GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Oreochromis mossambicus***

Oreochromis mossambicus 简体中文 正體中文

System: Freshwater

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Perciformes	Cichlidae

Common name

Mozambikskaya tilapiya (Russian, Russian Federation), nkobue (Sena, Mozambique), mojarra (Spanish, Mexico), tilapia mozámbica (Spanish, Mexico), tilapia del Mozambique (Spanish), Mozambique mouth-breeder (English), Mozambique mouthbrooder (English), Mozambique tilapia (English), tilapia mossambica (English, Dominican Republic), kawasuzume (Japanese), blou kurper (Afrikaans, South Africa), fai chau chak ue (Cantonese, Hong Kong), tilapia (English, Bangladesh), common tilapia (English, Fiji), Java tilapia (English, Fiji), kurper bream (English, Hong Kong), Mozambique cichlid (English, India), malea (Fijian), tilapia du Mozambique (French), mujair (Javanese, Indonesia), trey tilapia khmao (Khmer, Cambodia), wu-kuo yu (Mandarin, Taiwan), mphende (Nyanja, Malawi), weißkehlbarsch (German), mosambik-maulbrüter (German)

Synonym

Tilapia mossambica , (Peters, 1852)
Sarotherodon mossambicus , (Peters, 1852)
Chromis dumerilii , Steindachner, 1864
Chromis vorax , Pfeffer, 1893
Chromis natalensis , Weber, 1897
Tilapia arnoldi , Gilchrist & Thompson, 1917

Similar species

Oreochromis

Summary

Oreochromis mossambicus (Mozambique tilapia) has spread worldwide through introductions for aquaculture. Established populations of Oreochromis mossambicus in the wild are as a result of intentional release or escapes from fish farms. Oreochromis mossambicus is omnivorous and feeds on almost anything, from algae to insects.

view this species on IUCN Red List

Species Description

28-31 vertebrae; dorsal spines XV-XVII; total dorsal rays 26-29; 30-32 lateral line scales; anal spines III, lower outer gill rakers 14-20; fine pharyngeal teeth; breeding males black (not in some cultured strains) with white lower parts on head; red dorsal and caudal fin margins; remnants of striped and barred pattern often visible in females, juveniles and non-breeding makes, as a series of mid-lateral and dorsal blotches; jaws of adult males greatly enlarged, concave dorsal head profile; male genital papilla simple or slightly notched; caudal fin not densely scaled.

Notes
Mozambique tilapia (*Oreochromis mossambicus*) are easy to keep and breed in captivity.
The so-called red tilapia in aquaculture is a hybrid between *O. mossambicus* and either *O. niloticus* or *O. hornorum*. *O. mossambicus* is the research subject of many physiological and biochemical studies in Asia.
The mouthbrooding habit of this species allows it to nurture and carry its young long distances to invade habitats far from the original site of introduction (Costa-Pierce, 2003).
Outside of Asia exotic tilapia fishes were not imported directly from Africa, but arrived as transits from third or fourth party sources. Founder populations may be morphologically and meristically distinct in Africa but are still reproductively compatible due to their recent divergence (Costa-Pierce, 2003).

Lifecycle Stages
Size and age of sexual maturity varies according to environmental conditions, with spawning in ponds at 2-3 months and 6-10cm for females and 7-13cm for males at intervals of 1- 5 months. In natural conditions sexual maturity at greater age and size.

Habitat Description
Many tilapias (*Oreochromis* spp.) can live quite happily in seawater. The fact that they have not typically invaded coral reefs is perhaps due to predation by marine fishes. (Courtenay, W., pers. comm., 2004).
Mozambique tilapia (*Oreochromis mossambicus*) is very hardy and tolerates the high salinities of atoll lagoons, such as that at Fanning Atoll (Lobel, 1980). Thought to be ideal pond fish, they readily produce stunted stocks when overcrowded, as has been observed on Pagan in the Northern Mariana Islands (Eldredge, 2000).

Reproduction
Egg-layer. Male builds spawning bowers. Up to 1775 ripe eggs in one female. Hatching after 3-5 days; fry released 10-14 days after spawning, but mouthbrooded for about another week; more than one brood per season.
Reproductive performance of tilapias is affected by salinity, which suppresses the aggression of dominant males. *O. mossambicus* can reproduce at 35 and 49 ppt (Bhujel, 2000).

Nutrition
Mozambique tilapia (*Oreochromis mossambicus*) are opportunistic feeders; juveniles are mainly omnivorous, while adults mainly feed on detritus.

General Impacts
When introduced, Mozambique tilapia (*Oreochromis mossambicus*) may be a possible threat to native species through competition for food and nest space. Juveniles have been documented to feed on other fish (de Moor *et al*. 1986). Tilapia are now generally considered to be pests. Eradication has been suggested on Tarawa and Nauru (Eldredge, 2000).
In Hawai‘i, this species is suspected to be a threat to native species such as striped mullet (*Mugil cephalus*) (Randall 1987; Devick 1991). Tilapia also have been considered a major factor in the decline of the desert pupfish (*Cyprinodon macularius*) in the Salton Sea area (Courtenay and Robins, 1989; Swift *et al.* 1993).
Because of its presence in Dade County, Florida, Courtenay (1989) indicated that the Mozambique tilapia may eventually enter Everglades National Park.

Management Info
Mozambique tilapia (*Oreochromis mossambicus*) are hardy and can easily establish in natural waters near aquaculture ponds or cages, from which they may escape during loading-harvesting or *via* containment failures. Mozambique tilapia are particularly hardy, resistant to wide varieties of water salinity oxygen and pollution levels, and can migrate long distances. They are difficult to catch by angling. They occupy a wide range of habitats, and reproduce rapidly and successfully. Removal from natural water resources where they have established may be impossible. The most effective management is complete isolation of individuals from natural waters to prevent introductions. Established populations may require intensive fishing to prevent overpopulations from affecting native populations (Jeffrey McCrary pers.comm May 2005).
Preventative measures: The use of potentially invasive alien species for aquaculture and their accidental release/or escape can have negative impacts on native biodiversity and ecosystems. Hewitt *et al*, (2006) Alien Species in Aquaculture: Considerations for responsible use aims to first provide decision makers and managers with information on the existing international and regional regulations that address the use of alien species in aquaculture, either directly or indirectly; and three examples of national responses to this issue (Australia, New Zealand and Chile). The publication also provides recommendations for a 'simple' set of guidelines and principles for developing countries that can be applied at a regional or domestic level for the responsible management of Alien Species use in aquaculture development. These guidelines focus primarily on marine systems, however may equally be applied to freshwater.
Copp *et al*, (2005) Risk identification and assessment of non-native freshwater fishes presents a conceptual risk assessment approach for freshwater fish species that addresses the first two elements (hazard identification, hazard assessment) of the UK environmental risk strategy. The paper presents a few worked examples of assessments on species to facilitate discussion. The electronic Decision-support tools- Invasive-species identification tool kits that includes a freshwater and marine fish invasives scoring kit are made available on the Cefas (Centre for Environment, Fisheries & Aquaculture Science) page for free download (subject to Crown Copyright (2007-2008)).

Pathway
Mozambique tilapia (*Oreochromis mossambicus*) have been introduced to many locations mainly for aquaculture. Mozambique tilapia has been directly introduced as a fishery resource by governmental agencies and individual anglers into natural waters th

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Pubblication date: 2006-06-22

ALIEN RANGE

[1] ALGERIA
[1] ANTIGUA AND BARBUDA
[44] AUSTRALIA
[1] BANGLADESH
[1] BENIN
[1] BRAZIL
[1] CAMBODIA
[1] COLOMBIA
[1] COOK ISLANDS
[1] CUBA
[1] AMERICAN SAMOA
[1] ARGENTINA
[3] BAHAMAS
[1] BARBADOS
[1] BOLIVIA
[1] BURUNDI
[1] CHINA
[1] CONGO
[1] COSTA RICA
[1] CZECH REPUBLIC

[1] DOMINICA
[1] ECUADOR
[1] EL SALVADOR
[1] FRENCH POLYNESIA
[1] GUADELOUPE
[1] GUATEMALA
[1] HAITI
[1] HONG KONG
[3] INDONESIA
[1] JAMAICA
[1] JORDAN
[2] KIRIBATI
[1] MADAGASCAR
[1] MALDIVES
[1] MARTINIQUE
[1] MICRONESIA, FEDERATED STATES OF
[1] NAURU
[1] NEW CALEDONIA
[1] NIUE
[1] PAKISTAN
[1] PANAMA
[1] PERU
[1] PUERTO RICO
[2] RUSSIAN FEDERATION
[1] SAMOA
[1] SEYCHELLES
[2] SOLOMON ISLANDS
[9] SRI LANKA
[1] TAIWAN
[1] TONGA
[1] TUNISIA
[1] UGANDA
[41] UNITED STATES
[2] VENEZUELA
[1] WALLIS AND FUTUNA
[1] DOMINICAN REPUBLIC
[1] EGYPT
[2] FIJI
[1] GRENADA
[1] GUAM
[1] GUYANA
[1] HONDURAS
[4] INDIA
[1] ISRAEL
[1] JAPAN
[1] KENYA
[1] KOREA, REPUBLIC OF
[1] MALAYSIA
[1] MALTA
[3] MEXICO
[1] NAMIBIA
[1] NEPAL
[2] NICARAGUA
[2] NORTHERN MARIANA ISLANDS
[1] PALAU
[1] PAPUA NEW GUINEA
[1] PHILIPPINES
[1] REUNION
[1] SAINT LUCIA
[1] SAUDI ARABIA
[1] SINGAPORE
[3] SOUTH AFRICA
[1] SURINAME
[1] THAILAND
[1] TRINIDAD AND TOBAGO
[1] TUVALU
[1] UNITED KINGDOM
[2] VANUATU
[2] VIET NAM

Red List assessed species 21: CR = 2; EN = 9; VU = 7; LC = 3;

Barbus andrewi **EN**
Crossocheilus periyarensis **EN**
Etroplus suratensis **LC**
Garra menoni **VU**
Horadandia atukorali **LC**
Hypselobarbus periyarensis **EN**
Mesonoemacheilus pambarensis **VU**
Nemacheilus periyarensis **VU**
Rohtee ogilbii **LC**
Tor khudree **EN**
Travancoria jonesi **EN**
Chirostoma bartoni **VU**
Devario fraseri **VU**
Garra ghorensis **CR**
Garra periyarensis **VU**
Hypselobarbus curmuca **EN**
Lepidopygopsis typus **EN**
Nemacheilus menoni **VU**
Puntius chalakkudiensis **EN**
Tilapia guinasana **CR**
Travancoria elongata **EN**

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Summary: The electronic tool kits made available on the Cefas page for free download are Crown Copyright (2007-2008). As such, these are freeware and may be freely distributed provided this notice is retained. No warranty, expressed or implied, is made and users should satisfy themselves as to the applicability of the results in any given circumstance. Toolkits available include 1) FISK- Freshwater Fish Invasiveness Scoring Kit (English and Spanish language version); 2) MFISK- Marine Fish Invasiveness Scoring Kit; 3) MI-ISK- Marine invertebrate Invasiveness Scoring Kit; 4) FI-ISK- Freshwater Invertebrate Invasiveness Scoring Kit and AmphISK- Amphibian Invasiveness Scoring Kit. These tool kits were developed by Cefas, with new VisualBasic and computational programming by Lorenzo Vilizzi, David Cooper, Andy South and Gordon H. Copp, based on VisualBasic code in the original Weed Risk Assessment (WRA) tool kit of P.C. Pheloung, P.A. Williams & S.R. Halloy (1999).
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Invasive species - fish is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Peces [Accessed 30 July 2008]
Spanish:
La lista de especies del Sistema de informaci□n sobre especies invasoras de m□xico cuenta actualmente con informaci□n aceca de nombre cient□fico, familia, grupo y nombre com□n, as□ como h□bitat, estado de la invasi□n en M□xico, rutas de introducci□n y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la p□gina de alertas. Es importante resaltar que estas listas se encuentran en constante proceso de actualizaci□n, por favor consulte la portada (http://www.conabio.gob.mx/invasoras/index.php/Portada), en la secci□n novedades, para conocer los cambios.
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Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.
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Summary: Information on the commercial production of tilapia in Venezuela.
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