

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

CANTERBURY SHELF BREAK ISRA

New Zealand & Pacific Islands Region

SUMMARY

Canterbury Shelf Break is located off the east coast of the South Island of New Zealand. The area is characterised by a broad continental shelf and a steep slope with coarse sands and gravel substrates. The area overlaps with the Southern South Island (offshore) Key Biodiversity Area. Within this area there are: **threatened species** (Spiny Dogfish *Squalus acanthias*); **range-restricted species** (e.g., Smooth Skate *Dipturus innominatus*); and **reproductive areas** (e.g., Dark Ghostshark *Hydrolagus novaezealandiae*).

CRITERIA

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

NEW ZEALAND

100-383 metres

3,636.2 km²





DESCRIPTION OF HABITAT

Canterbury Shelf Break is located off the east coast of the South Island of New Zealand. It extends from a point off the Rakaia River delta to south of Oamaru. The area is characterised by a broad continental shelf and a steep slope with coarse sands and gravel substrates (Nokes et al. 2021). The area is influenced by the Southland Current and is considered a downwelling location, although northerly winds can produce upwellings (Beentjes et al. 2002; Stevens et al. 2021). Average sea surface temperature is ~15°C (Shears & Bowen 2017) and bottom sea temperatures range 10.2–12.7 °C during austral autumn and winter months (Beentjes et al. 2023).

The area overlaps with the Southern South Island (offshore) Key Biodiversity Area (KBA 2024).

This Important Shark and Ray Area is benthic and subsurface and is delineated from 100–383 m based on the depth range of Qualifying Species in 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 Spiny Dogfish (Finucci et al. 2020).

CRITERION B – RANGE RESTRICTED

This area holds the regular presence of the Smooth Skate and Dark Ghostshark as resident range-restricted species. These species were regularly encountered in independent research surveys using demersal trawls (30–400 m) conducted in the area during autumn and winter months (April–June) in 2009, 2012, 2014, 2016, 2018, 2021, and 2022 (Anderson et al. 1998; Beentjes et al. 2010, 2013, 2015, 2016, 2022, 2023; MacGibbon et al. 2019). In addition, these species were recorded in similar historical surveys using the same methods (1991–1994, 1996, 2007, 2008; B Finucci unpubl. data 2024). These two species are endemic to the New Zealand Shelf Large Marine Ecosystem and only occur in New Zealand waters.

For Smooth Skate, 1,455 individuals were recorded in all surveys conducted between 2009–2022. The largest number of Smooth Skates caught during research surveys around all New Zealand conducted between 2009–2024 were recorded in Canterbury Shelf Break (Beentjes et al. 2010, 2013, 2015, 2016, 2022, 2023; MacGibbon et al. 2019; B Finucci unpubl. data 2024). Smooth Skates were caught at depths between 100–383 m. In 2018, Smooth Skates were caught in 45 (47.9%) of the 96 stations sampled in the area (Beentjes et al. 2022).

For Dark Ghostshark, 2,954 individuals were recorded in all surveys conducted between 2009–2022. The largest number of Dark Ghostsharks caught during research surveys around all New Zealand conducted between 2009–2024 were recorded in Canterbury Shelf Break (Beentjes et al. 2010, 2013, 2015, 2016, 2022, 2023; MacGibbon et al. 2019; B Finucci unpubl. data 2024). Dark Ghostsharks were caught at depths 100–383 m. In 2022, Dark Ghostsharks were caught in 40 (46%) of the 87 stations sampled in the area (Beentjes et al. 2023).

SUB-CRITERION C1 – REPRODUCTIVE AREAS

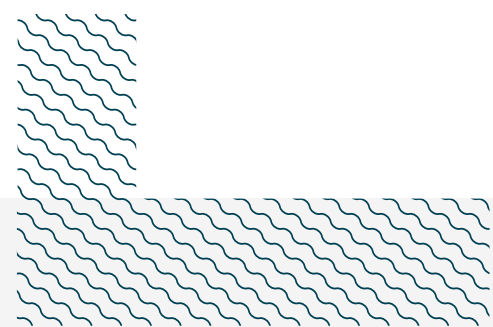
Canterbury Shelf Break is an important reproductive area for one shark, one ray, and one chimaera species.

Independent research demersal trawl surveys of the area were conducted in the area during autumn and winter months (April–June) in 2009, 2012, 2014, 2016, 2018, 2021, and 2022 at depths of 30–400 m (Beentjes et al. 2010, 2013, 2015, 2016, 2022, 2023; MacGibbon et al. 2019). These have regularly recorded young-of-the-year (YOY) individuals and late-stage pregnant females (with egg cases ready to be deposited or with near-term embryos) of Spiny Dogfish, Smooth Skate, and Dark Ghostshark (B Finucci unpubl. data 2024).

For Spiny Dogfish, 582 of the 3,541 individuals (16.4%) recorded in these surveys, and for which biological data were collected, were late-stage pregnant females and were caught at depths of 100–383 m (B Finucci unpubl. data 2024). Late-stage pregnant females were caught in all surveyed years (Beentjes et al. 2010, 2013, 2015, 2016, 2022, 2023; MacGibbon et al. 2019; B Finucci unpubl. data 2024).

For Smooth Skate, 67 of the 532 individuals (12.6%) recorded in these surveys, and for which biological data were collected, measured 14–29 cm total length (TL) and were caught at depths of 100–142 m (B Finucci unpubl. data 2024). These individuals were considered YOY based on the reported size for this life stage in the region (<30 cm TL; Francis et al. 2001). Canterbury Shelf Break held the largest number of this life-stage caught in research surveys along all New Zealand in that period and YOY were caught in all surveyed years (Beentjes et al. 2010, 2013, 2015, 2016, 2022, 2023; MacGibbon et al. 2019; B Finucci unpubl. data 2024). No late-stage pregnant females were recorded in the area.

For Dark Ghostshark, 87 of the 1,397 individuals (6.22%) recorded in these surveys and for which biological data were collected, measured <19 cm TL and were caught at depths of 100–383 m (B Finucci unpubl. data 2024). These individuals were considered YOY based on the reported size for this life stage for similar species (<20 cm TL for White-spotted Ratfish *Hydrolagus colliei*; Berio 2024 1988). In addition, 87 of the 372 late-stage pregnant females (23.4%) recorded in New Zealand during trawl surveys were recorded in the area. Canterbury Shelf Break held the largest number of this life-stage caught in research surveys along New Zealand in that period and YOY were caught in all surveyed years (Beentjes et al. 2010, 2013, 2015, 2016, 2022, 2023; MacGibbon et al. 2019; B Finucci unpubl. data 2024).



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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													
<i>Squalus acanthias</i>	Spiny Dogfish	VU	0-1,978	X		X							
RAYS													
<i>Dipturus innominatus</i>	Smooth Skate	LC	0-1,450		X	X							
CHIMAERAS													
<i>Hydrolagus novaezealandiae</i>	Dark Ghostshark	LC	32-800		X	X							

SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Alopias vulpinus</i>	Common Thresher	VU
<i>Bythaelurus dawsoni</i>	Dawson's Catshark	LC
<i>Cephaloscyllium isabellum</i>	Carpet Shark	LC
<i>Cetorhinus maximus</i>	Basking Shark	EN
<i>Etmopterus granulosus</i>	Southern Lanternshark	LC
<i>Etmopterus lucifer</i>	Blackbelly Lanternshark	LC
<i>Galeorhinus galeus</i>	Tope	CR
<i>Isurus oxyrinchus</i>	Shortfin Mako	EN
<i>Lamna nasus</i>	Porbeagle	VU
<i>Notorynchus cepedianus</i>	Broadnose Sevengill Shark	VU
<i>Oxynotus bruniensis</i>	Prickly Dogfish	NT
<i>Prionace glauca</i>	Blue Shark	NT
RAYS		
<i>Brochiraja asperula</i>	Smooth Deepsea Skate	DD
<i>Brochiraja spinifera</i>	Prickly Deepsea Skate	DD
<i>Tetronarce nobiliana</i>	Great Torpedo Ray	LC
<i>Zearaja nasuta</i>	Rough Skate	LC
CHIMAERAS		
<i>Callorinchus milii</i>	Elephantfish	LC
<i>Harriotta avia</i>	Australasia Narrow-nosed Spookfish	LC
<i>Hydrolagus bemisi</i>	Pale Ghostshark	LC

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.



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