

***Oreochromis angolensis* (a tilapia, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, March 2012

Revised, June 2018

Web Version, 12/4/2020

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



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<https://www.gbif.org/occurrence/1230403069>. (June 12, 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Africa: Lower reaches of Bengo and Quanza (Cuanza) Rivers and lakes and lagoons in their neighborhood in Angola.”

“Known from the Bengo River and associated lakes and lagoons. Also in the lower Cuanza River as far up as the Cambambe cataracts [Angola] [Trewavas 1983].”

Status in the United States

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

The Florida Fish and Wildlife Conservation Commission has listed the tilapia *Oreochromis angolensis* as a prohibited species. Prohibited nonnative species (FFWCC 2016), "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.

O. angolensis falls within Group I of New Mexico’s Department of Game and Fish Director’s Species Importation List (New Mexico Department of Game and Fish 2010). Group I species “are designated semi-domesticated animals and do not require an importation permit.”

Possession of any species of tilapia is prohibited without permit in the State of Louisiana (Louisiana State Legislature 2019).

Tilapia species are prohibited to be sold and used as bait or stocked in heated-water reservoirs in the State of Oklahoma (Oklahoma Secretary of State 2019).

All species in the genus *Oreochromis* are listed as prohibited in Texas (Texas Parks and Wildlife 2020).

A permit is required to import, possess, or sell any species of tilapia in Virginia (Virginia Department of Game and Inland Fisheries 2020).

All species in the genus *Oreochromis* are considered regulated Type A species in Washington. Regulated Type A species (Washington State Senate 2019) are “nonnative aquatic animal species that pose a low to moderate invasive risk that can be managed based on intended use or geographic scope of introduction, have a beneficial use, and are a priority for department-led or department-approved management of the species' beneficial use and invasive risks.”

Means of Introductions in the United States

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

Remarks

Information for this screening was searched for using both the valid name *Oreochromis angolensis* and the synonym *Sarotherodon angolensis*.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Oreochromis angolensis* (Trewavas 1973) is the valid name for this species. *Oreochromis angolensis* was originally described as *Sarotherodon angolensis* (Trewavas 1973).

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 angolensis* (Trewavas, 1973)

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 20.4 cm SL male/unsexed; [Trewavas 1983]”

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 reaches of Bengo and Quanza (Cuanza) Rivers and lakes and lagoons in their neighborhood in Angola.”

“Known from the Bengo River and associated lakes and lagoons. Also in the lower Cuanza River as far up as the Cambambe cataracts [Angola] [Trewavas 1983].”

Introduced

No records of *Oreochromis angolensis* introductions were found.

Means of Introduction Outside the United States

No records of *Oreochromis angolensis* introductions were found.

Short Description

From Froese and Pauly (2018):

“Dorsal spines (total): 15 - 17; Dorsal soft rays (total): 11-12; Anal spines: 3; Anal soft rays: 8 - 10; Vertebrae: 29. Diagnosis: outer teeth of jaws in females and young males bicuspid except a few lateral unicuspid, but mature males with many unicuspid, until at about 20cm SL nearly all outer teeth are unicuspid and the posterior are enlarged; pharyngeal teeth fine and dense, with blade of lower pharyngeal bone longer than toothed area; 21-26 gill-rakers on lower part of first arch; 29 vertebrae; 15-16, rarely 17 dorsal spines; total dorsal rays 27 or 28; caudal fin not scaly; genital papilla in both sexes complex, in the male elongate, bifid and tasselled; white spots on pelvic fins of mature males and on dorsal, anal and base of caudal in both sexes; dentition and coloration of mature males diagnostic [Trewavas 1983].”

“Scales on cheek in 2-3 rows; 4-5 scales between bases of pectoral and pelvic fins [Trewavas 1973, 1983], moderately small on chest but not very small on belly [Trewavas 1973].”

“Coloration: body grey-brown [Lamboj 2004], with dorsal parts darker than ventral parts [Trewavas 1983; Lamboj 2004]. Conspicuous white spots on dorsal and anal fins, and usually on base of caudal [Trewavas 1973, 1983; Lamboj 2004]. Similar spots on pelvic fins in larger specimens [Trewavas 1983]. Caudal fin with some dark spots [Trewavas 1973]. Mature males reddish with a silvery-white spot on each scale on the upper body parts [Trewavas 1973, 1983; Lamboj 2004] and with posterior dorsal lappets and upper edge of soft dorsal fin red (white when preserved)[Trewavas 1983]. Male with white upper lip and narrow white (red in life) upper edge of soft dorsal fin [Trewavas 1973].”

Froese and Pauly (2018) also list 29–32 scales on lateral line, and 3.5–5 scales rows above lateral line.

Biology

No information on the biology of *Oreochromis angolensis* was found.

Human Uses

No information on human uses of *Oreochromis angolensis* was found.

Diseases

No records of OIE-reportable diseases (OIE 2020) were found. No information on pathogens or parasites of *Oreochromis angolensis* was found.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No records of *Oreochromis angolensis* introductions were found.

4 History of Invasiveness

No records of introductions were found for *Oreochromis angolensis*, therefore, the history of invasiveness is classified as No Known Nonnative Population.

5 Global Distribution



Figure 1. Known global distribution of *Oreochromis angolensis*. Locations are in Angola, in eastern Africa. Map from GBIF Secretariat (2018).

6 Distribution Within the United States

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

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Oreochromis angolensis* was low across the contiguous United States with a small area of medium match in southern Florida and extreme southern Texas along the Gulf Coast. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had low individual climate 6 scores.

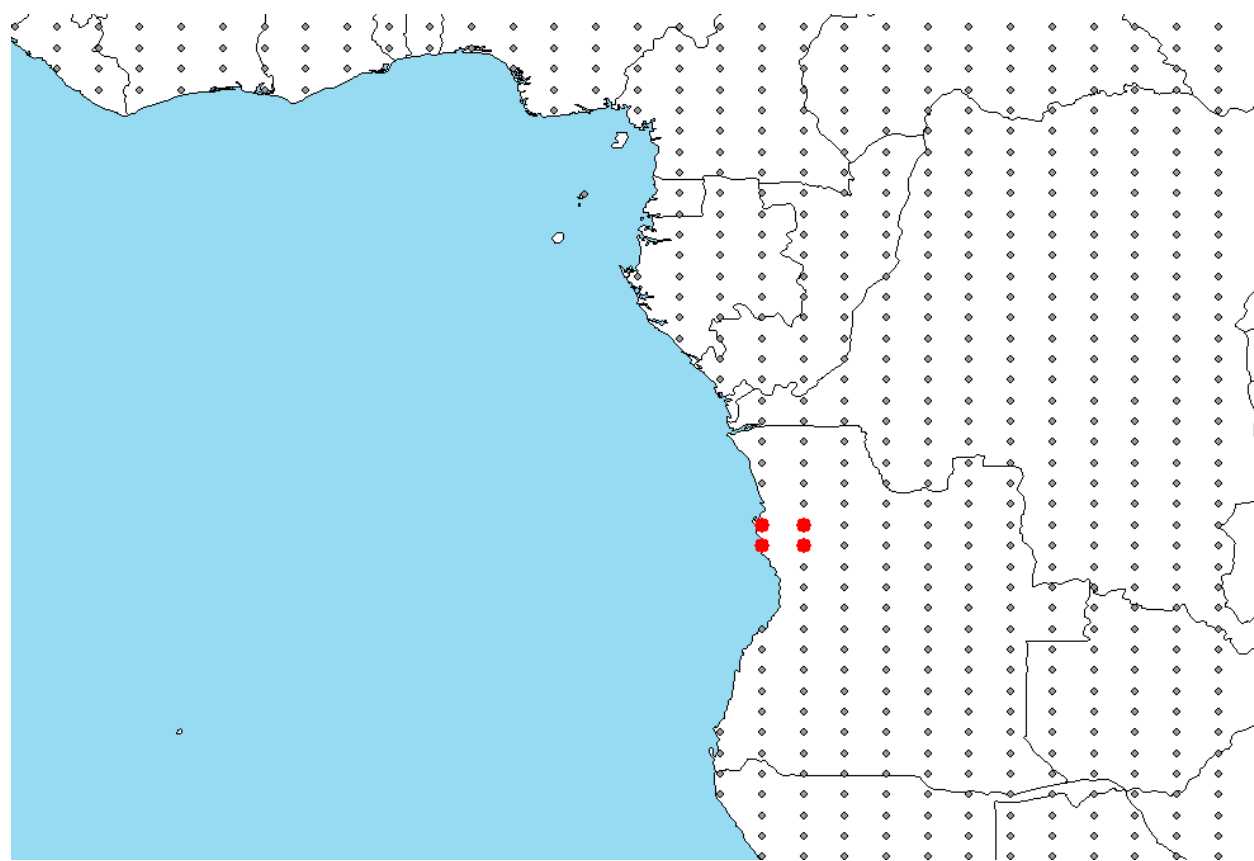


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Angola (west coast of Africa) selected as source locations (red) and non-source locations (gray) for *Oreochromis angolensis* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

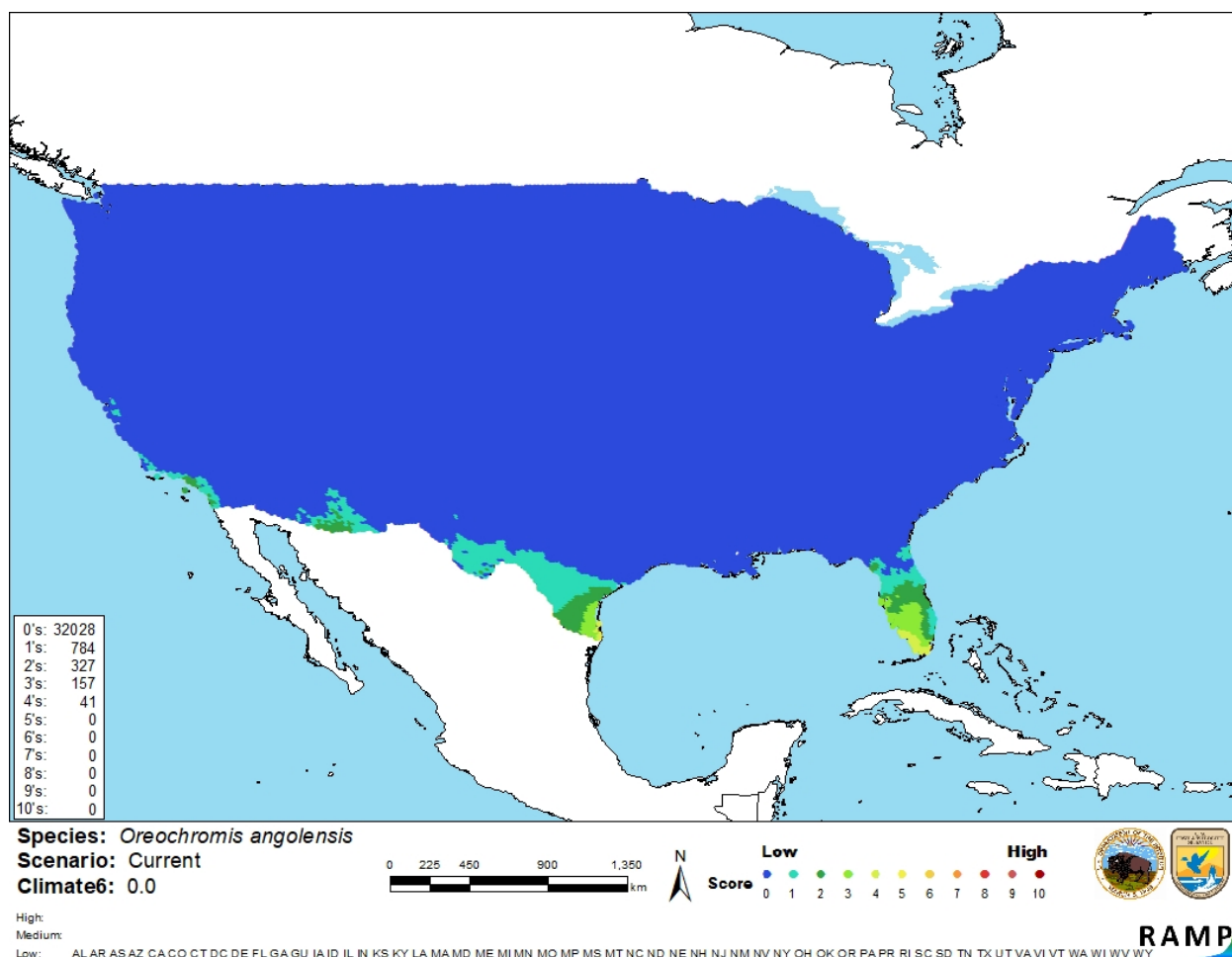


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Oreochromis angolensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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 for *Oreochromis angolensis* is low. There is a general lack of information for this species.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Oreochromis angolensis is a tilapia endemic to the Bengo and Cuanza river systems in Angola. It can be found in fresh and brackish water, but not much is known about the biology and ecology of this species. There are no records of introductions. The history of invasiveness is classified as “No Known Nonnative Population.” The climate match was low with a small area of medium match in southern Florida. The certainty of assessment is low and 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.

Eschmeyer WN, Fricke R, van der Laan R, editors. 2018. Catalog of fishes: genera, species, references. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (June 2018).

[FFWCC] Florida Fish and Wildlife Conservation Commission. 2018. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/> (June 2018).

Froese R, Pauly D, editors. 2018. *Oreochromis angolensis* (Trewavas, 1973). FishBase. Available: <https://www.fishbase.de/summary/Oreochromis-angolensis.html>. (June 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Oreochromis angolensis* (Trewavas, 1973). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2372389>. (June 2018).

[ITIS] Integrated Taxonomic Information System. 2018. *Oreochromis angolensis* (Trewavas, 1973). Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648838. (June 2018).

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New Mexico Department of Game and Fish. 2010. Director's species importation list. Santa Fe, New Mexico: New Mexico Department of Game and Fish. Available: http://www.wildlife.state.nm.us/download/enforcement/importation/information/Director-s-Species-Importation-List-08_03_2010.pdf (November 2020).

[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/> (November 2020).

Oklahoma Secretary of State. 2019. List of restricted exotic species. Oklahoma Administrative Code, Title 800, Chapter 20-1-2.

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

Texas Parks and Wildlife. 2020. Invasive, prohibited and exotic species. Austin, Texas: Texas Parks and Wildlife. Available: https://tpwd.texas.gov/huntwild/wild/species/exotic/prohibited_aquatic.phtml (November 2020).

Virginia Department of Game and Inland Fisheries. 2020. Nongame fish, reptile, amphibian and aquatic invertebrate regulations. Henrico, Virginia: Virginia Department of Game and Inland Fisheries. Available: <https://www.dgif.virginia.gov/fishing/regulations/nongame/> (November 2020).

Washington State Senate. 2019. Invasive/nonnative species. Washington Administrative Code, Chapter 220-640.

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.

Lamboj A. 2004. The cichlid fishes of Western Africa. Bornheim, Germany: Birgit Schmettkamp Verlag.

Trewavas E. 1973. A new species of cichlid fishes of rivers Quanza and Bengo, Angola, with a list of the known Cichlidae of these rivers and a note on *Pseudocrenilabrus natalensis* Fowler. Bulletin of the British Museum (Natural History). Zoology 25:27–37.

Trewavas E. 1983. Tilapiine fishes of the genera *Sarotherodon*, *Oreochromis* and *Danakilia*. London: British Museum of Natural History.