

Oreochromis tanganyicae (a tilapia, no common name) Ecological Risk Screening Summary

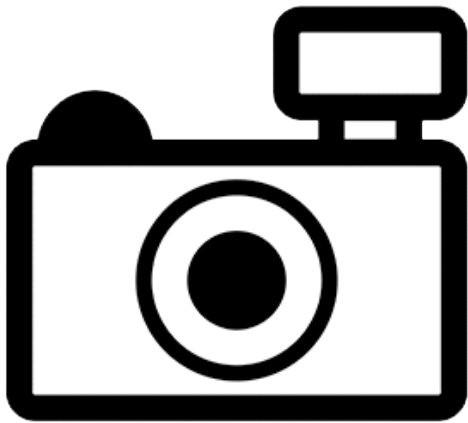
U.S. Fish & Wildlife Service, March 2012

Revised, July 2018

Web Version, 6/8/2020

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: Lake Tanganyika, in the coastal area and river mouths [Burundi, Democratic Republic of the Congo, Tanzania, Zambia].”

From Ntakimazi (2006):

“Endemic to Lake Tanganyika where it also enters the deltas and lower reaches of its major affluent rivers, including the Rusizi [Burundi] and Malagarasi [Tanzania].”

Status in the United States

No records of *Oreochromis tanganyicae* occurrences in the United States were found. No information on trade of *O. tanganyicae* in the United States was found.

The Florida Fish and Wildlife Conservation Commission has listed the tilapia, *Oreochromis tanganyicae* as a prohibited species. Prohibited nonnative species (FFWCC 2020), "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 tanganyicae* occurrences 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 tanganyicae* (Günther 1894) is the current valid name of 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 tanganyicae* (Günther, 1894)

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 42.0 cm SL male/unsexed; [Eccles 1992]”

Environment

From Froese and Pauly (2018):

“Freshwater; brackish; benthopelagic. [...]; 24°C - 26°C [assumed to be recommended aquarium temperature range] [Baensch and Riehl 1991]; [...]”

Climate/Range

From Froese and Pauly (2018):

“Tropical; [...]; 3°S - 9°S”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Africa: Lake Tanganyika, in the coastal area and river mouths [Burundi, Democratic Republic of the Congo, Tanzania, Zambia].”

From Ntakimazi (2006):

“Endemic to Lake Tanganyika where it also enters the deltas and lower reaches of its major affluent rivers, including the Rusizi [Burundi] and Malagarasi [Tanzania].”

Introduced

From Froese and Pauly (2018):

“*O. tanganyicae* established itself in various swamps of the rural areas [outside its native range in Burundi]. Its weight is about 2.5 kg with a length of 45 cm. Accurate researches on its nutritional habits and its reproduction should be undertaken in order to evaluate the most suitable techniques of fishculture [sic].”

Means of Introduction Outside the United States

No information on means of introduction outside of the United States for *Oreochromis tanganyicae*.

Short Description

From Froese and Pauly (2018):

“Dorsal spines (total): 15 - 17; Dorsal soft rays (total): 11-15; Anal spines: 3; Vertebrae: 30 - 31. Jaws not prolonged. Preorbital bone deep, 24-29 % HL. Scales of chest and belly very small but imbricating. Melanin pattern of body in facultative vertical bands of constant width, usually invisible in large preserved fishes.”

Biology

From Froese and Pauly (2018):

“Sometimes forms schools. Has been reported to browse on the surface film of sheltered waters. Stomachs contained large quantities of the diatoms *Pinnularia* and *Navicula* with some sand grains [Trewavas 1983].”

“Brooding females of 23-25 cm TL were included in the catches off sandy beaches.”

Human Uses

From Ntakimazi (2006):

“This species represent one of the most common inshore species found in the markets in the northern end of Lake Tanganyika.”

From Bukinga et al. (2012):

“Such shores are in a way atypical to Lake Tanganyika as they are not dominated by endemic cichlids (Van Steenberge et al. 2011). *T. polylepis*, *O. tanganyicae* and *B. microlepis* are, in view of their size, attractive fisheries targets (Konings 1998; Écoutin et al. 1994; Sinyinza et al. 2000). Swamp dwellers such as *O. tanganyicae* are the most important species in local subsistence fisheries, providing a source of protein to the poorest of littoral households.”

Diseases

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

Poelen et al. (2014) lists *Acanthogyrus tilapiae*, *Gyrodactylus niloticus*, and *Gyrodactylus shariffi* as parasites of *Oreochromis tanganyicae*.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

Impacts of introductions of *Oreochromis tanganyicae* have not been reported.

O. tanganyicae is listed as a prohibited species in Florida (FFWCC 2020).

4 History of Invasiveness

Oreochromis tanganyicae is a tilapia species endemic to Lake Tanganyika in Africa. It has not been reported in the United States and only reported as introduced and established outside of its native range in Burundi. No known impacts have been reported. For these reason, the history of invasiveness is Data Deficient.

5 Global Distribution

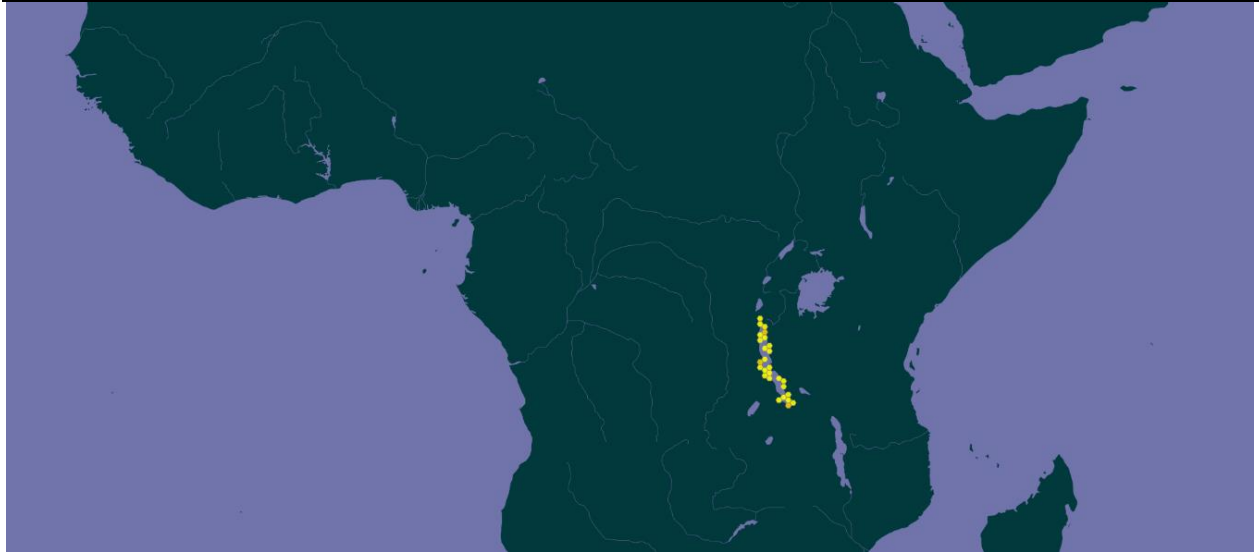


Figure 1. Known global distribution of *Oreochromis tanganicae*. Locations are in Democratic Republic of the Congo, Burundi, Tanzania, and Zambia. Map from GBIF Secretariat (2018).

6 Distribution Within the United States

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

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Oreochromis tanganicae* was low for most of the contiguous United States with small patches of medium match in the tips of southern Florida and Texas. 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 a low individual climate score.

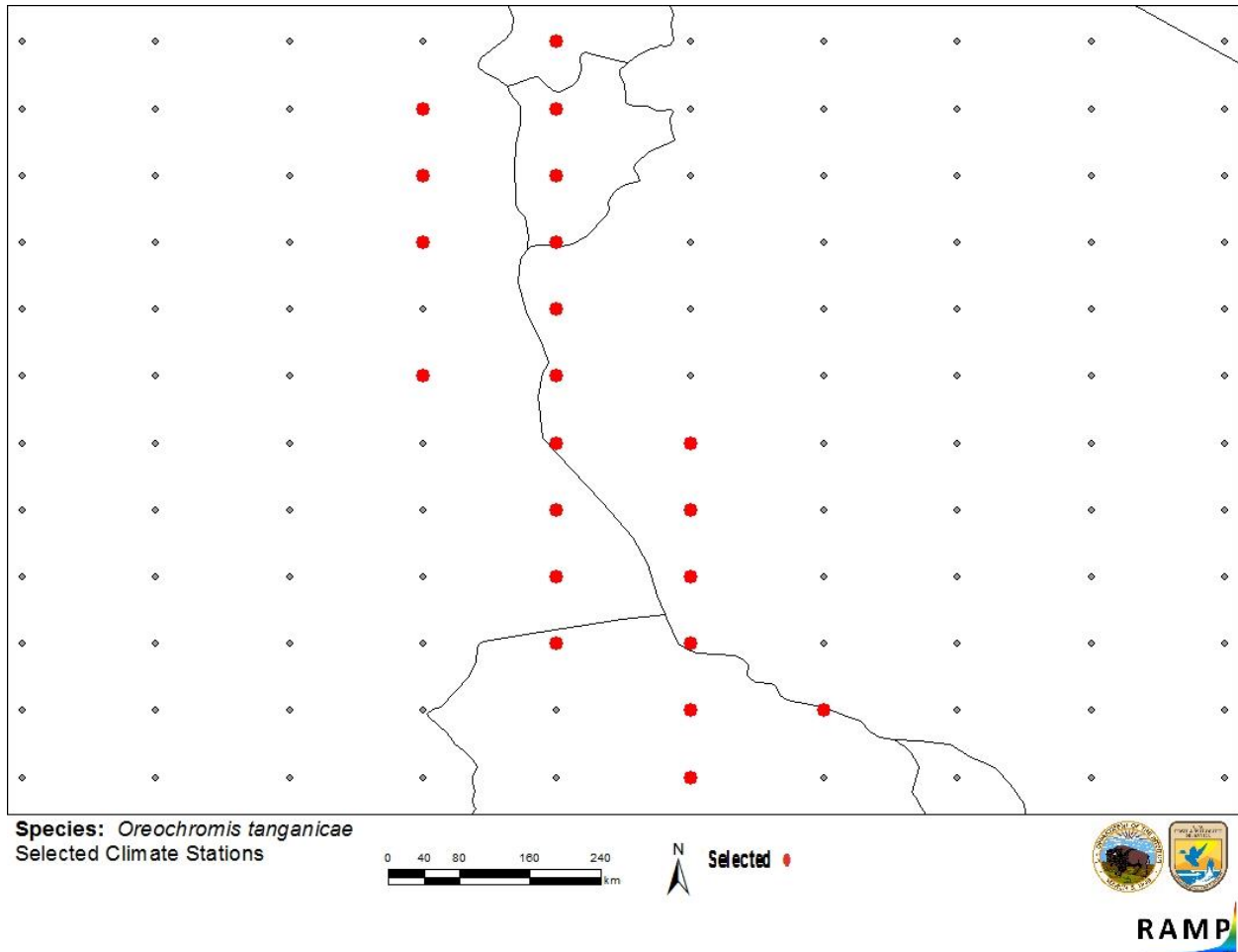


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Africa selected as source locations (red; Rwanda, Burundi, Democratic Republic of the Congo, Tanzania, Zambia) and non-source locations (gray) for *Oreochromis tanganicae* climate matching. Source locations from GBIF Secretariat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

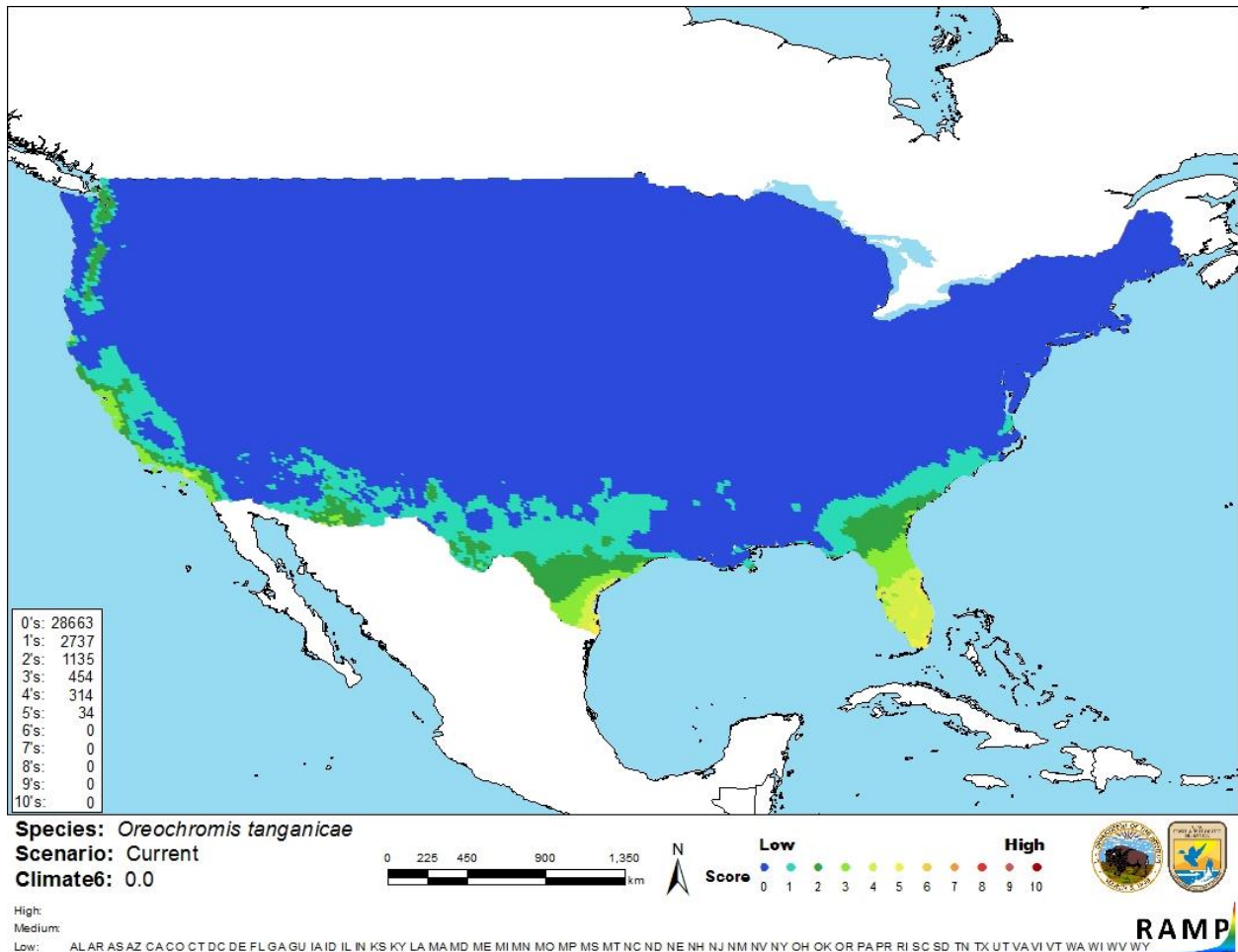


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Oreochromis tanganicae* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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 this assessment is low due to a lack of information on impacts of introduction. *O. tanganicae* has been introduced and established outside of its native range in Burundi; however, no additional information was found on whether it established or had any impacts.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Oreochromis tanganyicae is a tilapia endemic to Lake Tanganyika and surrounding rivers in Burundi, Democratic Republic of the Congo, Tanzania, and Zambia, Africa. This species supports a small commercial and subsistence fishery in the native range. The history of invasiveness is Data Deficient. *O. tanganyicae* was introduced to areas outside of the native range in Burundi and became established. However, no reports of impacts were found. *O. tanganyicae* is listed as a prohibited species in Florida. The climate match analysis resulted in a low match for the contiguous United States, with small areas of medium match in southern Florida and Texas. The certainty of this assessment is low due to a lack of information. The overall risk assessment category is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): Data Deficient**
- **Overall Climate Match Category (Sec. 7): Low**
- **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.

- Bukinga FM, Vanhove MPM, Van Steenberge M, Pariselle A. 2012. Ancyrocephalidae (Monogenea) of Lake Tanganyika: III: *Cichlidogyrus* infecting the world's biggest cichlid and the non-endemic tribes Haplochromini, Oreochromini, and Tylochromini (Teleostei, Cichlidae). *Parasitology Research* 111:2049–2061.
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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.

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Écoutin JM, Durand JR, Lae R, Hié Daré JP. 1994. L'exploitation des stocks. Pages 399–444 in Durand JR, Dufour P, Guiral D, Zabi SGF, editors. *Environnement et ressources aquatiques de Côte d'Ivoire. Tome II—Les milieux lagunaires*. Paris: ORSTOM Editions.

Günther A. 1894. Descriptions of the reptiles and fishes collected by Mr. E. Coode-Hore on Lake Tanganyika. *Proceedings of the Zoological Society of London* 1893 4:628–632.

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