GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Petromyzon marinus***

Petromyzon marinus **System:** Terrestrial_freshwater_marine

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Cephalaspidomorphi	Petromyzontiformes	Petromyzontidae

Common name lake lamprey (English), lamprey (English), lamprea de mar (Spanish), lamprey eel (English), lamproie marine (French), great sea lamprey (English), sea lamprey (English)

Synonym
Petromyzon ruber
Petromyzon lampetra
Petromyzon maximus
Petromyzon americanus
Ammocoetes bicolor
Petromyzon nigricans
Petromyzon adriaticus
Petromyzon maculosus
Lampetra marina
Petromyzon bairdii
Batymyzon bairdii
Petromyzon marinus dorsatus
Petromyzon concolor
Oceanomyzon wilsoni
Petromyzon marinus unicolor

Similar species *Lampetra appendix*

Summary Petromyzon marinus (sea lamprey) is an anadromous, eel-like fish that parasitically attaches and feeds on healthy fish. Petromyzon marinus is native to the east coast of the USA and the majority of the European coast but has been introduced to the Great Lakes through the canal system. Petromyzon marinus have contributed to the collapse of commercial fisheries and the extinction of three native species of cisco.

view this species on IUCN Red List

Species Description
Eel-like jawless fish with cartilaginous skeleton. No scales and no paired fins. Gray-blue back, metallic violet on sides, shading to silver-white underneath, skin is often marbled. Length 12-20 inches, weight 8-13 ounces.

Lifecycle Stages
Radical metamorphosis of ammocoete larvae in freshwater. After metamorphosis, lampreys migrate to sea or freshwater lakes.

Uses
Used for human food consumption as a delicacy in parts of Europe.

Habitat Description
The larvae prefer soft sediment substrates in clear streams; parasitic phase is found in cool-water lakes.

Reproduction
The sea lamprey spawn in freshwater rivers in running water. Fertilisation is external. Lampreys gather in small groups. Small and not yolky eggs are buried in spawning redds excavated in clean, hard bottoms (litophilous broodhiders). The parents die after spawning. Eggs laid are numerous (35,000 - 100,000).

Nutrition
Larvae feed on microorganisms and detritus. The lake-phase feed parasitically on healthy fish including: ciscoes *Coregonus* spp., lake trout *Salvelinus namaycush*, walleye *Stizostedion vitreum*, white sucker *Catostomus commersoni*, longnose sucker *Catostomus catostomus*, redhorse *Moxostoma* spp., yellow perch *Perca flavescens*, rainbow trout *Oncorhynchus mykiss*, burbot *Lota lota*, channel catfish *Ictalurus punctatus*, northern pike *Esox lucius*, and common carp *Cyprinus carpio*.

General Impacts
Lampreys attack and are parasite feeders on other fish, often resulting in the death of the fish. Partially responsible for collapse of commercial fisheries in the Great Lakes during 1940s-1950s. Decline of large native fish including, several ciscoes *Coregonus* spp., lake trout *Salvelinus namaycush*, and walleye *Stizostedion vitreum*. Partially responsible for the extinctions of 3 native species to the Great Lakes, longjaw cisco *Coregonus alpenae*, the deepwater cisco *C. johannae*, and the blackfin cisco *C. nigripinnis*. Because lamprey predation had reduced the number of large predators, the introduction of alewife (*Alosa pseudoharengus*) in the 1940's resulted in an explosion of the alewife population with serious consequences on distributions and abundances of native fish. Lamprey also prey on introduced salmon that are valued by anglers in the Great Lakes.

Management Info
Chemical: In 1958, a lampricide, TFM, was developed that selectively kills lamprey larvae. Control options have included a bottom-release, granular lampricide application of Bayluscide.
Physical: Efforts to bring lamprey populations under control have included: trapping and removing female lampreys, releasing large numbers of sterilized male lampreys.

Pathway
Larval lampreys used as bait in non-native areas.May have attached to boats going through canal system.

Principal source:

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

Review: Dr. Ellen Marsden, University of Vermont. USA

Pubblication date: 2005-01-24

ALIEN RANGE

[1] LAKE ERIE
[1] LAKE MICHIGAN
[1] LAKE SUPERIOR
[1] LAKE HURON
[1] LAKE ONTARIO
[8] UNITED STATES

BIBLIOGRAPHY
8 references found for **Petromyzon marinus**

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].

General information

Applegate, V. C. 1950. Natural history of the sea lamprey *Petromyzon marinus* in Michigan. U.S. Fish and Wildlife Service Special Scientific Report. 55:237 pages.
Summary: Early documentation of impacts of sea lamprey invasion in the Great Lakes
FishBase, 2004. Species profile *Petromyzon marinus* Sea lamprey.
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=2530 [Accessed September 23, 2004]
ITIS (Integrated Taxonomic Information System), 2005. Online Database *Petromyzon marinus*
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=Petromyzon+marinus&p_format=&p_ifx=plglt&p_lang= [Accessed March 2005]
Pam Fuller, Leo Nico and Erynn Maynard, 2004, *Petromyzon marinus*. Nonindigenous Aquatic Species Database, Gainesville, FL.
Summary: General information on the distribution, dates and locations of introductions, and impacts of introductions.
Available from: http://canal.er.usgs.gov/queries/SpFactSheet.asp?speciesID=836 [Accessed September 23, 2004]
Scott, W. B. and E. J. Crossman. 1973. Freshwater fishes of Canada. Bull. Fish. Res. Bd. Can. 184:966pp
Summary: Complete species description with life history data and impacts