GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Tinca tinca***

Tinca tinca 正體中文

System: Freshwater

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Cypriniformes	Cyprinidae

Common name

tilkhos (Farsi, Iran), aiguillons (French), alia (German), glini (Greek), doctor-fish (English, India), beurote (French), curaman (Gaelic, Irish), glínia (Greek), grunnungur (Icelandic), green tench (English), tenca (English), tanche de Mongolie (French, France), tanch (French), laaymahi (Farsi), lai mahi (Farsi), lindare (Swedish), kadife baligi (Turkish), suter (Norwegian), zeelt (Dutch), tench (English), sutare (Swedish), sudre (Norwegian), suder (Danish), sgreten (Welsh), Slia (German), tancho (French, France), suutari (Finnish), tinca (Italian, Switzerland), tenco (French), lin (Russian), lien (Czech), lín obecný (Czech), aiguillon (French), yesil sazan (Turkish), Schlei (German), naji (Farsi), linj (English, Slovene), seelt (Afrikaans), Schleie (French), tinche (French), Schlien (German), Schleie (German, Switzerland, Austia), compó (Hungarian), lien obycajný (Slovak), linë (Albanian), Tanche (French, France, Belgium, Can Quebec, Switzerland)

Synonym

Cyprinus tinca , Linnaeus, 1758
Cyprinus tinca auratus , Bloch, 1782
Cyprinus tincaauratus , Bloch, 1782
Tinca aurea , Gmelin, 1788
Cyprinus tincaurea , Shaw, 1804
Cyprinus zeelt , Lacepède, 1803
Cyprinus tincauratus , Lacepède, 1803
Tinca vulgaris , Fleming, 1828
Tinca chrysitis , Fitzinger, 1832
Tinca italica , Bonaparte, 1836
Tinca vulgaris maculata , Costa, 1838
Tinca communis , Swainson, 1839
Tinca limosa , Koch, 1840
Tinca vulgaris , non Valenciennes, 1842
Tinca linnei , Malm, 1877
Tinca vulgaris cestellae , Segre, 1904

Similar species

Summary

Tench (Tinca tinca) are a widespread species of freshwater fish native to temperate Europe and Asia. Popular as an angling species, they have been introduced to a number of countries as a sport fish. Their omnivorous diet and tolerance of a wide range of environmental conditions has lead to some countries labelling tench an invasive species, due to concerns over competition with native fish.

view this species on IUCN Red List

Species Description
Tench are a heavy-built, thick-set fish with a small barbel at each corner of the mouth. Colour ranges from deep blackish-olive to pale golden tan, with a bright reddish eye. The body is slimy, with the small scales being covered by a thick layer of mucus. Very large specimens may reach 800mm in length and 8kg in weight (McDowall, 2000).

Notes
Becomes dormant in winter, staying in the mud without feeding (FishBase, 2004).

Lifecycle Stages
Sexual maturity attained at around the age of two. Long-lived, with individuals surviving to 20 years of age or more (McDowall, 2000).

Uses
Highly valued as a sports fish by coarse fish anglers.

Habitat Description
Inhabits slow-moving, weedy waterways with muddy substrates. Found in streams, lake shallows and lagoons. Able to tolerate low oxygen concentrations and a wide range of temperatures, from 4 to 24°C. Often found amongst weeds or in deep holes. (FishBase, 2004; McDowall, 2000). The habitat for tench in New Zealand was reviewed by Rowe (2004).

Reproduction
External fertilisation. Spawns during summer, releasing thousands to millions of tiny eggs (c. 1mm diameter) amongst aquatic weeds. Fry hatch in around a week (McDowall, 2000).

Nutrition
Consumes a wide variety of benthic organisms (crustaceans, insect larvae, midges), as well as aquatic snails, small fish and algae (FishBase, 2004).

General Impacts
Impacts specific to tench are difficult to find, as this species is often lumped together with others in the Cyprinidae family, such as koi and common carp. In Australia it is thought that tench may directly compete with trout and native fish for food resources (IFS, 2000). The ability of tench to survive in degraded environments causes some confusion, as it is unclear whether they contribute to this degradation or simply inhabit a niche that native fish cannot occupy. Most impacts are likely to be related to the wide range of organisms consumed by tench. An experimental study by Bekliogu & Moss (1998) showed that tench can increase periphyton (algal) biomass through selective predation on gastropods, which keep periphyton under control through grazing. This 'trickle-down' effect could have negative impacts on aquatic communities if it occurs to a significant extent in the wild. Impacts of tench were reviewed by Rowe (2004). There is no evidence that they affect other fish directly, however, a number of studies have implicated them in water quality decline.

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)).
Physical/Chemical: Densities of tench declined markedly following complete weed removal in a small 2 ha lake (Rowe, 2004) and this was attributed to shag predation. All tench were eliminated by Rotenone. (Rowe and Champion, 1994).

Pathway
Tench may be stocked in ponds and lakes for recreational angling. Anglers may illegally introduce tench to stock private ponds.

Principal source: McDowall, R. M. 2000. The Reed field guide to New Zealand freshwater fishes. Auckland, Reed.
FishBase, 2004. Species profile *Tinca tinca* Tench
Rowe, D.K., 2004. Potential effects of tench *Tinca tinca* in New Zealand freshwater ecosystems. NIWA Client Report No HAM2004 005. National Institute of water and Atmospheric Research Ltd., Hamilton, New Zealand. 27 pp.\r\n
Rowe, D.K and Champion, P.D., 1994. Biomanipulation of plants and fish to restore Lake Parkinson: a case study of its implications. In Collier, K.J (eds), Restoration of Aquatic Ecosystems, Science and Research Series, Department of Conservation, New Zealand.

Compiler: IUCN SSC Invasive Species Specialist Group
Updates with support from the Overseas Territories Environmental Programme (OTEP) project XOT603, a joint project with the Cayman Islands Government - Department of Environment

Review: Dr. David Rowe, NIWA (National Institute of Water & Atmospheric Research). Hamilton New Zealand.

Pubblication date: 2010-10-04

ALIEN RANGE

[2] AUSTRALIA
[1] CHILE
[1] INDONESIA
[1] ITALY
[1] KYRGYZSTAN
[1] NEW ZEALAND
[1] SOUTH AFRICA
[2] CANADA
[1] INDIA
[1] IRELAND
[1] JAPAN
[1] MOROCCO
[1] NORWAY
[1] UNITED STATES

[1] UZBEKISTAN

[1] ZIMBABWE

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

Salvelinus fimbriatus **VU**

Salvelinus grayi **CR**

BIBLIOGRAPHY

17 references found for **Tinca tinca**

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].

Champion, P. Clayton, J. and Rowe, D. 2002. Alien Invaders Lake Managers Handbook. Ministry for the Environment.

Summary: Available from: http://www.mfe.govt.nz/publications/water/lm-alien-invaders-jun02.pdf [Accessed 3 February 2005]

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]

IUCN/SSC Invasive Species Specialist Group (ISSG)., 2010. A Compilation of Information Sources for Conservation Managers.

Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.

Ling, N. 2002: Rotenone a review of its toxicity and use for fisheries management. Science for Conservation 211. 40 p.

Summary: Available from: http://www.doc.govt.nz/upload/documents/science-and-technical/SFC211.pdf [Accessed 7 March 2008]

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 al (Qu 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 Strategic Plan for North American Cooperation in the Conservation of Biodiversity. 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].

Rowe, D.K and Champion, P.D., 1994. Biomanipulation of plants and fish to restore Lake Parkinson: a case study of its implications. In Collier, K.J (eds), Restoration of Aquatic Ecosystems, Science and Research Series, Department of Conservation, New Zealand.
Rowe, D.K and Graynoth, E, 2002. Lake Managers Handbook- Fish in New Zealand Lakes. Ministry for the Environment, Wellington.
Summary: Available from: http://www.mfe.govt.nz/publications/water/lm-fish-in-nz-lakes-jun02.pdf

General information

Beklioglu, M., Moss, B. 1998. The effects of tench (*Tinca tinca* (L.)) and sticklebacks (*Gasterosteus aculeatus* L.) on planktonic and benthic communities in mesocosms in a shallow lake. Aquatic Ecology *32*: 229-240.
Summary: Results suggest that selective predation by tench influences lower trophic levels in aquatic communities.
Abstract Available from:
http://www.ingenta.com/isis/searching/Expand/ingenta?pub=infobike://klu/aeco/1998/00000032/00000003/00186137 [Accessed 15 September 2004]
FishBase, 2004. Species profile *Tinca tinca* Tench
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=269 [Accessed, 10 September, 2004]
Freshwater Biodata Information System New Zealand (FBIS), 2005
Summary: The Freshwater Biodata Information System (FBIS) contains fish, algae, aquatic plant and invertebrate data and metadata gathered from New Zealand s freshwater streams, rivers and lakes. FBIS provides different ways to search for biodata: choose a predefined search from a list of common searches; use the map view to draw a box on a map and search for biodata; or create your own search for maximum search flexibility. FBIS is offered as a nationally available resource for the New Zealand public, institutions and companies who need access to a well-maintained long-term data repository.
Available from: https://secure.niwa.co.nz/fbis/validate.do?search=common [Accessed 5 August 2005]
ITIS (Integrated Taxonomic Information System), 2005. Online Database *Tinca tinca*
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=Tinca+tinca&p_format=&p_ifx=plglt&p_lang= [Accessed March 2005]
McDowall, R. M. 1990. New Zealand Freshwater Fishes: a natural history and guide. Auckland. Heinemann Reed.
Summary: An excellent reference book on New Zealand freshwater fish. Contains more in-depth information on species than McDowall, 2000.
McDowall, R. M. 2000. The Reed field guide to New Zealand freshwater fishes. Auckland, Reed.
Summary: Contains short descriptions and distributions far all freshwater fish found in New Zealand. An excellent reference.
Rowe, D.K., 2004. Potential effects of tench *Tinca tinca* in New Zealand freshwater ecosystems. NIWA Client Report No HAM2004 005. National Institute of water and Atmospheric Research Ltd., Hamilton, New Zealand. 27 pp.
Tasmanian Inland Fisheries Service website. Last updated 8 August, 2000.
Summary: Mentions tench as a pest species in Tasmania.