

***Homodiaetus banguela* (a catfish, no common name)**

Ecological Risk Screening Summary

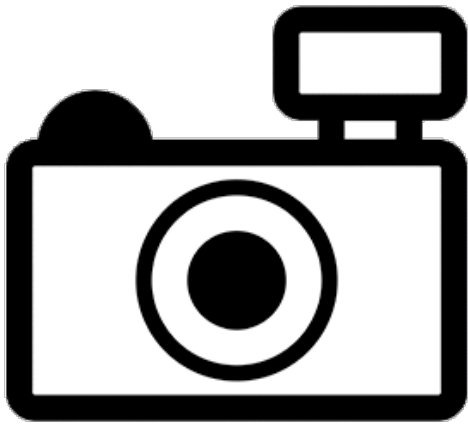
U.S. Fish & Wildlife Service, February 2022

Revised, March 2022

Web Version, 8/8/2022

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2022):

“South America: São João River in Brazil.”

Status in the United States

No records of *Homodiaetus banguela* in trade or in the wild in the United States were found.

From Arizona Office of the Secretary of State (2013):

“Fish listed below are considered restricted live wildlife: [...] All species of the family Cetopsidae and Trichomycteridae.”

From California Department of Fish and Wildlife (2019):

“It shall be unlawful to import, transport, or possess live animals restricted in subsection (c) below except under permit issued by the department. [...] Family Trichomycteridae (*Pygidiidae*)-Parasitic Catfishes.: All species”

The Florida Fish and Wildlife Conservation Commission has listed all species in the family Trichomycteridae, including *Homodiaetus banguela*, as a prohibited species. Prohibited nonnative species (FFWCC 2022), "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."

From Georgia DNR (2020):

“The exotic species listed below, except where otherwise noted, may not be held as pets in Georgia. This list is not all inclusive. [...] Parasitic catfishes; all species”

From Louisiana State Legislature (2019):

“No person, firm, or corporation shall at any time possess, sell, or cause to be transported into this state by any other person, firm, or corporation, without first obtaining the written permission of the secretary of the Department of Wildlife and Fisheries, any of the following species of fish: [...] Trichomycteridae (pencil catfishes); [...]”

From Mississippi Secretary of State (2019):

“All species of the following animals and plants have been determined to be detrimental to the State's native resources and further sales or distribution are prohibited in Mississippi. No person shall import, sell, possess, transport, release or cause to be released into the waters of the state any of the following aquatic species or hybrids thereof. [...] Family Trichomycteridae”

From State of Nevada (2018):

“Except as otherwise provided in this section and NAC 504.486, the importation, transportation or possession of the following species of live wildlife or hybrids thereof, including viable embryos or gametes, is prohibited: [...] South American Parasitic Catfish.....All species in the families Cetopsidae and Trichomycteridae”

From Oklahoma Secretary of State (2019):

“Until such time as is necessary for the Department of Wildlife Conservation to obtain adequate information for the determination of other harmful or potentially harmful exotic species, the importation into the State and/or the possession of the following exotic fish or their eggs is prohibited: [...] species of the Trichomycteridae family [...]”

From Texas Parks and Wildlife (2020):

“The organisms listed here are legally classified as exotic, harmful, or potentially harmful. No person may possess or place them into water of this state except as authorized by the department. [...] Family Trichomycteridae All species”

From Utah Office of Administrative Rules (2019):

“(c) all native and nonnative species and subspecies of fish that are not ornamental aquatic animal species and not listed in Subsections (2) through (30) are classified as prohibited for collection, and controlled for importation and possession. [...] family Trichomycteridae (All species).”

Means of Introductions in the United States

No records of *Homodiaetus banguela* in the wild in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2022), *Homodiaetus banguela* Koch 2002 is the current valid and original name for this species.

From ITIS (2022):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Siluriformes
Family Trichomycteridae
Subfamily Stegophilinae
Genus *Homodiaetus*
Species *Homodiaetus banguela* Koch, 2002

Size, Weight, and Age Range

From Froese and Pauly (2022):

“Max length : 3.8 cm SL male/unsexed; [de Pinna and Wosiacki 2003]”

Environment

From Froese and Pauly (2022):

“Freshwater; demersal”

Climate

From Froese and Pauly (2022):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2022):

“South America: São João River in Brazil.”

Introduced

No records of introduction were found for *Homodiaetus banguela*.

Means of Introduction Outside the United States

No records of introduction were found for *Homodiaetus banguela*.

Short Description

From Koch (2002):

“*Homodiaetus* is currently distinguished from other genus of Stegophilinae by the combination of the following characters: origin of ventral-fin at midlength between the snout tip and the caudal-fin origin; opercle with three or more odontodes; and gill membranes confluent with the istmus. [...] *H. banguela* sp. nov. with 9 opercular odontodes, 17-19 lower procurent caudal-fin rays, 17-22 upper procurent caudal-fin rays, reduction of fourth pharyngobranchial with only three teeth and untoothed fifth ceratobranchial [...]”

Biology

No information available on the biology of *Homodiaetus banguela*.

Human Uses

No information available on the human uses of *Homodiatetus banguela*.

Diseases

No records of OIE-reportable diseases (OIE 2022) were found for *Homodiaetus banguela*.
No information available on diseases for *Homodiaetus banguela*.

Threat to Humans

From Froese and Pauly (2022):

“Harmless”

3 Impacts of Introductions

No records of introductions were found for *Homodiaetus banguela*; therefore there is no information on impacts of introductions.

H. banguela is regulated in ten States as part of the Trichomycteridae family.

4 History of Invasiveness

The history of invasiveness for *Homodiaetus banguela* is classified as No Known Nonnative Population. *Homodiaetus banguela* has not been reported as introduced or established outside of its native range and there is no documented trade history.

5 Global Distribution



Figure 1. Known distribution of *Homodiaetus banguela*. Observations are reported from São João River Basin in Brazil. Map created with ArcPro (Esri 2022) based on locations described by Froese and Pauly (2022).

No georeferenced observations were available for *Homodiaetus banguela* to use as source locations for the climate match. Source points for the climate match were chosen to represent São João River Basin in Brazil.

6 Distribution Within the United States

No records of *Homodiaetus banguela* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The areas of highest climate match occurred in the southeastern portion of the contiguous United States, with the highest match being found in Florida. Low match was found everywhere else in the contiguous United States. The overall Climate 6 score (Sanders et al. 2021; 16 climate variables; Euclidean distance) for the contiguous United States was 0.021, medium (scores between 0.05 and 0.103, exclusive, are categorized as medium). All States had a low individual Climate 6 score except for Florida, which had a high individual Climate 6 score, and Georgia, Louisiana, North Carolina, and South Carolina, which had a medium individual Climate 6 score.

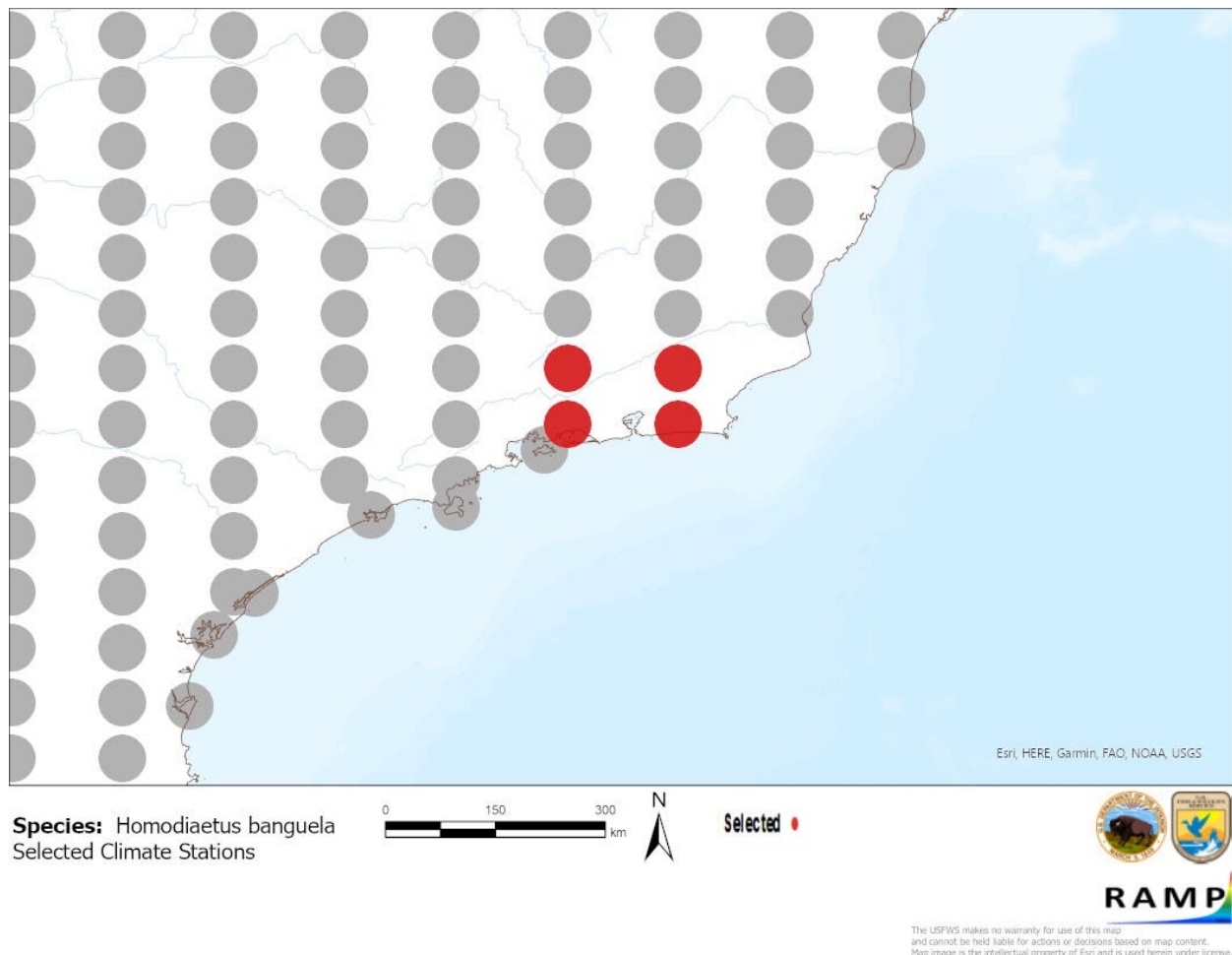


Figure 2. RAMP (Sanders et al. 2021) source map showing weather stations in the São João River Basin selected as source locations (red; Brazil) and non-source locations (gray) for *Homodiaetus banguela* climate matching. Source locations from Froese and Pauly (2022). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

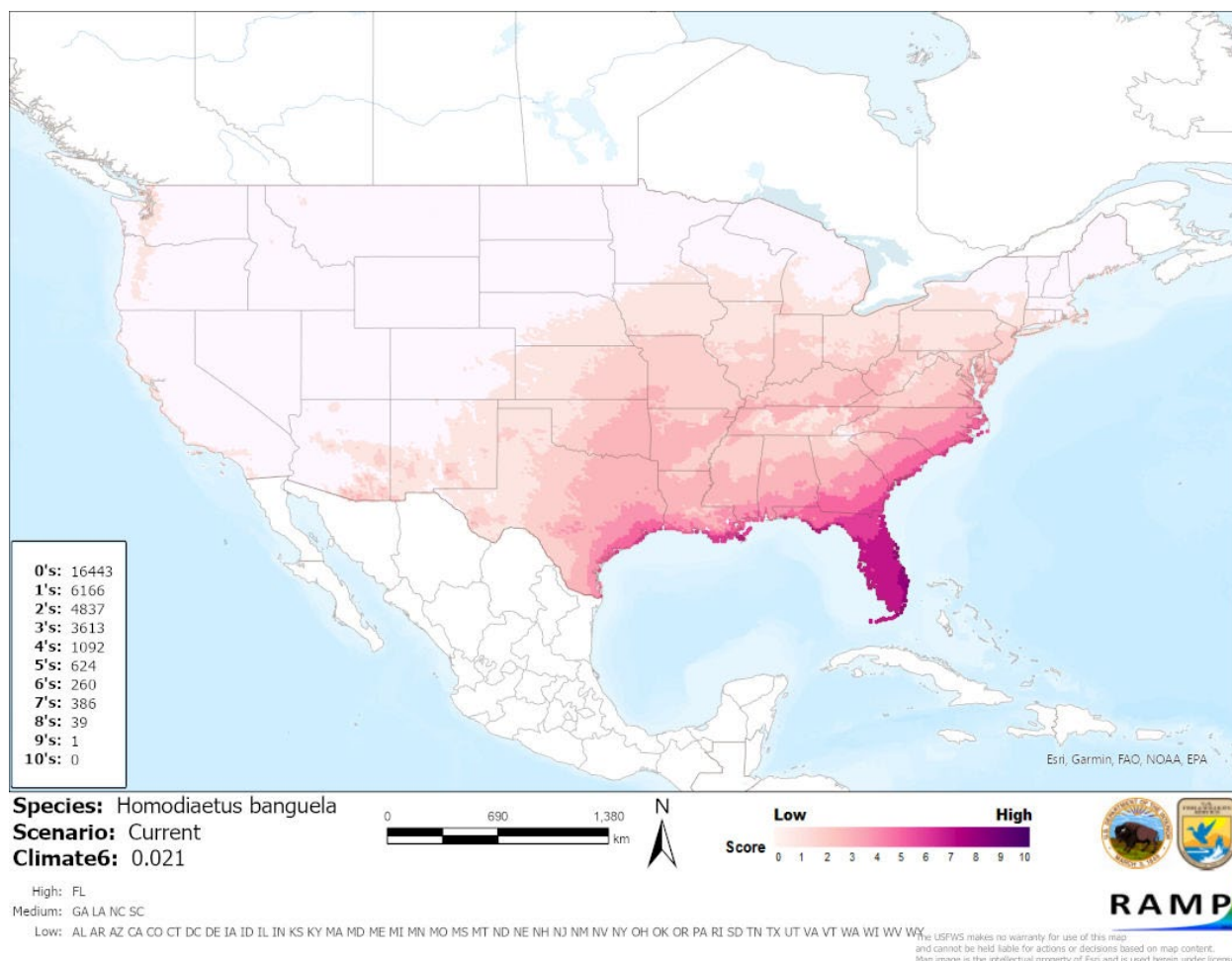


Figure 3. Map of RAMP (Sanders et al. 2021) climate matches for *Homodiaetus banguela* in the contiguous United States based on source locations reported by Froese and Pauly (2022). Counts of climate match scores are tabulated on the left. 0/Light Pink = Lowest match, 10/Dark Purple = Highest match.

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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

8 Certainty of Assessment

There is almost no information on *Homodiaetus banguela* available. Climate matching for this risk assessment was based on a general known distribution of this species in the São João River Basin, there were no records of collected specimens found. Further information on the biology

and distribution of *H. banguela* is needed to conduct a thorough risk assessment. Certainty of this assessment is low because of the lack of information.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Homodiaetus banguela is a freshwater catfish currently known to be native to the São João River in Brazil. Little information is available about this species. The history of invasiveness is classified as No Known Nonnative Population as *H. banguela* has not been introduced outside of its native range. However, it is regulated in ten States as part of the Trichomycteridae family. The overall Climate 6 score for *H. banguela* is Medium, with all States having a low individual Climate 6 score except for Florida, which had a high individual Climate 6 score, and Georgia, Louisiana, North Carolina, and South Carolina, which all had medium individual Climate 6 scores. The certainty of assessment is Low due to the lack of information available. Overall risk assessment category is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Medium**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks, Important additional information:** No additional remarks.
- **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.

Arizona Office of the Secretary of State. 2013. Live wildlife. Arizona Administrative Code, Game and Fish Commission, Title 12, Chapter 4, Article 4.

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[FFWCC] Florida Fish and Wildlife Conservation Commission. 2022. Prohibited species list. Tallahassee, Florida: Florida Fish and Wildlife Conservation Commission. Available: <https://myfwc.com/wildlifehabitats/nonnatives/prohibited-species-list/> (March 2022).

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- State of Nevada. 2018. Restrictions on importation, transportation and possession of certain species. Nevada Administrative Code, Chapter 503, Section 110.
- Texas Parks and Wildlife. 2020. Invasive, prohibited and exotic species. Austin: Texas Parks and Wildlife. Available: https://tpwd.texas.gov/huntwild/wild/species/exotic/prohibited_aquatic.phtml (March 2022).
- Utah Office of Administrative Rules. 2019. Classification and specific rules for fish. Utah Administrative Code, Rule R657-3-23.

Sanders S, Castiglione C, Hoff M. 2021. Risk Assessment Mapping Program: RAMP. Version 4.0. 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.

de Pinna MCC, Wosiacki W. 2003. Trichomycteridae (pencil or parasitic catfishes). Pages 270–290 in Reis RE, Kullander SO, Ferraris Jr CJ, editors. Checklist of the freshwater fishes of South and Central America. Porto Alegre, Brasil: EDIPUCRS.