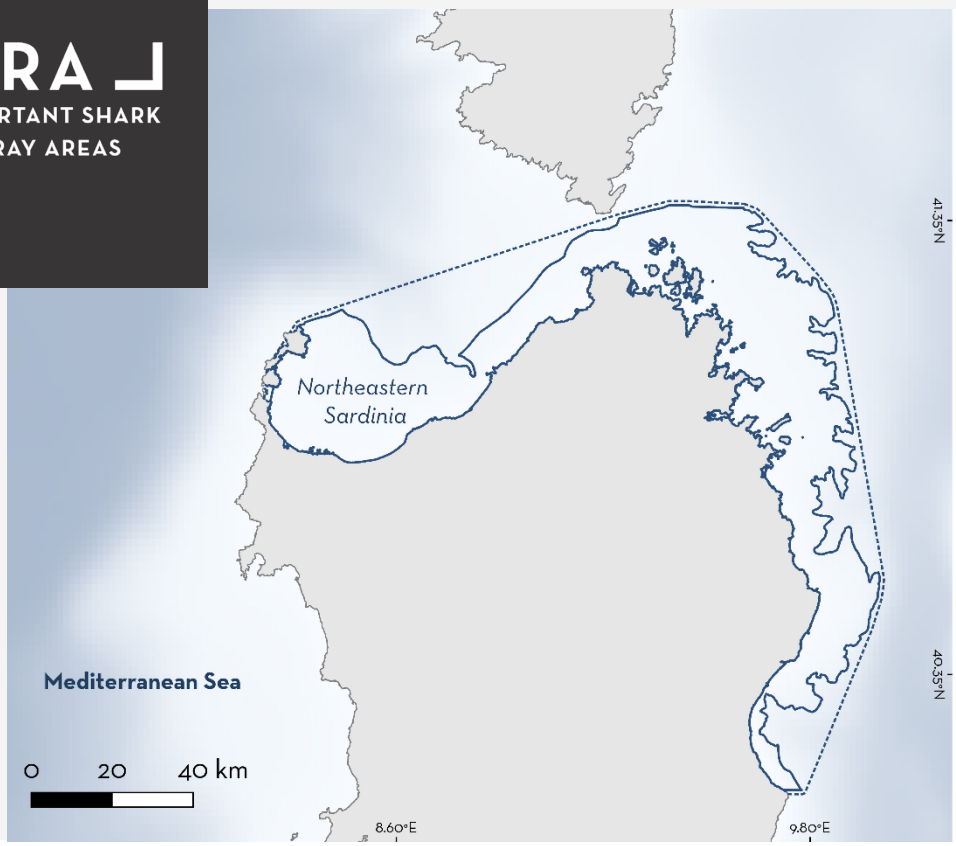
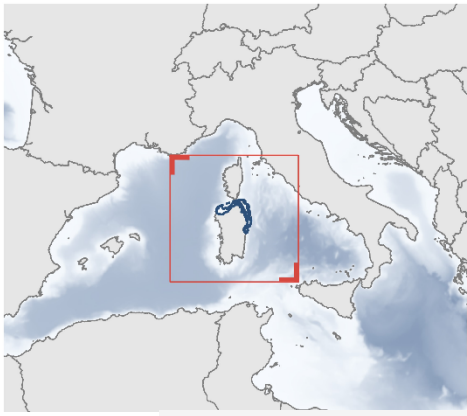
ISRA
IMPORTANT SHARK AND RAY AREAS





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

NORTHEASTERN SARDINIA ISRA

Mediterranean and Black Seas Region

ITALY

FRANCE

0–200 metres

4,324.8 km²

SUMMARY

Northeastern Sardinia is a coastal area bordering the coastline of Sardinia (Italy) and the waters of Corsica (France). It includes the Gulf of Asinara, the southern part of the Bonifacio Strait between Sardinia and Corsica, the islands and islets of the Maddalena Archipelago, and extends south to the islands of Tavolara and Molara and the coast down to the Gulf of Orosei. The area is characterised by a continental shelf of variable width (~1–20 km) and includes numerous deepwater canyons. Winter phytoplankton blooms are frequent in the area and characterise seasonal variations in productivity. The area overlaps with the North-western Mediterranean Pelagic Ecosystems Ecological and Biological Significant Marine Area, four Marine Protected Areas, and four Key Biodiversity Areas. Within this area there are: **threatened species** and **feeding areas** (Basking Shark *Cetorhinus maximus*).

CRITERIA

Criterion A – Vulnerability; Sub-criterion C2 – Feeding Areas

DESCRIPTION OF HABITAT

Northeastern Sardinia borders the northern and northwestern coast of Sardinia (Italy) and the waters of Corsica (France). It includes the Strait of Bonifacio which is shared between Italian and French waters. This area is mostly part of the Tyrrhenian Sea, but the western limit sits within the Liguro-Provençal Basin. The continental shelf is narrow in some places and wider in others (~1–20 km wide). The slope is carved by several deepwater canyons, including the Caprera, Mortorio, and Tavolara Canyons in the north, and the Posada, Orosei, and Gonone Canyons in the south (Würtz 2012). In the Tyrrhenian Sea, the Modified Atlantic Water forms the surface water mass layer (0–150 m; mean annual temperature range = 14.8–16°C; Iacono et al. 2021). Phytoplankton blooms, which are influenced by atmospheric and oceanographic conditions, occur mostly at the end of the boreal winter (Siokou-Frangou et al. 2010; Olita et al. 2011).

The area overlaps with the North-western Mediterranean Pelagic Ecosystems Ecological and Biological Significant Marine Area (CBD 2023), four Marine Protected Areas, and four Key Biodiversity Areas (Asinara Island, Piana Island and Stintino Peninsula; Northern Sardinia; Détroit de Bonifaccio et Iles Lavezzi; and Tavolara Archipelago, Cape Ceraso and Cape Figari) (KBA 2023a, 2023b, 2023c, 2023d).

This Important Shark and Ray Area is pelagic and is delineated from surface waters (0 m) to 200m based on the bathymetry of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

The one Qualifying Species occurring in the area is considered threatened with extinction according to the IUCN Red List of Threatened Species™. The Basking Shark is assessed as Endangered (Rigby et al. 2021).

SUB-CRITERION C2 – FEEDING AREAS

Northeastern Sardinia is an important feeding area for one shark species.

Basking Sharks are regular, seasonal, and annual visitors of the area. A compilation of data for the period 2005–2012 highlights records from a total of 111 individuals in the area (de Sabata & Clò 2010; de Sabata et al. 2013). Of those, ~75% were directly observed in the water by a network of observers and ~25% were captured by fishers. Individuals ranged 240–800 cm total length (TL) and were mostly observed in spring, particularly in March (de Sabata & Clò 2010; de Sabata et al. 2013). The individuals directly observed in the water were either solitary or in aggregations of up to 11 individuals.

Most sightings occurred in areas near submarine canyon heads (de Sabata & Clò 2010; de Sabata et al. 2013). Upwelling at these canyons transport nutrients to surface waters and enhance productivity (Würtz 2012). Sightings of Basking Sharks correlated to high levels of chlorophyll-a concentrations in the area (de Sabata et al. 2013). In addition, several observations of feeding individuals were made in the area.

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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												
Cetorhinus maximus	Basking Shark	EN	0–1,264	X			X					

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
Alopias vulpinus	Common Thresher	VU
Carcharodon carcharias	White Shark	VU
Hexanchus griseus	Bluntnose Sixgill Shark	NT
Isurus oxyrinchus	Shortfin Mako	EN
Prionace glauca	Blue Shark	CR*
RAYS		
Mobula mobular	Spinetail Devil Ray	EN

*Assessed as CR 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.

REFERENCES

Convention on Biological Diversity (CBD). 2023. North-western Mediterranean Pelagic Ecosystems. Available at: https://chm.cbd.int Accessed May 2023.

de Sabata E & Clò S. 2010. Public sighting scheme reveals the seasonal presence of *Cetorhinus maximus* around North Sardinia, Italy. *Biologia Marina Mediterranea* 17(1): 246–247 https://doi.org/10.13140/RG.2.2.27556.96646

de Sabata E, Olita A, Clò S. 2013. On the occurrence of basking sharks (*Cetorhinus maximus*) in Sardinia in relation to oceanographic variables. *Biologia Marina Mediterranea* 20(1): 180–181. https://doi.org/10.13140/RG.2.2.17490.63682

Iacono R, Napolitano E, Palma M, Sannino G. 2021. The Tyrrhenian Sea circulation: a review of recent work. *Sustainability* 13(11): 6371. https://doi.org/10.3390/su13116371

Key Biodiversity Areas (KBA). 2023a. Key Biodiversity Areas factsheet: Asinara Island, Piana Island and Stintino Peninsula. Available at: http://www.keybiodiversityareas.org Accessed May 2023.

Key Biodiversity Areas (KBA). 2023b. Key Biodiversity Areas factsheet: Northern Sardinia. Available at: http://www.keybiodiversityareas.org Accessed May 2023.

Key Biodiversity Areas (KBA). 2023c. Key Biodiversity Areas factsheet: Détroit de Bonifaccio et Iles Lavezzi. Available at: http://www.keybiodiversityareas.org Accessed May 2023.

Key Biodiversity Areas (KBA). 2023d. Key Biodiversity Areas factsheet: Tavolara Archipelago, Cape Ceraso and Cape Figari. Available at: http://www.keybiodiversityareas.org Accessed May 2023.

Olita A, Sorgente R, Robotti A, Fazioli A, Perili L, Perilli A. 2011. Pelagic primary production in the Algero-Provençal Basin by means of multisensor satellite data: focus on interannual variability and its drivers. *Ocean Dynamics* 61(7): 1005–1016. https://doi.org/10.1007/s10236-011-0405-8

Rigby CL, Barreto R, Carlson J, Fernando D, Fordham S, Francis MP, Herman K, Jabado RW, Liu KM, Marshall A, et al. 2021. *Cetorhinus maximus* (amended version of 2019 assessment). *The IUCN Red List of Threatened Species* 2021: e.T4292A194720078. https://dx.doi.org/10.2305/IUCN.UK.2021-1.RLTS.T4292A194720078.en

Siokou-Frangou I, Christaku U, Mazzochi MG, Montressor MG, Montresor M, Ribera D'Alcala M, Vacqué D, Zingone A. 2010. Plankton in the open Mediterranean Sea: a review. *Biogeosciences* 7: 1543–1586. https://doi.org/10.5194/bg-7-1543-2010

Würtz M, ed. 2012. *Mediterranean submarine canyons: ecology and governance*. Gland, Switzerland and Málaga, Spain: IUCN. https://portals.iucn.org/library/sites/library/files/documents/2012-035.pdf