

Giant Trahira (*Hoplias aimara*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2011

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Photo: Pavabidule. Public domain. Available: http://eol.org/data_objects/26932502. (September 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“South America: Tributaries of middle and lower Amazon basin [Brazil], including Rios Trombretas, Jari, Tapajós, Xingu, Tocantins, and in the coastal rivers of Guyana, Suriname, Fr[ench] Guiana; Rios Araguari and Amapá, state of Amapá, Brazil; lower reaches of Río Orinoco, Venezuela.”

Status in the United States

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

Hoplias aimara is available in the aquarium trade in the United States. For example:

From AquaScapeOnline (2018):

“Aimara Wolf Fish 8” (*hoplias aimara* [sic]) [...] Our Price: \$650.00”

The Florida Fish and Wildlife Conservation Commission has listed *H. aimara* as a prohibited species. Prohibited nonnative species “are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities” (FFWCC 2018).

Means of Introduction into the United States

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

Remarks

From Mattox et al. (2006):

“Specimens used in records of *Hoplias aimara* for the Rio Purus (La Monte, 1935:8) and for the upper and middle Río Orinoco (Taphorn, 1992:448) were examined and found to be misidentified.”

“Study of the type-specimens revealed that both species names, *H. aimara* and *H. macrophthalmus*, refer to the same taxon. According to the Principle of Priority of the International Code of Zoological Nomenclature the name *Hoplias aimara* has precedence.”

The synonym *H. macrophthalmus* was used, along with the valid scientific name, as a search term to find information for this ERSS.

From Corrêa et al. (2016):

“[...] popularly known as giant lungfish, lungfish or Aymara.”

2 Biology and Ecology

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 Characiformes
Family Erythrinidae
Genus *Hoplias*
Species *Hoplias aimara* (Valenciennes in Cuvier and Valenciennes, 1847)”

“Current Standing: valid”

From Fricke et al. (2019):

“**Current status:** Valid as *Hoplias aimara* (Valenciennes 1847). Erythrinidae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Maturity: L_m ?, range 22 - 22 cm

Max length : 100.0 cm SL male/unsexed; [Planquette et al. 2006]; max. published weight: 40.0 kg [Planquette et al. 2006]”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic; potamodromous [Riede 2004].”

Climate/Range

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“South America: Tributaries of middle and lower Amazon basin [Brazil], including Rios Trombetas, Jari, Tapajós, Xingu, Tocantins, and in the coastal rivers of Guyana, Suriname, Fr[ench] Guiana; Rios Araguari and Amapá, state of Amapá, Brazil; lower reaches of Río Orinoco, Venezuela.”

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 Mattox et al. (2006):

“This species is distinguished from congeners by the presence of a vertically-elongate dark spot on the median portion of the opercular membrane and by the absence of the accessory ectopterygoid.”

Biology

From Mattox et al. (2006):

“These [previous] studies indicate that *H. aimara* is common near waterfalls and rapids, and over 50% of the specimens examined in the present study come from regions near cataracts and waterfalls. In Venezuela, it is predominantly nocturnal and restricted to black or clear water rivers, being uncommon in strictly lentic environments (Taphorn, 1992). *Hoplias aimara* is a very common species in French Guiana, being the most abundant erythrinid (Mérona and Albert, 1999). In drainages in French Guiana, juveniles are present throughout the year on different kinds of substrate, excluding those entirely covered with sand. The water is usually acidic and sometimes has low oxygen levels (Tito de Moraes et al., 1995; Ponton and Copp, 1997; Méricoux et al., 1998; Ponton and Méricoux, 2001). *Hoplias aimara* is omnivorous while juvenile, becoming nearly exclusively piscivorous when adult, although occasionally consuming crabs, iguanas, and birds (Horeau et al., 1998). Due to its carnivorous habits, the species is severely impacted from contamination and bioaccumulation of mercury along the trophic chain in gold-mining areas (Chavent et al., 2000).”

“It is known that, at least in the Sinnamary River, French Guiana, the species often migrates a few kilometers upstream during some periods of the year (Tito de Moraes, 1995; Tito de Moraes and Raffray, 1996, 1999), perhaps to avoid being trapped during periods of drought (Taphorn, 1992).”

From Froese and Pauly (2018):

“Reproduction takes place at the onset of the rainy season from December to March. Depending on the size, the female can carry around 6,000 to 60,000 eggs [Planquette et al. 2006].”

Human Uses

From Froese and Pauly (2018):

“Aquarium: commercial”

From Moreira et al. (2015):

“[...] regarded as a good fish for anglers or sport fishing in Amazonian rivers such as the Xingu River (Oyakawa and Mattox 2009).”

Diseases

From Moreira et al. (2015):

“During a parasitological survey of freshwater fish, carried out at the Xingu River, a tributary of the Amazon River, in the State of Pará, two species of *Urocleidoides* were found on the gills of *H. aimara* (Characiformes: Erythrinidae).”

From Corrêa et al. (2016):

“This paper records the first occurrence of *Epistylis* sp. on the body surface of *Argulus* sp. parasitizing *Hoplias aimara* from the upper Araguari River, in the eastern Amazon region, in the north of Brazil. Of the 16 specimens of *H. aimara* examined, 93.7% had their pelvic, caudal and pectoral fins and tegument infested by *Argulus* sp. (n = 73), which in turn were infested by *Epistylis* sp.”

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

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

From Mattox et al. (2006):

“The flesh of *H. aimara* in French Guiana and Suriname sometimes has dangerous levels of mercury, with serious consequences to the local human populations feeding on its meat (Richard et al., 2000; Fréry et al., 2001; Mol et al., 2001; Mol and Ouboter, 2004; Durrieu et al., 2005).”

3 Impacts of Introductions

No information available. No introductions of this species have been reported.

The Florida Fish and Wildlife Conservation Commission (2018) has listed *H. aimara* as a prohibited species.

4 Global Distribution



Figure 1. Known global established locations of *H. aimara*, reported from northern South America. Map from GBIF Secretariat (2017). Occurrences in Colombia were excluded from the climate matching analysis because they are misidentifications according to Mattox et al. (2006).

5 Distribution within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) was medium in southern Florida and extreme southern Texas and Louisiana. The climate match was low across the remainder of the contiguous United States. 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 *Hoplias aimara* was 0.000. All states had a low climate score.

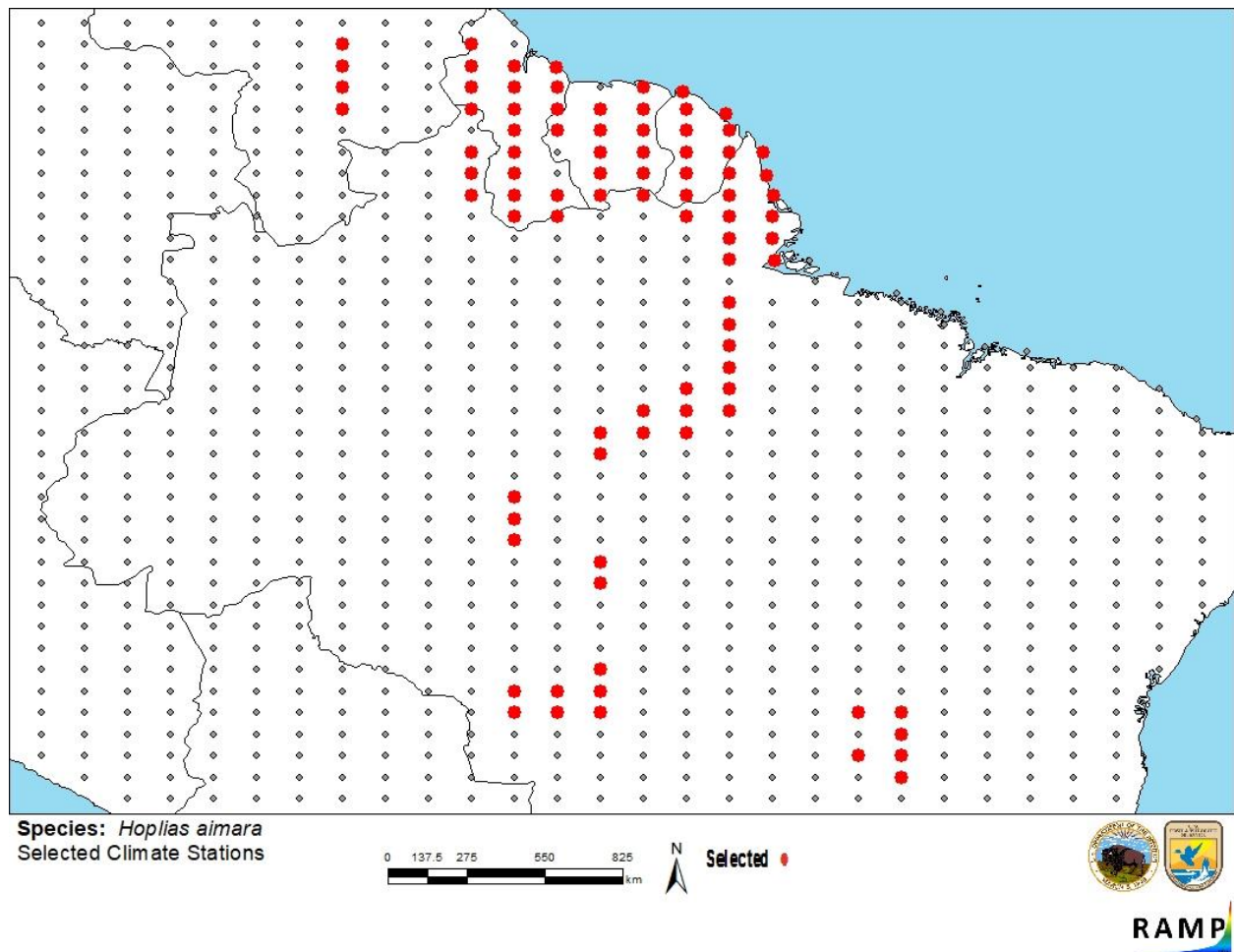


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations selected as source locations (red; Brazil, French Guiana, Suriname, Guyana, Venezuela) and non-source locations (gray) for *Hoplias aimara* climate matching. Source locations from GBIF Secretariat (2017).

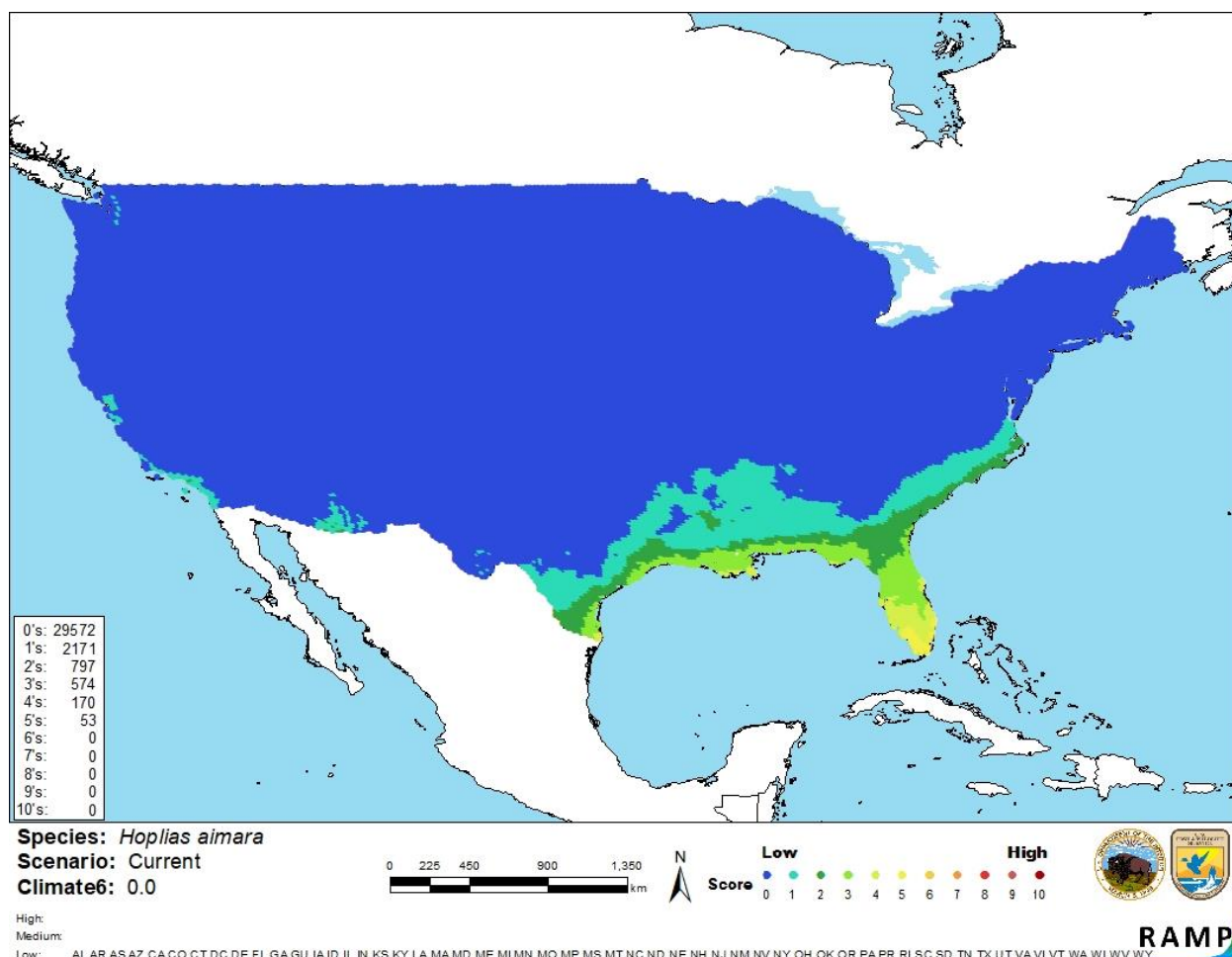


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Hoplias aimara* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10= Highest match.

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

Information is available on the biology, ecology, and distribution of *H. aimara*. However, no introductions of this species have been reported, so no information is available on impacts of introduction. Certainty of this assessment is low because of the lack of information on impacts.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Giant trahira (*Hoplias aimara*) is a species of fish native to the Amazon River basin, the lower Orinoco River basin, and coastal rivers of northeastern South America. It is used as a sport fish in the Amazon. No introductions of this species have been reported, so no information is available on impacts of introduction. *H. aimara* is present in the aquarium trade in the United States, but can be expensive to purchase and is prohibited in Florida. The climate match with the contiguous United States is low, with medium matches occurring only in southern Florida and extreme southern Texas and Louisiana. Certainty of the assessment is low because of the lack of information on impacts and history of invasiveness is uncertain. Overall, the risk posed by *H. aimara* to the contiguous United States is uncertain.

Assessment Elements

- **History of Invasiveness: Uncertain**
- **Climate Match: Low**
- **Certainty of Assessment: 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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10 References Quoted But Not Accessed

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