

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

## NORTH SEA CENTRAL GRABEN ISRA

### Polar Waters Region

### SUMMARY

North Sea Central Graben is located within the Norwegian exclusive economic zone and sits within the northern North Sea. The area is shallow and is characterised by low gradient terrains and sand banks. It is highly influenced by the input of Atlantic oceanic waters and by westerly winds. Within this area there are: **threatened species** and **reproductive areas** (Thorny Skate *Amblyraja radiata*).

### CRITERIA

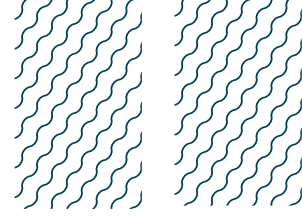
**Criterion A - Vulnerability; Sub-criterion C1 - Reproductive Areas**

NORWAY

50-80 metres

70.42 km<sup>2</sup>





## DESCRIPTION OF HABITAT

North Sea Central Graben is located within the Norwegian exclusive economic zone and sits within the northern North Sea. The area is shallow and is characterised by low gradient terrains and sand banks (Cohen et al. 2017).

It is highly influenced by the input of Atlantic oceanic waters and by westerly winds that produces a cyclonic circulation (Ducrotoy et al. 2000; Emeis et al. 2015). Sea bottom temperatures range between 6-9°C (Hiddink et al. 2015).

This Important Shark and Ray Area is benthic and subsurface and is delineated from 50-80 m based on the depth range of Qualifying Species in the area.

## ISRA CRITERIA

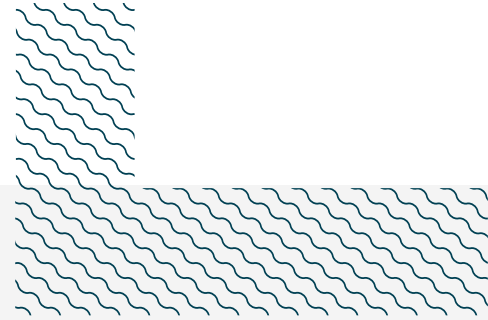
### CRITERION A – VULNERABILITY

One Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species regularly occurs in the area. This is the Vulnerable Thorny Skate (Kulka et al. 2020).

### SUB-CRITERION C1 – REPRODUCTIVE AREAS

North Sea Central Graben is an important reproductive area for one ray species.

Based on fishery-independent trawl surveys around the British Isles and in the North Sea between 1993-2022 (some surveys were only conducted over a fraction of the period) at depths of 20-200 m, this area was identified as a hotspot for early life-stages of Thorny Skate (Ellis et al. 2024). Surveys were done at fixed stations and at randomly sampled stations. At fixed stations, relative abundances (catch-per-unit-effort [CPUE] = number of individuals per hour; ind/h<sup>-1</sup>) and the frequency of occurrence (percentage of surveys in which the species was reported compared to the total surveys) were estimated. Individuals measuring <14 cm total length (TL) were classified as recently hatched. This classification was based on the reported size-at-hatching (6-12 cm TL; Ellis et al. 2005; Heessen et al. 2015; Last et al. 2016). This area presented the largest CPUE (~2 ind/h<sup>-1</sup>) of recently hatched individuals in all the North Sea, and a frequency of occurrence ~40%, which was the second largest in the North Sea (Ellis et al. 2024).



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Emiliano García-Rodríguez (IUCN SSC Shark Specialist Group - ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2024 ISRA Region 1 - Polar Waters workshop for their contributions to this process.

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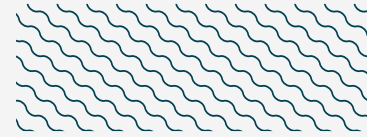
### **Suggested citation**

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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	
<b>RAYS</b>													
<i>Amblyraja radiata</i>	Thorny Skate	VU	0-1,400	X		X							

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



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