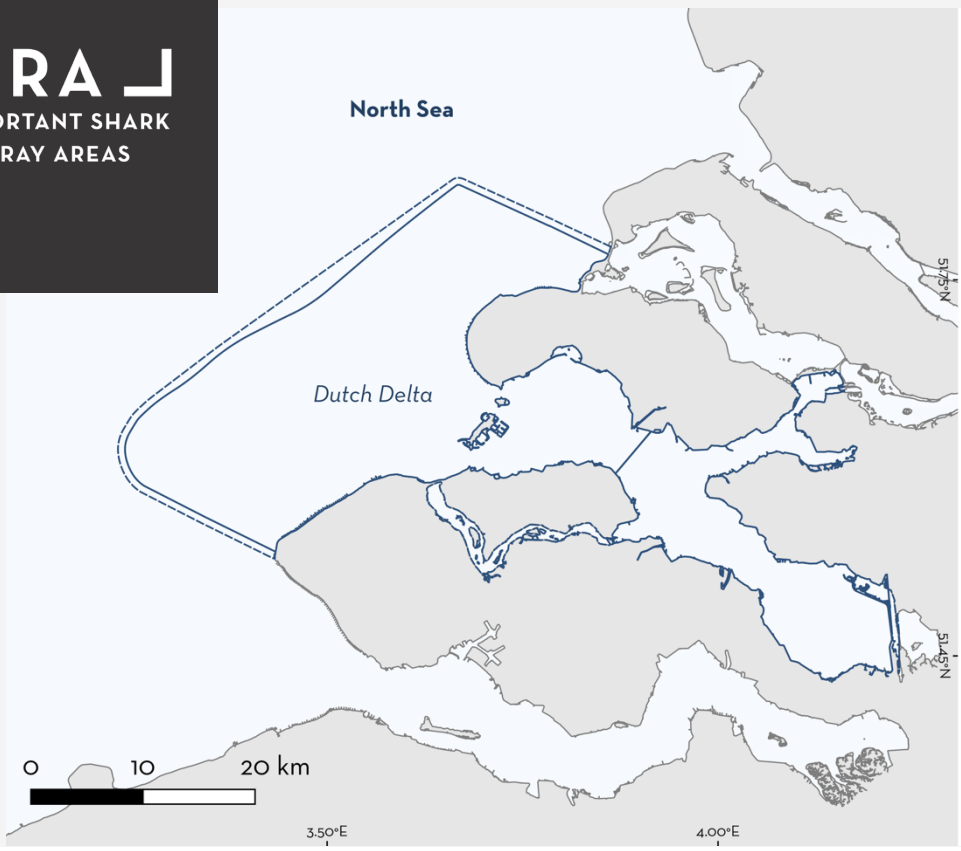
ISRA
IMPORTANT SHARK AND RAY AREAS



Blue lines indicate the area meeting the ISRA Criteria; dashed lines indicate the suggested buffer for use in the development of appropriate place-based conservation measures

DUTCH DELTA ISRA

European Atlantic Region

NETHERLANDS

0–30 metres

963.8 km²

SUMMARY

Dutch Delta is located in the southwest of the Netherlands. This coastal area is characterised by an estuary (Westerschelde) and a partially closed sea arm (Oosterschelde). The substrate is a mixture of sand and mud and is influenced by the Delta Works – a series of storm surge barriers, dikes, dams, and sluice gates – which has created a system of tidal and deep sandbanks connected by deep channels. Within this area there are: **reproductive areas** (Starry Smoothhound *Mustelus asterias*).

CRITERIA

Sub-criterion C1 – Reproductive Areas

DESCRIPTION OF HABITAT

Dutch Delta is located in the southwest of the Netherlands. This area comprises the shallow sea part of the Zeeland and South Holland Delta with an estuary (Westerschelde) and a partially closed sea arm (Oosterschelde). The area is characterised by a varied and dynamic environment of coastal waters (salt), intertidal zone, and beaches, which forms a relatively sheltered transition zone between the (former) estuaries, and the high seas (EEA 2025a, 2025b, 2025c). The area is influenced by the Delta Works – a series of storm surge barriers, dikes, dams, and sluice gates – which has extensively changed the region, creating a system of tidal and deep sandbanks connected by deep channels (EEA 2025a; Netherlands 2025). Erosion and sedimentation processes cause shifts in the size of the intertidal areas. The area has extensive reefs of Blue Mussel *Mytilus edulis* and Pacific Oyster *Crassostrea gigas*.

This Important Shark and Ray Area is benthic and pelagic and is delineated from inshore and surface waters (0 m) to 30 m based on the bathymetry of the area.

ISRA CRITERIA

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Dutch Delta is an important reproductive area for one shark species.

A Starry Smoothhound mark-recapture programme was led by anglers between 2011–2019. Sharks were caught by a group of licensed taggers and fishing occurred in the river Scheldt outer estuary (Westerschelde) and the adjacent sea arm in the Netherlands (Oosterschelde) within this area. During this period, 4,495 individuals were captured, of which 3,699 were tagged using unique plastic rototags (Brevé et al. 2016, 2020). Fishing took place year-round, but 99.9% of all Starry Smoothhounds were caught between May and October, supporting a seasonal nature to their habitat use at this location. The size and numbers of recaptures included 76 neonates measuring <33 cm total length (TL); 179 males (46 young-of-the-year [YOY] measuring 33–65 cm TL; 21 juveniles, 65–70.4 cm TL; 112 adults, >70.4 cm TL); and 187 females (46 YOY measuring 33–69 cm TL; 63 juveniles, 69–81.9 cm TL; 78 adults, >81.9 cm TL). The size-at-birth for this species is ~28–38 cm TL and it reaches maturity at 72–85 cm TL for males and ~83–96 cm TL for females (Ebert et al. 2021). Whether females were pregnant or not was not recorded. It is unclear where mating takes place, but gravid females move into the English Channel and into sheltered waters for pupping, with parturition occurring June to July in the eastern English Channel and southern North Sea, including the Dutch Delta (Brevé et al. 2016). In addition, expert knowledge surveys in the region have informed consensus maps of important pupping and reproduction areas for Starry Smoothhound in this area (V van den Berg unpubl. data 2025). There is additional photographic evidence of neonates in the area, and the data indicate that the Dutch Delta is used on an annual and seasonal basis as a pupping area, the only one known along the Dutch coastline.

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QUALIFYING SPECIES

Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
SHARKS												
Mustelus asterias	Starry Smoothhound	NT	0–199			X						

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Galeorhinus galeus	Tope	CR
Scyliorhinus canicula	Smallspotted Catshark	LC
Scyliorhinus stellaris	Nursehound	VU
RAYS		
Dasyatis pastinaca	Common Stingray	VU
Raja clavata	Thornback Skate	NT

IUCN Red List of Threatened Species Categories are available by searching species names at www.iucnredlist.org Abbreviations refer to: CR, Critically Endangered; EN, Endangered; VU, Vulnerable; NT, Near Threatened; LC, Least Concern; DD, Data Deficient.

SUPPORTING INFORMATION

There are additional indications that this area is important for reproductive purposes of at least one more shark species. Information from anglers and fishers suggests Tope use this area between the months of May–September, where it is suspected that they use it as a pupping ground as adult females and neonates are frequently observed (Winter & Batsleer 2023). However, more information is needed to confirm the regularity of their use of this area.

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