

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

SOUTHEASTERN AEGEAN SEA ISRA

Mediterranean and Black Seas Region

SUMMARY

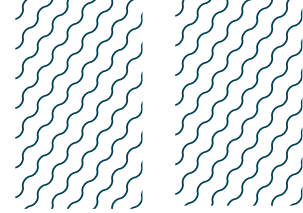
Southeastern Aegean Sea is located between Greece and Türkiye. On the Greek side, it includes Northwest Rhodes Island and its small islets, the strait of Rhodos, and continues south to Aphantou. On the Turkish side, the area extends from Oludeniz Bay in Fethiye, to Datça Peninsula. The area is characterised by diverse coastal and benthic habitats, including a subtropical open sea environment and bays, sandy to muddy substrates, rocky shores, islets, and rivers that flow into the bays. The area overlaps with five Natura 2000 sites, two Key Biodiversity Areas, and an Ecologically or Biologically Significant Marine Area. Within this area there are: **threatened species** (e.g., Smoothback Angelshark *Squatina oculata*); **reproductive areas** (Smoothback Angelshark); and **undefined aggregations** (Sandbar Shark *Carcharhinus plumbeus*).

CRITERIA

**Criterion A - Vulnerability; Sub-criterion C1 - Reproductive Areas;
 Sub-criterion C5 - Undefined Aggregations**

—	—
TÜRKIYE	—
GREECE	—
—	—
0-500 metres	—
—	—
2,719 km²	—
—	—





DESCRIPTION OF HABITAT

Southeastern Aegean Sea is located between Greece and Türkiye. On the Greek side, it includes Northwest Rhodes Island and its small islets, the strait of Rhodos in the north, and it continues south to Aphantou on the east. On the Turkish side, the area extends from Oludeniz Bay in Fethiye, to Datça Peninsula. The area is characterised by benthic habitat that consists mostly of sandy to muddy substrates (Vasquez et al. 2021). The waters are oligotrophic compared to the North Aegean Sea and there is an open sea subtropical environment influenced by the Levantine Sea (Sini et al. 2017). The continental shelf is narrow with the slope starting close to the coast.

The area overlaps with five Natura 2000 sites (GR4210026, GR4210024, GR4210005, GR4210025, GR4210030), two Key Biodiversity areas (Datça and Bozburun Peninsula, and Chalki Island and surrounding islets), and the Central Aegean Ecologically or Biologically Significant Marine Area. Additionally, Fethiye-Gocek Bay was listed as a Specially Protected Area under the Barcelona Convention in 1988 (Kaboğlu et al. 2005).

This Important Shark and Ray Area is benthopelagic and is delineated from the surface (0 m) to 500 m depth based on the known depth range of the Qualifying Species in the area.

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 Critically Endangered Smoothback Angelshark (Morey et al. 2019) and the Endangered Sandbar Shark (Rigby et al. 2021).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Southeastern Aegean Sea is an important reproductive area for one shark species.

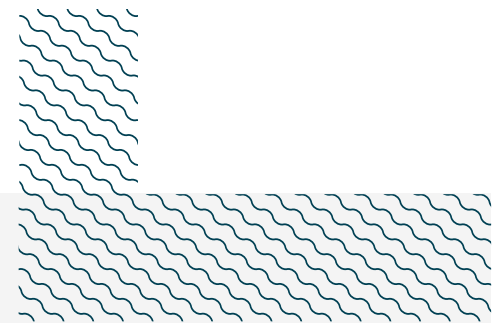
This area hosts a population of Smoothback Angelsharks that are no longer connected to the global population (Lawson et al. 2020; Gordon 2022). According to fisheries-dependent data, the habitat used by this species in the area is between 30–300 m. Prior to recent discoveries in this area, records of Smoothback Angelsharks in published literature from Turkish waters show approximately one record per year (Ergüden et al. 2019; Giovos et al. 2022; Özgür and Kabakasal 2022). Since December 2022, they have been encountered in nearly every fishing trial conducted in this region. Additionally, since 2020, 25 adult Smoothback Angelshark records have been confirmed from Fethiye Bay (A. Ulman unpubl. data 2023), in addition to one large adult from adjacent Oludeniz Bay. Fifty percent of sexed adults were females (A. Ulman unpubl. data 2023). Fifteen of those individuals were caught in 2023 alone, including three gravid females that were caught by trammel net. Two of them were carrying three pups and the third was carrying five, all of which were aborted onboard the vessel. The first three (~8–10 cm total length [TL]) were dead with external yolk sacs, the next eight (~12–20 cm TL) were released alive with the females (69.6 cm and unknown TL). Published size-at-birth for this species is 22–35 cm TL (Capapé et al. 2002, 2005). Females have been caught in a range of sizes including young-of-the-year (YOY) to mature females from 37 cm to 150 cm TL (A. Ulman unpubl. data 2023).



SUB-CRITERION C5 - UNDEFINED AGGREGATIONS

Southeastern Aegean Sea is important for aggregations of one shark species.

Groups of four to seven adult Sandbar Sharks (undetermined sexes) have been repeatedly seen throughout the month of May in 2019, 2020, and 2021, and July 2023 in shallow waters (5-10 m) in Dalaman Bay, Türkiye (H Filiz unpub. data 2023). According to two local fishers, groups of over 100 Sandbar Sharks were regularly observed in 3-5 m depths in Fethiye and Oludeniz Bays up until 1990 (O. Kavunaki and R. Aybi pers. comm. 2023). Additionally, Greek recreational fishers report captures of up to 100 neonate individuals every year (Naasan Aga - Spyridopoulou pers. comm. 2023). In the southwestern margins of the area, there are reports of three neonate captures by Greek recreational fishers using the surfcasting technique during the month of July for two consecutive years (2020 and 2021) and one in September 2021 (The M.E.C.O. project unpubl. data 2023). However, further information is needed to determine the nature of these aggregations and the regularity of neonates in the area.



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QUALIFYING SPECIES

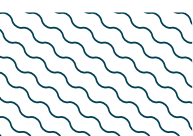
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met (mark with an 'X')							
				A	B	C1	C2	C3	C4	C5	D1
SHARKS											
<i>Carcharhinus plumbeus</i>	Sandbar Shark	EN	0-280	X						X	
<i>Squatina oculata</i>	Smoothback Angelshark	CR	20-500	X		X					

SUPPORTING SPECIES

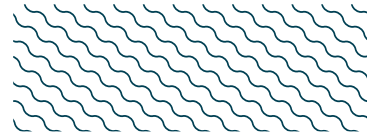
Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Carcharodon carcharias</i>	White Shark	VU
<i>Isurus oxyrinchus</i>	Shortfin Mako	EN
<i>Mustelus asterias</i>	Starry Smoothhound	VU*
<i>Mustelus mustelus</i>	Common Smoothhound	EN
<i>Oxynotus centrina</i>	Angular Roughshark	EN
<i>Prionace glauca</i>	Blue Shark	CR*
<i>Scyliorhinus canicula</i>	Smallspotted Catshark	LC
<i>Squalus acanthias</i>	Spiny Dogfish	VU
<i>Squalus blainville</i>	Longnose Spurdog	DD
<i>Squatina aculeata</i>	Sawback Angelshark	CR
<i>Squatina squatina</i>	Angelshark	CR
RAYS		
<i>Aetomylaeus bovinus</i>	Duckbill Eagle Ray	CR
<i>Bathytoshia lata</i>	Brown Stingray	VU
<i>Dasyatis pastinaca</i>	Common Stingray	VU
<i>Dasyatis tortonesei</i>	Tortonese's Stingray	DD
<i>Gymnura altavela</i>	Spiny Butterfly Ray	EN
<i>Myliobatis aquila</i>	Common Eagle Ray	CR
<i>Raja clavata</i>	Thornback Skate	NT
<i>Rhinobatos rhinobatos</i>	Common Guitarfish	CR

*Assessed as threatened in Mediterranean regional assessments 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 Southeastern Aegean Sea is an important area for aggregations and reproductive purposes of five shark and two ray species. Observations from four fishing surveys in 2022-2023 resulted in assemblages of an average of 50 sharks (maximum of 95) being caught in 500 m trammel nets, including at least one Smoothback Angelshark, at least 10 Starry Smoothhounds and Common Smoothhounds, at least 20 Smallspotted Catsharks, and at least five Thornback Skate and Starry Skate per haul (A. Ulman pers. obs. 2023).

Records of Smoothback Angelsharks on the Greek side of the area include one published record of an immature individual (79.5 cm TL) in May 2004 (Corsini & Zava 2007) and another one discarded in Rhodes port in August 2021 reported on the SEAlly application (iSea unpubl. data 2023).

Four neonate and YOY Shortfin Makos were captured in the area between May 2020 and March 2022. Two YOY (size-at-birth is 60-70 cm TL [Ebert & Dando 2021]) individuals were captured in longlines in 2020 (May and September) measuring 86 cm TL and <100 cm TL, respectively (The M.E.C.O. project unpubl. data 2023), while two neonates were caught (62 cm and 64 cm TL) in March 2022 (A. Ulman pers. obs. 2022). Additionally, fisher knowledge states that Shortfin Makos have been aborting pups in Fethiye Bay onboard fishing vessels when caught as bycatch for the last ~40 years (A. Ulman pers. obs. 2023).



REFERENCES

- Capapé C, Seck AA, Gueye-Ndiaye A, Diatta Y, Diop M. 2002.** Reproductive biology of the smoothback angel shark, *Squatina oculata* (Elasmobranchii: Squatinidae), from the coast of Senegal (eastern tropical Atlantic). *Journal of the Marine Biological Association of the United Kingdom* 82: 635-640. <https://doi.org/10.1017/S0025315402005994>
- Capapé C, Diatta Y, Seck AA, Guélorget O, Ben Souissi J, Zaouli J. 2005.** Reproduction of the sawback angel shark *Squatina aculeata* (Chondrichthyes: Squatinidae) off Senegal and Tunisia. *Cybium* 29: 147-157. <https://doi.org/10.26028/cybium/2005-292-006>
- Corsini M, Zava B. 2007.** Recent capture of *Squatina oculata* and *Squatina aculeata* from Dodecanese Islands (SE Aegean Sea, Eastern Mediterranean). *Biologia Marina Mediterranea* 14: 352-353.
- Ebert DA, Dando M. 2021.** *Field guide to sharks, rays, and chimaeras of Europe and the Mediterranean*. Princeton: Princeton University Press.
- Ergüden D, Ayas D, Gürlek M, Karan S, Turan C. 2019.** First documented smoothback angelshark *Squatina oculata* Bonaparte, 1840 from the North-Eastern Mediterranean Sea, Turkey. *Cahiers de Biologie Marine* 60: 189-194. <https://doi.org/10.21411/CBM.A.23607FF9>
- Giovas I, Katsada D, Spyridopoulou RNA, Poursanidis D, Doxa A, Katsanevakis S, Kleitou P, Oikonomou V, Minasidis V, Ozturk AA et al. 2022.** Strengthening angel shark conservation in the Northeastern Mediterranean Sea. *Journal of Marine Science and Engineering* 10(2): 269. <https://doi.org/10.3390/jmse10020269>
- Gordon CA. 2022.** *A guide to angel shark identification*. Plymouth: The Shark Trust.
- Kaboğlu G, Güçlüsoy H, Bizsel, K. 2005.** Marine Protected Areas in Turkey: history, current state and future prospects. Meknes: INOC International Workshop on Coastal and Protected Areas.
- Lawson JM, Pollom RA, Gordon CA, Barker J, Meyers EKM, Zidowitz H, Ellis JR, Bartolí A, Morey G, Fowler SL, et al. 2020.** Extinction risk and conservation of critically endangered angel sharks in the Eastern Atlantic and Mediterranean Sea. *ICES Journal of Marine Science* 77(1): 12-29. <https://doi.org/10.1093/icesjms/fsz222>
- Morey G, Barker J, Bartolí A, Gordon C, Hood A, Meyers EKM, Pollom R. 2019.** Smoothback Angelshark (*Squatina oculata*). *The IUCN Red List of Threatened Species* 2019: e.T61418A116782036. <http://dx.doi.org/10.2305/IUCN.UK.2019-1.RLTS.T61418A116782036.en>
- Özgür E, Kabasakal H. 2022.** Notes on Smoothback Angel Shark, *Squatina oculata* (Squatiniformes: Squatinidae) caught in the Gulf of Antalya. *Annales* 32(1): 8-14. <https://doi.org/10.19233/ASHN.2022.02>
- Rigby CL, Derrick D, Dicken M, Harry AV, Pacoureaux N, Simpfendorfer C. 2021.** *Carcharhinus plumbeus*. *The IUCN Red List of Threatened Species* 2021: e.T3853A2874370. <https://dx.doi.org/10.2305/IUCN.UK.2021-2.RLTS.T3853A2874370.en>
- Sini M, Katsanevakis S, Koukouroufli N, Gerovasileiou V, Dailianis T, Buhl-Mortensen L, Damalas D, Dendrinou P, Dimas X, Frantzis A et al. 2017.** Assembling ecological pieces to reconstruct the conservation puzzle of the Aegean Sea. *Frontiers in Marine Science* 17(4): 347. <https://doi.org/10.3389/fmars.2017.00347>
- Vasquez M, Allen H, Manca E, Castle L, Lillis H, Agnesi S, Al Hamdani Z, Annunziatellis A, Askew N, Bekkby T, et al. 2021.** EUSeaMap 2021. A European broad-scale seabed habitat map. D1.13 EASME/EMFF/2018/1.3.1.8/Lot2/Sl2.810241- EMODnet Thematic Lot n° 2 - Seabed Habitats EUSeaMap 2021 - Technical Report. <https://doi.org/10.13155/83528>