

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

STRAIT OF GIBRALTAR ISRA

Mediterranean and Black Seas Region

SUMMARY

Strait of Gibraltar is the only connection between the Atlantic Ocean and the Mediterranean Sea and separates the Iberian Peninsula of Spain from Morocco. Water flows through the strait from the Atlantic Ocean into the Mediterranean Sea by a surface current, and out of the Mediterranean Sea into the Atlantic Ocean by a deep outflow of water. The area overlaps with one Ecologically or Biologically Significant Marine Area (Gulf of Cadiz) and five Key Biodiversity Areas. Within this area there are: **threatened species** (e.g., Blue Shark *Prionace glauca*), and areas important for **movement** (e.g., Tope *Galeorhinus galeus*).

CRITERIA

Criterion A - Vulnerability; Sub-criterion C4 - Movement

—	—
SPAIN	—
MOROCCO	—
UNITED KINGDOM	—
—	—
0-900 metres	—
—	—
1,710.5 km²	—
—	—





DESCRIPTION OF HABITAT

Strait of Gibraltar is a narrow strait which connects the Atlantic Ocean to the Mediterranean Sea and separates the Iberian Peninsula from Morocco. It is 58 km long and 13 km wide at its narrowest. Water flows from the Atlantic Ocean into the Mediterranean Sea by a surface current, and out of the Mediterranean Sea into the Atlantic Ocean by a deep eastward flow of dense, highly saline water (de Stephanis et al. 2008). The two currents interface at a depth of 50–200 m depending on location and tidal flow (de Stephanis et al. 2008). The shallowest part of the trough is the Camarinal sill (~300 m deep) on the western side of the strait and is the location of intense internal wave events which create ‘boiling waters’ at the surface during the maximum outward flow stage of the tidal current (Bruno et al. 2002).

The area overlaps with one Ecologically or Biologically Significant Marine Area (Gulf of Cadiz; CBD 2023), five Key Biodiversity Areas (KBAs; Estrecho de Gibraltar, Tarifa, Ceuta, Strait of Gibraltar, and Jbel Moussa; KBA 2007, 2011a, 2011b, 2011c, 2017), six Natura 2000 sites under the Habitats and/or Birds Directive (ES6120017, ES6120008, ES6310002, ES6120032, ES0000337, ES6120033), and one Ramsar site (Littoral de Jbel Moussa, also a UNESCO Biosphere Reserve and Natural Park).

This Important Shark and Ray Area is pelagic and is delineated from surface waters (0 m) to a depth of 900 m based on the bathymetry of the area.

ISRA CRITERIA

CRITERION A – VULNERABILITY

There are two Qualifying Species considered threatened with extinction according to the IUCN Red List of Threatened Species™. These are the Critically Endangered Blue Shark (Sims et al. 2016) and the Critically Endangered Tope (Walker et al. 2020).

SUB-CRITERION C4 – MOVEMENT AREAS

Strait of Gibraltar is an important area for the movement of two shark species. As the ‘Gateway to the Mediterranean’, the strait is the only way in and out of the basin for many migratory species including sharks.

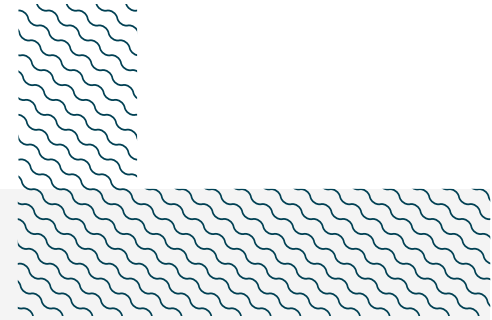
Tag-recapture data of Blue Sharks indicates that the species uses the strait to move between the Atlantic Ocean and the Mediterranean Sea. Between 1972–1975, one shark tagged in Portugal was recaptured 644 days later off the coast of Algeria (Stevens 1976). Between 1970–2001, records from the Irish Central Fisheries Board’s Marine Sportfish Tagging Programme showed two individuals, tagged in Ireland, were recaptured in the Mediterranean Sea after more than 6 months at liberty (Fitzmaurice et al. 2005). Additionally, in 1978, 1986, 2006, and 2011, four Blue Sharks tagged by the US National Marine Fisheries Service (NMFS) Cooperative Shark Tagging Program (CSTP) in the North Atlantic were recaptured in the Mediterranean Sea, in 1978, 1986, 2006, and 2012, respectively (Kohler et al. 2002; J. Carlson pers. comm. 2023). One individual tagged in May 1999 in the Mediterranean Sea was recaptured over a year later in the Atlantic in June 2000 (Kohler et al. 2002; J. Carlson pers. comm. 2023).

Of 64 Tope tagged and released by the Glasgow Museum between 1974 and 1980 in the UK, 12 were recaptured including one off the coast of Algeria in the Mediterranean Sea (Little 1995). Two female Tope tagged in Scotland in 2009 and in Ireland in 2015 were subsequently recaptured off the south



coast of Sicily in 2014 and 2017, respectively (Colloca et al. 2019; Thorburn et al. 2019).

The recapture of Blue Shark and Tope individuals on either side of the Strait, as well as direct observations of these and many other species of sharks in the strait, provides strong evidence for the importance of the strait of Gibraltar as a movement channel in and out of the Mediterranean Sea.



Acknowledgments

Jenny R Bortoluzzi (IUCN SSC Shark Specialist Group - ISRA Project) 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.

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. 2023. Strait of Gibraltar ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

QUALIFYING SPECIES

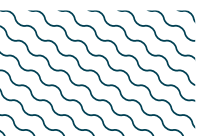
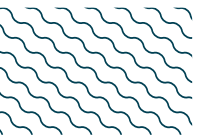
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
SHARKS												
<i>Galeorhinus galeus</i>	Tope	CR	0-826	X					X			
<i>Prionace glauca</i>	Blue Shark	CR*	0-1,000	X					X			

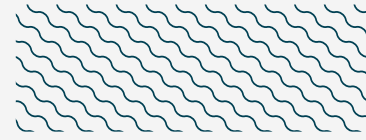
*Blue Shark is considered Critically Endangered in the Mediterranean Sea and Near Threatened globally

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Carcharodon carcharias</i>	White Shark	VU
<i>Cetorhinus maximus</i>	Basking Shark	EN
<i>Galeus atlanticus</i>	Atlantic Sawtail Catshark	NT
<i>Oxynotus centrina</i>	Angular Roughshark	EN
RAYS		
<i>Myliobatis aquila</i>	Common Eagle Ray	CR
<i>Raja undulata</i>	Undulate Skate	EN

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

- Bruno M, Juan Alonso J, Cózar A, Vidal J, Ruiz-Cañavate A, Echevarría F, Ruiz J. 2002.** The boiling-water phenomena at Camarinal Sill, the strait of Gibraltar. *Canary Islands, Azores, Gibraltar Observations (Canigo) Volume II: Studies of the Azores and Gibraltar regions* 49: 4097–4113. [https://doi.org/10.1016/S0967-0645\(02\)00144-3](https://doi.org/10.1016/S0967-0645(02)00144-3)
- Buencuerpo V, Ríos S, Morón J. 1998.** Pelagic sharks associated with the swordfish, *Xiphias gladius*, fishery in the eastern North Atlantic Ocean and the Strait of Gibraltar. *Fisheries Bulletin* 96: 667–685. <https://doi.org/10.1016/j.fishres.2023.106730>
- Colloca F, Scannella D, Geraci ML, Falsone F, Batista G, Vitale S, Di Lorenzo M. 2019.** British sharks in Sicily: records of long-distance migration of tope shark (*Galeorhinus galeus*) from North-eastern Atlantic to Mediterranean Sea. *Mediterranean Marine Science* 20(2): 309–313. <http://dx.doi.org/10.12681/mms.18121>
- Convention on Biological Diversity (CBD). 2023.** Gulf of Cádiz. Available at: <https://chm.cbd.int/database/record?documentID=263481> Accessed May 2023.
- de Stephanis R, García-Tíscar S, Verborgh P, Esteban-Pavo R, Pérez S, Minvielle-Sebastia L, Guinet C. 2008.** Diet of the social groups of long-finned pilot whales (*Globicephala melas*) in the Strait of Gibraltar. *Marine Biology* 154: 603–612. <https://doi.org/10.1007/s00227-008-0953-8>
- Key Biodiversity Areas (KBA). 2007.** Key Biodiversity Areas factsheet: Strait of Gibraltar. Available at: <https://www.keybiodiversityareas.org/site/factsheet/18> Accessed May 2023.
- Key Biodiversity Areas (KBA). 2011a.** Key Biodiversity Areas factsheet: Ceuta. Available at: <https://www.keybiodiversityareas.org/site/factsheet/1945> Accessed May 2023.
- Key Biodiversity Areas (KBA). 2011b.** Key Biodiversity Areas factsheet: Tarifa. Available at: <https://www.keybiodiversityareas.org/site/factsheet/1867> Accessed May 2023.
- Key Biodiversity Areas (KBA). 2011c.** Key Biodiversity Areas factsheet: Estrecho de Gibraltar. Available at: <https://www.keybiodiversityareas.org/site/factsheet/28513> Accessed May 2023.
- Key Biodiversity Areas (KBA). 2017.** Key Biodiversity Areas factsheet: Jbel Moussa. Available at: <https://www.keybiodiversityareas.org/site/factsheet/6478> Accessed May 2023.
- Kohler NE, Turner PA, Hoey JJ, Natanson LJ, Briggs R. 2002.** Tag and recapture data for three pelagic shark species: blue shark (*Prionace glauca*), shortfin mako (*Isurus oxyrinchus*), and porbeagle (*Lamna nasus*) in the North Atlantic Ocean. *Collective Volume Science Papers ICCAT* 54(4): 1231–1260.
- Sims D, Fowler SL, Ferretti F, Stevens J. 2016.** *Prionace glauca* (Mediterranean assessment). *The IUCN Red List of Threatened Species* 2016: e.T39381A16553182.
- Stevens J. 1976.** First results of shark tagging in the north-east Atlantic, 1972–1975. *Journal of the Marine Biological Association of the United Kingdom* 56(4): 929–937. <https://doi.org/10.1017/S002531540002097X>
- Stevens J. 1990.** Further results from a tagging study of pelagic sharks in the north-east Atlantic. *Journal of the Marine Biological Association of the United Kingdom* 70(4): 707–720. <https://doi.org/10.1017/S0025315400058999>
- Thorburn J, Neat F, Burrett I, Henry LA, Bailey DM, Jones CS, Noble LR. 2019.** Ontogenetic variation in movements and depth use, and evidence of partial migration in a benthopelagic elasmobranch. *Frontiers in Ecology and Evolution* 7: 353. <https://doi.org/10.3389/fevo.2019.00353>
- Walker TI, Rigby CL, Pacoureaux N, Ellis J, Kulka DW, Chiaramonte GE, Herman K. 2020.** *Galeorhinus galeus*. *The IUCN Red List of Threatened Species* 2020: e.T39352A2907336. <https://dx.doi.org/10.2305/IUCN.UK.2020-2.RLTS.T39352A2907336.en>