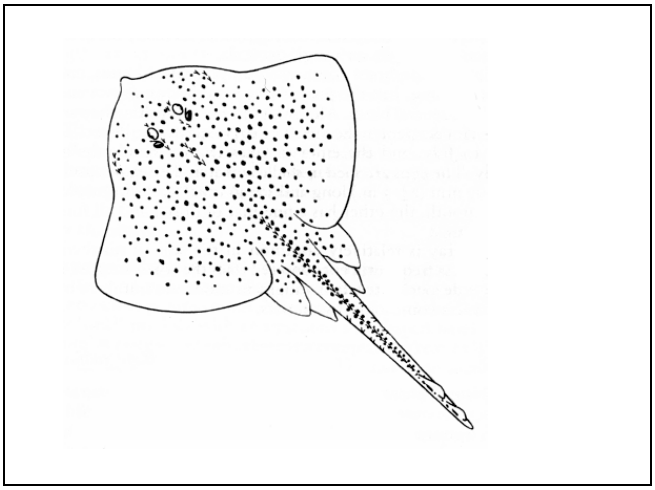
Nomination

Dipturus (Raja) montagui, Spotted Ray



Geographical extent

OSPAR Regions; II,III,IV, V
Biogeographic zones: 6-9,
Region & Biogeographic zones specified for decline and/or threat: as above

The Spotted Ray is widely distributed through the southern North Sea and adjacent shelf waters. It is found around the west coast of the British Isles, from Scotland and the Shetland Isles, the southern North Sea, English Channel and off the coasts of Spain and Portugal. It also occurs in the western Mediterranean. It is a Lusitanian species whose distribution appears to have extended into the North Sea in recent years with two possible centres of distribution, one off the NE coast of Scotland and the other off the south-east coast of England (Walker & Heesen, 1996). This species of ray lives in moderately deep water, mainly between 60-120m and is most common on sandy seabed (Wheeler, 1978).

Application of the Texel-Faial criteria

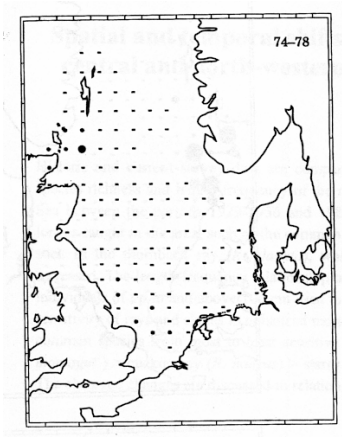
D.montagui was nominated for inclusion with particular reference to decline, sensitivity, rarity, and threat in Belgian waters.

Decline

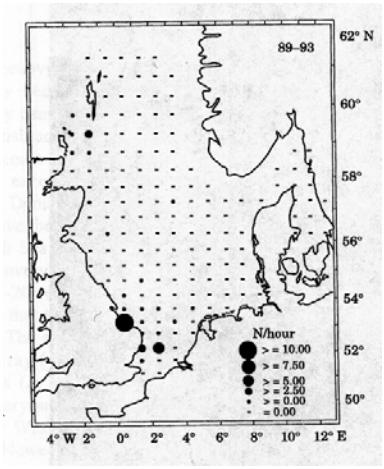
The precise status of the spotted ray in the North Sea is difficult to quantify but data from a Scottish survey and the International Bottom Trawl Survey (IBTS) point to it becoming more abundant along the SE coast of England during the mid to late 1970's (Walker & Heessen, 1996; Walker & Hislop, 1998) (Figure A). At the same time it may have become less abundant is some areas. The Spotted Ray was considered to be a commonly occurring species in Belgian waters in the mid-1900s for example (Poll, 1947), but there has been a severe decline since then and it is now very rare in Belgian waters (J.Haelters & F.Kerckhof, *pers.co*m).

FIGURE A. Distribution of spotted ray by 5-year period. (a) 74-78, (b) 89-93). Figure 5 from Walker & Heesen, 1996).

(a)



(b)



Sensitivity

Like all elasmobranchs, the spotted ray is a large, long-lived species with a low fecundity when compared to other groups of fish, however, it is less sensitive than some of the other rays found in the OSPAR Maritime Area. A sampling programme conducted in the North Sea revealed that the size of the spotted ray at the onset of maturity is less than that of the thornback ray *(R.clavata*), but larger that the cuckoo ray (*R.naevus*) or starry ray (*R.radiata*) .

On the other hand it is more fecund than the starry ray and less so than the cuckoo ray (Walker & Ellis, 1998). The size at maturity of this and other rays makes them vulnerable to capture by bottom trawl fisheries.

Rarity

The spotted ray is a Lusitanean species, reaching the northern limit of its range in the OSPAR Maritime Area. Most detailed studies of its abundance have taken place in the North Sea and the Irish Sea where it does not appear to be particularly common.

Threat

D.montagui not as vulnerable as some of the other skates and rays in the OSPAR Maritime Area, but the same threats are relevant. *D.montagui* is taken as bycatch in the demersal fisheries and it is landed for consumption along with a number of other rays. This is the main threat to the species at the present time (ICES, 2002).

Relevant additional considerations

Sufficiency of data

Fisheries data and benthic surveys provide the information on which the status of *D.montagui* 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

High catches of juveniles have been observed off the south-east coast of England in the 1990's following a series of warm winters in the late 1980's (Walker & Heessen, 1996). As it is a southerly species, the northerly limits of its distribution are in the North Sea and are determined by water temperature.

Expert judgement

Current data and expert judgement suggests that this species is probably not in overall decline in the OSPAR Maritime Area. It is subject to the same threats as other ray species and the identification of Spotted Ray as a species highly sensitive to mortality due to fishing is consistent with the scientific evidence (ICES, 2002).

ICES evaluation

The ICES review of this nomination by the Study Group on Elasmobranch Fishes (SGEF) notes that declines have been documented in the southern and eastern North Sea, but that no trends are apparent in the western North Sea. There is some documentation of impacts of fisheries that also take the Spotted Ray as by-catch. ICES conclude that this species should only be a priority for specific regions rather than the whole OSPAR Maritime area (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.montagui* 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 (Walker & Hislop, 1998).

Management considerations

Useful management measures for *D.montagui* in the OSPAR Maritime Area should address directed fishing and by-catch of the Spotted Ray. 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.

Further information

Nominated by:
Belgium

Contact persons:

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Useful References:

Camhi, M. Fowler, S., Musick, J., Brautigam, A. & Fordham, S. (1998). Sharks and their relatives. Ecology and Conservation. Occasional Paper of the IUCN Species Survival Commission No.20.

ICES (2002) Report of the Working Group on Ecosystem Effects of Fisheries. Advisory Committee on Ecosystems. ICES CM 2002/ACE:03.

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Wheeler, A. (1978) Key to the fishes of Northern Europe. Frederick Warne & Co, London.