GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Clarias batrachus***

Clarias batrachus 简体中文 正體中文

System: Freshwater

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Siluriformes	Clariidae

Common name

clarias catfish (English, USA), alimudan (Visayan, Philippines), climbing perch (English, Bangladesh), freshwater catfish (English, Malaysia), Froschwels (German), cá trèn trang (Vietnamese), hito (English, Philippines), ikan keling (Malay, Indonesia), ikan lele (Malay), Ito (Kapampangan, Philippines), keli (Malay), klarievyi som (Russian), koi (Bengali, Banglade), kug-ga (Punjabi, India), leleh (English), magur (English), mah-gur (Bengali, India), mangri (Hindi, India), marpoo (Telugu, India), masarai (Tamil, India), nga-khoo (Burmese), pa douk (Lao), paltat (Ilocano, Philippines), pla duk (Thai), pla duk dam (Thai), pla duk dan (Thai), pla duk nam juend (Thai), Thai hito (English, Philippines), Thailand catfish (English, Taiwan, province of China), trey andaing roueng (Khmer), trey andeng (Khmer), walking catfish (English), wanderwels (German), Yerivahlay (Malayalam, India), pla duk nam jued (Thai), pantat (English), kawatsi (Kuyunon, Philippines), mungri (Nepali), konnamonni (Finnish), htong batukan (Tagalog, Philippines), cá trê tráng (Vietnamese)

Synonym

Silurus batrachus , Linnaeus, 1758
Macropteronotus jagur , Hamilton, 1822
Clarias jagur , (Hamilton, 1822)
Macropteronotus magur , Hamilton, 1822
Clarias magur , (Hamilton, 1822)
Clarias punctatus , Valenciennes, 1840
Clarias assamensis , Day, 1877

Similar species

Summary

Clarias batrachus is native to southeastern Asia and has been introduced into many places for fish farming. Walking catfish, as it is commonly known (named for their ability to move over land), is an opportunistic feeder and can go for months without food. During a drought large numbers of walking catfish may congregate in isolated pools and consume other species. They are known to have invaded aquaculture farms, entering ponds where they prey on fish stocks. *C. batrachus* has been described as a benthic, nocturnal, tactile omnivore that consumes detritus and opportunistically forages on large aquatic insects, tadpoles, and fish.

view this species on IUCN Red List

Species Description
Clarias batrachus has a broad, flat head and an elongate body which tapers toward the tail. It is readily recognizable as a catfish with four pairs of barbels whiskers and fleshy, papillated lips. The teeth are villiform, occurring in patches on the jaw and palate. Its eyes are small. The dorsal fin is continuous and extends along the back two-thirds of the length of the body but there is no dorsal spine. The dorsal, caudal, and anal fins together form a near-continuous margin; the caudal fin is rounded and not eel-like though it is occasionally fused with the other fins. Its pectoral spines are large and robust and finely serrate along the margins with which it walks accompanied by a back and forth flexion.Their coloration is olive to dark brown or purple to black above, blue green on the sides and white below, with white specks on their rear side. *C. batrachus* may be easily distinguished from many of the North American Ictalurid catfishes in that the walking catfish lacks an adipose fin (Masterson, 2007; Robins, undated; GSMFC, 2006).

Notes
Clarias batrachus can survive out of water for quite sometime using its auxiliary breathing organs and move short distances over land allowing it to migrate to new water bodies (Froese and Pauly, 2009).

Lifecycle Stages
In southeast Asia, spawning period is during the rainy season, when rivers rise and fish are able to excavate nests in submerged mud banks and dikes of flooded rice fields (FishBase, 2003).

Uses
Fisheries: commercial, aquaculture: commercial, aquarium: commercial (FishBase, 2003). An important food fish that is marketed live, fresh and frozen. (FishBase, 2003)

Habitat Description
Walking catfish can be found in a variety of habitats, but they are most commonly encountered in stagnant, muddy or swampy water of high turbidity. Known to inhabit medium to large rivers, swamps, ponds, ditches, flooded fields, rice paddies, and pools left in low spots after rivers have been in flood, it is also reported to occur in intercoastal waterways of salinities up to 18 ppt. It is a tropical species with a moderate tolerance to colder waters with a reported a lower lethal temperature of 9.8°C. During cold dry months, walking catfish burrow into the sides of ponds and streams where they remain dormant until the spring rains begin (Masterson, 2007; FishBase, 2003; GSMFC, 2006).

Reproduction
Clarias batrachus engages in mass spawning migrations in late spring and early summer. Inundated rice paddy fields have been reported as favored spawning grounds over its native range. The pair manifests the 'spawning embrace' which is widely observed in other catfish species. Mating occurs repeatedly for as long as 20 hours. The pair gently nudge each other in the genital region and flick their dorsal fins; male wraps his body around the female, then the female releases a stream of hundreds to thousands of adhesive eggs into the nest or on submerged vegetation. Males guard the nests and embryos hatch in about 30 hours. Both parents guard fry for about three days, when they develop barbles visible to the naked eye and swim freely (GSMFC, 2006; FishBase, 2009, Ros, 2004c).

Nutrition
Clarias batrachus feeds on insect larvae, earthworms, shells, shrimps, small fish, aquatic plants and debris.

General Impacts
Clarias batrachus in South Florida are known to invade commercial aquaculture facilities, often consuming vast numbers of the stocks of fishes (Robins, undated). The impacts from this opportunist feeder are probably most pronounced in small, isolated wetland ponds where walking catfish quickly consume or outcompete other resident populations to become the dominant species in the pond. Resident centrarchids (freshwater sunfish) and native catfish species appear particularly susceptible to impacts from this invader (Masterson, 2007). *C. batrachus* can also negatively impact native amphibian populations by preying on tadpoles. The ability of walking catfish to exploit isolated, ephemeral water bodies allows them to access tadpole prey stocks that other fish cannot reach (Masterson, 2007).

Management Info
Preventative measures: Outside of its native range, numerous countries have banned possession of the *Clarias batrachus*, including the United States, which has classified all members of the family *Clariidae* as injurious wildlife which are illegal to possess without a federal permit (Robins, undated).

Pathway
Introduced into Hong Kong from Thailand for aquaculture, (FishBase, 2003).The walking catfish was imported to Florida, reportedly from Thailand, in the early 1960s for the aquarium trade (Courtenay *et al.* 1986).

Principal source: \r\n
Nico, L., 2005. *Clarias batrachus* Nonindigenous Aquatic Species Database, Gainesville, FL.
FishBase, 2003. Species profile *Clarias batrachus* Walking catfish

Compiler: IUCN/SSC Invasive Species Specialist Group (ISSG)

Review: Pam Fuller USGS/BRD, Nonindigenous Aquatic Species Program. Florida Integrated Science Center. USA

Pubblication date: 2010-03-27

ALIEN RANGE

[1] CHINA
[1] HONG KONG
[1] JAPAN
[1] PHILIPPINES
[1] TAIWAN
[1] UNITED KINGDOM
[1] GUAM
[2] INDONESIA
[1] PAPUA NEW GUINEA
[1] SRI LANKA
[1] THAILAND
[7] UNITED STATES

Red List assessed species 2: VU = 2;

Glossolepis incisus **VU**
Melanotaenia arfakensis **VU**

BIBLIOGRAPHY
26 references found for **Clarias batrachus**

Managment information
Baber, M.J., and Babbitt, K.J. 2003. The relative impacts of native and introduced predatory fish on a temporary wetland tadpoles assemblage. Oecologia 136:289-295
Summary: Impact 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].
Clearwater, Susan J.; Chris W. Hickey and Michael L. Martin. 2008. Overview of potential piscicides and molluscicides for controlling aquatic pest species in New Zealand. Science for conservation 283. March 2008, New Zealand Department of Conservation
Summary: Available from: http://www.doc.govt.nz/upload/documents/science-and-technical/sfc283entire.pdf [Accessed 20 March 2008]
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]
Early Detection & Distribution Mapping System (EDDMapS)., 2009. *Clarias batrachus* (Linnaeus, 1758)
Summary: Available from: http://www.eddmaps.org/florida/species/subject.cfm?sub=18399 [Accessed 28 July 2009]
Hewitt, C.L, Campbell, M.L. and Gollasch, S. 2006. Alien Species in Aquaculture. Considerations for responsible use. IUCN, Gland, Switzerland and Cambridge, UK. viii + 32 pp.
Summary: This publication 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 (New Zealand, Australia and Chile).
Available from: http://data.iucn.org/dbtw-wpd/edocs/2006-036.pdf [Accessed 22 September 2008]
Mito, Toshikazu and Tetsuro Uesugi., 2004. Invasive Alien Species in Japan: The Status Quo and the New Regulation for Prevention of their Adverse Effects. Global Environmental Research 8(2)/2004: 171-191
Summary: Available from: http://www.airies.or.jp/publication/ger/pdf/08-02-08.pdf [Accessed 28 July 2009]

General information

FishBase, 2003. Species profile *Clarias batrachus* Walking 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=3054&genusname=Clarias&speciesname=batrachus
Froese, R. and D. Pauly. Editors. 2009. FishBase. Ecology *Clarias batrachus* (Linnaeus, 1758) World Wide Web electronic publication. www.fishbase.org, version (06/2009).
Summary: Available from:
http://www.fishbase.org/Ecology/FishEcologySummary.php?StockCode=3250&GenusName=Clarias&SpeciesName=batrachus [Accessed 28 July 2009]
Froese, R. and D. Pauly. Editors. 2009. FishBase. Introductions *Clarias batrachus* (Linnaeus, 1758) World Wide Web electronic publication. www.fishbase.org, version (06/2009).
Summary: Available from:
http://www.fishbase.org/Introductions/IntroductionsList.cfm?ID=3054&GenusName=Clarias&SpeciesName=batrachus&fc=139&StockCode=3250 [Accessed 28 July 2009]
Froese, R. and D. Pauly. Editors. 2009. FishBase. Species Summary *Clarias batrachus* (Linnaeus, 1758) World Wide Web electronic publication. www.fishbase.org, version (06/2009).
Summary: Available from: http://www.fishbase.org/Summary/SpeciesSummary.php?id=3054 [Accessed 28 July 2009]
Fuller, Pam., 1999. Nonindigenous Aquatic Species, NAS. United States Geological Survey, USGS.
Summary: Database that features profiles on Nonindigenous Aquatic species. Includes biology, distribution, impacts and reasons for introductions.
http://nas3.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=486 [Accessed 30 November 2009]
Gulf States Marine Fisheries Commission (GSMFC), 2003. *Clarias batrachus*.
Summary: Includes features, similar species, biology, maximum size, distribution (native range and in the Gulf of Mexico), interest to fisheries, current status in the Gulf of Mexico Ecosystem, impacts and references. Available from:
http://nis.gsmfc.org/nis_factsheet.php?toc_id=181 [Accessed 14 August 2006].

ITIS (Integrated Taxonomic Information System), 2004. Online Database *Clarias batrachus*
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.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=164120 [Accessed December 31 2004]
Joshi, Ravindra C. undated. Invasive Alien Species (IAS): Concerns and status in the Philippines
Kotagama, S W and C N B Bambaradeniya., 2006. An Overview of the Wetlands of Sri Lanka and their Conservation Significance. IUCN Sri Lanka and the Central Environmental Authority., 2006. National Wetland Directory of Sri Lanka, Colombo, Sri Lanka.
Summary: Available from: http://dw.iwmi.org/wetland/files/An%20Overview%20of%20the%20Wetlands%20of%20Sri%20Lanka.pdf [Accessed 28 July 2009]
Masterson, J., 2007. *Clarias batrachus* Smithsonian Marine Station at Fort Pierce
Summary: Available from: http://www.sms.si.edu/IRLspec/Clarias_batrachus.htm [Accessed 28 July 2009]
Nico, L., 2005. *Clarias batrachus* Nonindigenous Aquatic Species Database, Gainesville, FL.
Summary: Available from: http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=486 [Accessed 21 March 2005]
Robins, H. Robert, undated. Biological Profiles Walking Catfish. Ichthyology at the Florida Museum of Natural History
Summary: Available from: http://www.flmnh.ufl.edu/fish/Gallery/Descript/WalkingCatfish/WalkingCatfish.html [Accessed 28 July 2009]
Ros, W. 2004a. Erfolgreiche Froschwels-Nachzucht im Aquarium. DATZ 7/04: 12-15.
Summary: In German
Ros, W. 2004b. Final Speech for the Walking Catfish (*Clarias batrachus*)
Summary: Available from: http://www.scotcat.com/articles/article67.htm.
Available in German from: http://www.welse.net/SEITEN/clarias.htm
Ros, W. 2004c. Successful Spawning of the wonderful WanderWels, *Clarias batrachus*
Summary: English version of the DATZ report, with additional data and pics.
Available from: http://www.planetcatfish.com/shanesworld/shanesworld.php?article_id=249 [Accessed 6 August 2006]
Ros, W. 2006. *Clarias batrachus* -Ausl&#xfffd;sen der Fortpflanzung bei Froschwelsen. DATZ 4/06: 33-37. Summary: In German
Summary: In German
Available from: http://www.datz.de/HHIZ2DH6oBXIaEIZ2DH2kBXUqB+++.HTML?UID=C2E8CBA1D49C2BB52FB735FCA286A9569AECCDE5 [Accessed 1 June 2007]
Ros, W. 2006. Pair behaviour of the &#xfffd;Walking Catfish&#xfffd;, *Clarias batrachus*
Summary: Available in English from: http://www.scotcat.com/articles/article83.htm
In Russian from: http://vitawater.ru/aqua/fish/papers/authors/clarias21.shtml and http://vitawater.ru/aqua/fish/papers/authors/clarias22.shtml
In German from http://www.welse.net/SEITEN/clarias2.htm [Accessed August 2006]
Sinohin, Veronica O. & Wilma R. Cuaterno, 2002. Excerpts from the paper entitled &#xfffd;Invasive Alien Species Resource Directory for the Philippines&#xfffd; presented by Veronica O. Sinohin of the Ecosystems Research and Development Bureau, and Wilma R. Cuaterno of the Bureau of Plant Industry during the workshop on &#xfffd;The Prevention and Management of Invasive Alien Species: Forging Cooperation through South and Southeast Asia&#xfffd; held from 14-16 August 2002 in Bangkok, Thailand.
Summary: Available from: http://www.arcbc.org.ph/arcbcweb/pdf/vol2no4/30-32_invasive_philippines.pdf [Accessed 28 July 2009]
USGS/NAS. 2010. *Clarias batrachus* (walking catfish) Collection Info.
Summary: Available from: http://nas.er.usgs.gov/queries/CollectionInfo.aspx?SpeciesID=486&State= [Accessed 27 March, 2010]