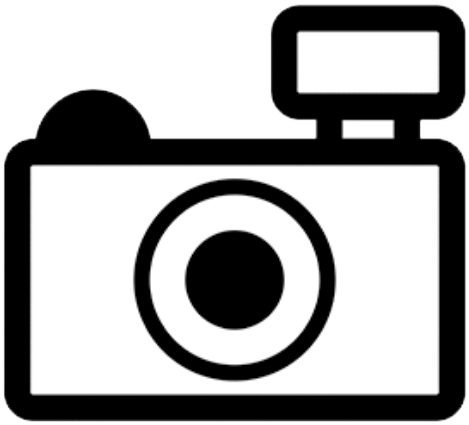
Malapterurus monsembeensis (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, February 2012
Revised, August 2018
Web Version, 8/31/2018



1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"Africa: Congo River basin except for the Zambian Congo [Angola, Republic of the Congo, Democratic Republic of the Congo] [Seegers 2008]."

Status in the United States

No records of *Malapterurus monsembeensis* in trade or in the wild in the United States were found.

The Florida Fish and Wildlife Conservation Commission has listed the electric catfish *M. monsembeensis* as a prohibited species. Prohibited nonnative species (FFWCC 2018), "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."

Means of Introductions in the United States

No records of *Malapterurus monsembeensis* in the wild in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Malapterurus monsembeensis* (Norris 2002) is the valid name for this species; it is also the original name.

From ITIS (2018):

"Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Siluriformes
Family Malapteruridae
Genus *Malapterurus*
Species *Malapterurus monsembeensis* Roberts, 2000"

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 58.0 cm SL male/unsexed; [Teugels 1992]; 42.0 cm SL (female)"

Environment

From Froese and Pauly (2018):

"Freshwater; benthopelagic."

Climate/Range
From Froese and Pauly (2018):

"Tropical"

Distribution Outside the United States
Native
From Froese and Pauly (2018):

"Africa: Congo River basin except for the Zambian Congo [Angola, Republic of the Congo, Democratic Republic of the Congo] [Seegers 2008]."

Introduced
No records of introduction were found for *Malapterurus monsembeensis*.

Means of Introduction Outside the United States
No records of introduction were found for *Malapterurus monsembeensis*.

Short Description
From Froese and Pauly (2018):

"Anal spines: 0; Anal soft rays: 9 - 12; Vertebrae: 44 - 49. Diagnosis: large species [Roberts 2000; Seegers 2008]. Tooth patches broad; obliquely angled pectoral fins positioned low on body [Roberts 2000]. 17-49 [Roberts 2000] or 44-45 [Norris 2002] vertebrae. 9-12 anal-fin rays; 19 caudal-fin rays (ii-7-8-ii); eye typically oval (along horizontal axis); caudal saddle and bar pattern poorly developed, even in juveniles; body with relatively small spots and flecks; pectoral and pelvic fin rays unpigmented [Norris 2002]. Broader mouth than *M. microstoma*, and fewer gill rakers and more vertebrae than either *M. microstoma* and *M. tanganyikaensis*; small dark marks rather uniformly distributed over the entire body and caudal fin, with no distinct dark or pale bars or bands, as *M. microstoma* and *M. tanganyikaensis* [Roberts 2000]."

"Description: head and body relatively depressed; lower jaw protruding; eye usually oval (more notable in smaller specimens); 17-20 abdominal vertebrae; 24-28 caudal vertebrae. [Norris 2002]."

Biology
From Froese and Pauly (2018):

"[…]; carnivorous, feeding on fishes, crabs, and other aquatic creatures [Norris 2002]."

Human Uses
From Froese and Pauly (2018):

"Fisheries:"

Diseases

No records of OIE-reportable diseases were found for *Malapterurus monsembeensis.*

Poelen et al. (2014) lists *Electrotaenia malopteruri* as a parasite of *M. monsembeensis.*

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

Although Froese and Pauly (2018) list *Malapterurus monsembeensis* as harmless, some species in this genus are able to produce electric discharges in the range of hundreds of volts (Alves-Gomes 2001), which have the potential to inflict harm.

3 Impacts of Introductions

No records of introduction were found for *Malapterurus monsembeensis*.

The Florida Fish and Wildlife Conservation Commission has listed the electric catfish *M. mosembeensis* as a prohibited species.

Members of the genus *Malapterurus* use electric discharges to stun prey and for defense (Alves-Gomes 2001). It is unknown how that would impact native fish.

4 Global Distribution

Figure 1. Known global distribution of *Malapterurus monsembeensis*. Locations are in the Democratic Republic of the Congo and the Republic of the Congo. Map from GBIF Secretariat (2018).

M. mosembeensis is reported from Angola, but georeferenced locations are not available for that part of the range.

5 Distribution Within the United States

No records of *Malapterurus monsembeensis* in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Malapterurus monsembeensis* was low for the majority of the contiguous United States with a small patch of medium match in coastal Louisiana and peninsular Florida. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.003, low. The range for a low climate score is from 0.0 to 0.005, inclusive. All states except for Florida had low individual climate scores, Florida had a high individual climate score.

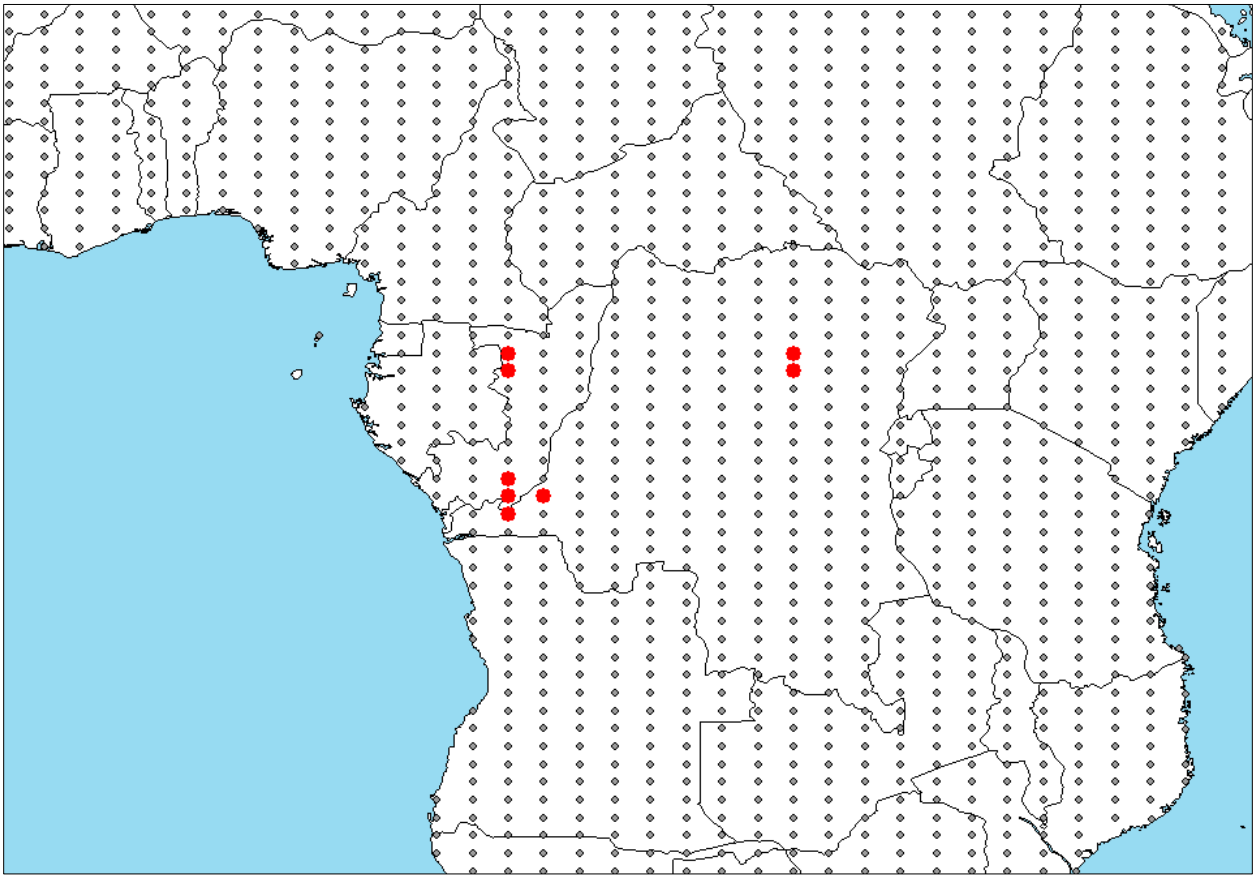


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in western Africa selected as source locations (red; Democratic Republic of the Congo, Republic of the Congo) and non-source locations (gray) for *Malapterurus monsembeensis* climate matching. Source locations from GBIF Secretariat (2018).

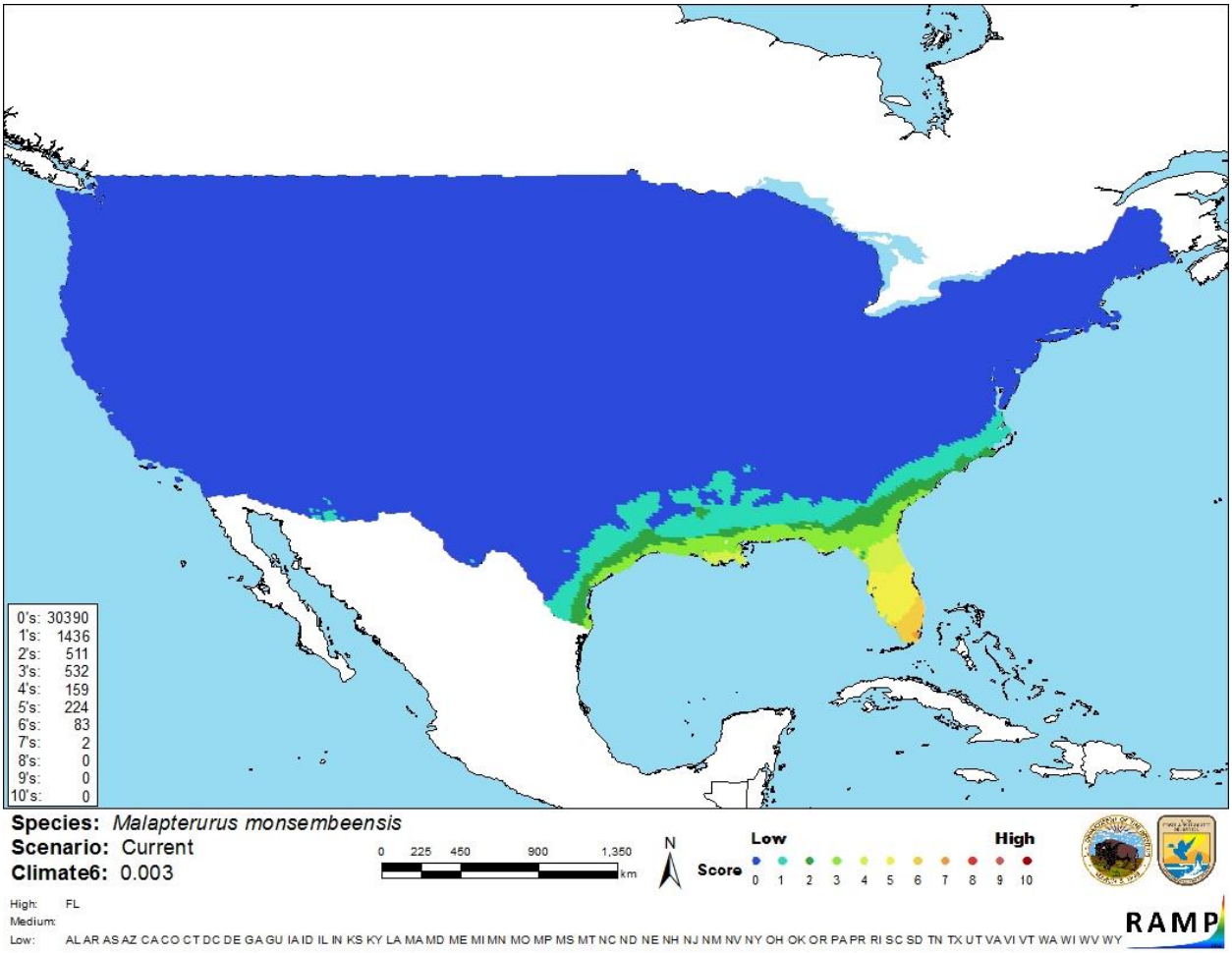


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Malapterurus monsembeensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0 = Lowest match, 10 = Highest match.

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

The certainty of assessment is low. There was minimal biological information available for this species. There were no records of introductions found, therefore there is no information on impacts of introductions.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Malapterurus monsembeensis is an electric catfish native to the Congo River basin in Africa. *M. monsembeensis* is used for fisheries. Some species in this genus are able to produce electric discharges in the range of hundreds of volts to stun prey and for defense. The history of invasiveness is uncertain. No records of introductions were found. The Florida Fish and Wildlife Conservation Commission has listed the electric catfish *M. mosembeensis* as a prohibited species. The climate match is low for the entire contiguous United States except for peninsula Florida and coastal Louisiana. Florida had an individually high climate score. The certainty of assessment is low because of lack of information; the overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **Certainty of Assessment (Sec. 7): Low**
- **Remarks/Important additional information:** No additional information.
- **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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Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (August 2018).

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Poelen, J. H., J. D. Simons, and C. J. Mungall. 2014. Global Biotic Interactions: an open infrastructure to share and analyze species-interaction datasets. Ecological Informatics 24:148–159.

Sanders, S., C. Castiglione, and M. Hoff. 2018. Risk assessment mapping program: RAMP, version 3.1. U.S. Fish and Wildlife Service.

10 References Quoted But Not Accessed

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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Seegers, L. 2008. The catfishes of Africa: a handbook for identification and maintenance. Aqualog Verlag A. C. S. GmbH, Germany.

Teugels, G. G. 1992. Malapteruridae. Pages 496–499 *in* C. Leveque, D. Paugy, and G. G. Teugels, editors. Faune des poissons d'eaux douces et saumâtres de l'Afrique de l'Ouest, Tome 2. Coll. Faune Tropicale n° 28 Musée Royal de l'Afrique Centrale, Tervuren Belgique and O. R. S. T. O. M., Paris.