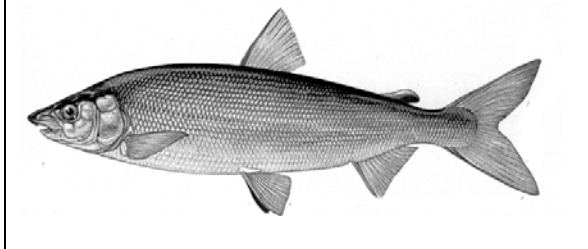


Nomination**Houting***Coregonus lavaretus oxyrhynchus***Geographical extent**OSPAR Region: IIBiogeographic zone: 11Region & Biogeographic zones specified for decline and/or threat: II/11

The houting *Coregonus lavaretus oxyrhynchus*, is a migratory species that swims upriver in the autumn to spawn in fresh water and then returns to estuarine areas. It was known to have had a distribution in the southern North Sea and the western Baltic and in the rivers Rhine, Weser and Elbe as well as being present in large lakes in southern Sweden (Wheeler, 1978). In the North Sea it is typically estuarine, rarely moving into fully marine conditions and a large part of the population today is found in Danish waters

Application of the Texel-Faial criteria

C.l.oxyrhynchus was nominated for inclusion on the OSPAR list by two parties. Criteria common to both were rarity and decline with information also provided on threat.

Decline

There is no total estimate of the population size of houting in the OSPAR Maritime Area but a survey between 1994-1997 of Danish waters, which hold most of the North Sea population, recorded 8,700 houting returning to the watercourses as spawners (Amt & Amt, 1997). Population numbers are known to have been greatly reduced in recent decades. It is no longer recorded in the southern North Sea for example. The last record for the UK was from the River Colne in 1925 and it is thought to be extinct in British waters (Ratcliffe, 1977). It was fished in the Scheldt estuary in the 19th century but was reported as uncommon along the Belgian coast in the mid-1800's (Van Beneden, 1871; De Selys Longchamps, 1842) and there have been no records from Belgian

waters since the mid-1900's (Gilson, 1921; Poll, 1947). By the late 1980's it was nearly extinct in the Wadden Sea area but the status has since improved as a result of a reintroduction programme.

Rarity

C.l.oxyrhynchus has been reported as becoming increasingly rare in European rivers and estuaries. Today, the most significant population in the North Sea is believed to be centred on the Danish river Vidåen where numbers have been supplemented through a restocking programme however the houting is still classified as endangered on the Danish Red List and the Wadden Sea Red List (Anon, 1998; Berg *et al.*, 1996).

Threat

The main threats to houting in the OSPAR Maritime Area are obstruction of migration routes, pollution of lower river reaches, incidental capture, and damage to spawning grounds.

The majority of these threats take place on the inland waters used by the migrating fish. The construction of dams and artificial embankments prevent the fish migrating freely, while extraction of water for irrigation can also make spawning grounds inaccessible and create difficulties for fish returning downstream. Houting are also a bycatch in trap and fyke nets such as those used in the Wadden Sea.

The spawning grounds themselves have been degraded by extraction of gravel and stones from the river bed, and modifications in water flow caused by channelling and fluctuating water levels below dams. Poor water quality is another concern affecting the fish directly and indirectly through effects on their food.

Relevant additional considerationsSufficiency of data

The numbers of houting recorded in the rivers and estuaries known to have been used by the migrating fish reveal a decline in the population and local extinctions in parts of its former range.

Changes in relation to natural variability

Little is known about the natural variability in the population of houting and therefore whether the decline and local extinctions are greater than might be expected through natural change. The fact that human activity is known to have affected the ability of adults to reach spawning sites does however suggest that the

decline is at least in part due to human activity rather than natural variability.

Expert judgement

The decline in records and local extinctions has provided the data on which this species has been given international protection through the EC Habitats and Species Directive and a number of international conventions.

ICES Evaluation

The ICES review of this nomination by the Working Group on Fish Ecology (WGFE) reached the following conclusions (ICES, 2003).

There is evidence of a decrease in both the area of distribution and the abundance of houting, within the OSPAR maritime area and the species is restricted to a very few locations. A great part of the population is found in Danish waters. In Great Britain this species is classified as Extinct and in Europe, as a whole, it is considered Endangered. It is listed in Appendix III of the Bern Convention. In the UK, a Biodiversity Action Plan has been developed to raise awareness that the species will need protection if it becomes established.

The species is protected in the Danish Red List and has been protected since 1983 by the Danish Ministry of Fisheries making it illegal to deliberately catch houting. Habitat degradation is still a major threat to the survival of the species. Essential habitats for juveniles in estuaries have been characterized; however, pollution and by-catch pose a continual threat

Threat and link to human activities

Cross-reference to checklist of human activities in OSPAR MPA Guidelines

Relevant human activity: Fishing, hunting, harvesting; extraction of sand, stone and gravel; constructions, land-based activities.
Category of effect of human activity: Physical – substratum removal and change, water flow rate changes, Biological – removal of target species

The main threats to this species come from the degradation of spawning habitat, poor water quality, and incidental capture all which are linked to human activities. Specific examples include records compiled during a survey between 1994-1997 of 3,400 houting (including 800 spawners) being caught in eel fyke nets in the Danish Wadden Sea (Amt & Amt 1997)

Management considerations

The main management measures that would assist the recovery of houting populations in the OSPAR Maritime Area are improvement of water quality, habitat conditions, and access to suitable spawning grounds in the estuaries and rivers of Europe as well as reducing the bycatch of houting in nets used for other fisheries. There is an ongoing restoration programme in Denmark through captive breeding and the stocking of rivers where houting used to be more numerous.

The work programme agreed at the eight Trilateral Governmental Conference on the Protection of the Wadden Sea in 1997 included the evaluation of the running reintroduction project of the Houting in Denmark and Schleswig-Holstein and the consideration of further actions in other rivers of the Wadden Sea.

Reintroduction programmes will only be successful in the long term if conditions that led to the decline in the first place have been tackled.

The houting is listed on Annexes II & V of the EC Habitats & Species Directive, and Annex III of the Bern Convention.

Further information

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Useful References:

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This the 2003 case report used to justify the inclusion of Houting in the OSPAR List that appears in the OSPAR Publication: Case Reports for the OSPAR List of threatened and/or declining species and habitats. OSPAR Publication number 2008/358.