

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

## GULF OF ANTALYA ISRA

### Mediterranean and Black Seas Region

#### SUMMARY

Gulf of Antalya is located on the southern coast of Türkiye in the Levantine Sea. This area is characterised by muddy and sandy substrates with patches of rock and seagrass meadows. Three rivers flow into the area which is dominated by high temperatures, high salinities, and oligotrophic conditions. The area overlaps with an Ecologically or Biologically Significant Marine Area (North-East Levantine Sea) and with three Key Biodiversity Areas. Within the area there are: **threatened species** (e.g., Velvet Belly Lanternshark *Etmopterus spinax*); **range-restricted species** (Rough Skate *Raja radula*); and **reproductive areas** (e.g., Blackmouth Catshark *Galeus melastomus*).

#### CRITERIA

**Criterion A - Vulnerability; Criterion B - Range-restricted; Sub-criterion C1 - Reproductive Areas**

— —  
**TÜRKIYE** — —  
 — —  
**0-600 metres** — —  
 — —  
**1,775.1 km<sup>2</sup>** — —  
 — —





## DESCRIPTION OF HABITAT

Gulf of Antalya is located on the southern coast of Türkiye in the Levantine Sea (Kabasakal & Bayrı 2019). This area is characterised by muddy and sandy substrates with patches of rock and seagrass meadows (Mutlu et al. 2022a). Three main rivers flow into the area which is dominated by high temperatures, high salinities, and oligotrophic conditions (Kebapçioğlu et al. 2010; Özbek et al. 2016).

The area overlaps with an Ecologically or Biologically Significant Marine Area (EBSA), the North-East Levantine Sea (CBD 2023). In addition, it overlaps with three Key Biodiversity Areas: Gazipaşa - Anamur Coast, Kızılot, and Antalya Plains (KBA 2023a, 2023b, 2023c).

This Important Shark and Ray Area is delineated from surface waters (0 m) to a depth of 600 m based on the distribution of the Qualifying Species within 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 Vulnerable Velvet Belly Lanternshark (Finucci et al. 2021) and the Endangered Rough Skate (Mancusi et al. 2016).

### CRITERION B - RANGE RESTRICTED

Gulf of Antalya holds the regular presence of one ray species as a range-restricted species. Rough Skate is restricted to the Mediterranean Sea Large Marine Ecosystem and was regularly reported in the catch of trawl nets in the area between 2009-2015. This species had abundances of ~84 individuals/km<sup>2</sup> and was caught year-round mostly at depths <75 m (Kebapçioğlu 2021; Mutlu et al. 2022a).

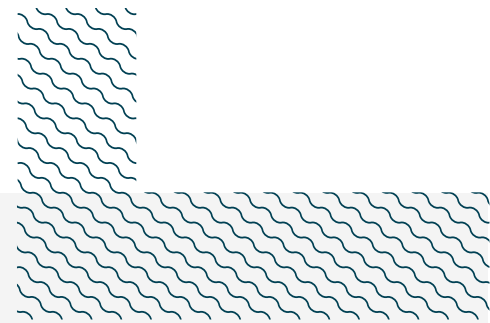
### SUB-CRITERION C1 - REPRODUCTIVE AREAS

Gulf of Antalya is an important reproductive area for two shark species.

Based on data collected from benthic trawlers, 995 Velvet Belly Lanternshark were caught in the area between 2016-2019 (Olguner 2021). Of these individuals, ~235 were classified as neonates, as they measured the reported size-at-birth for the species (12-14 cm total length [TL]) (Ebert et al. 2021). Sharks were caught from the boreal autumn to spring, with a greater abundance in September, October, and January between 400-600 m depth in the eastern part of the gulf (Olguner 2021). In addition, based on band counts in vertebrae from 235 individuals, four were estimated to be young-of-the-year and 65 as one-year old. This highlights the importance of this area for early lifecycle stages. Mature females (including pregnant individuals) were found in spring and autumn when the majority of neonates were found (Olguner 2021).

Between 2016-2019, 1,821 Blackmouth Catsharks were recorded in benthic trawlers (Olguner 2021). The size-at-birth for this species is unknown, but some individuals (~60) measured 10-17 cm TL which is similar to the size-at-birth for congeners (Broadfin Sawtail Catshark *Galeus nipponensis*, 13 cm TL; Mouse Catshark *G. murinus*, 8-9 cm TL; Gecko Catshark *G. eastmani*, <17 cm TL; Atlantic Sawtail Catshark *G. atlanticus*, 15 cm TL; Ebert et al. 2021). These smaller individuals were caught mostly

during September, October, February, and March at depths between 300–600 m and in the eastern part of the gulf. In addition, most mature females, including pregnant individuals, were found during autumn. Based on band counts in vertebrae from 208 individuals, two were estimated to be young-of-the-year, and 53 as one-year old (Olguner 2021). Between 2010–2011, individuals measuring ~13 cm TL were also caught in the area at ~300 m depth (Mutlu et al. 2022b), confirming the regular presence of these smaller sharks.



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## Suggested citation

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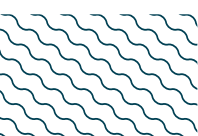
## QUALIFYING SPECIES

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	
<b>SHARKS</b>													
<i>Etmopterus spinax</i>	Velvet Belly Lanternshark	VU	70-2,000	X		X							
<i>Galeus melastomus</i>	Blackmouth Catshark	LC	55-2,000			X							
<b>RAYs</b>													
<i>Raja radula</i>	Rough Skate	EN	0-350	X	X								

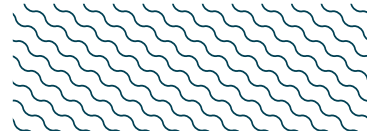
## SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
<b>SHARKS</b>		
<i>Mustelus mustelus</i>	Common Smoothhound	EN
<i>Odontaspis ferox</i>	Smalltooth Sand Tiger	VU
<i>Scyliorhinus canicula</i>	Smallspotted Catshark	LC
<i>Squalus blainville</i>	Longnose Spurdog	DD
<b>RAYS</b>		
<i>Aetomylaeus bovinus</i>	Duckbill Eagle Ray	CR
<i>Dasyatis pastinaca</i>	Common Stingray	VU
<i>Dasyatis tortonesei</i>	Tortonese's Stingray	DD
<i>Dipturus oxyrinchus</i>	Longnosed Skate	NT
<i>Gymnura altavela</i>	Spiny Butterfly Ray	EN
<i>Mobula mobular</i>	Spinetail Devil Ray	EN
<i>Myliobatis aquila</i>	Common Eagle Ray	CR
<i>Pteroplatytrygon violacea</i>	Pelagic Stingray	LC
<i>Raja asterias</i>	Starry Skate	NT
<i>Raja clavata</i>	Thornback Skate	NT
<i>Raja miraletus</i>	Brown Skate	LC
<i>Raja polystigma</i>	Speckled Skate	LC
<i>Raja undulata</i>	Undulate Skate	EN
<i>Rhinobatos rhinobatos</i>	Common Guitarfish	CR
<i>Rhinoptera marginata</i>	Lusitanian Cownose Ray	CR
<i>Torpedo marmorata</i>	Marbled Torpedo Ray	VU
<i>Torpedo torpedo</i>	Ocellate Torpedo	VU

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.



## SUPPORTING INFORMATION



There are additional indications that Gulf of Antalya is an important area for aggregations and reproductive purposes of two shark and six ray species. For all species, additional information is needed to determine if these are true aggregations as well as their nature and function.

From 213 Longnose Spurdog individuals caught by benthic trawlers between 2016–2019, 34 were between 16–26 cm TL which overlaps with the reported size-at-birth for this species (~23 cm TL; Ebert et al. 2021). These individuals were exclusively caught during October and April between 300–400 m depths (Olguner 2021). From band counts on dorsal spines of 146 individuals, eight individuals were estimated to be young-of-the-year and 16 as one-year old (Olguner 2021).

Based on information from bycatch in benthic trawlers operating in the area, Smallspotted Catshark was the most commonly caught shark, with relative abundances of  $1,478.0 \pm 3,691.8$  individuals/km<sup>2</sup> during 2005–2006, and  $189.12 \pm 186.61$  individuals/km<sup>2</sup> during 2009–2015 (Mutlu et al. 2022b). Most of the sharks were caught between 200–300 m depths and almost all were immature. These individuals were caught in large groups.

An aggregation of Spinetail Devil Ray ( $n = 30$ ) was observed in 2017 (Başusta & Özbek 2017). However, more information is needed to confirm the regular presence of the species.

Information gathered from bycatch in trawlers operating in the area between 2005–2006 and 2009–2015 indicates that Common Stingray had mean densities between 12–80 individuals/km<sup>2</sup> and aggregations were dominated by females. Most individuals were caught at depths <50 m and mostly during February, with sizes between 10–82 cm disc width (DW; Kebapcioglu et al. 2010; Kebapcioglu 2021; Mutlu et al. 2022a).

Spiny Butterfly Ray was reported with mean densities between 27–60 individuals/km<sup>2</sup> with sizes between 24–97 cm DW. Most individuals were caught at depths <50 m but were reported to a maximum depth of 125 m. Individuals were caught year-round with a peak during May and August (Beğburs & Kebapcioglu 2007; Kebapcioglu et al. 2010; Özbek et al. 2016; Mutlu et al. 2022a).

Longnosed Skate was reported with mean densities between 75–86 individuals/km<sup>2</sup> with sizes between 5.3–78.0 cm TL. All individuals were caught at depths between 200–300 m year-round, with a peak during August and October (Mutlu et al. 2022a).

Thornback Skate was the most abundant ray in trawl catches, with reported densities between 134–1,415 individuals/km<sup>2</sup> and sizes between 5.7–42.5 cm TL. Most of the individuals were females and were mostly caught at depths between 125–300 m. Individuals were caught year-round with a peak during August and October (Beğburs & Kebapcioglu 2007; Kebapcioglu et al. 2010; Kebapcioglu 2021; Mutlu et al. 2022a).

Brown Skate was reported with mean densities between 91–166 individuals/km<sup>2</sup> with sizes between 8–57.5 cm TL. Most individuals were caught at depths between 25–300 m. Individuals were caught year-round with peaks during February, May, and October (Beğburs & Kebapcioglu 2007; Kebapcioglu 2021; Mutlu et al. 2022a).

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