

# ***Oreochromis schwebischi* (a tilapia, no common name)**

## **Ecological Risk Screening Summary**

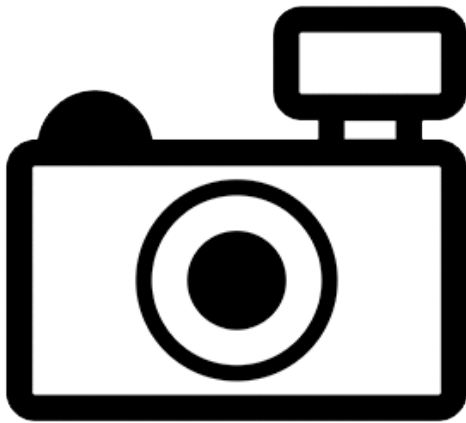
U.S. Fish & Wildlife Service, March 2012

Revised, June 2018

Web Version, 5/1/2020

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

## **1 Native Range and Status in the United States**

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### **Native Range**

From Froese and Pauly (2018):

“Africa: present in the basins of the Ogooué, Nyanga, Kouilou-Niari and Chiloango, Gabon to Democratic Republic of the Congo [Trewavas 1983; Stiassny et al. 2008]. Reports from Gambia and Senegal [Samb B, 1990, personal communication, Centre de Recherches Océanographiques de Dakar-Thiaroye, Dakar, Sénégal] and Guinea [Hureau 1991] are doubtful and need confirmation [Trewavas 1983; Stiassny et al. 2008].”

From da Costa and Moelants (2010):

“This species is known predominantly from coastal rivers from Gabon to Angola.”

“Central Africa: *Oreochromis schwebischi* is mainly known from coastal rivers from Gabon to the Democratic Republic of the Congo, including [sic] This species is known from upper and

lower Ogowe and its tributary the Ivindo, as well as the Chiloango system, Niari-kouilou, River Dja, Majumbe and Lukula.”

“Southern Africa: In Angola, it occurs in the Bengo River (and Lake Panguila), Kwanza River and Chiloango River systems.”

From Stiassny et al. (2008):

“Distribution: a Lower Guinea [forest biogeographic region, not referring to the country of Guinea] endemic, found in the Ogowe and Ivindo Rivers [Gabon], Nyanga [Gabon, Republic of the Congo], Kouilou-Niari [Republic of the Congo] and Chiloango [Republic of the Congo, Democratic Republic of the Congo, Angola].”

## Status in the United States

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

The Florida Fish and Wildlife Conservation Commission has listed the tilapia *O. schwebischi* 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 schwebischi* occurrences in the United States were found.

## Remarks

No additional remarks.

# 2 Biology and Ecology

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## Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Oreochromis schwebischi* (Sauvage 1884) 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 schwebischi* (Sauvage, 1884)”

## **Size, Weight, and Age Range**

From Froese and Pauly (2018):

“Max length : 30.0 cm SL male/unsexed; [Trewavas 1983]”

## **Environment**

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

From Culter et al. (2016):

“Many species were present both in large and small streams, although *Oreochromis schwebischi* was only collected in large rivers.”

## **Climate**

From Froese and Pauly (2018):

“Tropical”

## **Distribution Outside the United States**

Native

From Froese and Pauly (2018):

“Africa: present in the basins of the Ogooué, Nyanga, Kouilou-Niari and Chiloango, Gabon to Democratic Republic of the Congo [Trewavas 1983; Stiassny et al. 2008]. Reports from Gambia and Senegal [Samb B, 1990, personal communication] and Guinea [Hureau 1991] are doubtful and need confirmation [Trewavas 1983; Stiassny et al. 2008].”

From da Costa and Moelants (2010):

“This species is known predominantly from coastal rivers from Gabon to Angola.”

“Central Africa: *Oreochromis schwebischi* is mainly known from coastal rivers from Gabon to the Democratic Republic of the Congo, including [sic] This species is known from upper and lower Ogowe and its tributary the Ivindo, as well as the Chiloango system, Niari-kouilou, River Dja, Majumbe and Lukula.”

“Southern Africa: In Angola, it occurs in the Bengo River (and Lake Panguila), Kwanza River and Chiloango River systems.”

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## Introduced

No records of *Oreochromis schwebischi* introductions were found.

## Means of Introduction Outside the United States

No records of *Oreochromis schwebischi* introductions were found.

## Short Description

From Froese and Pauly (2018):

“Dorsal spines (total): 14 - 16; Dorsal soft rays (total): 12-13; Anal spines: 3; Anal soft rays: 9 - 11; Vertebrae: 27 - 29. Diagnosis: scales of cheek in 2 or usually 3 horizontal rows; in mature males preorbital bone and jaws enlarged; upper profile of head often concave; outermost teeth bicuspid, and inner tricuspid in immature fishes and females, all becoming unicuspid in males; male genital papilla spade-shaped; margins of dorsal and caudal fins red in mature males [Trewavas 1983].”

From Stiassny et al. (2008):

“Colour: base body colour pale or whitish, light grey dorsally, preorbital olive-green. Lips paler than snout. Flank scales with central blue-red spot. There are numerous, irregularly arranged black spots on opercle and occiput, concentrated around sensory canal pores. Dorsal fin greyish with a large yellowish white distal submargin becoming red marginally. Spinous dorsal with some oblique clear lines, very thin between spines, soft dorsal with many clear maculae. Caudal fin greyish with many clear maculae, sometimes aligned between rays, distal margin red. Anal fin greyish with some clear maculae between soft rays, proximally tinted red. Pelvics whitish to transparent. Juveniles tinted with green, with 6-8 darker vertical bars on the flanks. Dorsal, caudal and anal fins greenish grey, with some clear maculae between soft rays. Pelvics and pectoral fins transparent.”

“28-30 (generally 29) scales in the lateral line.”

## Biology

From Froese and Pauly (2018):

“Occasionally territorial; stomachs contained algae, mainly unicellular or in short filaments [Trewavas 1983]. Arena-spawning, exclusively maternal mouthbrooder with marked sexual dichromatism when sexually active [Stiassny et al. 2008].”

“Nests are made on sandy or loamy bottoms in water 40-80 cm deep, or more sparsely in depths of a meter or more; they are circular basins with a diameter of 115-185 cm, about 20 cm deep in the middle with a rim raised 7-8 cm above the surrounding level; spawning occurs at night, the fishes seeking deeper waters during the day to avoid high temperatures and intense illumination [Trewavas 1983]. Reproduction is seasonal, usually taking place during the dry seasons from June to September and in February; can reach maturity at a size of 15 cm; breeding behavior is similar to that of its congeners (e.g. *O. niloticus*) [Lamboj 2004].”

## Human Uses

From Froese and Pauly (2018):

“Aquaculture: likely future use”

From da Costa and Moelants (2010):

“This species is harvested for human consumption.”

## Diseases

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

## Threat to Humans

From Froese and Pauly (2018):

“Harmless”

## 3 Impacts of Introductions

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No records of *Oreochromis schwebischi* introductions were found.

*O. schwebischi* is listed as a prohibited species in Florida (FFWCC 2018).

## 4 History of Invasiveness

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No records of *Oreochromis schwebischi* introductions were found, therefore the history of invasiveness is “no known nonnative population”.

## 5 Global Distribution

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**Figure 1.** Known global distribution of *Oreochromis schwebischi* reported from Gabon, Republic of the Congo, Democratic Republic of the Congo, and Angola. Map from GBIF Secretariat (2018). The source location in Durban Bay, South Africa was not used for the climate match because this location could not be verified and was not believed to be an established population.

## 6 Distribution Within the United States

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

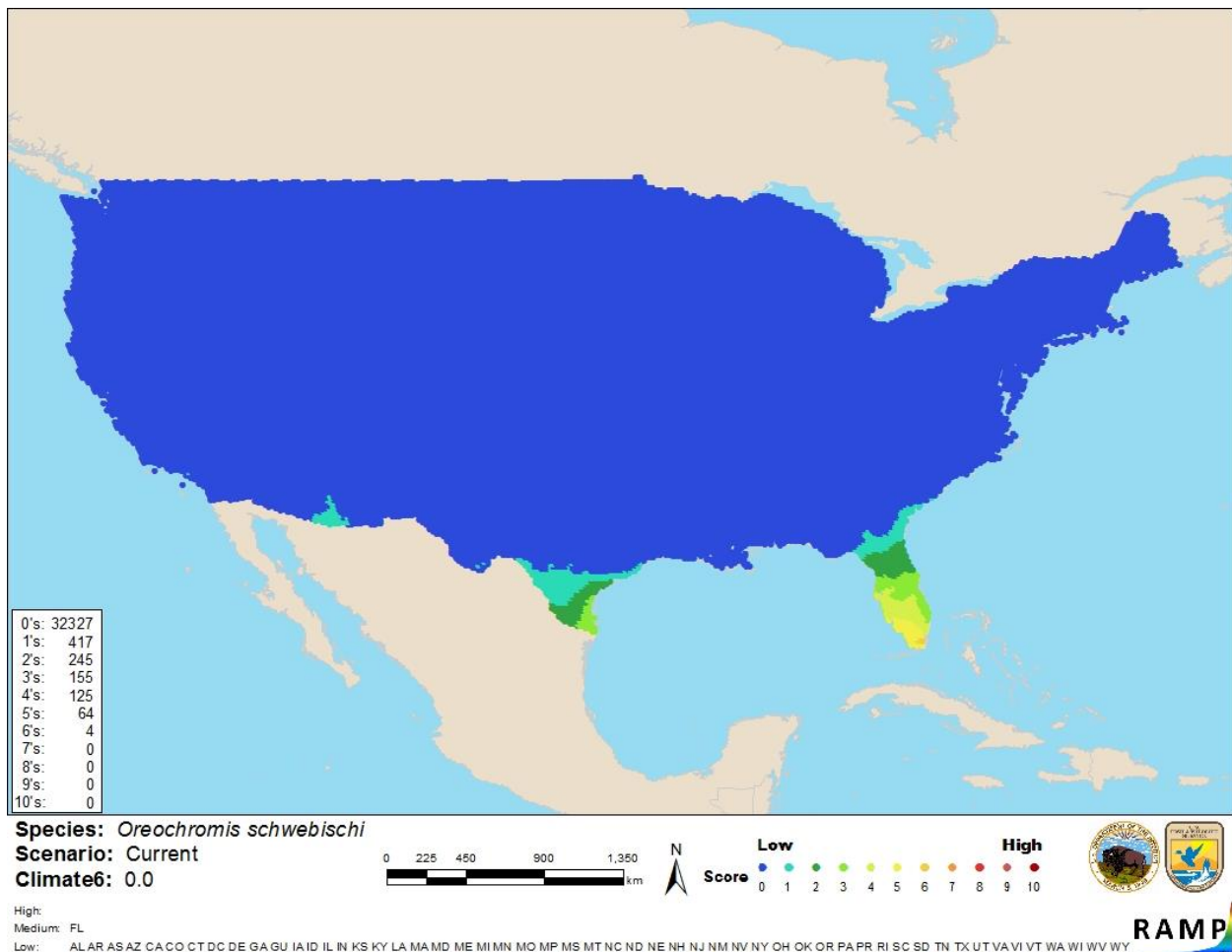
## 7 Climate Matching

### Summary of Climate Matching Analysis

The climate match for *Oreochromis schwebischi* was low for most of the contiguous United States with small patches of medium match in southern peninsula Florida. 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). Florida was the only State with a medium individual climate score; all other States had a low climate score.



**Figure 2.** RAMP (Sanders et al. 2018) source map showing weather stations in western Africa selected as source locations (red; Equatorial Guinea, Gabon, Republic of the Congo, Democratic Republic of the Congo, Angola) and non-source locations (gray) for *Oreochromis schwebischi* 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 schwebischi* 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:<br>(Count of target points with climate scores 6-10)/<br>(Count of all target points) | Overall<br>Climate Match<br>Category |
|--------------------------------------------------------------------------------------------------|--------------------------------------|
| $0.000 \leq X \leq 0.005$                                                                        | Low                                  |
| $0.005 < X < 0.103$                                                                              | Medium                               |
| $\geq 0.103$                                                                                     | High                                 |

## 8 Certainty of Assessment

The certainty of this assessment is low. There is some biological and ecological information available. The distribution of the species is well described. There were no records of introduction found and therefore no information on impacts of introduction.

## 9 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Oreochromis schwebischi* is a tilapia native to Gabon, Republic of the Congo, Democratic Republic of the Congo, and Angola, Africa where it is used for human consumption. The history of invasiveness is no known nonnative population. It has not been reported as introduced or established outside of its native range. *O. schwebischi* is listed as a prohibited species in Florida. The climate match analysis resulted in a low match for the contiguous United States; only southern peninsular Florida had a medium match. 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): No Known Nonnative Population**
- **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

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**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.**

- Culter J, Apse C, Cavelier T, Fermon Y, JMve-Beh JH, Paiz MC, Sidlauskas B, Sullivan JP. 2016. Fish biodiversity assessment of the rapids of Mboundou Badouma and Doume Ramsar surrounding areas in Gabon. Arlington, Virginia: The Nature Conservancy.
- da Costa L, Moelants T. 2010. *Oreochromis schwebischi*. The IUCN Red List of Threatened Species 2010: e.T182095A7796273. Available: <http://www.iucnredlist.org/details/182095/0> (June 2018).
- 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. Tallahassee, Florida: Florida Fish and Wildlife Conservation Commission. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/> (June 2018).
- Froese R, Pauly D, editors. 2018. *Oreochromis schwebischi* Sauvage, 1884. FishBase. Available: <http://www.fishbase.se/summary/Oreochromis-schwebischi.html> (June 2018).

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[ITIS] Integrated Taxonomic Information System. 2018. *Oreochromis schwebischi* (Sauvage, 1884). Reston, Virginia: Integrated Taxonomic Information System. Available: [https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=648856](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=648856) (June 2018).

[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-2019/> (May 2020).

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

Stiassny, MLJ, Lamboj A, De Weirdt D, Teugels GG. 2008. Cichlidae. Pages 269–403 in Stiassny MLJ, Teugels GG, Hopkins CD, editors. The fresh and brackish water fishes of Lower Guinea, West-Central Africa. Volume 2. Coll. faune et flore tropicales 42. Paris: Institut de recherche de développement, Muséum national d'histoire naturelle; Tervuren, Belgium: Musée royal de l'Afrique Central.

## 11 Literature Cited in Quoted Material

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**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.**

Hureau JC. 1991. La base de données GICIM: Gestion informatisée des collections ichthyologiques du Muséum. Pages 225–227 in Atlas Préliminaire des Poissons d'Eau Douce de France. Paris: Conseil Supérieur de la Pêche, Ministère de l'Environnement, CEMAGREF et Muséum national d'Histoire naturelle.

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

Sauvage HE. 1884. Note sur des poissons de Franceville, Haute Ogooué. Bulletin de la Société Zoologique de France 9:193–198.

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