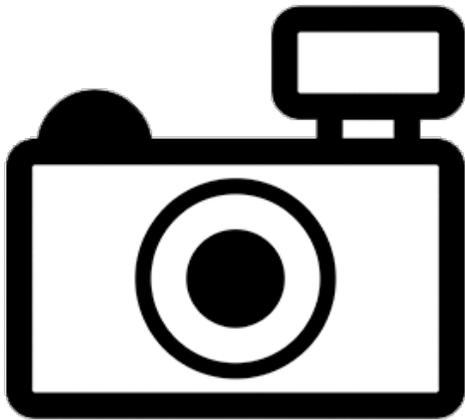


***Sarotherodon nigripinnis* (a tilapia, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, May 2012
Revised, October 2018
Web Version, 2/22/2021

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: coastal zone of Gabon and Equatorial Guinea (*Sarotherodon nigripinnis nigripinnis*) and the lower Kouilou in Republic of Congo to the lower Congo River estuary in Democratic Republic of Congo (*Sarotherodon nigripinnis dolloi*).”

Status in the United States

No records of *Sarotherodon nigripinnis* in the wild or in trade in the United States were found.

The Florida Fish and Wildlife Conservation Commission has listed the tilapia *Sarotherodon nigripinnis* as a conditional species. Conditional 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, although exceptions are made by

permit from the Executive Director for research, commercial use (with security measures to prevent escape or release) or public exhibition purposes.”

From Louisiana State Legislature (2019):

“No person, firm, or corporation shall at any time possess, sell, or cause to be transported into this state by any other person, firm, or corporation, without first obtaining the written permission of the secretary of the Department of Wildlife and Fisheries, any of the following species of fish: freshwater electric eel (*Electrophorus* sp.); rudd (*Scardinius erythrophthalmus*); all members of the families *Synbranchidae* (Asian swamp eels); *Channidae* (snakeheads); *Clariidae* (walking catfishes); *Trichomycteridae* (pencil catfishes); all species of tilapia [*Sarotherodon nigripinnis* is a species of tilapia], [...]”

Sarotherodon nigripinnis falls within Group IV of New Mexico’s Department of Game and Fish Director’s Species Importation List (New Mexico Department of Game and Fish 2010). “The importation of these species [Group IV] are prohibited for the general public but may be allowed for, scientific study, department approved restoration and recovery plans, zoological display, temporary events/entertainment, use as service animal or by a qualified expert.”

From State of Nevada (2018):

“Except as otherwise provided in this section and NAC 504.486, the importation, transportation or possession of the following species of live wildlife or hybrids thereof, including viable embryos or gametes, is prohibited: [...] All species in the genera *Tilapia* and *Sarotherodon*”

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 *Sarotherodon* are listed as prohibited in Texas (Texas Parks and Wildlife 2020).

From Utah Office of Administrative Rules (2019):

“All species of fish listed in Subsections (2) through (30) are classified as prohibited for collection, importation and possession, [...] (30) Tilapia, (Tilapia and Sarotherodon) (All species) family Cichlidae.”

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 *Sarotherodon* 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 *Sarotherodon nigripinnis* in the wild in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2018), *Sarotherodon nigripinnis* (Guichenot 1861) is the valid name for this species. It was originally described as *Tilapia nigripinnis* and has been previously known as a synonym of *Sarotherodon melanotheron*.

From Bailly (2018):

Kingdom Animalia
Phylum Chordata
Subphylum Vertebrata
Superclass Gnathostomata
Class Actinopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Subfamily Pseudocrenilabrinae
Genus *Sarotherodon*
Species *Sarotherodon nigripinnis* (Guichenot 1861)

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 18.0 cm SL male/unsexed; [Trewavas 1983].”

Environment

From Froese and Pauly (2018):

“Freshwater; brackish; demersal.”

Climate

From Froese and Pauly (2018):

“Tropical; 3°N - 7°S”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Africa: coastal zone of Gabon and Equatorial Guinea (*Sarotherodon nigripinnis nigripinnis*) and the lower Kouilou in Republic of Congo to the lower Congo River estuary in Democratic Republic of Congo (*Sarotherodon nigripinnis dolloi*).”

Introduced

No records of *Sarotherodon nigripinnis* introductions were found.

Means of Introduction Outside the United States

No records of *Sarotherodon nigripinnis* introductions were found.

Short Description

From Froese and Pauly (2018):

“Dorsal spines (total): 14 - 17; Dorsal soft rays (total): 9-12; Anal spines: 3; Anal soft rays: 8 - 9. Diagnosis: 12-17 rakers on lower limb of first arch; 27-30 scales in lateral line; generally with black spots and blotches on head and body [Stiassny et al. 2008].”

Biology

From Froese and Pauly (2018):

“Estuarine species, preferring brackish water but found in freshwater during low tide [Roman 1971]. Male mouthbrooder [Loubens 1964]. No marked sexual dichromatism when sexually active; forms temporary pair-bonds during reproduction [Stiassny et al. 2008].”

“Males carry eggs [Loubens 1964]. Males of *Sarotherodon nigripinnis dolloi* construct nest and incubate eggs [Thys van den Audenaerde 1964]. Incubatory period lasts about 14 days; female retrieves newly released young in mouth [Aronson 1949]. Juveniles become independent [sic] after about 4 weeks [Thys van den Audenaerde 1964].”

Human Uses

No information on human uses of *Sarotherodon nigripinnis* was found.

Diseases

No records of diseases of *Sarotherodon nigripinnis* were found. **No records of OIE-reportable diseases (OIE 2021) were found for *S. nigripinnis*.**

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No records of *Sarotherodon nigripinnis* introductions were found; therefore, there is no information on impacts of introductions.

4 History of Invasiveness

There are no known nonnative populations of *Sarotherodon nigripinnis*.

5 Global Distribution



Figure 1. Known global distribution of *Sarotherodon nigripinnis*. Locations are in Gabon, Equatorial Guinea, Republic of Congo, and Democratic Republic of Congo. Map from GBIF Secretariat (2018).

6 Distribution Within the United States

No records of *Sarotherodon nigripinnis* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Sarotherodon nigripinnis* was low for nearly all of the contiguous United States. Southern Florida and a few small areas of the Gulf coast had medium matches; there were no areas of high match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for *Sarotherodon nigripinnis* in the contiguous United States was 0.001, low (scores from 0.000 and 0.005, inclusive, are classified as low). The only State with a medium individual climate score is Florida; all other States had a low score.



Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in central Africa selected as source locations (red; Gabon, Equatorial Guinea, Republic of Congo, and Democratic Republic of Congo) and non-source locations (gray) for *Sarotherodon nigripinnis* 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.

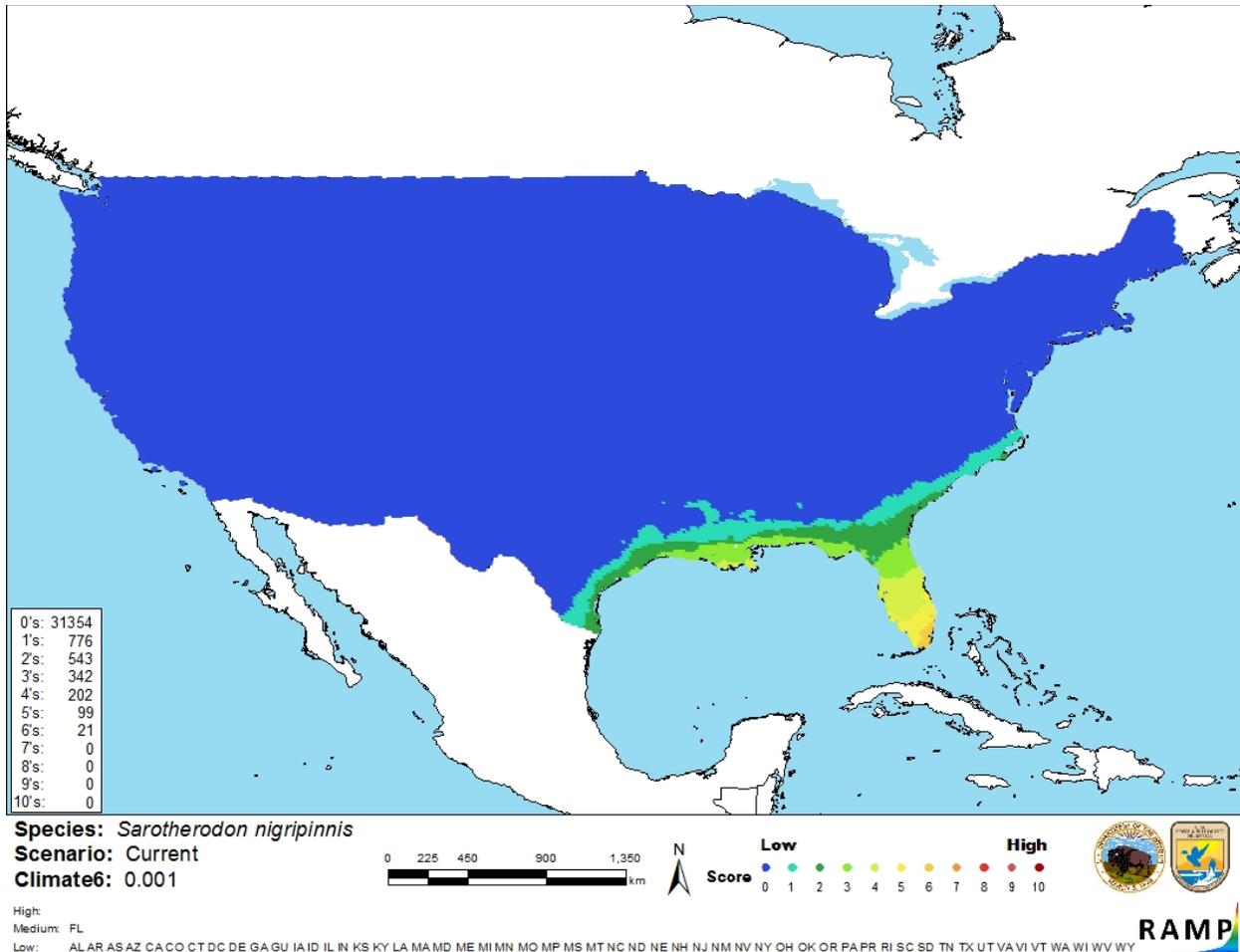


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Sarotherodon nigripinnis* in the contiguous United States based on source locations reported from GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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. There is a lack of general information about *Sarotherodon nigripinnis*. There are no records of introductions found and, therefore, no impacts available to evaluate.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Sarotherodon nigripinnis is a tilapia native to the central region of Africa. The history of invasiveness is no known nonnative population. This species is not found in trade. The overall climate match for the contiguous United States was low. There were a few areas of medium match in southern Florida and the Gulf Coast and no areas of high match. The certainty of assessment is low. While the distribution of the species seems to be well documented, there is little other information available regarding their invasiveness and their impacts. 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:** *Sarotherodon nigripinnis* is regulated in multiple States.
- **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.

Bailly N. 2018. *Sarotherodon nigripinnis*. In World Register of Marine Species. Available: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=405368> (September 2018).

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

Fricke R, Eschmeyer WN, 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> (September 2018).

Froese R, Pauly D, editors. 2018. *Sarotherodon nigripinnis* (Guichenot 1861). FishBase. Available: <https://www.fishbase.de/summary/Sarotherodon-nigripinnis.html> (September 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Sarotherodon nigripinnis* (Guichenot 1861). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2419354> (September 2018).

Louisiana State Legislature. 2019. Exotic fish; importation, sale, and possession of certain exotic species prohibited; permit required; penalty. Louisiana Revised Statutes, Title 56, Section 319.

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/Directors-Species-Importation-List-08_03_2010.pdf (November 2020).

[OIE] World Organisation for Animal Health. 2021. OIE-listed diseases, infections and infestations in force in 2021. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2021/> (February 2021).

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.

State of Nevada. 2018. Restrictions on importation, transportation and possession of certain species. Nevada Administrative Code, Chapter 503, Section 110.

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).

Utah Office of Administrative Rules. 2019. Classification and specific rules for fish. Utah Administrative Code, Rule R657-3-23.

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.

Aronson LR. 1949. An analysis of reproductive behavior in the mouthbreeding cichlid fish, *Tilapia macrocephala* (Bleeker). *Zoologica* 34:133–158.

- Loubens G. 1964. Travaux en vue du développement de la pêche dans le bassin inférieur de l'Ogooué. Centre Techn. Forestier Trop. 27:151.
- Roman B. 1971. Peces de Rio Muni, Guinea Ecuatorial (Agua dulce y salobre). Barcelona, Spain.
- Stiassny MLJ, Lamboj A, De Weirtd D, Teugels GG. 2008. The fresh and brackish water fishes of Lower Guinea, West-Central Africa. Paris: IRD Editions.
- Thys van den Audenaerde DFE. 1964. Révision systématique des espèces congolaises du genre *Tilapia* (Pisces, Cichlidae). Annales du Musée Royal de l'Afrique Centrale: Sciences Zoologiques 124:155.
- Trewavas E. 1983. Tilapiine fishes of the genera *Sarotherodon*, *Oreochromis* and *Danakilia*. British Museum (Natural History).