

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

## CENTRAL CATALONIA ISRA

### Mediterranean and Black Seas Region

#### SUMMARY

Central Catalonia is located along the continental shelf of Barcelona and Girona in Spain. The area has a broad continental shelf extending to 200 m depth characterised by a high productivity. The area includes sandy and muddy substrates, rocky coasts, and submarine canyons. This area includes three Natura 2000 areas, two Special Protection Areas, partially overlaps with two Key Biodiversity Areas, and sits within an Ecologically or Biologically Significant Marine Area. Within this area there are: **range restricted species** (Starry Skate *Raja asterias*); **reproductive areas** (Smallspotted Catshark *Scyliorhinus canicula*); and **feeding areas** (Starry Skate).

#### CRITERIA

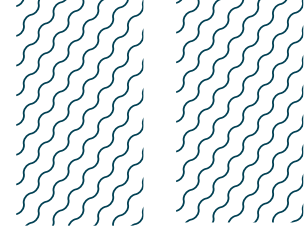
**Criterion B - Range Restricted; Sub-criterion C1 - Reproductive Areas; Sub-criterion C2 - Feeding Areas**

— —  
**SPAIN**

— —  
**20-200 metres**

— —  
**1,634.2 km<sup>2</sup>**





## DESCRIPTION OF HABITAT

Central Catalonia is located in the northeast of the Iberian Peninsula in Spain. This area in the northwest Mediterranean Sea is characterised by the presence of the Liguro-Provençal-Catalan Current that follows the continental shelf towards the west and south according to the geostrophic equilibrium. This, combined with the winter disruption of the thermocline and the river discharge of the Ebro and other rivers, causes a huge input of nutrients to the Catalan Sea increasing productivity (Estrada 1996; Basterretxea et al. 2018).

Overall, the area has a broad continental shelf to 200 m depth. The northern part of the area has a narrower continental shelf with prominent submarine canyons. The substrate consists mainly of a rocky coast, with a predominance of sand and sandy-muddy bottoms. The southern part has a wider continental shelf with some underwater canyons with muddy-sandy substrates. These benthic environments are rich in calcareous algae, molluscs, and echinoderms (Demestre et al. 2000).

Central Catalonia includes three areas designated as Natura 2000 sites: Espacio marino del Baix Llobregat-Garraf (ES0000513) protected under the Birds Directive; and Massís de les Cadiretes (ES5120013) and Delta del Llobregat (ES0000146) protected under both the Birds and Habitats Directives.

This area is within an Ecologically or Biologically Significant Marine Area (EBSA), the North-western Mediterranean Benthic Ecosystems EBSA (CBD 2023) and partially overlaps with two Key Biodiversity Areas: Aguas del Baix Llobregat - Garraf, and Plataforma Marina del Delta del Ebro - Columbretes (KBA 2023a, 2023b).

This Important Shark and Ray Area is benthic from 20 to 200 m based on the bathymetry of the area and the depth range of Qualifying Species in the area.

## ISRA CRITERIA

### CRITERION B - RANGE RESTRICTED

This area holds the regular presence of the Starry Skate as resident range-restricted species. This species occurs year-round in the area and is regularly caught as bycatch during commercial fishing operations (Abelló & Guerao 1999; Barría et al. 2015; Navarro et al. 2016). Starry Skate occurs only in the Mediterranean Sea Large Marine Ecosystem.

### SUB-CRITERION C<sub>1</sub> - REPRODUCTIVE AREAS

Central Catalonia is an important reproductive area for one shark species.

Based on Mediterranean International Trawl Survey (MEDITS) data (2002-2016), Central Catalonia holds a high abundance of the Smallspotted Catshark (30 to 300 individuals/km<sup>2</sup>) (Navarro et al. 2016) being one of the two shark species most captured in the area (Barría 2017). Egg cases of Smallspotted Catsharks are regularly found in trawl nets (A. Sanjaume pers. obs. 2023). The abundance of egg cases has been quantified based on surveys from captures in trawl fishing operations between May 2020 and February 2022, identifying an average density in this area of 59 egg cases/km<sup>2</sup>, with a maximum of 639 egg cases/km<sup>2</sup> (Ceballos 2023; D. Ruiz-García et al. unpubl.

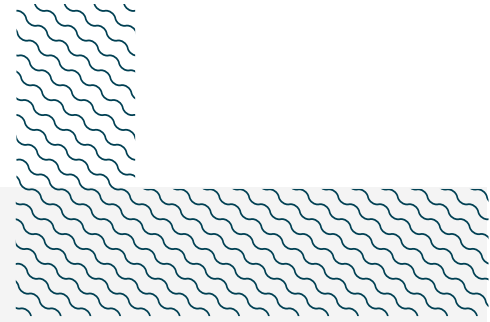
data 2023). Two hotspots of high density (>580 egg cases/km<sup>2</sup>) have been identified in front of Llobregat Delta and in front of Sant Feliu de Guixols, situated respectively at the north and south of Central Catalonia.

The highest egg case abundance was located at ~100 m depth (Ceballos 2023; D. Ruiz-García et al. unpubl. data 2023). Morphological identification keys were used to identify egg cases to species (Porcu et al. 2017; Mancusi et al 2021).

## SUB-CRITERION C2 - FEEDING AREAS

Central Catalonia is an important feeding area for Starry Skate.

The area is a productive location within a mostly oligotrophic region. Stomach content and stable isotope analysis have been used to describe the diet of Starry Skate. Both techniques indicated that diet was composed of crustaceans, principally the Angular Crab (*Goneplax rhomboidesk*) and Harbour Crab (*Liocarcinus depurator*) (Barría et al. 2015; Navarro et al. 2013). Crustaceans are very abundant in the area (Barría et al. 2015; Navarro et al. 2016; Ramírez-Amaro et al. 2020). Both crab species are the dominant crustaceans in terms of both biomass and abundance (Abelló et al. 1988, 2002). This area is an important feeding ground for the range-restricted Starry Skate, due to the high and constant abundance of its main preys throughout the year in this area (Abelló & Guerao 1999).



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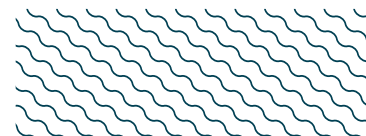
## **Suggested citation**

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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
<b>SHARKS</b>											
<i>Scyliorhinus canicula</i>	Smallspotted Catshark	LC	0-800			X					
<b>RAYS</b>											
<i>Raja asterias</i>	Starry Skate	NT	0-700		X		X				

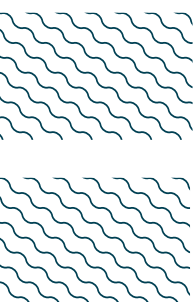
## SUPPORTING SPECIES

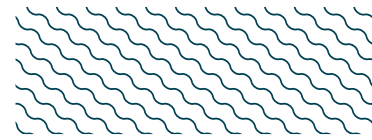


Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Alopias vulpinus</i>	Common Thresher	VU
<i>Cetorhinus maximus</i>	Basking Shark	EN
<i>Galeorhinus galeus</i>	Tope	CR
<i>Isurus oxyrinchus</i>	Shortfin Mako	CR*
<i>Oxynotus centrina</i>	Angular Roughshark	EN
<i>Prionace glauca</i>	Blue Shark	CR*
<i>Squalus acanthias</i>	Spiny Dogfish	VU
<i>Squalus blainville</i>	Longnose Spurdog	DD
<b>RAYS</b>		
<i>Aetomylaeus bovinus</i>	Duckbill Eagle Ray	CR
<i>Dasyatis pastinaca</i>	Common Stingray	VU
<i>Dasyatis tortonesei</i>	Tortonese's Stingray	DD
<i>Gymnura altavela</i>	Spiny Butterfly Ray	EN
<i>Mobula mobular</i>	Spinetail Devil Ray	EN
<i>Myliobatis aquila</i>	Common Eagle Ray	CR
<i>Pteroplatytrygon violacea</i>	Pelagic Stingray	LC
<i>Raja brachyura</i>	Blonde Skate	NT
<i>Raja polystigma</i>	Speckled Skate	LC
<i>Raja undulata</i>	Undulate Skate	EN
<i>Torpedo marmorata</i>	Marbled Torpedo Ray	VU
<i>Torpedo torpedo</i>	Ocellate Torpedo	VU

\*Considered CR in a Mediterranean regional assessment but NT (Blue Shark) and EN (Shortfin Mako) globally

*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.*





## SUPPORTING INFORMATION

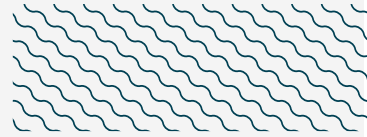
There are additional indications that Central Catalonia is an important area for aggregations, range restricted species, and reproductive purposes of three ray species.

The dive centre Blaumar in Mataró (Roger Punsola) reports that aggregations of at least 100 Common Eagle Ray individuals (local common name, Milana) can be seen during boreal spring near the coast. However, additional information is needed to confirm the regularity of these aggregations.

This area also holds the regular presence of the range restricted Speckled Skate (Navarro et al. 2016; D. Ruiz-García et al. unpubl. data 2023; C. Barría & A.I. Colmenero unpubl. data 2023). This species occurs year-round in the area and is regularly caught as bycatch during commercial hake trawl fishing operations and small-scale fisheries (Barría et al. 2015; Barría & Colmenero 2019; D. Ruiz-García et al. unpubl. data 2023; C. Barría & A.I. Colmenero unpubl. data 2023). Further information is needed to justify the importance of area in comparison with other areas of the Mediterranean Sea where the species can also be found.

Egg cases of the Starry Skate are found within the area. Further information is required to determine the importance of the area for reproduction of this species.





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