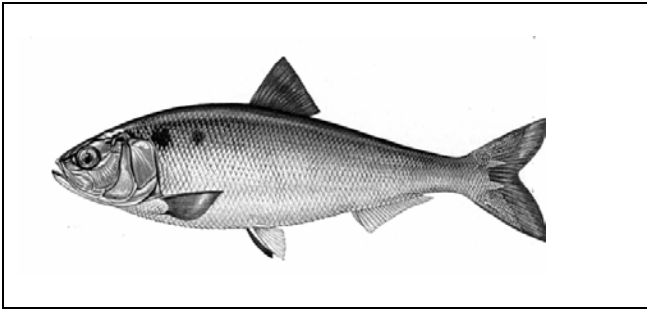


Nomination

Alosa alosa, Allis Shad



Geographical extent

OSPAR Region; II, III, IV

Biogeographic zone: 4,6,7,9,11,13,14

Region & Biogeographic zones specified for decline and/or threat: as above

The Allis Shad *Alosa alosa* is a migratory species reproducing in fresh water and then moving into the sea until ready to spawn again. It has a distribution that extends along the coasts of Western Europe from northern Norway to Spain and Portugal, as well as and in the western Mediterranean (Wheeler, 1978). It occurs mainly in shallow coastal waters and estuaries and the lower reaches of rivers where it spawns. It is also found offshore e.g. in the Bay of Biscay but aggregated near the mouths of rivers such as the Gironde and the Loire, where it migrates to spawn (Taverny & Elie, 2001). The most successful breeding rivers are thought to be in western France and Portugal.

Application of the Texel-Faial criteria

A. alosa was nominated for inclusion on the OSPAR list with particular reference its rarity and decline, with information also provided on threat.

Decline

Records show a sporadic distribution around the coasts of the British Isles, where it is considered to have declined in abundance since the mid-nineteenth century (e.g. Aprahamian & Aprahamian, 1990). Former spawning grounds that are no longer believed to support allis shad include the River Severn (England/Wales) and the rivers that feed the Solway on the west coast of Scotland. It is possible that viable populations remain on the Solway Firth and the rivers that drain into it and the Bristol Channel (Potts & Swaby, 1993). Declines in Portugal have been reported by Costa *et al.*, (2001)

and in the Wadden Sea by Berg *et al.*, (1996) It may now only breed in a few French and Portuguese rivers.

Rarity

A. alosa has been reported as becoming increasingly rare in European rivers and estuaries. They were common migrating up rivers in Belgium until the late 1940's, for example, but no specimens have been reported from the coast and rivers of the country since 1947 (Van Beneden, 1871; Poll, 1947). The species is also considered to be extinct in the Netherlands. Adult fish occur in small numbers around the coast of the UK but even here they are considered to be uncommon (Swaby & Potts, 1990).

Threat

The main threats to Allis Shad in the OSPAR Maritime Area are obstruction of migration routes, pollution of lower river reaches 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 the fish returning downstream.

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 (e.g. Berg *et al.*, 1996).

Relevant additional considerations

Sufficiency of data

The number of Allis shad recorded in 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 Allis shad 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 have 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 extensive evidence that the OSPAR area is of global importance to *Alosa alosa*. All the remaining self-sustaining populations are confined mainly to France and Portugal and complete their life cycle within the OSPAR area. There is good evidence for a reduction in their range and in certain rivers the population has declined to such a level that it is extremely unlikely that a self-sustaining population exists and the population may well be extinct.

The main threats to the Allis Shad in Europe are obstruction of migration routes, pollution of lower river reaches, impingement at river intakes, and damage to spawning grounds. The majority of these threats take place in estuarine and freshwater environments used by migrating fish and there is no evidence that anthropogenic activities in fully marine environments are major threats to their populations, although they are occasionally taken in marine fisheries. It is suggested that in the future both shad species should be protected as protection measures for *A. alosa* will also afford protection to the twaite shad *A. fallax*.

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 and poor water quality, both of which are linked to human activities. Specific examples include the reports of Allis shad being severely affected by pollution in the River Clyde (Maitland, 1974; Cazemier, 1988) and the building of navigation weirs on the River Meuse in

France, Belgium and the Netherlands (Phillipart, 2000).

Management considerations

The main management measures that would assist the recovery of the Allis shad 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. Guidance to fishermen on the status and threats to the shad will be valuable in providing records of the species.

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

Further information

Nominated by:
Belgium

Contact persons:

Jan Haelters & Francis Kerckhof, Management Unit of the North Sea Mathematical Models, 3^e en 23^e Linieregimentsplein, 8400 Oostende, Belgium.

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