

SPECIES INFORMATION SHEET

Lampetra fluviatilis

English name: River lamprey	Scientific name: <i>Lampetra fluviatilis</i>	
Taxonomical group: Class: Cephalaspidomorphi Order: Petromyzontiformes Family: Petromyzontidae	Species authority: Linnaeus, 1758	
Subspecies, Variations, Synonyms: –	Generation length: 7 years	
Past and current threats (Habitats Directive article 17 codes): Migration barriers (J03.02.01), Eutrophication (H01.05), Fishing (F02),	Future threats (Habitats Directive article 17 codes): Eutrophication (H01.05), Migration barriers (J03.02.01), Fishing (F02),	
IUCN Criteria: A2bd	HELCOM Red List Category:	NT Near Threatened
Global / European IUCN Red List Category LC/LC	Habitats Directive: Annex II, V	
Previous HELCOM Red List Category (2007): EN		
Protection and Red List status in HELCOM countries: Denmark: –/ DD Estonia: <i>Fishery regulations / LC</i> Finland: <i>In some closed rivers stocks are kept alive by transfer individuals over dams and in some others with stocking / NT</i> Germany: <i>Protected by national and European law (Annex II, V Habitat Directive) / 1</i> (Critically endangered, Baltic Sea) Latvia: <i>Fishery regulated by number of gears and closed season. Under the Law on the Conservation of Species and Biotopes Nr. 396 and 45 / –</i> Lithuania –/ Poland: <i>prohibited to kill, catch or disturb this species under strict protection / VU</i> Russia: Excluded from the Red Book of Russian Federation since 1997 Sweden: <i>regional restoration programs in rivers / LC</i>		

Distribution and status in the Baltic Sea region

The anadromous river lamprey is distributed throughout the HELCOM area including adjacent rivers and streams. A land-locked form is present in the greater lakes in Sweden and Finland. River lampreys are traditionally used as human food in the northern and eastern part of the Baltic Sea and there is a commercial fishery in Finland, Estonia, Latvia, Lithuania, Russia and Sweden. In Poland, spawning probably takes place in some Pomeranian rivers and lakes as well as in Odra and Vistula basins in connection with estuaries and coastal areas but there is lack of knowledge of this species. In Germany this species is considered critically endangered while there is a lack of knowledge of the status in Denmark. After a severe reduction of the species in the mid-1900s, due to establishment of hydropower plants, most Baltic areas show a stable development of the species in the last decades. Data from commercial landings in southern Baltic Sea show that despite a large decrease seen during the 1900s there is no decrease during the last 20 years. Furthermore Swedish electrofishing data from rivers show stable occurrence over the last 25 years. In contrast, the catches in Finland have been



River lamprey. Photo by Gerd-Peter Zauke, Carl von Ossietzky University Oldenburg.

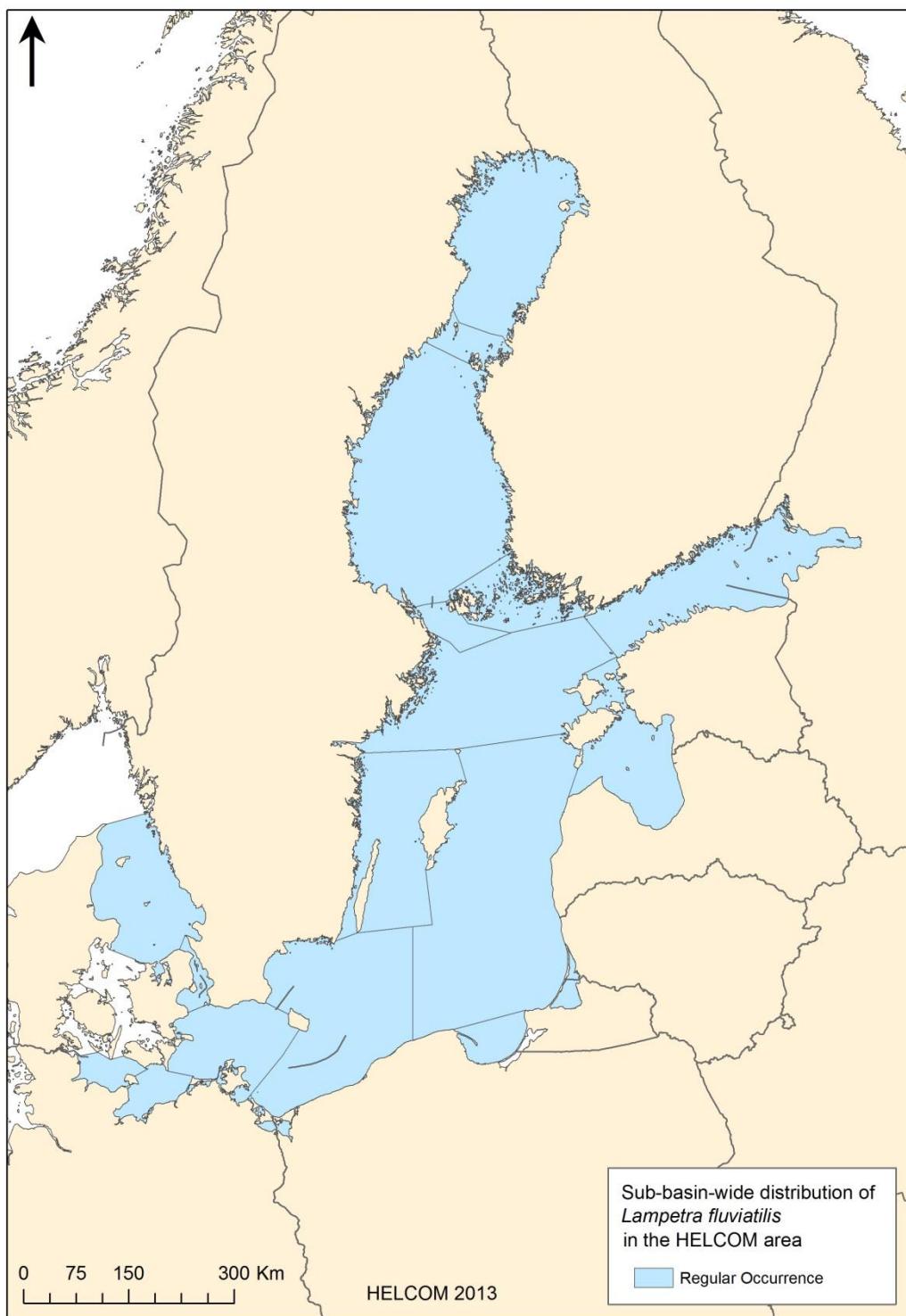
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reduced close to half from the late 1980s to 2000s, and in a monitory series in Åland Sea the catch per unit effort have decreased by 80% during the same timeframe.

Distribution map

The map shows the sub-basins in the HELCOM area where the species is known to occur regularly (HELCOM 2012). Reproduction only takes place in rivers.



Habitat and ecology

The river lamprey is an anadromous long-distance migrating species. Adults enter freshwater habitats in autumn, winter and even spring, migrate far upstream, and spawn from early spring to early summer in gravel areas with adjacent clean sand bottoms. Short after spawning the adult river lampreys die. Larvae bury in sand or clean silt near the spawning site for 3–5 years. After metamorphosis the juveniles migrate downstream to the sea in spring where they spend another 1–2 years, benthic in shallow and deeper water, mostly on hard bottom or parasitic on larger fishes (mainly cod or herring) (Fricke 1987, Froese & Pauly 2012). All lampreys have bucal glands that excrete a substance that prevents blood from clotting (Holcik 1986). This species reaches a maximum total length of 50 cm, a maximum weight of 150 g, and an individual age of up to 10 years.

Description of major threats

In the past, the most important reason for population declines was establishment of hydropower plants in rivers. Currently, eutrophication in the spawning habitats (larvae can live only in well oxygenated sand bottoms) and still also construction of weirs and dams in rivers and in some areas fisheries (target species) are major threats. The species is sensitive to human activities, including acid waters and daily water level regulations.

Assessment justification

After a severe reduction in the mid-1900s due to establishment of hydropower plants the Baltic populations have stabilised. Data from commercial landings in southern Baltic Sea (in Thiel et al. 2009) show that despite a large decrease seen during the whole investigated time series (1887–1999) there is no decrease over the last 3 generations (1990–2010). In addition landings from 17 rivers in Latvia show stable commercial catches over the last 20 years. Lampreys are not caught in coastal monitory fishing series or acoustic- and bottom trawl surveys but Swedish electrofishing data from rivers show stable occurrence over the last 25 years (Degerman et al. 2008). In contrast to these data from the cooling water intake in Forsmark in the Åland Sea show an 80% decrease during the assessment period and catches in Finland have decreased from 1.8 millions in the late 1980s to 800 000 in the 2000s. Assuming that Finland has approximately half of the lamprey populations in the HELCOM area the drastic reduction of landings in Finland together with the sensitivity of their lifestyle (require various habitats and functioning waterways) suggest a possible decrease between 10–50% with most probable value according to expert judgement 25% in the HELCOM. The estimated 25% reduction results in a NT status for river lamprey in the A criterion (A2bd) for the HELCOM area. Immigration from outside the HELCOM area is unlikely to have any rescue effect due to the species natal homing behaviour.

Although the estimated area of occupancy, which for this anadromous species equals the area of rivers with known reproduction, are below the threshold for NT ($2\ 000\ km^2$), and there is a continued decline, the lack of severe fragmentation or extreme fluctuations in habitat or abundance leads to the B-criteria not being fulfilled.

Recommendations for actions to conserve the species

Measures for protection of river lamprey should mainly improve the situation along the migration route and at the spawning sites. The construction of new weirs and other migration obstacles in rivers and streams should be avoided; fish passes should be constructed where weirs and other obstacles exist. In Finland some closed river stocks are kept alive by manually transfer individuals over dams. Eutrophication of potential spawning sites should be reduced. Fishery should also be controlled.

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Common names

DE: Flussneunauge; DK: Flodlampret; ES: Jöesilm; FI: Nahkiainen; GB: River lamprey; LV: Upes nēģis ; LI: Upinė négė; PL: Minóg rzeczny; RU: Rechnaja minoga; SE: Flodnejonöga

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