Malapterurus teugelsi (a catfish, no common name)
Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, March 2012
Revised, July 2018, August 2018
Web Version, 2/1/2019

Photo: ©F. K. Konan, used with permission.

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"Africa: endemic to the Kogon River, Guinea [Africa] [Norris 2002, 2003]."

Status in the United States

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

The Florida Fish and Wildlife Conservation Commission lists the genus of electric catfish *Malapterurus*, including *M. teugelsi*, as prohibited (FFWCC 2018).

According to FFWCC (2018), 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.

Means of Introductions in the United States
No records of *Malapterurus teugelsi* in the wild in the United States were found.

Remarks
From Lalèyè (2010):

"Due to its very restricted range, the species is assessed as Near Threatened […]"

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing
According to Eschmeyer et al. (2018), *Malapterurus teugelsi* (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 teugelsi* Norris, 2002"

Size, Weight, and Age Range
From Froese and Pauly (2018):

"Max length : 21.2 cm SL male/unsexed; [Norris 2003]"

Environment
From Froese and Pauly (2018):

"Freshwater; demersal."

Climate/Range
From Froese and Pauly (2018):

"Tropical"

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

"Africa: endemic to the Kogon River, Guinea [Norris 2002, 2003]."

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

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

Short Description
From Froese and Pauly (2018):

"Dorsal spines (total): 0; Dorsal soft rays (total): 0; Anal spines: 0; Anal soft rays: 8 - 10; Vertebrae: 38 - 40. Diagnosis: body elongate and cylindrical; tooth patches narrow; vertically based pectoral fin positioned at body mid-depth; caudal bar frequently extends a narrow band along the body mid-depth, dividing the pale interspace and joining the saddle and caudal bar; medial portion of pelvic fin dark with a well-defined pale rim; caudal saddle and bar pattern more prominent in juveniles and young, the darkened pelvic fin more apparent in larger specimens [Norris 2002]."

Biology
From Lalèyè (2010):

"This benthopelagic species occurs among rocks or roots; favours sluggish or standing water. Active at night, feeding mainly on fish stunned by electric shocks [produced by specialized organs within the fish]. Forms pairs and breeds in excavated cavities or holes."

Human Uses
Konan et al. (2018):

"Caught by artisanal fishers on the Kogon Rivers, *M. teugelsi* is much appreciated by the local population. As such, an important source of animal protein and micronutrients in the diet of riparian rural populations.

Moreover, the species belonging to the genus *Malapterurus* have a high cultural representation in the folklore of the local population as well as in many other West African cultures. For example,

his skin is used in traditional medicine for the preparation of certain medication. Used as a nesting aid in some rural communities, the skin of this fish helps protect eggs of chickens against rapacious birds."

Diseases

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

Poelen et al. (2014) list *Tegorhychus brevis* as a parasite of *Malapterurus teugelsi*.

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

Some species of the genus *Malapterurus* use electric discharges to stun prey and for defense (Alves-Gomes 2001), but it is unknown if this species does or if those discharges would be harmful to humans.

3 Impacts of Introductions

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

Some species of the genus *Malapterurus* use electric discharges to stun prey and for defense (Alves-Gomes 2001), but it is unknown if this species does or how that would affect native species.

4 Global Distribution

Figure 1. Known global distribution of *Malapterurus teugelsi*. Location is in Guinea. Map from GBIF Secretariat (2018).

5 Distribution Within the United States

No occurrences of *Malapterurus teugelsi* in the wild in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Malapterurus teugelsi* was low for the entire contiguous United States. There were no areas of medium or high match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low. All States have low individual climate scores.

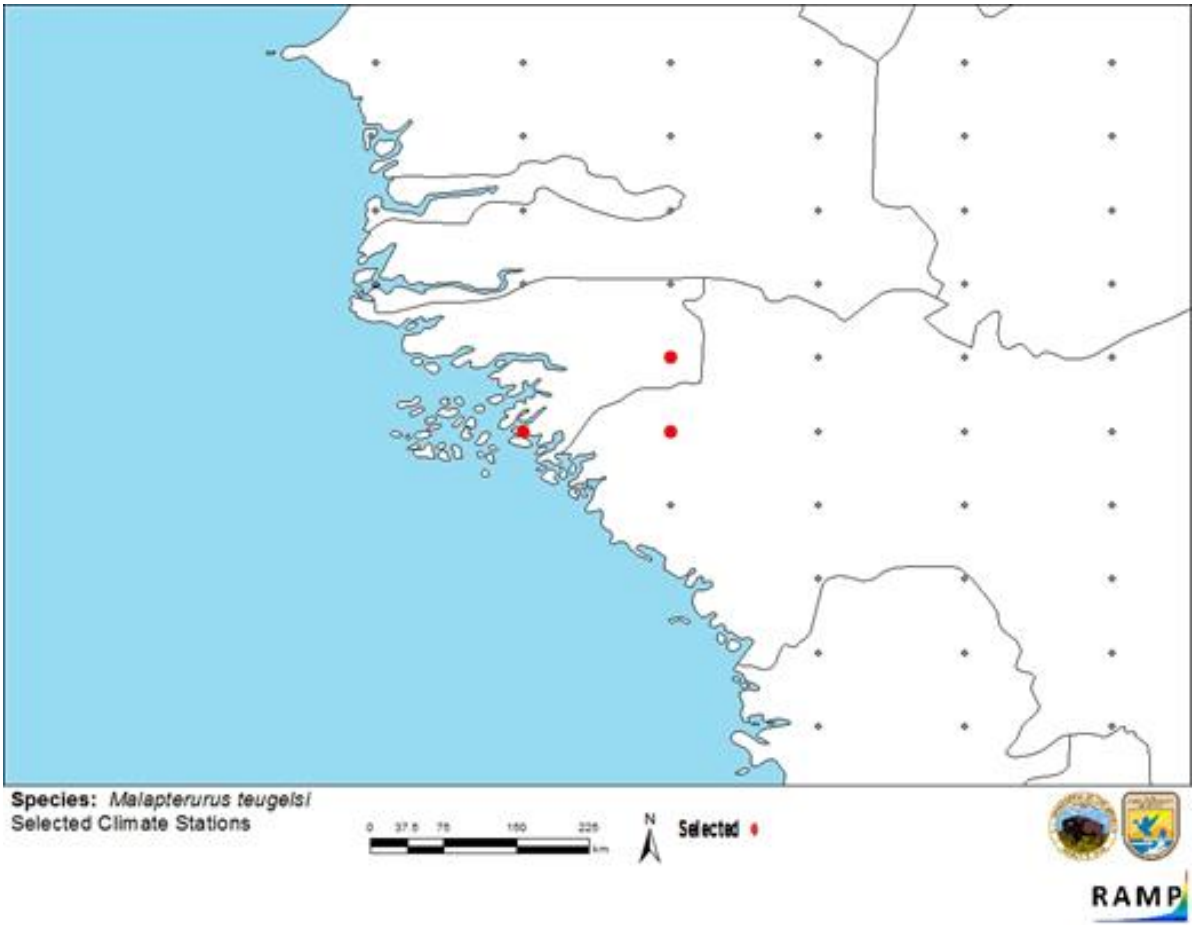

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Guinea selected as source locations (red; Guinea-Bissau, Guinea) and non-source locations (gray) for *Malapterurus teugelsi* climate matching. Source locations from GBIF Secretariat (2018).

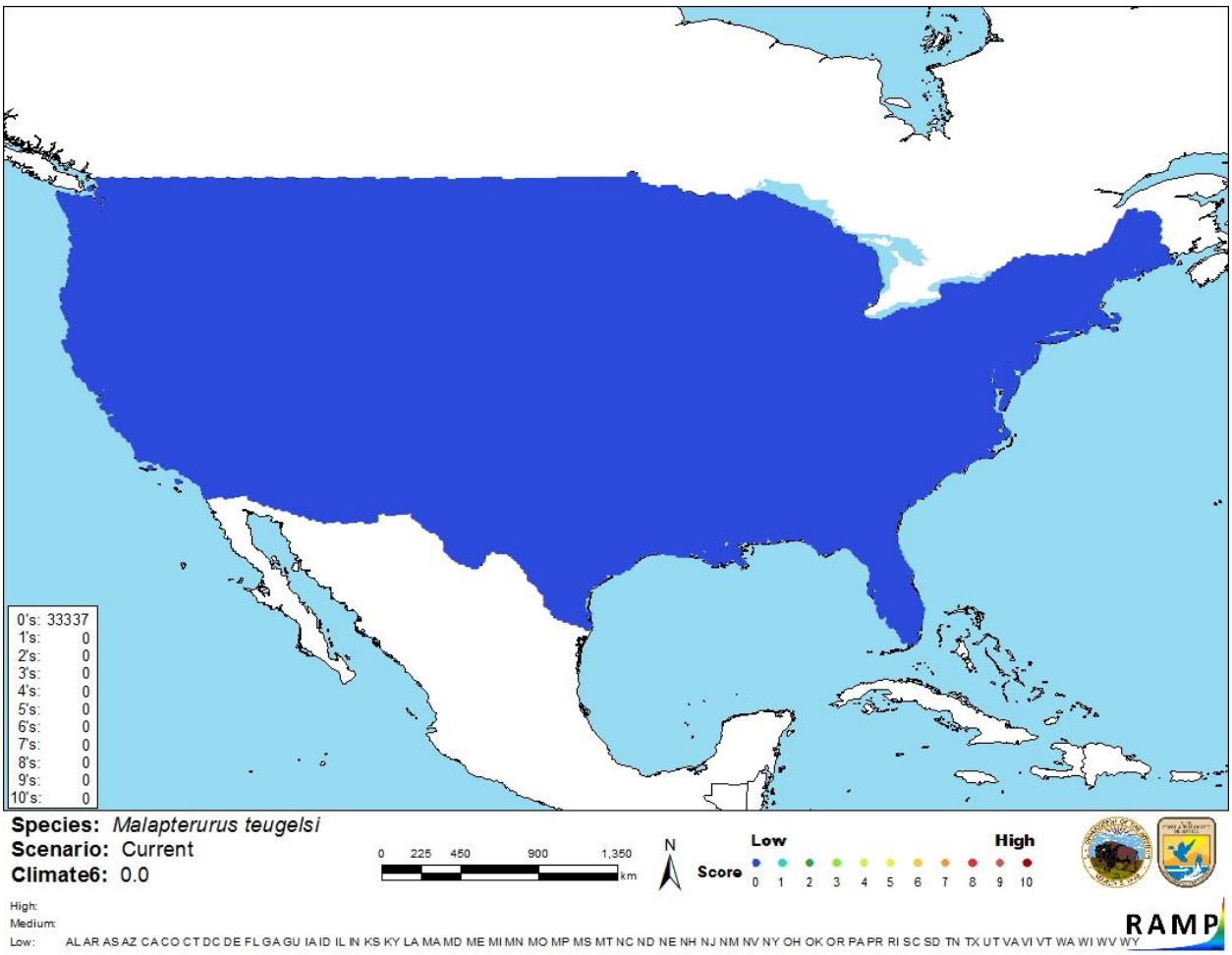

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Malapterurus teugelsi* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0 = Lowest match, 10 = Highest match.

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.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Malapterurus teugelsi is a catfish native to the Kogon River in Guinea. Some species in this genus can produce electric discharges to stun prey and for defense, but it is unknown if this is one. It is also unknown what the potential impact of those electric discharges on the United States' native fish or humans would be. The history of invasiveness is uncertain. No records of introductions were found. The climate match is low for the entire contiguous United States. The certainty of assessment is low; 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.

Alves-Gomes, J. A. 2001. The evolution of electroreception and bioelectrogenesis in teleost fish: a phylogenetic perspective. Journal of Fish Biology 58:1489–1511.

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. (July 2018).

FFWCC (Florida Fish and Wildlife Conservation Commission). 2018. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: https://myfwc.com/wildlifehabitats/nonnatives/prohibited-species-list/. (August 2018).

Froese, R., and D. Pauly, editors. 2018. *Malapterurus teugelsi* Norris, 2002. FishBase. Available: https://www.fishbase.de/summary/Malapterurus-teugelsi.html. (July 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy *Malapterurus teugelsi* Norris, 2002. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/2342050. (July 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Malapterurus teugelsi* Norris, 2002. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=681510#null. (July 2018).

Konan, F. K., C. K. Boussou, Y. K. Bony, M. K. Konan, E. O. Edia, and B. Diallo. 2018. Near threatened fishes of the world: *Malapterurus teugelsi* Norris, 2002 (Siluriformes: Malapteruridae). Aquatic Science and Technology 6(2):1–5.

Lalèyè, P. 2010. *Malapterurus teugelsi*. The IUCN Red List of Threatened Species 2010: e.T182394A7876875. Available: http://www.iucnredlist.org/details/182394/0. (July 2018).

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.

Norris, S. M. 2002. A revision of the African electric catfishes, family Malapteruridae (Teleostei, Siluriformes), with erection of a new genus and descriptions of fourteen new species, and an annotated bibliography. Annales du Musée Royal de l'Afrique Centrale: Sciences Zoologiques 289:1–155.

Norris, S. M. 2003. Malapteruridae. Pages 174–194 *in* C. Lévêque, D. Paugy, and G. G. Teugels, editors. Faune des poissons d'eaux douce et saumâtres de l'Afrique de l'Ouest, Tome 2. Coll. Faune et Flore tropicales 40. Musée Royal de l'Afrique Centrale, Tervuren, Belgique, Museum National d'Histoire Naturalle, Paris, France and Institut de Recherche pour le Développement, Paris.