

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

CENTRAL CHATHAM RISE ISRA

New Zealand & Pacific Islands Region

SUMMARY

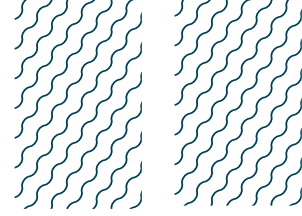
Central Chatham Rise is located in the central part of a ridge on the eastern side of New Zealand. This area is characterised by muddy and sandy substrates with high microbenthic and low meiofaunal biomass. The area is dominated by the Subtropical Front where subtropical waters and subantarctic waters mix. The area overlaps with two Key Biodiversity Areas. Within this area there are: **threatened species** (Spiny Dogfish *Squalus acanthias*); **range-restricted species** (Northern Spiny Dogfish *Squalus griffini*); and **reproductive areas** (Pale Ghostshark *Hydrolagus bemisi*).

CRITERIA

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

—	—
NEW ZEALAND	—
—	—
0-670 metres	—
—	—
8,727 km²	—
—	—





DESCRIPTION OF HABITAT

Central Chatham Rise is located in the central part of a ridge on the eastern side of New Zealand. It rises from deep areas to 50 m in the western side and to sea level near the Chatham Islands (McGregor et al. 2019). The area is characterised by abyssal hills and plains with muddy and sandy substrates along high microbenthic and low meiofaunal (Nodder et al. 2003). Phosphorite nodules are spread around the crest of the rise along with exposed basement rock substrates (Bowden et al. 2017; Leduc et al. 2024). These habitats sustain large densities of deep-water corals (Leduc et al. 2024). The area has a stable and permanent oceanography dominated by the Subtropical Front where there is a mix of subtropical waters and subantarctic waters (Sutton 2001; Chiswell et al. 2015). North subtropical waters are warmer, more saline and nutrient poor compared to the cold and nutrient rich subantarctic waters from the south (McGregor et al. 2019). This front is divided by a frontal zone in the north and south (Sutton 2001). Sea surface temperatures are warmer during austral autumn with a shallow mixed layer in subtropical waters while in spring, temperatures are cooler and there is a deeper mixed layer (Sutton 2001). Due to the oceanographic and habitat features in the rise, this area has the highest species richness for demersal fishes (Leathwick et al. 2006)

The area overlaps with the Chatham (offshore) and East Coast South Island (offshore) Key Biodiversity Areas (KBA 2024a; 2024b).

This Important Shark and Ray Area is benthic and pelagic and is delineated from surface waters (0 m) to 670 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 Spiny Dogfish (Finucci et al. 2020).

CRITERION B - RANGE RESTRICTED

This area holds the regular presence of the Northern Spiny Dogfish, Smooth Skate, Australasia Narrow-nosed Spookfish, Pale Ghostshark, and Dark Ghostshark. These species were regularly encountered in independent research surveys using demersal trawls (200–1,300 m) conducted in January–February annually from 2009–20124 and bi-annually since 2014 (O’Driscoll et al. 2011; Stevens et al. 2012, 2013, 2014, 2015, 2017, 2018, 2021, 2023; B Finucci unpubl. data 2024). Due to the fishing gear selectivity, the abundance recorded for some of the species is underestimated and does not represent their true abundances in the area.

For Northern Spiny Dogfish, 140 individuals were recorded in the area between 2009–2024 (except 2015, 2019, and 2023) with Central Chatham Rise having the second largest number of individuals recorded during research surveys for this species in all New Zealand. This species is endemic to the New Zealand Shelf LME.

For Smooth Skate, 102 individuals were recorded in the area between 2009–2024 with Central Chatham Rise having the third largest number of individuals recorded during research surveys for this species in all New Zealand. This species is endemic to the New Zealand Shelf LME.

For Australasia Narrow-nosed Spookfish, 1,186 individuals were recorded in the area between 2009–2024 with Central Chatham Rise having the second largest number of individuals recorded during research surveys for this species in all New Zealand. This species is endemic to the New Zealand Shelf LME.

For Pale Ghostshark, 1,074 individuals were recorded in the area between 2009–2024 with Central Chatham Rise having the second largest number of individuals recorded during research surveys for this species in all New Zealand. This species is endemic to the New Zealand Shelf LME.

For Dark Ghostshark, 4,997 individuals were recorded in the area between 2009–2024 with Central Chatham Rise having the largest number of individuals recorded during research surveys for this species in all New Zealand. This species is endemic to the New Zealand Shelf LME.

SUB-CRITERION C1 – REPRODUCTIVE AREAS

Central Chatham Rise is an important reproductive area for one shark and two chimaera species.

Based on records from research demersal trawl surveys conducted in yearly between January–February from 2009–2014 and bi-annually since 2014 (O’Driscoll et al. 2011; Stevens et al. 2012, 2013, 2014, 2015, 2017, 2018, 2021, 2023) 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, Pale Ghostshark and Dark Ghostshark are regularly found in the area (B Finucci unpubl. data 2024). Species maturity was assessed at sea using the National Institute of Water and Atmospheric Research’s standard shark macroscopic maturity staging key. YOY were determined either through physical assessment at sea or estimated from published growth curves based on their size (Hanchett 1988; Berio et al. 2024). Due to the fishing gear selectivity, the abundance of YOY recorded does not represent the true abundances of these life-stages in the area.

For Spiny Dogfish, 10,934 individuals were caught. Of these, 26 YOY and 2,586 late-stage pregnant females (23.6% of catches) were caught at depths of 220–587 m. YOY were defined as individuals measuring <30 cm TL (Hanchett 1988).

For Pale Ghostshark, 7,916 individuals were caught. Of these, 16 YOY and 117 late-stage pregnant females (1.47% of catches) were caught at depths of 369–670 m. YOY were defined as individuals measuring <20 cm TL (Berio et al. 2024). Central Chatham Rise was the area with the largest number of pregnant females with egg cases sampled in all New Zealand.

For Dark Ghostshark, 11,856 individuals were caught. Of these, two YOY and 103 late-stage pregnant females (0.86% of catches) were caught at depths of 243–486 m. YOY were defined as individuals measuring <20 cm TL (Berio et al. 2024). Central Chatham Rise was the area with the second largest number of pregnant females with egg cases sampled in all New Zealand.

Acknowledgments

Brittany Finucci (National Institute of Water and Atmospheric Research), Clinton AJ Duffy (Auckland War Memorial Museum), Malcolm P Francis (National Institute of Water and Atmospheric Research), 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 2024 ISRA Region 10 - New Zealand and Pacific Islands 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. 2024. Central Chatham Rise ISRA Factsheet. Dubai: IUCN SSC Shark Specialist Group.

QUALIFYING SPECIES

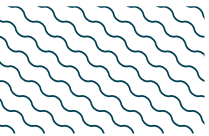
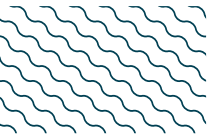
Scientific Name	Common Name	IUCN Red List Category	Global Depth Range (m)	ISRA Criteria/Sub-criteria Met								
				A	B	C1	C2	C3	C4	C5	D1	D2
SHARKS												
<i>Squalus acanthias</i>	Spiny Dogfish	VU	0-1,978	X		X						
<i>Squalus griffini</i>	Northern Spiny Dogfish	LC	15-700		X							
RAYS												
<i>Dipturus innominatus</i>	Smooth Skate	LC	0-1,450		X							
CHIMAERAS												
<i>Harriotta avia</i>	Australasia Narrow-nosed Spookfish	LC	260-1278		X							
<i>Hydrolagus bemisi</i>	Pale Ghostshark	LC	400-1,100		X	X						
<i>Hydrolagus novaezealandiae</i>	Dark Ghostshark	LC	32-800		X	X						

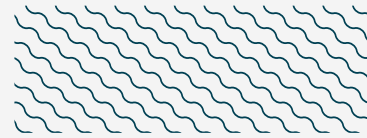
SUPPORTING SPECIES

Scientific Name	Common Name	IUCN Red List Category
SHARKS		
<i>Apristurus ampliceps</i>	Roughskin Catshark	LC
<i>Apristurus exsanguis</i>	New Zealand Catshark	LC
<i>Apristurus garricki</i>	Garrick's Catshark	LC
<i>Apristurus melanoasper</i>	Fleshynose Catshark	LC
<i>Bythaelurus dawsoni</i>	Dawson's Catshark	LC
<i>Centrophorus squamosus</i>	Leafscale Gulper Shark	EN
<i>Centroscymnus owstonii</i>	Roughskin Dogfish	VU
<i>Centroselachus crepidater</i>	Longnose Velvet Dogfish	NT
<i>Cephaloscyllium isabellum</i>	Carpet Shark	LC
<i>Chlamydoselachus anguineus</i>	Frilled Shark	LC
<i>Dalatias licha</i>	Kitefin Shark	VU
<i>Deania calcea</i>	Birdbeak Dogfish	NT
<i>Etmopterus granulosus</i>	Southern Lanternshark	LC
<i>Etmopterus lucifer</i>	Blackbelly Lanternshark	LC
<i>Galeorhinus galeus</i>	Tope	CR
<i>Hexanchus griseus</i>	Bluntnose Sixgill Shark	NT
<i>Oxynotus bruniensis</i>	Prickly Dogfish	NT
<i>Scymnodon macracanthus</i>	Largespine Velvet Dogfish	VU
RAYS		
<i>Amblyraja hyperborea</i>	Arctic Skate	LC
<i>Bathyraja shuntovi</i>	Longnose Deepsea Skate	DD
<i>Brochiraja asperula</i>	Smooth Deepsea Skate	DD
<i>Brochiraja spinifera</i>	Prickly Deepsea Skate	DD
<i>Dipturus nasutus</i>	Rough Skate	LC
<i>Tetronarce nobiliana</i>	Great Torpedo Ray	LC
CHIMAERAS		
<i>Chimaera carophila</i>	Brown Chimaera	LC
<i>Chimaera lignaria</i>	Giant Chimaera	LC
<i>Hydrolagus homonycteris</i>	Black Ghostshark	LC
<i>Hydrolagus trolli</i>	Abyssal Ghostshark	LC

<i>Rhinochimaera pacifica</i>	Pacific Spookfish	LC
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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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