GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Cichla ocellaris***

Cichla ocellaris 正體中文

System: Freshwater

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Perciformes	Cichlidae

Common name

tukunali (Djuka), sargento (Spanish), isokirjoahven (Finnish), isokikla (Finnish), tucunaré açu (Portuguese), kounanni (French Creole), eyespot cichlid (English), peacock cichlid (English), tucunare comun (English), butterfly peacock bass (English), pavon (Spanish), peacock bass (English), tucunare (Portuguese), tuc (English), malisamba (Galibi), Grüner Augenfleck-Kammbarsch (German), matawalé (Wayana), toukounaré (French Creole), lukanani (Swedish), aborrecichlide (Danish), kunan (Palikur), toekoenari (Saramaccan), aboné (Djuka), toukounalé (Oyampi)

Synonym

Acharnes speciosus
Cichla argus
Cichla atabapensis
Crenicichla orinocensis
Cychla argus
Cychla trifasciata

Similar species

Summary

Cichla ocellaris is a piscivorus fish that has been introduced for sport fishing. Studies have concluded that where introduced this species predates on native species, competes for resources with others, and causing a cascading effect throughout the entire trophic food chain, but there are also contradictory studies that attribute increases in native fish populations to the introduction of *C. ocellaris*.

view this species on IUCN Red List

Species Description

Cichla ocellaris have a sloping forehead and elongate bodies that typically reach 50-60cm in length (91cm is the current record) with a deeply notched dorsal fin. Males are larger than females. Their mouth is large, the lower jaw projects beyond the upper jaw. They have a characteristic large black spot encircled by a silver coloured halo on their caudal fin. Their colouration is olive-green dorsally fading to yellow-white ventrally, with three broad transverse stripes, between which are a series of dark spots. The first dorsal, upper caudal, and pectoral fins are gray or black, the anal, pelvic and the lower caudal fins are red. White spots are present on the second dorsal and the upper lobe of the caudal fin. Large adults have a yellow-orange stripe, which extends from their mouth to their caudal fin. Their iris is red (Environmental Institute of Houston, 2004; Gulf States Marine Fisheries Commission, 2005; and Mongabay Tropical Fish, 2006).

Notes

Shafland (1996) states that, \"The collective environmental effects of the planned introduction of the butterfly peacock (*C. ocellaris*) were both predicted and beneficial\" and the author also argues that some common assumptions involving exotic fishes and their negative impacts have little, if any, scientific merit, and that professional journals are \"Publishing nonverifiable opinions as if they were scientific facts\" (Shafland, 1996).

Uses
In Miami, there is an estimated $15.5 million dollar market attributed to sportfishing, of which most is contributed by anglers fishing for *C. ocellaris* and largemouth bass (*Micropterus salmoides*). The *C. ocellaris* received 56% more fishing effort than largemouth bass, and their estimated annual asset value was $6.6 million (Shaflanda and Stanforda, 1999).

Habitat Description
Cichla ocellaris occurs primarily in freshwater but can tolerate moderate salinities and brackish water. It inhabits aquatic environments ranging from rapids to quiet waters with medium depth (~5m) and rocky substrates. Through experimentation an upper salinity tolerance of 18 ppt has been reported. This species is not tolerant to cold waters and has a reported lower lethal temperature of 15.6-16°C and a higher lethal temperature of 37.9°C. Some studies have shown that some fish can survive temperatures of 13.5°C when salinity is raised to 10 ppt (Environmental Institute of Houston, 2004; FishBase, 2006; and Gulf States Marine Fisheries Commission, 2005).

Reproduction
The *Cichla ocellaris* is a biparental substrate spawner, spawning approximately 2000-3000 eggs per brood. Spawning, with rare exceptions, takes place on a flat, horizontal surface which is either bare to begin with, or cleared of algae or other vegetation during the spawning activities. The female moves forward laying a single row of eggs and the male follows exuding sperm over each row. Once the eggs have hatched, the parents transport the larvae in their mouths to one of the depression nests. Breeding pairs guard their clutch for approximately nine weeks, at which time the fry move from open waters to areas rich vegetation along banks. As is the case with most cichlids, breeding pairs are highly territorial and aggressive (FishBase, 2006; and Gulf States Marine Fisheries Commission, 2005).

Nutrition
Cichla ocellaris are piscivorus and feed during the day while remaining inactive at night. Prey is caught typically through high-speed pursuit. Fish consumed include atherinids, poecilids, characids, eleotrids and other cichlids. Spotted tilapia, *Tilapia mariae*, Mozambique tilapia, *Oreochromis mossambicus*, and bluegill, *Lepomis macrochirus* also constitute major prey items (Environmental Institute of Houston, 2004; and Gulf States Marine Fisheries Commission, 2005).

General Impacts
The introduction of *Cichla ocellaris* mainly occurs in altered environments, where the community of fishes is already in decline. The presence of these highly adapted and quickly proliferating predators causes serious damage to these communities by predation, competition, and cascade effects throughout the whole trophic chain (Gomiero and Braga, 2004). This species is a voracious piscivore capable of greatly modifying ecosystems where introduced. Some studies have reported as much as a 25% decline of forage fish from canals in which *C. ocellaris* have been introduced. There is speculation that if *C. ocellaris* continues to expand its range throughout southern Florida, faunas of less altered waters, such as those of the Everglades, could be at risk (Gulf States Marine Fisheries Commission, 2005).
However, other studies report beneficial effects of this species introudction into Florida's waterways such as attributed increases to native fish because *C. ocellaris* feeds on non-indigenous fish that have previously caused other native fish declines. Also, this species attracts recreational fishermen (Gomiero and Braga, 2004), which has accounted for a very large boon to the sport fishing industry in Florida. And some analyses and estimates reveal no major deleterious effects attributable to *C. ocellaris*, and indicate native fishes continue to exist satisfactorily with them (Shaflanda, 1999; and Shaflanda and Stanforda, 1999).

Pathway
Cichla ocellaris have been stocked by state agencies as a sport fish (Nico, 2004).

Principal source: Gulf States Marine Fisheries Commission, 2005 *Cichla ocellaris* (Schneider, 1801)
FishBase, 2006 *Cichla ocellaris* - Peacock cichlid

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[1] BELIZE
[1] DOMINICAN REPUBLIC
[1] FRANCE
[1] PANAMA
[1] PUERTO RICO
[6] UNITED STATES
[1] BOLIVIA
[1] ECUADOR
[3] GUAM
[1] PERU
[1] SINGAPORE

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Managment information
Centre for Environment, Fisheries & Aquaculture Science (CEFAS)., 2008. Decision support tools-Identifying potentially invasive non-native marine and freshwater species: fish, invertebrates, amphibians.
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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Summary: In 1993, Canada, Mexico and the United States signed the North American Agreement on Environmental Cooperation (NAAEC) as a side agreement to the North American Free Trade Agreement (NAFTA). The NAAEC established the Commission for Environmental Cooperation (CEC) to help the Parties ensure that improved economic efficiency occurred simultaneously with trinational environmental cooperation. The NAAEC highlighted biodiversity as a key area for trinational cooperation. In 2001, the CEC adopted a resolution (Council Resolution 01-03), which created the Biodiversity Conservation Working Group (BCWG), a working group of high-level policy makers from Canada, Mexico and the United States. In 2003, the BCWG produced the &#65533;Strategic Plan for North American Cooperation in the Conservation of Biodiversity.&#65533; This strategy identified responding to threats, such as invasive species, as a priority action area. In 2004, the BCWG, recognizing the importance of prevention in addressing invasive species, agreed to work together to develop the draft CEC Risk Assessment Guidelines for Aquatic Alien Invasive Species (hereafter referred to as the Guidelines). These Guidelines will serve as a tool to North American resource managers who are evaluating whether or not to introduce a non-native species into a new ecosystem. Through this collaborative process, the BCWG has begun to implement its strategy as well as address an important trade and environment issue. With increased trade comes an increase in the potential for economic growth as well as biological invasion, by working to minimize the potential adverse impacts from trade, the CEC Parties are working to maximize the gains from trade while minimizing the environmental costs.
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General information

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Summary: FishBase is a global information system with all you ever wanted to know about fishes . FishBase on the web contains practically all fish species known to science. FishBase was developed at the WorldFish Center in collaboration with the Food and Agriculture Organization of the United Nations (FAO) and many other partners, and with support from the European Commission (EC). Since 2001 FishBase is supported by a consortium of seven research institutions. You can search on Search FishBase
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