Pylodictis olivaris 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Siluriformes	Ictaluridae

Common name mud cat (English), shovelhead cat (English), opelousas (English), yellow cat (English)

Synonym
Opladelus olivaris
Silurus olivaris
Hopladelus olivaris
Pelodichthys olivaris
Leptops olivaris

Similar species

Summary Pylodictis olivaris is one of the largest members of the catfish family and its introduction is the most biologically harmful of all fish introductions in North America as it predates heavily on native fish. Native to the warm water streams and rivers of the Mississippi River basin, it has been introduced east of the Appalachian Mountains and into several western states. P. olivaris prefers the slow moving water of large rivers and lakes and can be spread by unintentional stock contamination of channel catfish shipments, but in most cases, it has been intentionally stocked.

view this species on IUCN Red List

Species Description
FWC (UNDATED) describes *P. olivaris* as having a flattened head, tiny eyes, a squarish tail and a protruding lower jaw that distinguishes *P. olivaris* from other catfish and contributes to it being placed in a genus of its own. This protuding lower jaw is an important characteristic when identifying the species (PFBC, 2003). They are yellow-brown and usually mottled above, with a creamy-white or yellow belly. *P. olivaris* can achieve weights of over 45kg but most weigh 1 to 7kg (FWC, UNDATED).

Uses
FWC (UNDATED) indicates that *P. olivaris* is highly regarded as a food fish when taken from clean water.

Habitat Description
According to PFBC (2003), *P. olivaris* is found in large rivers, streams, and lakes, usually over hard bottoms. They prefer deep, sluggish pools, with logs and other submerged debris that can be used as cover. Young *P. olivaris* live in rocky or sandy runs in the river and in riffles.

Reproduction
According to FWC (UNDATED), spawning occurs in late spring when water temperatures reach 21 to 27 degrees celsius. One or both parents excavate a nest that is usually made in a natural cavity or near a large submerged object. Females lay a golden-yellow mass of up to 100,000 eggs. Males guard the nest and agitate the eggs to keep them clean and aerated. The young remain in a school near the nest for several days after hatching, but soon disperse.

Nutrition
FWC (UNDATED) states that *P. olivaris* is a predatory fish and will consume bass, bream, shad, crayfish and often feed on other catfish. The young rely more extensively on aquatic insects and crayfish than do the adults. They rarely eat dead or decaying matter.

General Impacts
Many feeding studies have found that *Pylodictis olivaris* prey heavily on sunfish (*Lepomis* spp.). One study also found that they reduced the number of common carp (*Cyprinus carpio*) and bullheads (*Ameiurus* spp.). However, the introduced population in the Flint River system was found to prey largely on crayfish, and it was also found that young-of-the-year *P. olivaris* fed on darters (*Etheostoma* spp.) clupeids, catostomids, ictalurids, and centrarchids. A severe decline in native fish species, particularly native bullhead species, was observed in the Cape Fear River within 15 years of the first *P. olivaris* introduction.
One ichthyologist believes that of all fish introductions in North America, introductions of flathead catfish, are possibly the most biologically harmful (Carter Gilbert., pers. comm., in Fuller 2000).

Management Info
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)).
Chemical: According to Sea Grant (2003), recent studies in Pennsylvania's Delaware Valley have been investigating *P. olivaris* physical and chemical sensitivities in hopes of finding a method of targeted removal, establishing selective barriers, or disrupting the spawning of the exotic species without harming native species. Researchers have discovered that *P. olivaris* exhibits a unique chemical sensitivity to the amino acid l-glutamine. After testing electrical responses of taste buds (or olfactory neurons) located on the skin and whiskers of the fish to 10 amino acids, it was determined that *P. olivaris*, unlike native channel catfish (*Ictalurus punctatus*), was most sensitive to l-glutamine.

Pathway
The flathead catfish has been intentionally stocked in most cases (Fuller, 2000).

Principal source: FWC (Florida Fish and Wildlife Conservation Commission) Undated Catfish.
Fuller, 2000. *Pylodictis olivaris* Nonindigenous Aquatic Species Database, Gainesville, FL.

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

Review: Rob Weller. Senior Fisheries Biologist Georgia Department of Natural Resources Wildlife Resources Division. USA.

Pubblication date: 2005-01-24

ALIEN RANGE

[1] CANADA

[22] UNITED STATES

Red List assessed species 2: CR = 1; LC = 1;

Lepomis auritus **LC**

Xyrauchen texanus **CR**

BIBLIOGRAPHY

19 references found for **Pylodictis olivaris**

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).

The decision support tools are available from:

http://cefas.defra.gov.uk/our-science/ecosystems-and-biodiversity/non-native-species/decision-support-tools.aspx [Accessed 13 October 2011]

The guidance document is available from http://www.cefas.co.uk/media/118009/fisk_guide_v2.pdf [Accessed 13 January 2009].

Copp, G.H., Garthwaite, R. and Gozlan, R.E., 2005. Risk identification and assessment of non-native freshwater fishes: concepts and perspectives on protocols for the UK. Sci. Ser. Tech Rep., Cefas Lowestoft, 129: 32pp.

Summary: The discussion paper 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.

Available from: http://www.cefas.co.uk/publications/techrep/tech129.pdf [Accessed 1 September 2005]

Mendoza, R.E.; Cudmore, B.; Orr, R.; Balderas, S.C.; Courtenay, W.R.; Osorio, P.K.; Mandrak, N.; Torres, P.A.; Damian, M.A.; Gallardo, C.E.; Sanguines, A.G.; Greene, G.; Lee, D.; Orbe-Mendoza, A.; Martinez, C.R.; and Arana, O.S. 2009. Trinational Risk Assessment Guidelines for Aquatic Alien Invasive Species. Commission for Environmental Cooperation. 393, rue St-Jacques Ouest, Bureau 200, Montr&#65533;al (Qu&#65533;bec), Canada. ISBN 978-2-923358-48-1.

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.

Available from: English version: http://www.cec.org/Storage/62/5516_07-64-CEC%20invasives%20risk%20guidelines-full-report_en.pdf [Accessed 15 June 2010]

French version: http://www.cec.org/Storage/62/5517_07-64-CEC%20invasives%20risk%20guidelines-full-report_fr.pdf [Accessed 15 June 2010]

Spanish version: http://www.cec.org/Storage/62/5518_07-64-CEC%20invasives%20risk%20guidelines-full-report_es.pdf [Accessed 15 June 2010].

Odenkirk, J, Steinkoenig, E, and F. Spuchesi. 1999. Response of a brown bullhead population to flathead catfish introduction in a small Virginia impoundment. Pages 475-478 in E.R. Irwin, W.A Hubert, C.F. Rabeni, H.L. Schramm, Jr., and T. Coon, editors, Catfish 2000: proceedings of the international ictalurid symposium. American Fisheries Society, Symposium 24, Bethesda, Maryland.

Summary: Good descriptive study on the response of a native bullhead population to a flathead catfish introduction.

Sea Grant. 2003. *Could Flathead Catfish s Unique Chemical Sensitivity Be Used to Repel Invasive Exotic?.*

Summary: A newsletter that contain current research on various exotic species.

Available from: http://www.pserie.psu.edu/seagrant/communication/news/winter03.html [Accessed 13 August 2003].

General information

CONABIO. 2008. Sistema de informaci□n sobre especies invasoras en M□xico. Especies invasoras - Peces. Comisi□n Nacional para el Conocimiento y Uso de la Biodiversidad. Fecha de acceso.
Summary: English:
The species list sheet for the Mexican information system on invasive species currently provides information related to Scientific names, family, group and common names, as well as habitat, status of invasion in Mexico, pathways of introduction and links to other specialised websites. Some of the higher risk species already have a direct link to the alert page. It is important to notice that these lists are constantly being updated, please refer to the main page (http://www.conabio.gob.mx/invasoras/index.php/Portada), under the section Novedades for information on updates.
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.
Especies invasoras - Peces is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Peces [Accessed 30 July 2008]
Dobbins, D. A., Cailteux, R. L. and J.J. Nordhaus. 1999. Flathead catfish abundance and movement in the Appalachicola River, Florida. Pages 199-202 in E.R. Irwin, W.A Hubert, C.F. Rabeni, H.L. Schramm, Jr., and T. Coon, editors, Catfish 2000: proceedings of the international ictalurid symposium. American Fisheries Society, Symposium 24, Bethesda, Maryland.
Summary: Descriptive study of the movement and abundance of a newly introduced population.
FishBase, 2005. Species summary *Pylodictis olivaris* Flathead catfish
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
This species profile is available from:
http://www.fishbase.org/Summary/SpeciesSummary.cfm?ID=3051&genusname=Pylodictis&speciesname=olivaris [Accessed 21 March, 2005]
Fuller., 2000. *Pylodictis olivaris* Nonindigenous Aquatic Species Database, Gainesville, FL.
Summary: Available from: http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=750
FWC (Florida Fish and Wildlife Conservation Commission). UNDATED. *Catfish*Division of Freshwater Fisheries.
Summary: A report on various catfish.
Available from: http://floridafisheries.com/fishes/catfish.html#flathead [Accessed 18 July 2003]
ITIS (Integrated Taxonomic Information System), 2005. Online Database *Pylodictis olivaris*
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.
Available from:
http://www.cbif.gc.ca/pls/itisca/taxastep?king=every&p_action=containing&taxa=Pylodictis+olivaris&p_format=&p_ifx=plglt&p_lang= [Accessed March 2005]
Jackson, D. C. 1999. Flathead catfish: biology, fisheries, and management. Pages 23-36 in E.R. Irwin, W.A Hubert, C.F. Rabeni, H.L. Schramm, Jr., and T. Coon, editors, Catfish 2000: proceedings of the international ictalurid symposium. American Fisheries Society, Symposium 24, Bethesda, Maryland.
Summary: Good species and literature review for flathead catfish including life history, management, and distribution.
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Summary: An online database that provides distribution info on various species.
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Scotcat, 2003. Factsheet 85: Flathead Catfish - *Pylodictis olivaris*
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Thomas, M.E. 1995. Monitoring the effects of introuduced flathead catfish on sprotfish poulations in the Altamaha River, Georgia. Proceedings of the Annual Conference Southeastern Association of Fish and Wildlife Agencies 47:531-538.
Summary: Descriptive study of the impacts of an introduced flathead catfish population on native fish species.
TPW (Texas Parks and Wildlife). UNDATED. *Flathead Catfish (Pylodictis olivaris)*. Texas Parks and Wildlife Department.
Summary: A report on *P. olivaris*, including information on biology and distribution.
Available from: http://www.tpwd.state.tx.us/fish/infish/species/flt/flt.htm [Accessed 18 July 2003]
Weller, R.R. and C. Robbins. 1999. Food habits of flathead catfish in the Altamaha River system. Georgia. Proceedings of the Annual Conference Southeastern Association of Fish and Wildlife Agencies. 53:35-41.
Summary: Descriptive study and management implications based on the diet of an introduced flathead catfish population.

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Summary: Human dimensions study concerning angler opinions on a newly introduced population.