

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

## SETÚBAL PENINSULA ISRA

### European Atlantic Region

#### SUMMARY

Setúbal Peninsula is located on the west coast of Portugal. The area extends from Arrábida in the west to the Sado Estuary in the east. It is characterised by rocky reefs, extensive algae patches, and sandy and muddy substrates. Its southern coastline is protected from the predominant north/northwest winds, creating sheltered low energy environments with nutrient-rich waters transported to the area via upwelling. The area overlaps with one Ecologically or Biologically Significant Marine Area, one Key Biodiversity Area, one protected area, and one Ramsar site. Within this area there are: **threatened species** and areas important for **movement** (Common Stingray *Dasyatis pastinaca*).

#### CRITERIA

**Criterion A - Vulnerability; Sub-criterion C4 - Movement Areas**

— —  
**PORTUGAL**

— —  
**0-200 metres**

— —  
**276.9 km<sup>2</sup>**





## DESCRIPTION OF HABITAT

Setúbal Peninsula is located in the west coast of Portugal. The area extends from Arrábida in the west to the Sado Estuary, the second largest estuary in Portugal, in the east. Multiple benthic habitats are found in the area. Rocky reefs are found bordering the southern coastline at shallow depths, with a high presence of macroalgae of different morphology (crustose, filamentous, thaliform). The exposed western end of the peninsula and the central part is dominated by rocky substrates and coarse sediments. Beyond the rocky reefs, fine and medium-grain sandy substrates dominate shallower waters, with scattered coarse sediment patches. This is replaced by a mix of sand and mud sediments with increasing depth, after which these are replaced by muddy sediments as the dominant substrate type (Henriques et al. 2015).

The area is found in a transition zone between colder environments further north and warmer environments from the south (Cunha et al. 2014). The west/southwest orientation of the peninsula protects the southern coast from the prevailing north and northwest winds and provides these waters with mostly low-energy environments. Because of this and the steep depth profile that ends in the underwater canyon, upwelling events regularly occur (Cunha et al. 2014). The waters near Sado estuary are more energetic and dynamic. The estuary has large areas of salt marshes and intertidal flats and is greatly influenced by the Sado River discharges during the boreal winter, when the river input is at its highest. This changes in spring and summer, when the river input decreases significantly, and the estuary becomes more influenced by the entering of the tides (Gonçalves et al. 2015).

The area overlaps with the West Iberia Canyons and Banks Ecologically or Biologically Significant Marine Areas (EBSA; CBD 2025), the Cabo Espichel Key Biodiversity Area (KBA 2025), the Luiz Saldanha Marine Park (UNEP-WCMC & IUCN 2025), and the Estuário do Sado Ramsar site (Wetland of International Importance; Ramsar 2025).

This Important Shark and Ray Area is benthic and is delineated from inshore and surface waters (0 m) to 200 m based on the bathymetry of 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 Common Stingray (Jabado et al. 2021).

### SUB-CRITERION C<sub>4</sub> - MOVEMENT AREAS

Setúbal Peninsula is important for the movement of one ray species.

Passive acoustic telemetry revealed the regular and seasonal movements of Common Stingray between Arrábida in the western side of the area and the Sado Estuary in the east (Kraft et al. 2023, 2024). In April and October 2019 and 2021, Common Stingray were tagged with acoustic transmitters. Individuals were monitored between May 2019–May 2022 with an array of 33 acoustic receivers deployed along the western and central coast of the Setúbal peninsula and four in the Sado Estuary (Kraft et al. 2023, 2024). Of the 30 individuals tagged, 25 provided enough detections to explore seasonal movements. Individuals (15 females and 15 males) ranged between 25–42 cm disc width (DW) and the majority (n = 18; 58%) were adults. Residence index in the southwest side of the area was

highest between October/November–March/April. After this period, Common Stingrays were virtually absent from that side of the area and were detected in receivers in the central part and closer to the estuary as the months passed. Between March/April–October/November, 23 individuals (92%) were detected at least once in Sado Estuary in the eastern part of the area (with the estuary mouth ~20–40 km from the southwest and central side of the area) with 18 individuals making back and forth movements in two or more years (Kraft et al. 2023). Seasonal movements of the Common Stingray in the Setúbal Peninsula may be related to feeding and reproductive purposes. Arrábida seems to be an area where individuals aggregate (Kraft et al. 2024; S Kraft pers. obs. 2025) while the period they travel to Sado Estuary matches the reproductive season (from mating to pupping) reported for the species in other areas in the Levant Sea (Mediterranean Basin) and the Gulf of Gabès (Tunisia) (Saadoui et al. 2015; Chaikin et al. 2020). Sado Estuary may function as a parturition site as it provides protection from predators to early life stages.

---

## Acknowledgments

Sebastian Kraft (Centro de Ciências do Mar, Universidade do Algarve), David Abecasis (Centro de Ciências do Mar, Universidade do Algarve), and Emiliano García-Rodríguez (IUCN SSC Shark Specialist Group – ISRA Project) contributed and consolidated information included in this factsheet. We thank all participants of the 2025 ISRA Region 02 – European Atlantic workshop for their contributions to this process.

This factsheet has undergone review by the ISRA Independent Review Panel prior to its publication.

This project was funded by the Shark Conservation Fund, a philanthropic collaborative pooling expertise and resources to meet the threats facing the world’s sharks and rays. The Shark Conservation Fund is a project of Rockefeller Philanthropy Advisors.

## Suggested citation

IUCN SSC Shark Specialist Group. 2025. Setúbal Peninsula ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

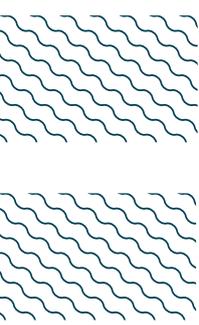
## QUALIFYING SPECIES

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												
<i>Dasyatis pastinaca</i>	Common Stingray	VU	0-200	X					X			

## SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Mustelus mustelus</i>	Common Smoothhound	EN
<b>RAYS</b>		
<i>Myliobatis aquila</i>	Common Eagle Ray	CR

*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.*





## REFERENCES

- Chaikin S, Belmaker J, Barash A. 2020.** Coastal breeding aggregations of threatened stingrays and guitarfish in the Levant. *Aquatic Conservation: Marine and Freshwater Ecosystems* 30: 1160-1171. <https://doi.org/10.1002/aqc.3305>
- Convention on Biological Diversity (CBD). 2025.** West Iberian Canyons and Banks. Ecologically or Biologically Significant Areas (EBSAs). Available at: <https://chm.cbd.int/database/record?documentID=263480> Accessed May 2025.
- Cunha AH, Erzini K, Serrão EA, Gonçalves E, Borges R, Henriques M, Henriques V, Guerra M, Duarte C, Marbá N, Fonseca M. 2014.** Biomares, a LIFE project to restore and manage the biodiversity of Prof. Luiz Saldanha Marine Park. *Journal of Coastal Conservation* 18: 643-655. <https://doi.org/10.1007/s11852-014-0336-x>
- Gonçalves C, Brogueira MJ, Nogueira M. 2015.** Tidal and spatial variability of nitrous oxide (N<sub>2</sub>O) in Sado estuary (Portugal). *Estuarine, Coastal and Shelf Science* 167: 466-474. <https://doi.org/10.1016/j.ecss.2015.10.028>
- Henriques V, Guerra MT, Mendes B, Gaudêncio MJ, Fonseca P. 2015.** Benthic habitat mapping in a Portuguese Marine Protected Area using EUNIS: An integrated approach. *Journal of Sea Research* 100: 77-90. <https://doi.org/10.1016/j.seares.2014.10.007>
- Jabado RW, Chartrain E, De Bruyne G, Derrick D, Dia M, Diop M, Doherty P, Leurs GHL, Metcalfe K, Pacoureaux N, et al. 2021.** *Dasyatis pastinaca*. *The IUCN Red List of Threatened Species* 2021: e.T161453A124488102. <https://dx.doi.org/10.2305/IUCN.UK.2021-2.RLTS.T161453A124488102.en>
- Key Biodiversity Areas (KBA). 2025.** Key Biodiversity Areas factsheet: Cabo Espichel. Available at: <https://www.keybiodiversityareas.org/site/factsheet/19677> Accessed May 2025.
- Kraft S, Winkler AC, Abecasis D. 2023.** Small coastal marine protected areas offer recurring, seasonal protection to the common stingray (*Dasyatis pastinaca*). *Ocean & Coastal Management* 246: 106891. <https://doi.org/10.1016/j.ocecoaman.2023.106891>
- Kraft S, Winkler AC, Abecasis D, Mourier J. 2024.** Long-term co-occurrence and gregariousness in the migratory common stingray using network analysis. *Marine Biology* 171: 176. <https://doi.org/10.1007/s00227-024-04498-z>
- Ramsar Convention on Wetlands of International Importance (Ramsar). 2025.** Ramsar site: Estuário do Sado. Available at: <https://rsis.ramsar.org/ris/826> Accessed May 2025.
- Saadaoui A, Saidi B, Enajjar S, Bradai MN. 2015.** Reproductive biology of the common stingray *Dasyatis pastinaca* (Linnaeus, 1758) off the Gulf of Gabès (Central Mediterranean Sea). *Cahiers de Biologie Marine* 56: 389-396.
- UNEP-WCMC & IUCN. 2025.** Protected Planet: The World Database on Protected Areas (WDPA) and World Database on Other Effective Area-based Conservation Measures (WD-OECM) [Online], May 2025, Cambridge, UK: UNEP-WCMC and IUCN. Available at: [www.protectedplanet.net](http://www.protectedplanet.net) Accessed May 2025.