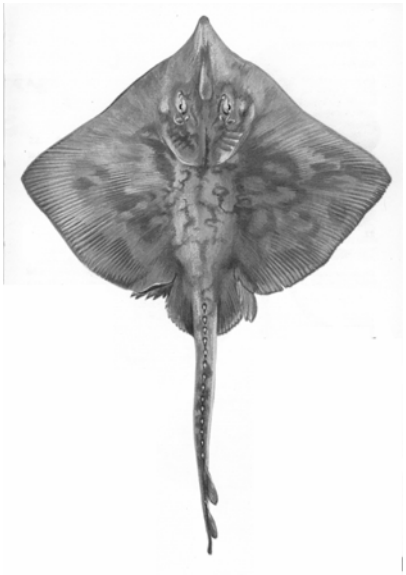
Nomination

Dipturus (Raja) batis, Common Skate



Geographical extent

OSPAR Regions; All
Biogeographic zones: 1,2,4,6-9,11-14
Region & Biogeographic zones specified for decline and/or threat: as above

The Common Stake has a distribution that extends from Iceland, the Faeroe islands and northern Norway, through the Irish Sea and North Sea to the waters off Ireland, Spain and Portugal. It is also found in the western Mediterranean (Wheeler, 1978). Its westward distribution is less well documented, but it is being found in developing fisheries in the mid-Atlantic Ridge, and in deeper parts of ICES of Sub-areas VI and VII (ICES, 2002). The Greater North Sea/Celtic Sea was thought to be the most important region for this species, amounting to around 75% of the population in the North Atlantic, but further confirmation is required (Daan, *pers comm*.).

Application of the Texel-Faial criteria

D.batis was nominated for inclusion by several Contracting Parties and Observers. The criteria common to all nominations were, decline, sensitivity and rarity, with information also provided on threat.

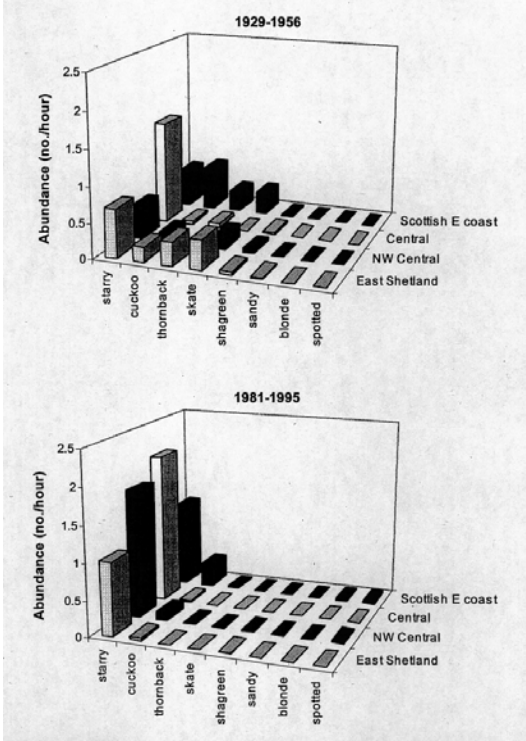
Decline

The Common Skate has declined throughout its range. The magnitude of decline is differentially well documented in various areas, but it is known to have severely declined in most shelf areas (ICES, 2002). For example, *D.batis* has been commercially extinct in the Irish Sea for some years (Brander, 1981) and has declined severely in the North Sea (Walker & Hislop, 1998). This skate was once an abundant constituent of the demersal fish community of north-west Europe. Fisheries data indicate that populations of *Dipturus batis* have undergone an extremely high level of depletion in the central part of its range around the British Isles since the early part of this century. Although landings appear stable in other parts of the species' range, this is attributed to the redirection of fishing effort from shelf seas, where populations have been very heavily depleted, into deeper water where previously unfished populations are now being taken (Ellis & Walker, *in press*).

Catch statistics reveal a major decline in landings of all skates and rays since the beginning of the 20th century but there are some difficulties with interpretation at the species level, as the data have sometimes been combined. There are some records, however, that distinguish between catches of the different species such as the Scottish sampling programme carried out in the North Sea between 1929-1956 and 1981-1995. The results show that *D.batis* was caught regularly in the North Sea during the first period, but had apparently disappeared from the area before the second sampling period although there are occasional incidental catches (Walker & Hislop, 1998; Walker & Heessen, 1996) (Figure A). In the southern North Sea *D.batis* was considered to be common in Belgian waters in the early 1900's (e.g. Gilson, 1921; Lameere, 1936), but there are no recent records (J.Haelters & F.Kerckhof *pers comm*).

Fishing pressure in the North Sea has been calculated to have resulted in a 34-37% decrease in numbers annually and *D.batis* is believed to have been replaced in much of its former range by smaller, faster-maturing and more fecund *Dipturis* species (Camhi *et al.* 1998). Modelling of the long-term impact of otter trawling in the North Sea, based on by-catch records delivered to the Dutch Zoological station between 1947-1981, suggest that numbers of *D.batis* decreased by more than 75% during this period (Rumohr *et al.,* 1998).

FIGURE A Abundance (average catch/hour) of seven skate and ray species in the North Sea. (from Walker & Hislop, 1998).



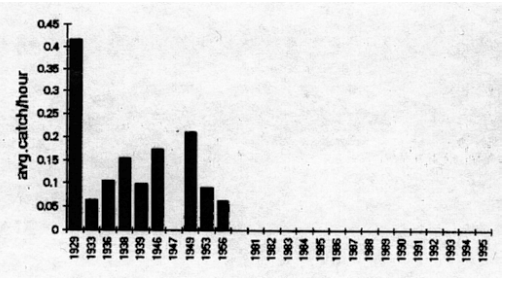
Sensitivity

The Common Skate is a large, long-lived species with a low fecundity. Its age and very large size at maturity makes it especially vulnerable to capture by bottom trawl fisheries. Most size classes are taken in fishing nets, and mortality of the large juveniles is high (Camhi *et al.,* 1998).

Rarity

The status of the Common Skate in the North Sea has changed from a species that was relatively common and commercially important, to being quite rare. At the end of the last century, for example, it was considered to be one of the more common elasmobranchs in Scottish waters, comprising nearly 40% of landings. In the 1930's *D.batis* comprised nearly 40% of the tonnage of skates landed by Dutch fishermen from near the Dogger Bank, although only juveniles were being landed. This figure dropped to 10% in 1970 the last year in which it was recorded separately (Camhi *et al.,* 1998). The fall in catch per unit effort in the North Sea is illustrated in Figure B. The species has also been commercially extinct in the Irish Sea for some years (Brander, 1981).

Figure B. Average catch/hour of *D.batis* 1929-1956 and 1981-1995 (from Walker & Hislop, 1998)



Threat

Directed and by-catch fishing mortality is the major threat to Common Skate. Its vulnerable life history makes the threat to population status posed by even only by-catch mortality potentially serious. The recent expansion of fishing into deep-water areas of ICES Sub-areas VI and VII, and along the Mid-Atlantic Ridge, exploits previously unharvested portions of this species. Depending on unknown relationships between deep-water and shelf "populations" of skates, it is possible that these fisheries could be reducing the remaining spawning population for Common Skate (ICES, 2002).

Other possible threats such as an increased risk of damaging embryos by trawling on spawning areas and of bioaccumulation of contaminants are unconfirmed at the present time but may warrant further investigation (ICES, 2002).

Relevant additional considerations

Sufficiency of data

Fisheries data, including catch per unit effort, and benthic surveys provide the information on which the decline of *D.batis* has been determined although in some cases the information is grouped for several species of skates and rays making it difficult to distinguish species-specific trends.

Changes in relation to natural variability

The dramatic decline in abundance of common Skate following exploitation by fisheries, points to changes beyond that which would be expected through natural variability.

Expert judgement

The overall decline in abundance and commercial extinction in at least one part of its range is the basis on which this species has been classified by IUCN as endangered throughout its range and "critically endangered" in shelf sea areas.

ICES evaluation

The ICES review of this nomination by the Study Group on Elasmobranch Fishes (SGEF) confirms that the impacts of directed fisheries and by-catches are well documented and that the decline of the Common Skate is also widespread and well documented. ICES agree that it should be a priority across its full range, which is much of OSPAR area, and that the designation of Common Skate as threatened or declining is consistent with the scientific evidence (ICES, 2002).

Threat and link to human activities

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

Relevant human activity: Fishing, hunting, harvesting; shipping & navigation. *Category of effect of human activity:* Biological – removal of target species, removal of non-target species, physical damage to species.

The principle threat to *D.batis* is from fisheries and therefore clearly linked to human activity. European fisheries for skates and rays have been in existence since at least the 1800's although not a highly valued species at that time. Today fishing pressure on skates from target and multi-species fisheries in the NE Atlantic is so intensive that few of the species can survive to maturity (Camhi *et al* 1998). Another fisheries related effect is the change in the length distribution of skates and rays in the North Sea (with the exception of the starry ray). These show a shift to few fish about 80cm now, whereas individuals of more than 100cms used to be common. For the common skate this has meant a loss of all or some of the reproducing females (Walker & Hislop, 1998).

Management considerations

Useful management measures for *D.batis* in the OSPAR Maritime Area should address directed fishing and by-catch of the Common Skate. This could include gear restrictions and closed areas. These are issues that fall within the remit fisheries organisations rather than OSPAR, although OSPAR can communicate an opinion on this to the relevant bodies.

The Common Skate is considered to be a globally endangered species by IUCN with inshore European populations "critically endangered" (IUCN, 2002).

Further information

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Belgium, Netherlands, UK.

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