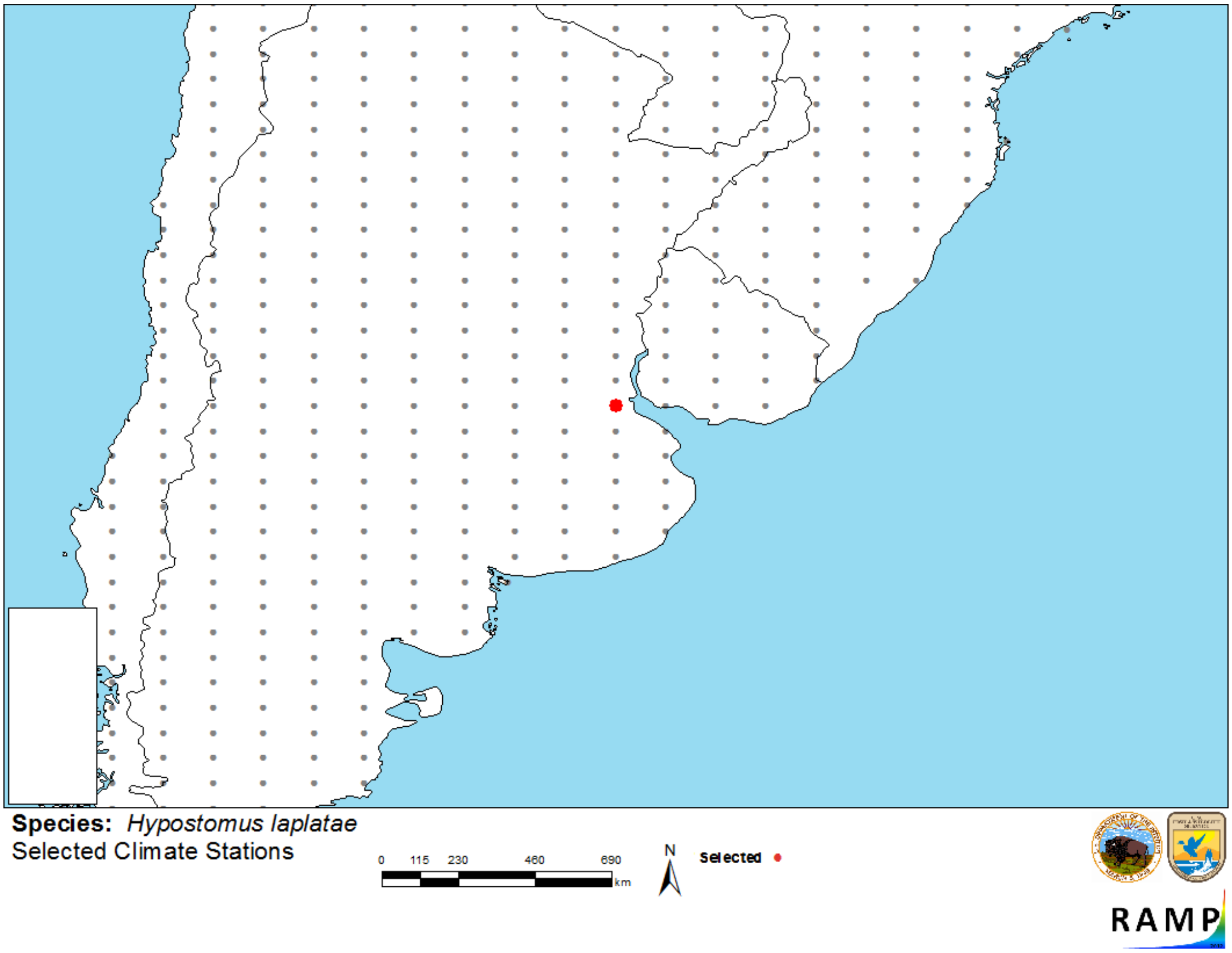

Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in southern South America selected as source locations (red) and non-source locations (gray) for *Hypostomus laplatae* climate matching. Source locations from GBIF (2016).

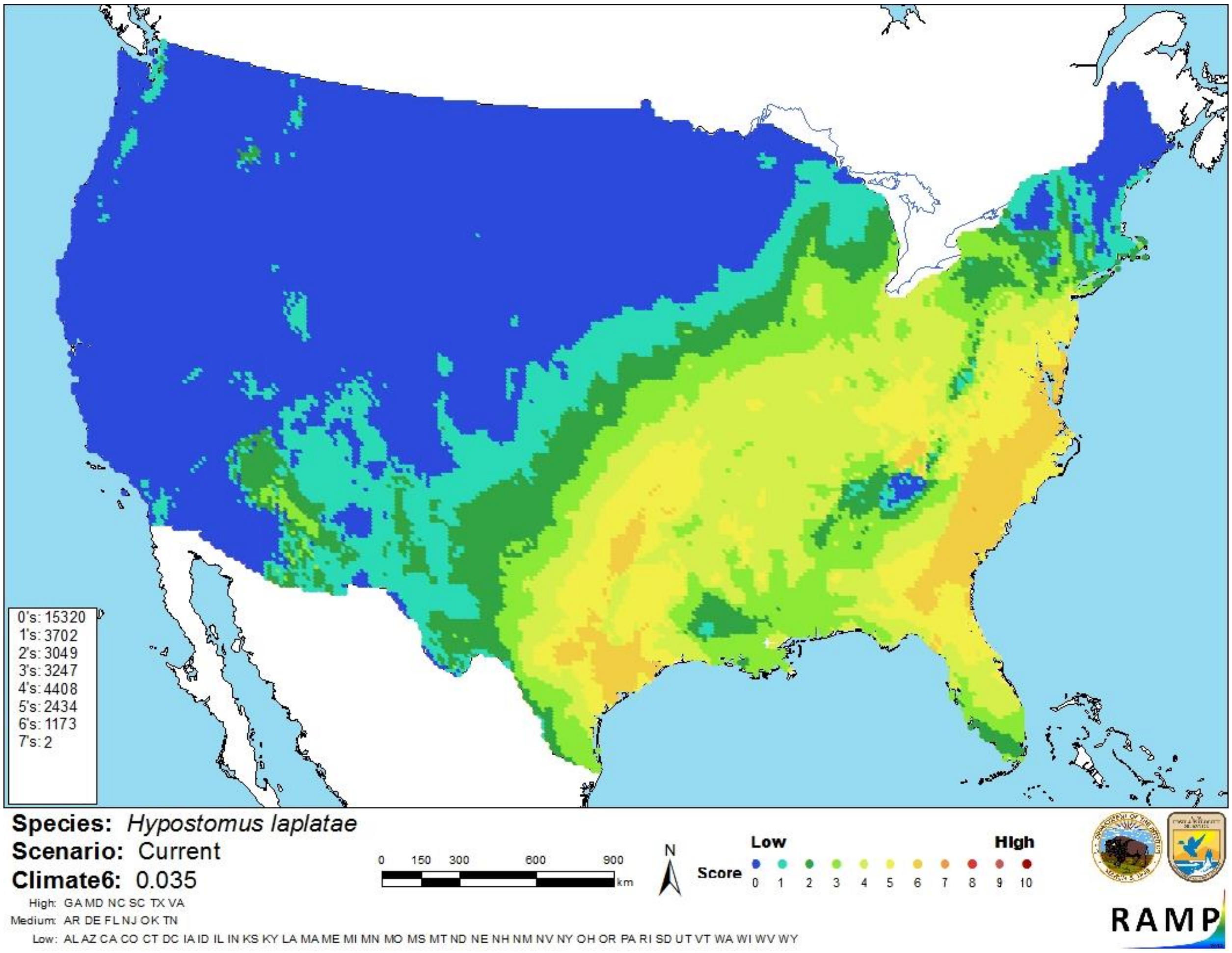

Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Hypostomus laplatae* in the contiguous United States based on source locations reported by GBIF (2016). 0=Lowest match, 10=Highest match.

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

There is little information available on *Hypostomus laplatae*. Although introductions and established populations of species in the *Hypostomus* genus have been documented in the United States, there are no documented introductions of *H. laplatae* specifically. It is uncertain what impacts this species may have where introduced. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Hypostomus laplatae is a species of suckermouth catfish native to the La Plata river basin in South America. This species has no documented history of introduction outside its native range; however, other South American species in the genus *Hypostomus* are established in the U.S., and it is difficult to distinguish between *Hypostomus* species. This species has a medium climate match with the contiguous United States, with the areas of highest match occurring in the southern U.S. Certainty of this assessment is low and 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**
- **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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