

Oreochromis lepidurus (a tilapia, no common name)

Ecological Risk Screening Summary

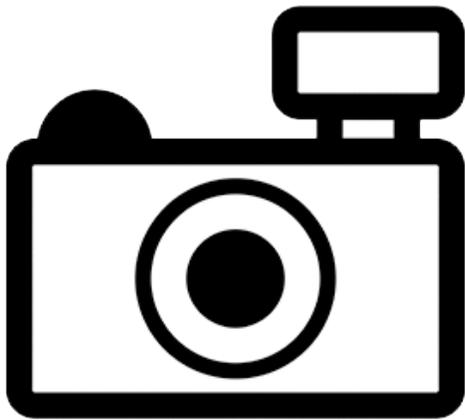
U.S. Fish & Wildlife Service, March 2012

Revised, June 2018

Web Version, 5/14/2020

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 (2018):

“Africa: lower Congo River basin in Democratic Republic of the Congo [Trewavas 1983]. Also reported from Angola [Thys van den Audenaerde 1963, 1964; Trewavas 1983], where it probably occurs in the lower Congo River and/or coastal rivers between the lower Congo and Bengo [Trewavas 1983].”

“Lectotype from Angola, but without further details; however, as species is absent from Bengo and Quanza rivers, lectotype probably came from either the Angolan lower Congo River or from coastal rivers between this and the Bengo [Trewavas 1983] (M'Bridge, Loge, Dande). Present in northern Angolan coastal rivers according to [Thys van den Audenaerde 1964].”

“Known from the lower Congo River [Democratic Republic of the Congo] [Boulenger 1915; Nichols and Griscom 1917; Thys van den Audenaerde 1963, 1964; Trewavas 1983], probably

only in brackish water [Trewavas 1983]. Reports from the middle Congo River [Boulenger 1915; Pellegrin 1928] questionable and unconfirmed by [Trewavas 1983], probably based in misidentified specimens.”

Status in the United States

No records of *Oreochromis lepidurus* in the wild or in trade in the United States were found.

The Florida Fish and Wildlife Conservation Commission has listed the tilapia *O. lepidurus* 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 *Oreochromis lepidurus* 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), *Oreochromis lepidurus* (Boulenger 1899) is the valid name for this species.

From ITIS (2018):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Genus *Oreochromis*
Species *Oreochromis lepidurus* (Boulenger, 1899)

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 19.0 cm TL male/unsexed; [Boulenger 1915]”

Environment

From Froese and Pauly (2018):

“Freshwater; brackish; benthopelagic.”

Climate

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Africa: lower Congo River basin in Democratic Republic of the Congo [Trewavas 1983]. Also reported from Angola [Thys van den Audenaerde 1963, 1964; Trewavas 1983], where it probably occurs in the lower Congo River and/or coastal rivers between the lower Congo and Bengo [Trewavas 1983].”

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“Known from the lower Congo River [Democratic Republic of the Congo] [Boulenger 1915; Nichols and Griscom 1917; Thys van den Audenaerde 1963, 1964; Trewavas 1983], probably only in brackish water [Trewavas 1983]. Reports from the middle Congo River [Boulenger 1915; Pellegrin 1928] questionable and unconfirmed by [Trewavas 1983], probably based in misidentified specimens.”

Introduced

No records of *Oreochromis lepidurus* introductions were found.

Means of Introduction Outside the United States

No records of *Oreochromis lepidurus* introductions were found.

Short Description

From Froese and Pauly (2018):

“Dorsal spines (total): 15 - 17; Dorsal soft rays (total): 9-12; Anal spines: 3; Anal soft rays: 8 - 9; Vertebrae: 28. Diagnosis: mature male with tuberculate genital papilla, some of the tubercles prolonged into filaments [Trewavas 1983]. Caudal fin of adults densely scaled, usually with a reticulate melanin pattern [Thys van den Audenaerde 1964; Trewavas 1983]. 28 vertebrae; total

dorsal rays 24-27; 19-24 lower gill-rakers; in adults snout long, preorbital bone deep and blade of lower pharyngeal 2-2.3 times the median length of the toothed area; outer teeth of jaws bicuspid unless by wearing down of minor cusp [Trewavas 1983].”

“Description: [...] Mouth rather small [Boulenger 1915]. Maxillary extending to between nostril and eye [Boulenger 1899, 1901, 1915; Pellegrin 1904; Thys van den Audenaerde 1964]. [...] Scales on cheek in 2 or usually 3 rows [Boulenger 1899, 1901, 1915; Trewavas 1983], width of scaly part less than diameter of eye [Boulenger 1915]. Eye equal to or a little less than preorbital depth [Boulenger 1915]. [...] 5 scales between bases of pectoral and pelvic fins [Trewavas 1983]. Opercular scales large [Boulenger 1899, 1901; Pellegrin 1904]. [...] 17-21 scales in upper part of lateral line, 11-13 in lower part [Boulenger 1915]. Last dorsal fin spine longest; third anal fin spine nearly as long as last dorsal fin spine [Boulenger 1899, 1901, 1915]. Dorsal fin almost reaching base of caudal fin in juveniles anterior third of caudal fin in adults; anal fin reaching as far as dorsal fin [Thys van den Audenaerde 1964]. Pectoral fin as long as or a little longer than head [Boulenger 1899, 1901, 1915; Pellegrin 1904], reaching vent [Thys van den Audenaerde 1964]. Pelvic fins never reaching anal fin but generally reaching a little further than pectoral fins [Thys van den Audenaerde 1964]. Caudal fin densely scaled [Boulenger 1899, 1901, 1915; Pellegrin 1904; Thys van den Audenaerde 1964; Trewavas 1983], with straight posterior border and hardly rounded corners [Thys van den Audenaerde 1964]. Caudal peduncle deeper than long [Boulenger 1899, 1901, 1915; Pellegrin 1904]. Bifid tassel of tubercles and filaments on the male genital papilla [Trewavas 1983].”

“Coloration: [...] In life: upper part of head and back green-brown; flanks paler brownish yellow; 6-8 dark brownish vertical bands on upper flanks; scales on flanks with brownish red spot in the middle; chest and belly yellowish, turning reddish when sexually mature; dorsal fin pale green-brown with a pale horizontal band; soft dorsal with irregular pale stripes or spots; Tilapia-mark clearly present but vaguely outlined; anal fin olive-green to brown, with less spots than dorsal fin; caudal fin brown with irregular light stripes or spots; juveniles silvery [Thys van den Audenaerde 1964].”

Biology

From Froese and Pauly (2018):

“Microphagous, using plankton [Thys van den Audenaerde 1964; Trewavas 1983]. Maternal, ovophilic mouthbrooder [Lamboj 2004].”

Human Uses

From Moelants (2010):

“This species is harvested for human consumption.”

Diseases

No records of OIE-reportable diseases (OIE 2020) were found for *Oreochromis lepidurus*.

Poelen et al. (2014) list *Gyrodactylus niloticus* and *G. shariffi* as parasites of *O. lepidurus*.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No records of *Oreochromis lepidurus* introductions were found.

O. lepidurus is a prohibited species in Florida (FFWCC 2018).

4 History of Invasiveness

Oreochromis lepidurus is a tilapia species native to the lower Congo River basin in Democratic Republic of Africa. No known successful introductions exist. History of invasiveness is No Known Nonnative Population.

5 Global Distribution



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

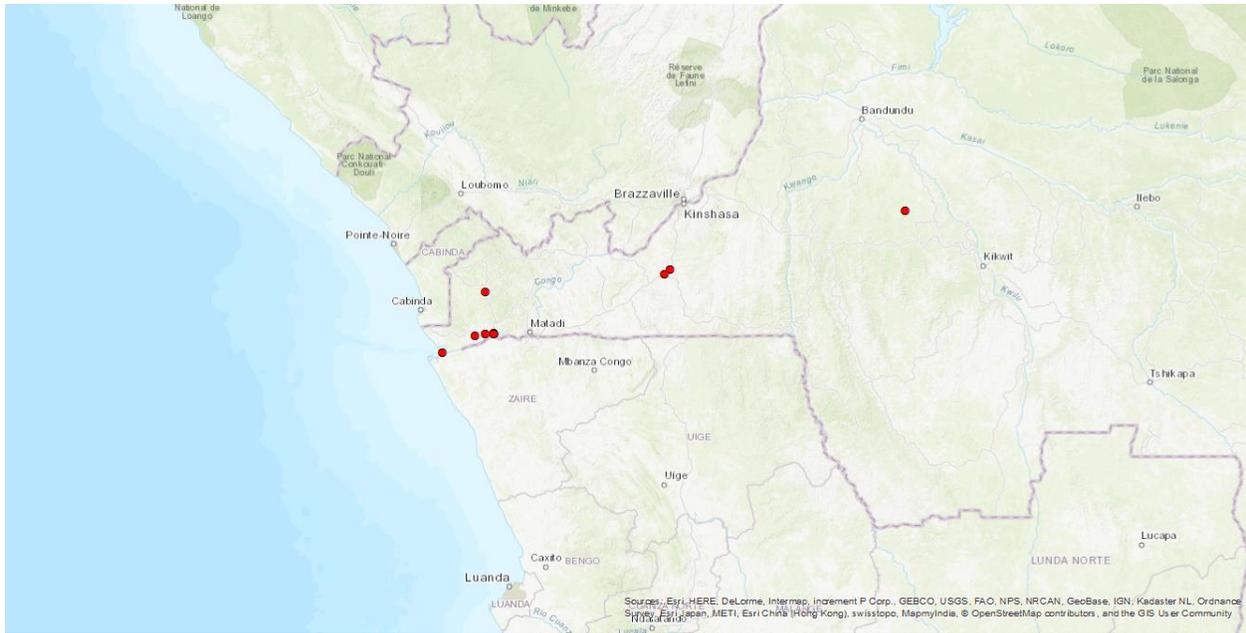


Figure 2. Additional known global distribution of *Oreochromis lepidurus*. Locations are in Democratic Republic of the Congo. Map created with data from Froese and Pauly (2018).

6 Distribution Within the United States

No records of *Oreochromis lepidurus* in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Oreochromis lepidurus* was mostly low for the contiguous United States. Southern peninsular Florida had a medium match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.001, low (scores between 0.000 and 0.005, inclusive, are classified as low). The individual climate 6 score for Florida was medium; all other States had low climate scores.

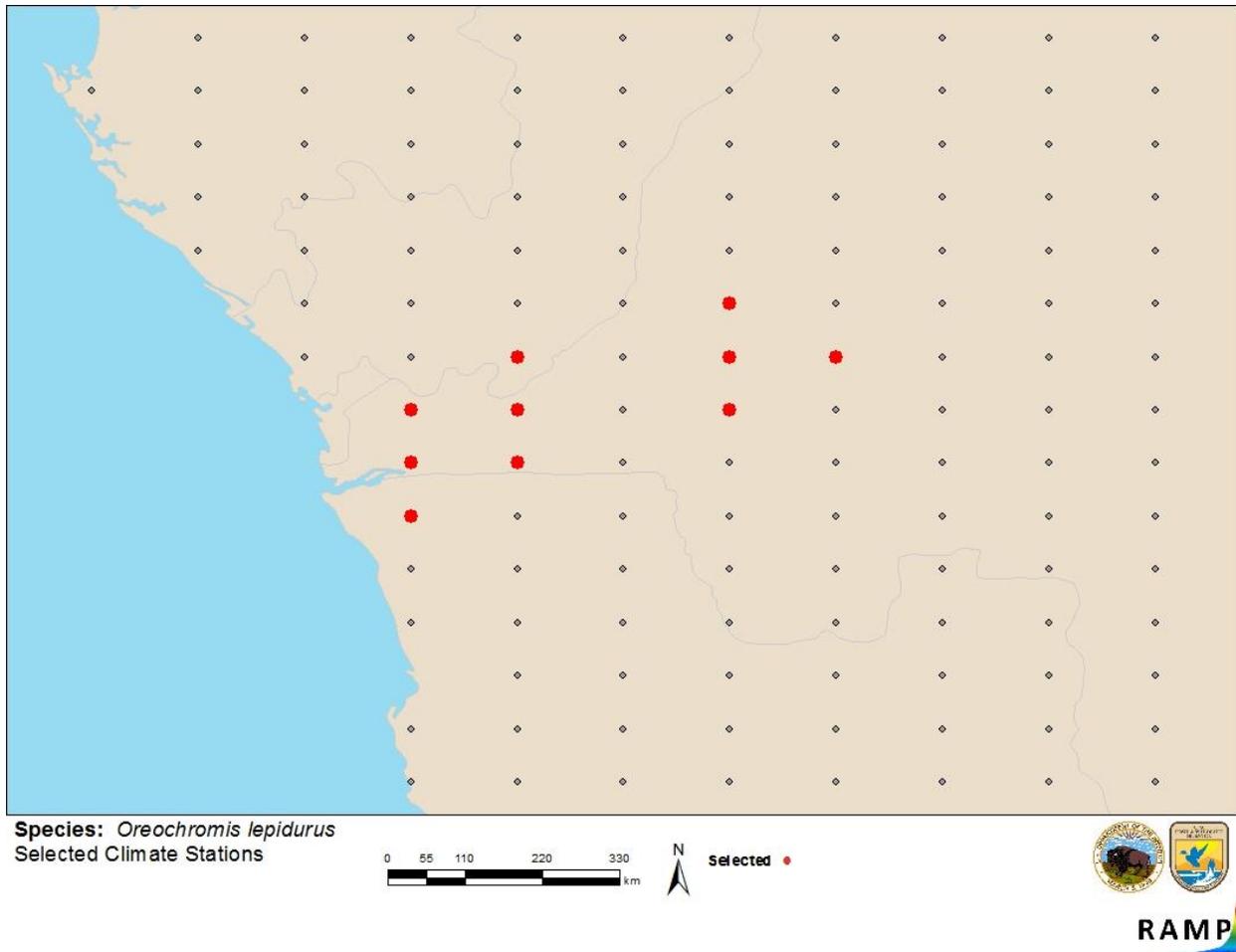


Figure 3. RAMP (Sanders et al. 2018) source map showing weather stations in western central Africa selected as source locations (red; Angola, Democratic Republic of the Congo, and Republic of the Congo) and non-source locations (gray) for *Oreochromis lepidurus* climate matching. Source locations from Froese and Pauly (2018) and GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

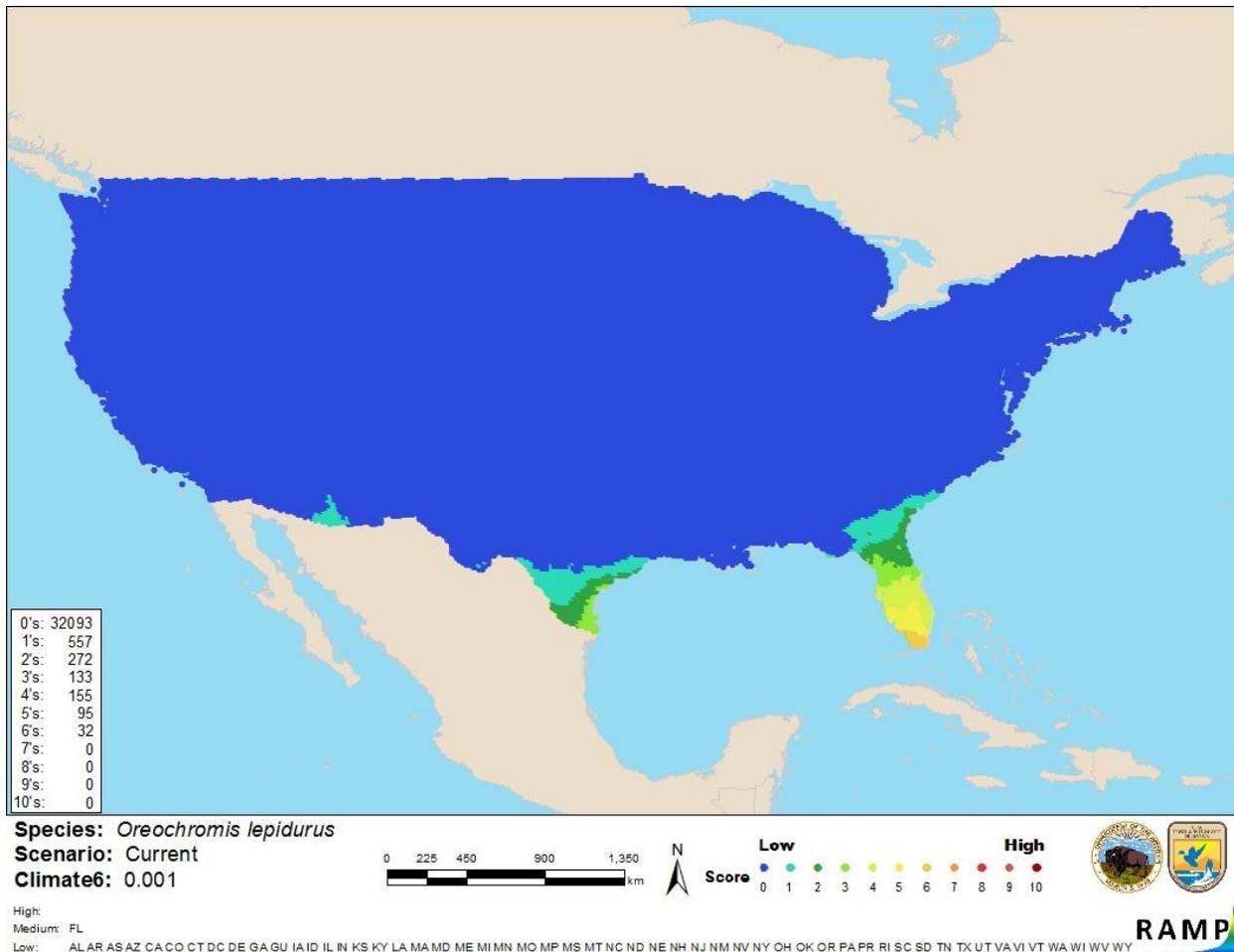


Figure 4. Map of RAMP (Sanders et al. 2018) climate matches for *Oreochromis lepidurus* in the contiguous United States based on source locations reported by Froese and Pauly (2018) and GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = 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 |
| $0.000 \leq X \leq 0.005$ | Low |
| $0.005 < X < 0.103$ | Medium |
| ≥ 0.103 | High |

8 Certainty of Assessment

The certainty of assessment is low for *Oreochromis lepidurus*. There was little biological information available and no records of introduction were found.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Oreochromis lepidurus is a tilapia native to the Congo River drainage in western Africa. It is harvested for consumption. The history of invasiveness is no known nonnative population. No records of introduction were found. No records of this species in the United States were found but *O. lepidurus* is listed as a prohibited species in Florida. The climate match with the contiguous United States was low, however southern Florida had a medium match. The certainty of assessment is low due to lack of information. The overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): 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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[ITIS] Integrated Taxonomic Information System. 2018. *Oreochromis lepidurus* (Boulenger, 1899). Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=649529 (June 2018).

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Poelen JH, Simons JD, Mungall CJ. 2014. Global Biotic Interactions: an open infrastructure to share and analyze species-interaction datasets. *Ecological Informatics* 24:148–159.

[OIE] World Organisation for Animal Health. 2020. OIE-listed diseases, infections and infestations in force in 2020. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2020/> (May 2020).

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.

Boulenger GA. 1899. A revision of the African and Syrian fishes of the family Cichlidae. Part II. *Proceedings of the Zoological Society of London* 1899:98–143.

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Nichols JT, Griscom L. 1917. Fresh-water fishes of the Congo basin obtained by the American Museum Congo Expedition, 1909–1915. *Bulletin of the American Museum of Natural History* 37:653–756.

Pellegrin J. 1904. Contribution à l'étude anatomique, biologique et taxinomique des poissons de la famille des cichlidés. *Mémoires de la Société Zoologique de France* 16:41–399.

Pellegrin J. 1928. Poissons du Chiloango et du Congo recueillis par l'expédition du Dr. Schouteden (1920–1922). *Annalen van het Koninklijk Museum van Belgisch-Congo*, Tervuren, België, *Zoology* 3:1–50.

Thys van den Audenaerde DFE. 1963. La distribution géographique des *Tilapia* au Congo. *Bulletin des Séances. Académie Royale des Sciences d'Outre-Mer* 9:570–605.

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