Driftwood Catfish (*Trachelyopterus galeatus*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, February 2011
Revised, February 2019
Web Version, 9/23/2021

Organism Type: Fish
Overall Risk Assessment Category: Uncertain

Photo: Mr. Fulano. Licensed under Creative Commons Attribution-Share Alike 4.0 International. Available: https://commons.wikimedia.org/wiki/File:Trachelyopterus_galeatus.jpg. (February 2019).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

"South America: Widespread in northern South America [Trinidad and Tobago, Argentina, Brazil, French Guiana, Peru and Suriname]."

From Fricke et al. (2019):

"Distribution: Widespread in northern South America: Argentina (?), Brazil, Ecuador, Colombia, Bolivia, Paraguay, Uruguay, French Guiana, Peru, Suriname and Trinidad and Tobago."

Status in the United States

According to both Froese and Pauly (2019) and Nico (2019) there was an occurrence in the United States in Arizona in 1989. Both sources state that this occurrence does not represent an established population.

From Froese and Pauly (2019):

"probably not established"

From Nico (2019):

"Status: Failed in Arizona."

Trachelyopterus galeatus is in trade in the United States (e.g., Exotic Fish Shop 2021).

T. galeatus is listed on Hawaii's Conditional Animal List under the synonym *Parauchenipterus galeatus* (Hawaii Department of Agriculture 2019).

Means of Introductions in the United States

From Nico (2019):

"Means of Introduction: Probable aquarium release."

Remarks

Information was searched for using the valid name, *Trachelyopterus galeatus*, and the synonym *Parauchenipterus paseae*.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2019), *Trachelyopterus galeatus* (Linnaeus 1766) is the current and valid name of this species. This species was originally known as *Silurus galeatus* (Linnaeus 1766), and has synonyms: *Parauchenipterus paseae*, *P. galeatus*, and *Auchenipterus lacustris*.

From ITIS (2019):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi

Order Siluriformes
Superfamily Auchenipteridae
Family Auchenipterinae
Genus *Trachelyopterus*
Species *Trachelyopterus galeatus* (Linnaeus, 1766)

Size, Weight, and Age Range

From Froese and Pauly (2019):

"Maturity: L_m 10.8 […]
Max length : 30.0 cm TL male/unsexed; [Marques et al. 2016]; 23.0 cm TL (female); max. published weight: 675.00 g [Marques et al. 2016]; max. published weight: 675.00 g; max. reported age: 3 years [Le Bail et al. 2000]"

Environment

From Froese and Pauly (2019):

"Freshwater; demersal; pH range: 6.0 - 7.5; dH range: ? – 18. […] 20°C - 24°C [Baensch and Riehl 1985; assumed to be recommended aquarium temperature]"

From Pantoja et al. (2016):

"Both of these fish species are found in wet areas of floodplains, and thus, *T. galeatus* and *T. coriaceus* are adapted to these hypoxic environments."

Climate

From Froese and Pauly (2019):

"Tropical"

Distribution Outside the United States

Native

From Froese and Pauly (2019):

"South America: Widespread in northern South America [Trinidad and Tobago, Argentina, Brazil, French Guiana, Peru and Suriname]."

From Fricke et al. (2019):

"Distribution: Widespread in northern South America: Argentina (?), Brazil, Ecuador, Colombia, Bolivia, Paraguay, Uruguay, French Guiana, Peru, Suriname and Trinidad and Tobago."

Introduced

Trachelyopterus galeatus has not been reported as introduced or established outside of their native range.

Means of Introduction Outside the United States

Trachelyopterus galeatus has not been reported as introduced or established outside of their native range.

Short Description

From Froese and Pauly (2019):

"Dorsal spines (total): 1; Dorsal soft rays (total): 5-6; Anal spines: 0; Anal soft rays: 20 - 25. The body is stocky, the head a little depressed, the inferior jaw a little prognathous, the cephalic helmet covered with finely pigmented skin in adults, with a fontanelle shorter than the orbital diameter [Le Bail et al. 2000]."

Biology

From Froese and Pauly (2019):

"Occurs in swamps. Well-adapted to hypoxic environments, being able to survive for hours, emerged. Adults feed on small fishes, arthropods, worms and sometimes on fruits [Le Bail et al. 2000]. The spiny structure of the pectoral fins enables the male to hold the females during mating (internal fertilization). Sperm can be kept in the female's genital tract for several months, owing to a gelatinous emission from the seminal vesicle of the male. At maturity, the size of the adhesive eggs (20% of the female's weight) is 3 mm. Nine days after hatching, alevin size is 1.5 cm and they feed on microscopic worms or small insects. At around 11 days, their negative phototropism pushes them to hide themselves under branches or rocks."

From Parreira et al. (2009):

"*Trachelyopterus galeatus* (Linnaeus, 1766) is a seasonal breeder the reproductive period of which coincides with the rainy season (Chacon and Mendes Filho, 1972). […] Mature males present a modified anal fin (pseudopenis: Chacon and Mendes Filho, 1972, gonopodium: Loir et al., 1989; Meisner et al., 2000), which serves in the transfer of sperm to the female."

Human Uses

From Froese and Pauly (2019):

"Fisheries: minor commercial; aquarium: commercial"

"Its pink flesh is highly appreciated by the local population [Boujard et al. 1997]."

Trachelyopterus galeatus is in trade in the United States (e.g., Exotic Fish Shop 2021).

Diseases

No OIE-reportable diseases (OIE 2021) were found to be associated with *Trachelyopterus galeatus*.

According to Poelen et al. (2014), *Trachelyopterus galeatus* is a host for the following parasites: *Cangatiella arandasi, Nupelia tomasi, Demidospermus uncusvalidus, Clinostomum marginatum, Clinostomum complanatum, Creptotrema creptotrema, Dadaytremoides*, and *Microrchis*.

Pantoja et al. (2016), states *Trachelyopterus galeatus* is a host species for the following parasites: *Ichthyophthirius multifiliis, Tripartiella tetramerii, Trichodina nobilis, Contracaecum* sp., *Cystidicoloides* sp., and *Dadaytremoides parauchenipteri*.

Threat to Humans

From Froese and Pauly (2019):

"Harmless"

3 Impacts of Introductions

From Nico (2019):

"The impacts of this species are currently unknown, as no studies have been done to determine how it has affected ecosystems in the invaded range. The absence of data does not equate to lack of effects. It does, however, mean that research is required to evaluate effects before conclusions can be made."

4 History of Invasiveness

Trachelyopterus galeatus has not been reported as introduced or established outside of its native range, with the exception of a failed release in Arizona thought to be via aquarium release. The history of invasiveness is classified as No Known Nonnative Population.

5 Global Distribution

Figure 1. Known global distribution of *Trachelyopterus galeatus*. Locations in Argentina, Brazil, Ecuador, Colombia, Bolivia, Paraguay, Uruguay, French Guiana, Peru, and Suriname. Map from GBIF Secretariat (2019).

6 Distribution Within the United States

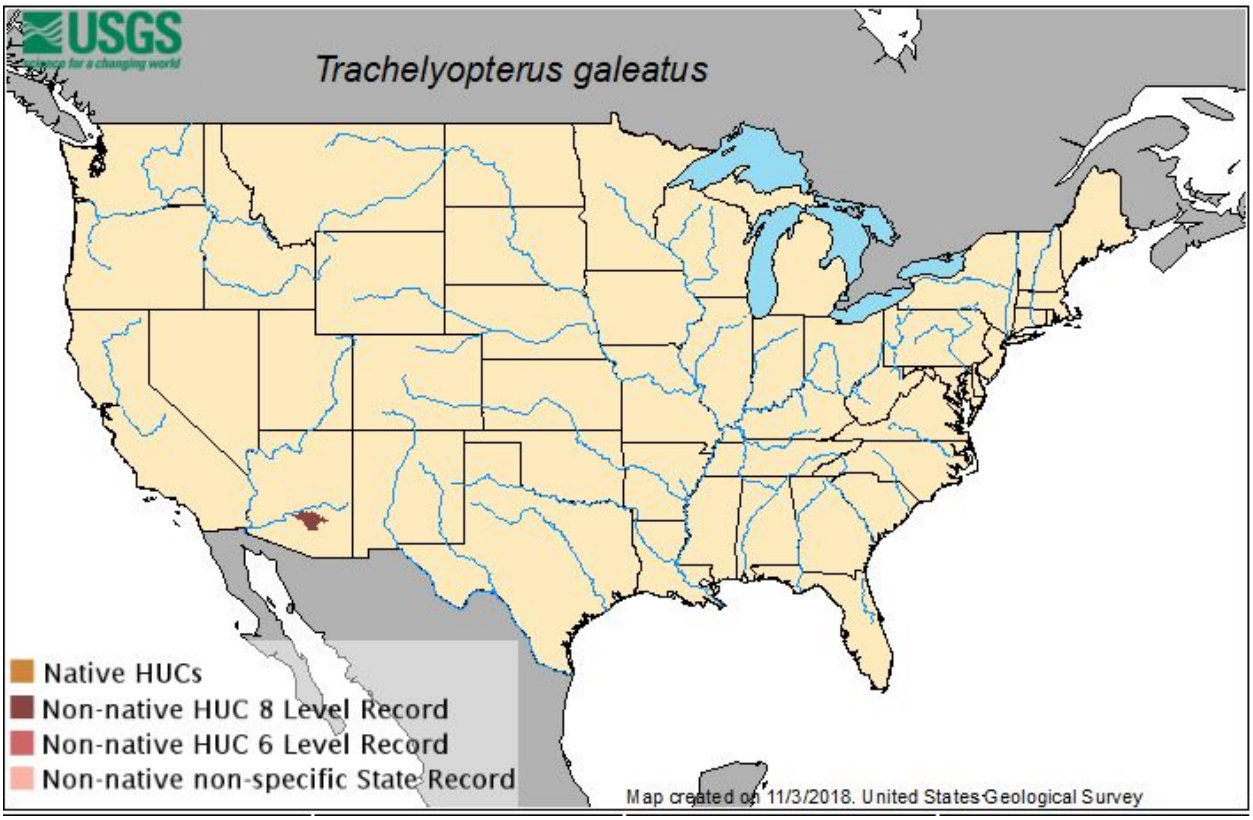

Figure 2. Location of HUC 8 with the single report of *Trachelyopterus galeatus*. Map from Nico (2019). According to Froese and Pauly (2019) and Nico (2019) it is unlikely that *T. galeatus* is established in Arizona. The record in Arizona was not used to select source points for the climate match.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for the contiguous United States was low for a majority of the northern and western states. States in the south mostly had medium matches, with states along the Gulf of Mexico and along the southern Atlantic Coast having high matches. The highest areas of match are found in peninsular Florida and a small area of southeastern Texas. The overall Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for contiguous United States was 0.085, medium (Scores between 0.005 and 0.103, exclusive, are considered medium). Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Texas all had high individual climate scores, while Arkansas, Arizona, Maryland, Oklahoma and Virginia all had medium individual climate scores, with all other states receiving low individual climate scores.

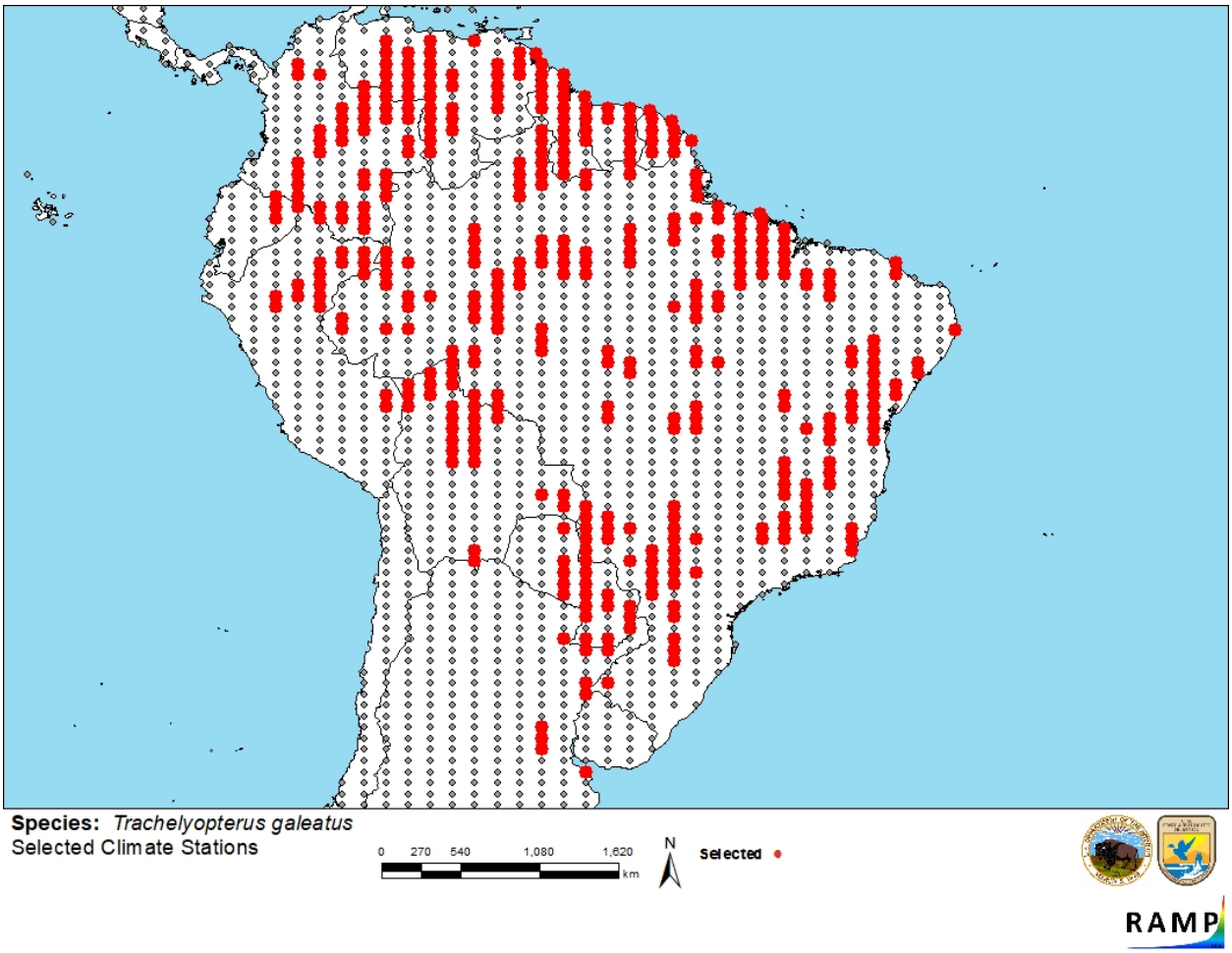

Figure 3. RAMP (Sanders et al. 2018) source map showing weather stations in South America selected as source locations (red; Argentina, Brazil, Ecuador, Colombia, Bolivia, Paraguay, Uruguay, French Guiana, Peru, and Suriname) and non-source locations (gray) for *Trachelyopterus galeatus* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

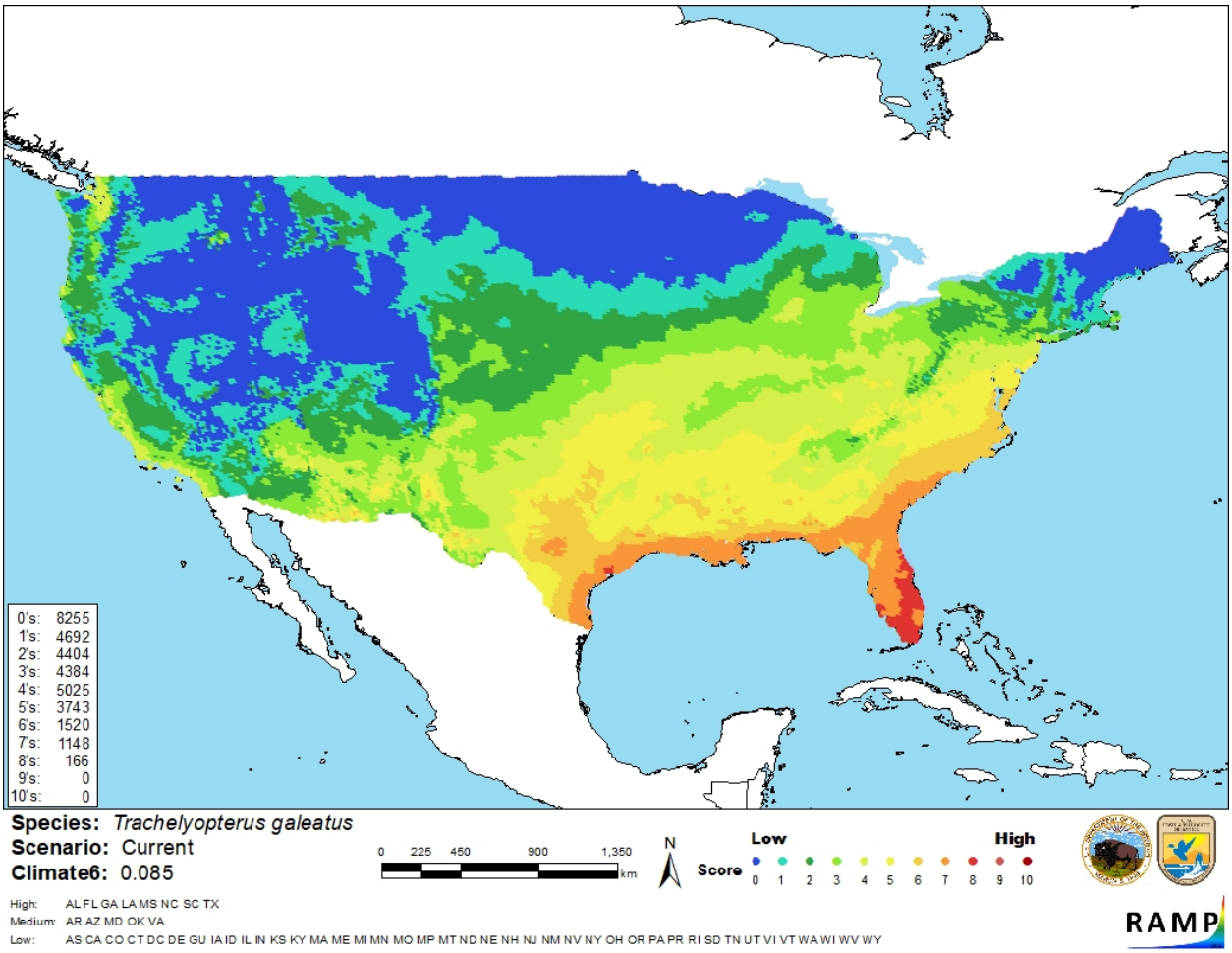

Figure 4. Map of RAMP (Sanders et al. 2018) climate matches for *Trachelyopterus galeatus* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
0.000≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

8 Certainty of Assessment

The certainty of assessment is low. There is information available on the biology and environment of *Trachelyopterus galeatus*. An introduction has been reported but it does not represent an established population and no impacts of its introduction have been reported.

9 Risk Assessment

Summary of Risk to the Contiguous United States

The driftwood catfish, *Trachelyopterus galeatus* is a species native to South America. It can be found in Argentina, Brazil, Ecuador, Colombia, Bolivia, Paraguay, Uruguay, French Guiana, Peru, Suriname and Trinidad and Tobago. *T. galeatus* are well-adapted to survive in hypoxic environments. Females have the capability of storing sperm in their genital track for months. The history of invasiveness for *Trachelyopterus galeatus* is classified as No Known Nonnative Population. There was only one record of introduction found outside of their native range. No information on impacts of introduction were found. This introduction was likely an aquarium release and does not represent an established population. The climate match for the contiguous United States was medium. Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina and Texas all had high individual climate scores, while Arkansas, Arizona, Maryland, Oklahoma and Virginia had medium individual climate scores. The certainty of assessment is low. The overall risk assessment category for is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): No Known Nonnative Population**
- **Overall Climate Match (Sec. 6): Medium**
- **Certainty of Assessment (Sec. 7): Low**
- **Remarks/Important additional information: No additional information.**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

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Sanders S, Castiglione C, Hoff M. 2018. Risk Assessment Mapping Program: RAMP. Version 3.1. U.S. Fish and Wildlife Service.

11 Literature Cited in Quoted Material

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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Boujard T, Pascal M, Meunier FJ, Le Bail P-Y. 1997. Poissons de Guyane. Guide écologique de l'Approuague et de la réserve des Nouragues. Paris: Institut National de la Recherche Agronomique.

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