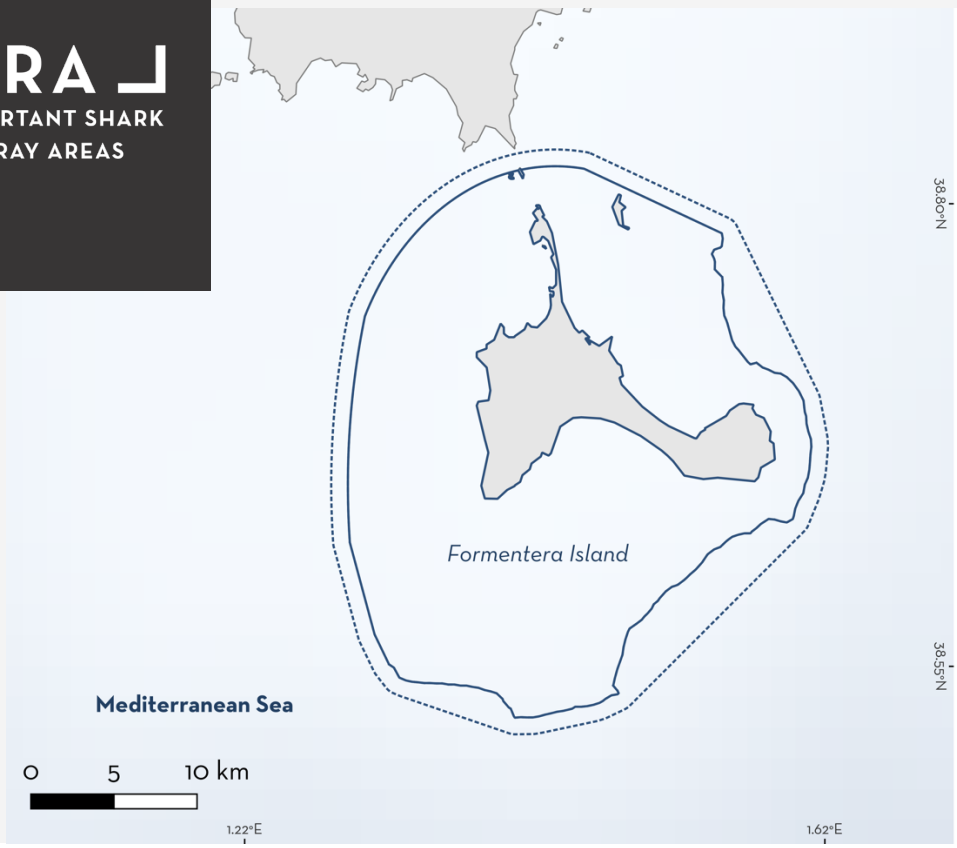
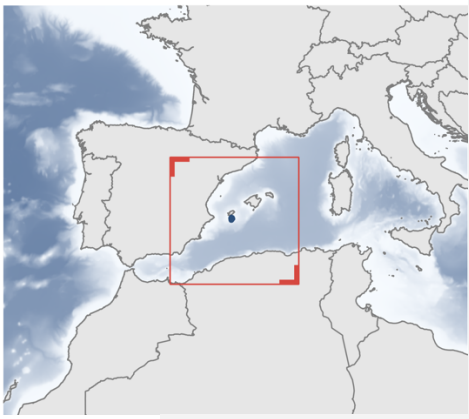
ISRA
IMPORTANT SHARK AND RAY AREAS





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

FORMENTERA ISLAND ISRA

Mediterranean and Black Seas Region

SPAIN

0–200 metres

562.6 km²

SUMMARY

Formentera Island, the southernmost island of the Balearic Archipelago, is located east of the Iberian Peninsula of Spain. The area is characterised by benthic habitats that include extensive Neptune Grass *Posidonia oceanica,* rocky shores, sandy substrates, maërl beds, and coralligenous areas, as well as some flat and low seamounts in its southern part. The area overlaps with the Freus d'Eivissa I Formentera and the Punta de sa Creu Marine Reserves, seven Natura 2000 areas, and the North-western Mediterranean Benthic Ecosystems Ecologically or Biologically Significant Marine Area. Within this area there are: **threatened species** (e.g., White Skate *Rostroraja alba*); **range-restricted species** (Rough Skate *Raja radula*); and **undefined aggregations** (White Skate).

CRITERIA

Criterion A – Vulnerability; Criterion B – Range Restricted;
Sub-criterion C5 – Undefined Aggregations

DESCRIPTION OF HABITAT

Formentera Island is the southernmost island of the Balearic Archipelago, located in the northwestern Mediterranean and east of the Iberian Peninsula of Spain. This area is separated from Ibiza Island by a channel of <4 km wide.

The coastline of Formentera Island consists of a succession of sandy beaches and rocky shores, that form high cliffs in some sectors. The substrate around the island is mostly detrital (sandy), with Neptune Grass *Posidonia oceanica* forming large meadows down to 35 m depth (Julià et al. 2019). Deeper habitats consist of maërl beds and coralligenous habitats (dominated by algae). Three seamounts are located in the southern part of Formentera Island with Baix Fondo the most significant. This seamount is located 2.5 km south of the southernmost tip of the island and occupies ~25 km^2. It constitutes a flat seamount elevated from the circalittoral sedimentary bottoms at 65 m to the rocky infralittoral bottoms at 33 m, although most of its shallowest part is formed by sandy bottoms with abundant algae. The bay located in the southern part of Formentera is dominated by sandy substrates (Coll et al. 2017).

The area overlaps with the Freus d'Eivissa i Formentera and the Punta de sa Creu Marine Reserves, seven Natura 2000 areas, and the North-western Mediterranean Benthic Ecosystems Ecologically or Biologically Significant Marine Areas (CBD 2023).

This Important Shark and Ray Area is benthic and is delineated from the surface and inshore waters (0 m) to 200 m depth based on the depth range of Qualifying Species.

ISRA CRITERIA

CRITERION A – VULNERABILITY

Two Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species™ regularly occur in the area. These are the Endangered Rough Skate (Mancusi et al. 2016) and White Skate (Dulvy et al. 2006).

CRITERION B – RANGE RESTRICTED

This area holds the regular presence of the Rough Skate as a resident range-restricted species. Rough Skate is the second most abundant species among coastal sharks and rays in the Balearic Islands (Morey et al. 2006). Furthermore, its relative contribution to the coastal shark and ray assemblage is higher in Formentera Island in comparison to Mallorca and Menorca islands. The species has been repeatedly reported in different surveys in Formentera Island, whether through experimental trammel net hauls or scuba diving surveys (Coll et al. 2017). Rough Skate only occurs in the Mediterranean Sea Large Marine Ecosystem.

SUB-CRITERION C5 – UNDEFINED AGGREGATIONS

This area is an important aggregation site for one species of ray.

Formentera Island hosts the highest known density of White Skate in the Balearic Islands. Until 2015, when the species became legally protected in Spain, a regular and seasonal fishery targeted White Skate in Formentera Island using trammel nets. In 2009 and 2010, preliminary monitoring of this

small-scale fishery showed a mean catch-per-unit-effort (CPUE ± standard error) of 0.9 individuals ± 0.25 /100 m of net (range: 0.3–3.3; sample size: 13 hauls) (G. Morey unpubl. data 2023) with a mean size from 38 specimens of 131 ± 22 cm total length (TL) (range: 67–171 cm TL). The fishery ceased in 2015, and no further monitoring has been conducted. More recent information of 10 specimens captured in a single haul of a 500 m trammel net in April 2023 (with all the skates being released alive; G. Morey pers. obs.), indicates that the species is aggregating around the island, but the reasons for these aggregations remain unknown.

The species is rarely recorded as bycatch in the Mediterranean Sea (Serena et al. 2010), emphasising the importance of Formentera Island. Landings data from neighbouring Mallorca Island, in 2009 resulted in an estimation of ~100 individuals captured around the island in one year (estimation calculated from 27 specimens recorded during 65 sampling days in Palma's Central fish auction wharf) (Morey & Navarro 2010), confirming that the abundance of White Skate in Formentera Island is considerably higher.

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Gabriel Morey (Save the Med Foundation) contributed and consolidated information included in this factsheet. We thank all participants of the 2023 ISRA Region 3 – Mediterranean and Black Seas workshop for their contributions to this process.

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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
RAYS												
Raja radula	Rough Skate	EN	0–350	X	X							
Rostroraja alba	White Skate	EN	0–750	X						X		

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Mustelus asterias	Starry Smoothhound	VU*
Mustelus mustelus	Common Smoothhound	EN
RAYS		
Aetomylaeus bovinus	Duckbill Eagle Ray	CR
Dasyatis pastinaca	Common Stingray	VU
Myliobatis aquila	Common Eagle Ray	CR
Raja brachyura	Blonde Skate	NT
Raja miraletus	Brown Skate	LC
Scyliorhinus canicula	Smallspotted Catshark	LC
Torpedo marmorata	Marbled Torpedo Ray	VU

*Assessed as VU in a Mediterranean regional assessment but considered NT globally.

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 indications that Formentera Island could be a potential reproductive area for White Skate. Preliminary monitoring of 13 trammel net hauls conducted during 2009 and 2010 showed that the proportion of mature individuals (both sexes) was 71%. From the individuals that could be sampled, 23% (n = 3) of the adult females (i.e., >129.4 cm TL; Kadri et al. 2014) had egg cases in their uteri (G. Morey unpubl. data 2023). This percentage might be higher, as a number of them arrived gutted to the port and so the maturity stage could not be sampled (and therefore it is not known if they carried egg cases). Further information on egg nursery grounds, presence of neonates, young-of-the-year, or a higher proportion of females with egg-cases is needed to understand if the area is important for reproduction.

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