Salmo trutta 简体中文 正體中文

System: Freshwater

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Salmoniformes	Salmonidae

Common name

thalasopestrofa (Greek), salmon trout (English), truita (Catalan), an breac geal (Gaelic, Irish), aure (Norwegian), lassföhren (German), ørret (Norwegian), sjøaure (Norwegian), truta-fário (Portuguese), bachforelle (German), blacktail (English), breac geal (Gaelic, Irish), brook trout (English), denizalabaligi (Turkish), denizalasi (Turkish), finnock (English), galway sea trout (English), gillaroo (English), gwyniedyn (Welsh), pstruh obecný (Czech), trucha común (Spanish), urriði (Icelandic), herling (English), hirling (English), truta marisca (Portuguese), k'wsech (Salish), lachsforelle (German), losos taimen (Russian, Latvia), losos' taimen (Russian), mahiazad-e-daryaye khazar (Farsi), trout (English), meritaimen (Finnish), morska postrv (English, Slovenia), morskaya forel' (Russian), öring (Swedish), orkney sea trout (English), truite brune (French), pastrav de mare (Romanian), peal (English), pstruh morsky (Czech), salmo trota (Italian), sea trout (English), sewin (English), siwin (Welsh), sjourrioi (Icelandic), Europäische Forelle (German), pstruh obecný severomorský (Czech), pstruh obycajný (Slovak), ørred (Danish), taimen (Finnish), troc (Polish), troc wedrowna (Polish), trota fario (Italian), trucha (Spanish), trucha marina (Spanish), truite brune de mer (French), truite de mer (French), truite d'europe (French), truta-de-lago (Portuguese), truta-marisca (Portuguese), whiting (English), whitling (English), zeeforel (Dutch), meerforelle (German), orange fin (English), brown trout (English), kumzha (Russian), forelle (German), lachförch (German), havørred (Danish), havsöring (Swedish), sjøørret (Norwegian)

Synonym

Salmo trutta abanticus , Tortonese, 1954
Salmo eriox , Linnaeus, 1758
Salmo trutta , Linnaeus, 1759
Salmo trutta trutta , Linnaeus, 1761
Trutta fluviatilis , Duhamel, 1771
Trutta marina , Duhamel, 1771
Trutta salmonata , Rutty, 1772
Salmo albus , Bonnaterre, 1788
Trutta salmanata , Ström, 1784
Salmo gadoides , Lacepède, 1803
Salmo phinoc , Shaw, 1804
Salmo stroemii , Gmelin, 1788
Salmo sylvaticus , Gmelin, 1788
Salmo albus , Walbaum, 1792
Salmo cornubiensis , Walbaum, 1792
Salmo fario loensis , Walbaum, 1792
Salmo saxatilis , Paula Schrank, 1798
Salmo cumberland , Lacepède, 1803
Salmo cambricus , Donovan, 1806
Salmo montana , Walker, 1812
Salmo taurinus , Walker, 1812
Salmo spurius , Pallas, 1814
Salmo caecifer , Parnell, 1838
Salmo levenensis , Yarrell, 1839
Salmo orientalis , McClelland, 1842
Fario argenteus , Valenciennes, 1848
Salar ausonii , Valenciennes, 1848
Salar bailloni , Valenciennes, 1848
Salar gaimardi , Valenciennes, 1848
Salar spectabilis , Valenciennes, 1848
Salar ausonii parcepunctata , Heckel & Kner, 1858
Salar ausonii semipunctata , Heckel & Kner, 1858
Salmo fario major , Walecki, 1863
Salmo islayensis , Thomson, 1873
Salmo caspius , Kessler, 1877
Salmo brachypoma , Günther, 1866
Salmo gallivensis , Günther, 1866
Salmo mistops , Günther, 1866
Salmo orcadensis , Günther, 1866
Salmo polyosteus , Günther, 1866
Trutta marina , Moreau, 1881
Salmo lacustris septentrionalis , Fatio, 1890
Salmo trutta ezenami , (non Berg, 1948)
Salmo trutta ciscaucasicus , Dorofeyeva, 1967

Similar species

Salmo salar

Summary

Salmo trutta has been introduced around the world for aquaculture and stocked for sport fisheries. It is blamed for reducing native fish populations, especially other salmonids, through predation, displacement and food competition. It is a popular angling fish.

view this species on IUCN Red List

Species Description
Brown trout get their name from the brown or golden brown hue on their bodies. Some of the other characteristics: their sides are silvery or yellow and bellies are white or yellowish; dark spots, sometimes encircled by a pale halo, are plentiful on the back and sides; spotting also can be found on the head and the fins along the back; rusty-red spots also occur on the sides; the small adipose (or fatty) fin in front of the tail has a reddish hue; sea-run brown trout have a more silvery colouration and the spotting is less visible.
Brown trout closely resemble Atlantic salmon and rainbow trout, but salmon have no red colouration on the adipose fin and rainbow trout have lines of black spots on the tail. Young brown trout (parr) have 9-14 dark narrow parr marks along the sides and some red spotting along the lateral line.
Brown trout can grow to be quite large, especially sea-run fish. Fish weighing up to 31kg (68 lb) have been recorded in Europe (Fisheries & Oceans Canada, 2004). Wild trout reach sizes of 9kg (20 lbs).

Notes
Mainly diurnal, (FishBase, 2003).

Lifecycle Stages
Life history and spawning behaviour is similar to salmon, (FishBase, 2003). Spawning takes place in shallow freshwater (Kroon, F. pers. comm, Jan 2004). \"Female covers the eggs by restirring the sand and fine gravel. After hatching at 12mm, larval brown trout remain in the gravel for 2-3 weeks until they are about 25mm long, when they emerge to begin feeding in the water column. Brown trout are territorial and begin establishing territories as juveniles. Juvenile trout from lake populations move from their natal inlets to lakes during the first 2 years of life.\" (FishBase, 2003). Juvenile brown trout either migrate to the ocean or stay in freshwater (Kroon, F. pers. comm, Jan 2004).

Uses
Fisheries: commercial, aquaculture: commercial, gamefish, aquarium. Marketed fresh and smoked; eaten fried, broiled, boiled, cooked in microwave, and baked (FishBase, 2003).

Habitat Description
Brown trout are primarily a freshwater species, but can spend time in the sea, they hide in shallow water weed beds and rocky, boulder-strewn areas, and prefer a water temperature of 18-23 degrees C (65-75 degrees F). Brown trout prefer cold, well-oxygenated upland waters although their tolerance limits are lower than those of rainbow trout (FishBase, 2003).

Reproduction
\"Matures in 3-4 years. Reproduces in the rivers. Female produces about 10,000 eggs \" (FishBase, 2003)

Nutrition
Feeds on aquatic and terrestial insects, molluscs, crustaceans and small fish (FishBase, 2003).

General Impacts
Brown trout have been implicated in reducing native fish populations (especially other salmonids) through predation, displacement, and food competition (Taylor *et al*. 1984, in Fuller, 1999). Although it rarely occurs, in America the brown trout is one of the few foreign species able to hybridize with natives, (Fuller, 1999).

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)).

Pathway
primarily bred and stocked for recreational fishing

Principal source: FishBase, 2003. *Salmo trutta trutta* Sea trout.

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

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ALIEN RANGE

[1] ARGENTINA
[1] ATLANTIC - NORTHWEST
[1] BHUTAN
[5] CANADA
[1] COLOMBIA
[1] CZECH REPUBLIC
[1] ETHIOPIA
[1] FIJI
[1] INDIA
[1] JAPAN
[2] KENYA
[1] MADAGASCAR
[1] MOROCCO
[1] NEW ZEALAND
[1] PAKISTAN
[1] PAPUA NEW GUINEA
[1] PUERTO RICO
[1] ATHI-GALANA-SABAKI RIVER
[4] AUSTRALIA
[1] BOLIVIA
[1] CHILE
[1] CYPRUS
[1] ECUADOR
[1] FALKLAND ISLANDS (MALVINAS)
[2] FRENCH SOUTHERN TERRITORIES
[1] IRAN, ISLAMIC REPUBLIC OF
[1] JORDAN
[1] LESOTHO
[1] MALAWI
[1] NEPAL
[1] PACIFIC - NORTHEAST
[1] PANAMA
[1] PERU
[1] SOUTH AFRICA

[1] SOUTH AMERICA
[1] SWAZILAND
[1] TANZANIA, UNITED REPUBLIC OF
[48] UNITED STATES
[1] SRI LANKA
[1] SWITZERLAND
[1] TIGRIS RIVER
[1] ZIMBABWE

Red List assessed species 23: CR = 3; EN = 8; VU = 6; NT = 2; DD = 3; LC = 1;

Diplomystes chilensis **DD**
Euastacus bidawalis **EN**
Euastacus claytoni **EN**
Euastacus diversus **EN**
Euastacus kershawi **LC**
Euastacus wiowuru **NT**
Galaxias pedderensis **CR**
Lepidomeda vittata **VU**
Neochanna apoda **VU**
Paragalaxias mesotes **VU**
Prototroctes maraena **NT**
Salmo rhodanensis **DD**
Engaeus nulloporius **DD**
Euastacus bispinosus **VU**
Euastacus crassus **EN**
Euastacus eungella **CR**
Euastacus neodiversus **EN**
Euastacus yarreansis **VU**
Hymenolaimus malacorhynchos **EN**
Litoria spenceri **CR**
Ombrastacoides pulcher **VU**
Podiceps gallardoi **EN**
Pseudobarbus quathlambae **EN**

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18 references found for **Salmo trutta**

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]

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]

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.

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].
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General information

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FishBase, 2003. Species profile *Salmo trutta trutta* Sea trout
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=238&genusname=Salmo&speciesname=trutta%20trutta [Accessed 7 September, 2004]
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Summary: Article de synth"se sur les invasions biologiques (plantes, invert"br"s et vert"br"s) en antarctique.
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Fuller, Pam., 1999. Nonindigenous Aquatic Species, NAS. United States Geological Survey, USGS.
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Hasegawa, K. and Maekawa, K. 2006. The Effects of Introduced Salmonids on Two Native Stream-dwelling Salmonids Through Interspecific Competition, *Journal of Fish Biology 68*: 1123 - 1132.

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Available from:
http://www.cbif.gc.ca/pls/itisca/taxastep?king=every&p_action=containing&taxa=Salmo+trutta&p_format=&p_ifx=plglt&p_lang= [Accessed March 2005]