

Appendix 4

Contact lists for Marine Reserves Act
section 5(1)(d)

Released under the Official Information Act

Adjacent Landowners 5(1)(d)(i)

Name of interested party	Reserve Name	Type of Interest	Reference - Official lot name
9(2)(a)	Waitaki	Freehold	9(2)(a)
	Waitaki	Freehold	
	Waitaki	Freehold	
	Waitaki	Freehold	
	Waitaki	Freehold	
	Waitaki	legal road	
	Waitaki	crown land	
	Waitaki	Freehold	
	Waitaki	Freehold	
	Waitaki	legal road	
	Waitaki	Freehold	
	Waitaki	Freehold	
	Waitaki	Freehold	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	legal road	
	Waitaki	Freehold	
	Waitaki	Freehold	
	Waitaki	Freehold	
	Te Umu Koau	Freehold	
	Te Umu Koau	covenant area	
	Te Umu Koau	Freehold	
Te Umu Koau	Freehold		
Te Umu Koau	Freehold		
Te Umu Koau	Conservation Area		
Te Umu Koau	legal road		
Te Umu Koau	Freehold		
Te Umu Koau	Freehold		
Te Umu Koau	Freehold		
Te Umu Koau	Freehold		
Te Umu Koau	Marginal strip		
Te Umu Koau	Freehold		
Te Umu Koau	Freehold		
Te Umu Koau	legal road		
Te Umu Koau	legal road		
Te Umu Koau	freehold		
Te Umu Koau	legal road		
Te Umu Koau	legal road		
Te Umu Koau	Freehold		
Te Umu Koau	Freehold		

Released under the Official Information Act

Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	legal road
Te Umu Koau	Freehold
Te Umu Koau	
Te Umu Koau	Marginal strip
Te Umu Koau	
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	Marginal strip
Te Umu Koau	legal road
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	
Te Umu Koau	Freehold
Te Umu Koau	covenant area
Te Umu Koau	Reserve
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	Freehold/covenant
Te Umu Koau	Freehold
Te Umu Koau	
Te Umu Koau	legal road
Te Umu Koau	Freehold
Te Umu Koau	covenant area
Te Umu Koau	Freehold
Te Umu Koau	crown land?
Te Umu Koau	
Te Umu Koau	easement
Te Umu Koau	Marginal strip
Te Umu Koau	legal road
Te Umu Koau	Freehold
Te Umu Koau	legal road
Te Umu Koau	crown land?
Te Umu Koau	legal road
Te Umu Koau	hydro
Te Umu Koau	crown land?
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	legal road
Te Umu Koau	Freehold
Te Umu Koau	legal road
Te Umu Koau	legal road
Te Umu Koau	legal road
Te Umu Koau	legal road
Te Umu Koau	
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Te Umu Koau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold

Released Under the Official Information Act

Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold

Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Reserve
Ōrau	Reserve?
Ōrau	?
Ōrau	legal road
Ōrau	?
Ōrau	legal road
Ōrau	?

Ōrau	Freehold
Ōrau	legal road
Ōrau	Reserve

Ōrau	
Ōrau	legal road
Ōrau	foreshore
Ōrau	legal road
Ōrau	legal road
Ōrau	legal road
Ōrau	legal road
Ōrau	legal road
Ōrau	legal road
Ōrau	legal road
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold

Released under the Official Information Act

Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold

Ōrau	Freehold
Ōrau	Freehold

Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold

Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold
Ōrau	Freehold

Okaihae	Nature Reserve
---------	----------------

Hākinikini	Freehold
Hākinikini	legal road
Hākinikini	legal road
Hākinikini	legal road
Hākinikini	legal road
Hākinikini	Freehold
Hākinikini	Freehold

Hākinikini	Freehold
------------	----------

Hākinikini	crown land
Hākinikini	crown land
Hākinikini	crown land

Hākinikini	
------------	--

Released Under the Official Information Act

Concession Holders 5(1)(d)(i)

9(2)(a)

Name of interested party	Reserve Name	Type of Interest	Reference/Permission No	Premission Discription
Action Helicopters Limited	All	Wild Animal Control	68119-WARS	2018 short-term national WARO permit
Ahaura Helicopters Ltd	All	Wild Animal Control	68120-WARS	2018 short-term national WARO permit
Back to Nature Tours New Zealand Limited	All	Guiding	39657-GUI	Guided day walks in the southern South Island and on Stewart Island/Rakiura
Barn Bay Fishing Co Limited	All	Wild Animal Control	69230-WARS	2018 short-term national WARO permit
Bus and Coach Association (New Zealand) Incorporated	All	Vehicle	WC-27582-LAN	BCA National permit for driving, parking and embarking/disembarking passengers on conservation land throughout New Zealand (with some conservation lands excluded).
D J & N A Shanks Limited	All	Wild Animal Control	69229-WARS	2018 short-term national WARO permit
Fiordland Helicopters Limited	All	Wild Animal Control	69231-WARS	2018 short-term national WARO permit
Hawkeye Helicopters Limited	All	Wild Animal Control	69232-WARS	2018 short-term national WARO permit
Landcare Research New Zealand Limited	All	Unidentified	CA-31615-OTH	Global research & collection permit. Re-issue of CA-5160-OTH
National Institute of Water and Atmospheric Research Limited (NIWA)	All	Structures	OT-29753-OTH	Sea level monitoring structure on Green Island Nature Reserve, Coastal Otago Area
New Zealand Professional Fishing Guides Association	All	Guiding	WC-32264-GUI	National concession for guided fishing (nationwide except Northland)
North West Livestock Ltd	All	Wild Animal Control	69233-WARS	2018 short-term national WARO permit
9(2)(a)	All	Access	OT-33122-OTH	Right of Way (access)easement to private residence located at 261 Tomahawk Road - Tomahawk Lagoon Wildlife Management Reserve (I42295)
Road Transport Association New Zealand Incorporated	All	Vehicle	68165-LAN	RTANZ National permit for driving, parking and embarking/disembarking passengers on conservation land throughout New Zealand (with some conservation lands excluded).

Released under the Official Information Act

Resource Consent Holders 5(1)(d)(i)

Name of interested party/Consent Holder	Reserve Name	Type of Interest / Consent Type	Reference / Consent Number	Consent Expiry	PurposeActivity
Alliance Group Limited	Waitaki	Discharge to Air Permit	2006.199	11/01/2021	To discharge landfill gas, odour and dust to air for the purpose of operating a landfill. Location of activity: Approximately 250 metres south of the intersection of McEneany and Steward Roads and adjacent to the coastal marine area, Pukeuri, North Otago.
Alliance Group Limited	Waitaki	Discharge to Air Permit	2009.424	5/10/2047	To discharge contaminants to air for the purpose of operating a meat processing and export plant. Location: Approximately 140 metres north east of the intersection of Hilderthorpe-Pukeuri Road (State Highway 1) and Georgetown-Pukeuri Road (State Highway 83), Pukeuri, Oamaru
Alliance Group Limited	Waitaki	Discharge to Land Permit	2005.77	11/01/2021	To discharge solid waste to land for the purpose of disposing of waste from a meat processing and export plant. Location of activity: Approximately 250 metres south of the intersection of McEneany and Steward Roads and adjacent to the coastal marine area, Pukeuri, North Otago.
Alliance Group Limited	Waitaki	Discharge to Land Permit	2006.198	11/01/2021	To discharge leachate and stormwater to land in a manner that may enter water for the purpose of operating a landfill. Location of activity: Approximately 250 metres south of the intersection of McEneany and Steward Roads and adjacent to the coastal marine area, Pukeuri, North Otago.
Alliance Group Limited	Waitaki	Discharge to Land Permit	RM13.058.01	05/31/2034	To discharge wastewater treatment solids to land for the purpose of disposal of excess solids settled out in the wastewater treatment plant at the Alliance Pukeuri Meat Processing Plant
Alliance Group Limited	Waitaki	Discharge to Land Permit	98419	05/31/2034	To discharge an estimated maximum of 2,020 cubic metres per year of composting leachate to land in a manner that may enter water
Alliance Group Limited	Waitaki	Discharge to Land Permit	98519	05/31/2034	To discharge up to 46,000 cubic metres (approx 100mm over 46 ha) per irrigation cycle (nominally 16 days) of treated wastewater mixed with water in an irrigation race on McEneany Road and overflow from the end of a borderdyke system to land for the purpose of discharge of treated meat processing, fellmongery and tannery wastewater from the Alliance Pukeuri Meat Processing Plant. See also 98518-98523, 98419 & 98390.

Alliance Group Limited	Waitaki	Discharge to Land Permit	98520	05/31/2034	To discharge stormwater to land (1) at the end of Works Road (J41:563718) and (2) on a dry farm drainage ditch at the north-eastern end of the plant (J41:567723) for the purpose of disposal of stormwater from the Alliance Pukeuri Meat Processing Plant. See also 98518-98523, 98419 & 98390.
Alliance Group Limited	Waitaki	Discharge to Land Permit	98521.V1	05/31/2034	To discharge treated wastewater to land for the purpose of discharge of treated meat processing, and fellmongery and tannery wastewater from the Alliance Pukeuri Meat Processing Plant mixed with irrigation race water via energy diffuser structures at (1) Main Hilderthorpe irrigation race outlet and (2) Craigs Beach, McEneany Road outlet
Alliance Group Limited	Waitaki	Discharge to Water Permit	98523	05/31/2034	To discharge an average 12,000 cubic metres/day at a maximum rate of 15,000 cubic metres/day of treated wastewater to water at (1) McEneany Road irrigation race for purpose of discharge of meat processing, tannery & fellmongery wastewater from the Alliance Pukeuri Meat Processing Plant treated by aerated lagoon(s) & clarifier system & (2) the discharge of this wastewater mixed with McEneany Road irrigation water to the Hilderthorpe main irrigation race via a pipeline
9(2)(a)	Waitaki	Discharge to Land Permit	RM14.057.01		To discharge treated wastewater to land for the purpose of operating two restaurants and an accomdation facility
Blast Tech 2006 Limited	Waitaki	Discharge to Air Permit	RM17.246.01	10/17/2027	To discharge contaminants into air for the purpose of operating both a fixed premises and mobile abrasive blasting and spray painting business
Chairperson Board of Trustees Waitaki Boys High School	Waitaki	Discharge to Air Permit	RM13.162.01	05/21/2048	To discharge contaminants to air for the purpose of operating a coal fired boiler
Dunedin City Council Community and Recreation	Waitaki	Groundwater Take Permit	RM18.119.01	8/01/2043	To take and use groundwater from the Lower Waitaki Plains Aquifer for the purpose of stock water and irrigation
Firth Industries	Waitaki	Discharge to Air Permit	2005.287	9/01/2030	To discharge particulates to air for the purpose of operating a concrete batching plant Location of activity: Corner of Steward Road and Seven Mile Road, Hilderthorpe, North Otago.
Fortitude Farm Limited	Waitaki	Groundwater Take Permit	RM14.038.01	3/01/2049	To take and use ground water for the purpose of stock water and dairy shed
Fortitude Farm Limited	Waitaki	Bore Construction Consent	RM13.454.01		To construct a bore for the purpose of accessing ground water
Houtimata Farm Limited	Waitaki	Groundwater Take Permit	2001.A06.V1	5/01/2022	To take and use groundwater for the purpose of supplying irrigation water

9(2)(a)	Waitaki	Groundwater Take Permit	2001.989	11/21/2021	To take and use groundwater for the purpose of irrigation approximately 600m south of the Waitaki River, north of Kaik Road.
Lower Waitaki Irrigation Company Limited New Zealand Railways Corporation trading as ONTRACK	Waitaki Waitaki	Compliance Certificate	2007.C16		To disturb the foreshore and sea bed for the purpose of reconstructing a rock sea-wall. Location 1: Between 80 metres south-east of the intersection of Orwell Street and Humber Street and 80 metres south-east of the intersection of Humber Street and Ouse Street, Oamaru. ☐ Location 2: Between 80 metres east of the intersection of Usk Street and Humber Street and 80 metres east of the intersection of Ribble Street and Humber Street, Oamaru.
Oamaru Shingle Supplies Limited	Waitaki	Discharge to Air Permit	2006.284	11/01/2031	To discharge contaminants to air for the purpose of operating a quarry and block manufacturing plant. Location of activity: Adjacent to the intersection of Seven Mile Road and State Highway One, approximately twelve kilometres north-east of Oamaru, between Hilderthorpe and Waitaki Bridge.
Oamaru Shingle Supplies Limited	Waitaki	Discharge to Water Permit	2007.653	6/01/2033	To discharge water containing sediment to land in circumstances that it may enter water for the purpose of disposing of water used to wash gravel and accumulated groundwater on site. Location: An unnamed tributary of the Steward Settlement Water Race approximately 90 metres west of the intersection of State Highway 1 (Main South Line) and Seven Mile Road, Hilderthorpe, North Otago
Oamaru Shingle Supplies Limited	Waitaki	Discharge to Water Permit	RM15.283.01	12/01/2050	To discharge contaminants to water for the purpose of reclamation of a quarry pit
Oamaru Shingle Supplies Limited	Waitaki	General/Structure Land Use Cor	RM15.283.02	12/01/2050	To reclaim the bed of an artificial lake for the purposes of infilling a used quarry pit
Searle's Dairy Limited	Waitaki	Groundwater Take Permit	2008.338.V1	8/01/2033	To take and use groundwater for the purpose of pasture irrigation, single domestic, stock water and dairy shed supply
Searle's Dairy Limited	Waitaki	Groundwater Take Permit	RM13.376.01.V1	3/01/2049	To take and use groundwater from the Lower Waitaki Aquifer for the purpose of irrigation
Searle's Dairy Limited	Waitaki	Groundwater Take Permit	RM15.076.01	4/01/2050	To take and use groundwater for the purpose of irrigation
Searle's Dairy Limited	Waitaki	Discharge to Land Permit	2008.227	5/01/2023	To discharge treated domestic wastewater to land for the purpose of disposal of wastewater from a residential dwelling located 1.1 kilometres east of the intersection of Kaik Road and State Highway 1, Waitaki Bridge, Oamaru

Trustees of the Butler Family Trust	Waitaki	Groundwater Take Permit	2010.221.V1	07/14/2045	To take and use groundwater for the purpose of stock water and dairy shed supply.
Waitaki District Council	Waitaki	Discharge to Air Permit	2002.656	04/30/2028	To discharge to air, odours and aerosols from the Oamaru Wastewater Treatment Plant for the purpose of the treatment and disposal of wastewater from the Oamaru Wastewater Treatment Plant. Location of activity: An area of land at the coastal end of TY Duncan Road, Oamaru
Waitaki District Council	Waitaki	Discharge to Air Permit	2004.163	4/01/2028	To discharge to air odours resulting from the removal of sludge for the purpose of maintaining and operating the Oamaru Wastewater Treatment Plant. Location of activity: An area of land at the coastal end TY Duncan Road, Oamaru
Waitaki District Council	Waitaki	Discharge to Land Permit	2002.704	04/30/2028	To discharge up to 7,500 cubic metres per day (annual average daily flow) of treated effluent from the Oamaru Wastewater Treatment Plant to land for the purpose of the treatment and disposal of wastewater from the Oamaru Wastewater Treatment Plant. Location of activity: An area of land at the coastal end of TY Duncan Road, Oamaru
Waitaki District Council	Waitaki	Discharge to Water Permit	2002.655	04/30/2028	To discharge up to 7,500 cubic metres per day (annual average daily flow) of treated effluent from the Oamaru Wastewater Treatment Plant to Landon Creek for the purpose of the treatment and disposal of wastewater from the Oamaru Wastewater Treatment Plant. Location of activity: An area of land at the coastal end of TY Duncan Road, Oamaru
Waitaki District Council	Waitaki	Divert Water Permit	2374	10/01/2026	TO DIVERT MUDDY CREEK FOR THE PURPOSE OF BETTER LAND USE AND CHANNEL IMPROVEMENT
Waste Management NZ Limited	Waitaki	Discharge to Air Permit	RM15.358.01	5/01/2051	To discharge contaminants to air for the purpose of operating a waste transfer site
Willowview Pastures Limited	Waitaki	Groundwater Take Permit	RM18.064.01	3/01/2038	To take and use ground water for the purpose of irrigation
Tumai Beach Services Limited	Te Umu Koau	Dam Water Permit	2008.007	01/22/2045	To dam an unnamed ephemeral tributary of the Pleasant River Estuary for the purpose of storing water. Location of activity: An unnamed ephemeral tributary of the Pleasant River Estuary, approximately 2.6 kilometres north east of the intersection of Main South Road (State Highway 1) and Thorburn Road, Waikouaiti

Tumai Beach Services Limited	Te Umu Koau	Surface Water Take Permit	2008.008.V1	1/12/2044	To take and use water as primary allocation from three unnamed ephemeral tributaries of the Pleasant River estuary for the purpose of communal domestic, stock water and irrigation supply located at three unnamed ephemeral tributaries of the Pleasant River estuary, approximately 2.6 kilometres north east of the intersection of Main South Road (State Highway 1) and Thorburn Road, Waikouaiti
Tumai Beach Services Limited	Te Umu Koau	Dam Water Permit	2008.009	12/01/2043	To dam an unnamed ephemeral tributary of the Pleasant River Estuary for the purpose of storing water. Location of activity: An unnamed ephemeral tributary of the Pleasant River Estuary, approximately 2.6 kilometres north east of the intersection of Main South Road (State Highway 1) and Thorburn Road, Waikouaiti.
Tumai Beach Services Limited	Te Umu Koau	Dam Water Permit	2008.011	1/06/2044	To dam an unnamed ephemeral tributary of the Pleasant River estuary for the purpose of storing water. Location of activity: An unnamed ephemeral tributary of the Pleasant River estuary, approximately 2.6 kilometres north east of the intersection of Main South Road (State Highway 1) and Thorburn Road, Waikouaiti
Tumai Beach Services Limited	Te Umu Koau	Discharge to Water Permit	2008.571	01/22/2045	To discharge natural high flow water via a spillway from a dam to an unnamed ephemeral tributary of the Pleasant River Estuary for the purpose of operating a dam. Location of activity: An unnamed ephemeral tributary of the Pleasant River Estuary, approximately 2.6 kilometres north east of the intersection of Main South Road (State Highway 1) and Thorburn Road, Waikouaiti
Tumai Beach Services Limited	Te Umu Koau	Discharge to Water Permit	2008.575	11/12/2043	To discharge natural high flow water via a spillway from a dam to an unnamed ephemeral tributary of the Pleasant River Estuary for the purpose of operating a dam. Location of activity: An unnamed ephemeral tributary of the Pleasant River Estuary, approximately 2.6 kilometres north east of the intersection of Main South Road (State Highway 1) and Thorburn Road, Waikouaiti.

Tumai Beach Services Limited	Te Umu Koau	Discharge to Water Permit	2008.579	1/06/2044	To discharge natural high flow water via a spillway from a dam to an unnamed ephemeral tributary of the Pleasant River Estuary for the purpose of operating a dam. Location: An unnamed ephemeral tributary of the Pleasant River Estuary, approximately 2.6 kilometres north east of the intersection of Main South Road (State Highway 1) and Thorburn Road, Waikouaiti
Dunedin City Council	Ōrau	Coastal Discharge Permit	2001.084	03/31/2036	To discharge seawater or seawater containing contaminants to the Coastal Marine Area at St Clair Salt Water Pool, Second Beach Road, St Clair, Dunedin for the purpose of disposal of swimming pool water at the end of the season and during storm events.
Dunedin City Council	Ōrau	CMA Use Permit	2001.085	03/31/2036	To erect, place, alter and maintain the existing seawall structures within the Coastal Marine Area at St Clair Hot Water Pool, Second Beach Road, St Clair, Dunedin for the purpose of redevelopment of St Clair Hot Water Pool.
Dunedin City Council	Ōrau	CMA Use Permit	2002.478	1/01/2038	To occupy the coastal marine area with a concrete wall and steps for the purpose of erosion protection, defence against the sea and amenity enhancement Location of consent activity: St Clair beach
Dunedin City Council	Ōrau	CMA Use Permit	2002.482	1/01/2038	To occupy the coastal marine area with rock riprap and a concrete retaining wall for the purpose of erosion protection, defence against the sea and amenity enhancement. Location of consent activity: St Clair beach
Dunedin City Council	Ōrau	CMA Use Permit	2002.573	1/01/2038	To occupy the coastal marine area with a bolted rock wave energy dissipation structure for the purpose of defence against the sea. Location of consent activity: Adjacent to St Clair beach
Dunedin City Council	Ōrau	CMA Use Permit	2002.621	10/26/2039	To occupy the coastal marine area with structures and facilities associated with an offshore outfall for the disposal of treated wastewater from the Tahuna Wastewater Treatment Plant for a term expiring 35 years from the date of issue of this permit. Location: the outfall commences at the Tahuna Waste Treatment Plant situated at 10 Tahuna Road and extends approximately perpendicular to the shore to a distance of 1,100 metres from mean high water springs.

Dunedin City Council	Ōrau	Coastal Discharge Permit	2002.623	06/30/2032	To discharge up to 600 litres per second average dry weather flow and up to 4000 litres per second wet weather flow of treated wastewater to the Pacific Ocean from an outfall located approximately 1100 metres off shore. The outfall commences at the Tahuna Wastewater Treatment Plant situated at 10 Tahuna Road and extends approximately perpendicular to the shore to a distance of 1,100 metres from mean high water springs.
Dunedin City Council	Ōrau	Coastal Discharge Permit	2002.624	06/30/2032	To discharge up to 600 litres per second average dry weather flow and up to 4000 litres per second wet weather flow of treated wastewater to the Pacific Ocean from twin outfalls at Lawyers Head.
Dunedin City Council	Ōrau	Discharge to Air Permit	2002.626	06/20/2032	To discharge contaminants to air, namely odour, associated with the discharge of treated wastewater to the Pacific Ocean for the purpose of discharge of odour to air from the surge vent and sewage discharge portals on Lawyers Head. Location of activity: Lawyers Head, Dunedin. Accessed at the end of John Wilson Drive.
Dunedin City Council	Ōrau	CMA Use Permit	2006.509	9/02/2041	To occupy the coastal marine area with an outfall structure for the purpose of using the structure to discharge stormwater. Location of consent activity: Beach locally known as Second Beach, approximately 150 metres south of the intersection of Second Beach Road and Cliffs Road, St Clair, Dunedin.
Dunedin City Council	Ōrau	CMA Use Permit	2006.534	06/30/2032	To occupy the coastal marine area with two outfall structures for the purpose of disposing of treated wastewater from the Tahuna Wastewater Treatment Plant. Location of consent activity: Lawyers Head, accessed at the south end of John Wilson Ocean Drive, approximately 2 kilometres east-southeast of the intersection of John Wilson Ocean Drive with Victoria Road, Dunedin.
Dunedin City Council	Ōrau	Coastal Discharge Permit	RM11.313.10	06/20/2048	To discharge contaminants to the coastal marine area for the purpose of stormwater disposal
Dunedin City Council	Ōrau	CMA Use Permit	RM13.428.01	7/01/2034	To occupy the coastal marine area with sand sausages, reno mattresses and a rubble wall for the purpose of erosion protection
Dunedin City Council	Ōrau	CMA Use Permit	RM13.428.02	7/01/2034	To disturb and temporarily occupy the coastal marine area for the purpose of undertaking erosion protection works

Dunedin City Council	Ōrau	General/Structure Land Use Cor	RM13.428.03		To disturb a contaminated site for the purpose of site remediation and erosion protection
Dunedin City Council	Ōrau	CMA Use Permit	RM13.428.05	7/01/2034	To deposit sand within the coastal marine area for the purpose of erosion protection
Dunedin City Council	Ōrau	CMA Use Permit	RM13.428.04	7/01/2034	To place Reno mattresses and sand sausages within the coastal marine area for the purposes of erosion protection
Dunedin City Council	Ōrau	Discharge to Air Permit	RM13.428.06	7/01/2034	To discharge sand and dust to air for the purpose of stockpiling and storing sand
Dunedin City Council	Ōrau	Compliance Certificate	RM13.428.07		To discharge sand to air of the purpose of placing sand within the Coastal Marine area
Dunedin City Council	Ōrau	CMA Use Permit	RM14.309.07	3/01/2035	To deposit rock material within the coastal marine area at St Clair Beach for the purpose of protecting an existing seawall
Dunedin City Council	Ōrau	CMA Use Permit	RM14.309.05	3/01/2035	To alter and reinforce an existing seawall at St Clair Beach with sheet piling and concrete for the purpose of erosion protection.
Dunedin City Council	Ōrau	CMA Use Permit	RM14.309.08	3/01/2035	To disturb and temporarily occupy the coastal marine area at St Clair Beach for the purpose of placing rock material and altering an existing seawall
Dunedin City Council	Ōrau	Discharge to Air Permit	RM15.142.01	8/01/2050	To discharge contaminants into air for the purpose of operating a crematorium
Dunedin City Council	Ōrau	CMA Use Permit	RM18.381.01	1/01/2024	To occupy the common marine and coastal area with an access ramp for the purpose of public and vehicle access
Nash & Ross Limited	Ōrau	CMA Use Permit	2010.256	5/01/2032	To extract sand and to disturb the coastal marine area for the purpose of flood protection and extracting sand for commercial use
Nash & Ross Limited	Ōrau	CMA Use Permit	2010.257	5/01/2032	To occupy the coastal marine area for the purpose of undertaking flood protection works and sand extraction
Clutha District Council	Hākinikini	Discharge to Land Permit	95426	11/01/2022	To discharge up to 1,045 cubic metres per year of landfill leachate to land in a manner that may enter water from Taieri Mouth Closed Landfill off Milton-Taieri Mouth Road approximately 5.5 km south of Taieri Mouth Bridge for the purpose of maintaining the closed landfill.
Clutha District Council	Hākinikini	Discharge to Air Permit	95427	11/01/2022	To discharge to air landfill gas, odour and dust for the purpose of maintaining the Taieri Mouth Closed Landfill off Milton-Taieri Mouth Road, approximately 5.5 km south of Taieri Mouth Bridge.

Mining interest permit holders 5(1)(d)(i)

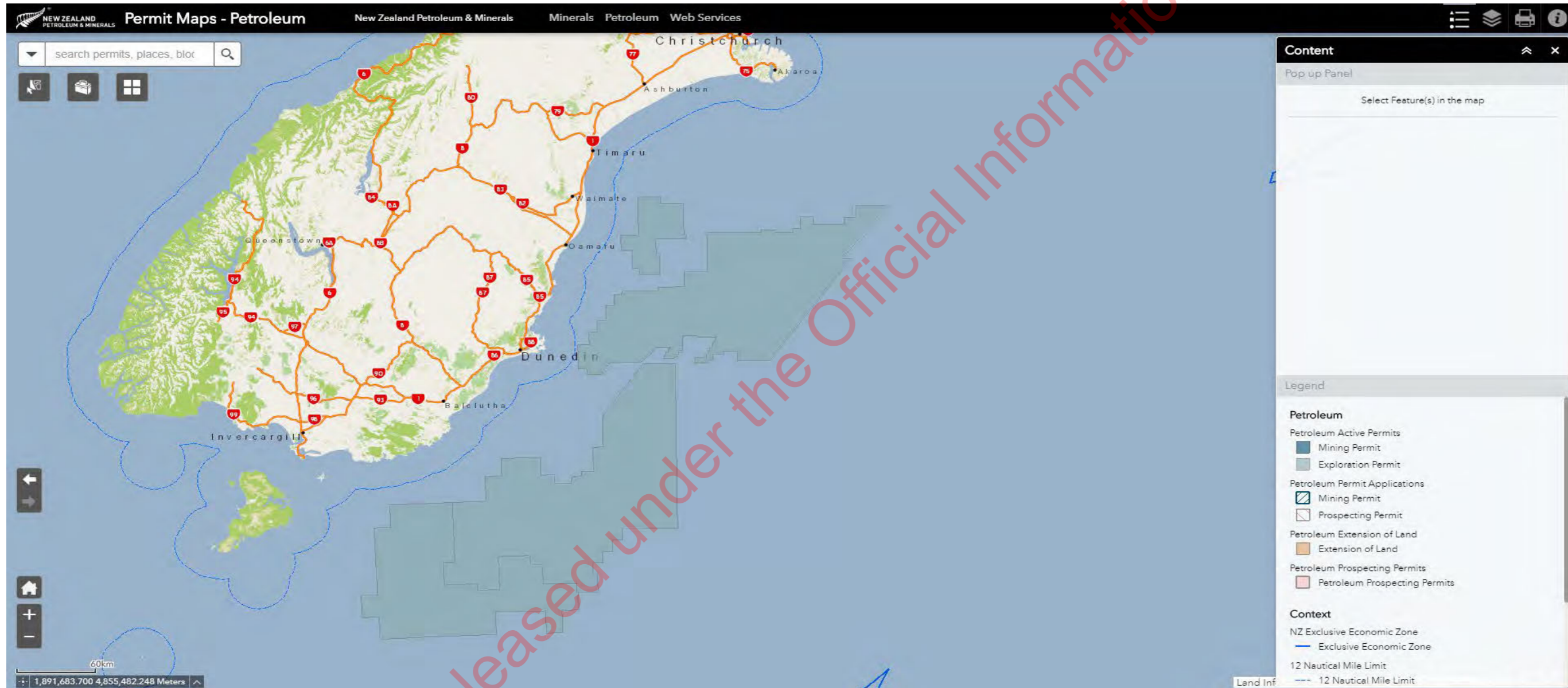
Petroleum and Minerals Mining Interest Holders

NZP&M provides online maps using real-time data to show all current petroleum and minerals permits and applications in New Zealand. <https://www.nzpam.govt.nz/maps-geoscience/minerals-webmaps>
Petroleum map below accessed 24/05/2020: <https://data.nzpam.govt.nz/permitwebmaps/?commodity=petroleum>

Petroleum map for PEP 38264 no longer overlaps with proposed marine reserve H1 (Papanui) - there are no active PEPs within/adjacent to proposed marine reserves and so no need for written notice to any companies
Search of petroleum wells in the area showed all coastal and offshore wells within region to be plugged and abandoned.

<https://data.nzpam.govt.nz/permitwebmaps/?commodity=minerals>

Minerals map search showed no overlapping or adjacent mining permits and so no one needs to be contacted.



Harbour Board 5(1)(d)(ii)

Name of interested party	Type of Interest
Environment Canterbury	Marine Reserves Act section 5(1)(d)(ii)
Environment Southland	Marine Reserves Act section 5(1)(d)(ii)
Otago Regional Council	Marine Reserves Act section 5(1)(d)(ii)

Released under the Official Information Act

Local Bodies 5(1)(d)(iii)

Name of interested party	Type of Interest
Clutha District Council	Marine Reserves Act section 5(1)(d)(iii)
Dunedin City Council	Marine Reserves Act section 5(1)(d)(iii)
Invercargill City Council	Marine Reserves Act section 5(1)(d)(iii)
Southland District Council	Marine Reserves Act section 5(1)(d)(iii)
Timaru District council	Marine Reserves Act section 5(1)(d)(iii)
Waimate District Council	Marine Reserves Act section 5(1)(d)(iii)
Waitaki District Council	Marine Reserves Act section 5(1)(d)(iii)

Released under the Official Information Act

Secretary of Transport 5(1)(d)(iv)

Name of interested party	Contact Name	Postal address	Reserve Name	Type of Interest
Secretary of Transport	Mr Peter Mersi	Ministry of Transport	All	Marine Reserves Act section 5(1)(d)(iv)

Released under the Official Information Act

Director-General of Agriculture and Fisheries 5(1)(d)(v)

Name of interested party	Contact Name	Reserve Name	Type of Interest
Director-General of Agriculture and Fisheries (Actually the D-G of MPI - Ray Smith - cc Dan Bolger DDG Fisheries)	Ray Smith	All	Marine Reserves Act section 5(1)(d)(v)

Released under the Official Information Act

Appendix 5

SEMP statutory consultation
recommencement letter - Marine
Reserves Act section 5(1)(d)(i), (ii) and
(iii)

Released under the Official Information Act

DOC-6302670

3 June 2020

Dear Sir/Madam

Notice of intention to apply for marine reserves on the southeast coast of the South Island

Background

In May 2019, the Ministers of Conservation and Fisheries announced that statutory processes would begin to establish six marine reserves under the Marine Reserves Act 1971 and five Type 2 marine protected areas and a kelp harvesting prohibition area under the Fisheries Act 1996. Together, these would create a network of marine protected areas on the southeastern coast of the South Island.

Public consultation on these proposed southeast marine protected areas (SEMP) began on 17 February 2020 but was withdrawn on 9 April 2020 due to New Zealand's emergency response to the global COVID-19 pandemic, which meant people could no longer participate meaningfully in the SEMP public consultation process.

On 14 May 2020, restrictions imposed as part of the national COVID-19 response were eased as the country moved to Alert Level 2.

Public consultation will recommence in early June 2020

This letter is to inform you that the Department of Conservation (DOC) and Fisheries New Zealand plan to recommence public consultation for two months from 3 June 2020.

We invite public feedback on the proposed network, which remains unchanged from that initially consulted on in February 2020.

Why am I being contacted?

As the applicant for the proposed marine reserves, the Director-General of Conservation is required to give written notice to specified parties (section 5(1)(d) of the Marine Reserves Act 1971¹).

Where can I get more information?

A map of the proposed marine reserves, a consultation document with more information about the areas (including the formal application for the marine reserves) and a link to make an objection or submission are all available at this website: <https://survey.publicvoice.co.nz/s3/sempr-consultation>.

The DOC website has information about the proposed marine reserves, including a history of the process, an outline of the current public consultation and the next steps: <https://www.doc.govt.nz/our-work/south-eastern-south-island-marine-protection/>.

¹ <http://www.legislation.govt.nz/act/public/1971/0015/latest/DLM397838.html>

Printed copies of the consultation document are available for viewing at DOC offices in Christchurch, Dunedin and Invercargill; visitor centres in Dunedin and Wellington; and public libraries in Waimate, Oamaru and Balclutha during office hours. A map of the proposed marine reserves can be viewed outside the DOC office in Geraldine.

You can request a hard copy of the consultation document (which includes the formal application for the marine reserves) by emailing: semp@doc.govt.nz.

DOC is investigating options for live online question and answer sessions with the public. Details of these sessions will be here: <https://www.doc.govt.nz/our-work/south-eastern-south-island-marine-protection/>.

DOC also plans to provide email updates to stakeholders during the consultation period. If you would like to receive these emails, please contact us at semp@doc.govt.nz.

How can I make an objection or submission?

You can make an online objection or submission at this website: <https://survey.publicvoice.co.nz/s3/semp-consultation>.

If you are unable to provide an online objection or submission, you can post it to the address provided below.

When are objections/submissions due?

Objections and submissions can be made from 3 June 2020 until 3 August 2020.

This notice of intention to apply for marine reserves is given by the applicant (the Director-General of Conservation) whose address is:

*Proposed southeast marine protection network
Department of Conservation
Conservation House
PO Box 10420
Wellington 6143
New Zealand*

Sincerely

9(2)(a)

Michael Slater

Deputy Director-General Operations | **Tumuaki Kāhui Matarautaki**

On behalf of the Director-General of Conservation.

Appendix 6

SEMP statutory consultation
recommencement letter – Marine
Reserves Act section 5(1)(d)(iv)

Released under the Official Information Act



DOC-6305652

Mr Peter Mersi
Secretary of Transport
Ministry of Transport
PO Box 3175
Wellington 6140

3 June 2020

Dear Mr Mersi

Notice of intention to apply for marine reserves on the southeast coast of the South Island

Background

In May 2019, the Ministers of Conservation and Fisheries announced that statutory processes would begin to establish six marine reserves under the Marine Reserves Act 1971 and five Type 2 marine protected areas and a kelp harvesting prohibition area under the Fisheries Act 1996. Together, these would create a network of marine protected areas on the southeastern coast of the South Island.

As the applicant for the proposed marine reserves, the Director-General of Conservation is required to give written notice to specified parties (section 5(1)(d) of the Marine Reserves Act 1971).

Public consultation on these proposed southeast marine protected areas (SEMP) **began on 17 February 2020 but was withdrawn on 9 April 2020 due to New Zealand's** emergency response to the global COVID-19 pandemic, which meant people could no longer participate meaningfully in the SEMP public consultation process.

On 14 May 2020, restrictions imposed as part of the national COVID-19 response were eased as the country moved to Alert Level 2.

Public consultation will recommence in early June 2020

This letter is to inform you that the Department of Conservation (DOC) and Fisheries New Zealand plan to recommence public consultation for two months from 3 June 2020.

We invite public feedback on the proposed network, which remains unchanged from that initially consulted on in February 2020.

A map of the proposed marine reserves, a consultation document with more information about the areas (including a formal application for the marine reserves) and a link to make an objection or submission are all available at this website:

<https://survey.publicvoice.co.nz/s3/sempp-consultation>.

The DOC website has information about the proposed marine reserves, including a history of the process, an outline of the current public consultation and the next

¹ <http://www.legislation.govt.nz/act/public/1971/0015/latest/DLM397838.html>

steps: <https://www.doc.govt.nz/our-work/south-eastern-south-island-marine-protection/>.

Printed copies of the consultation document are available for viewing at DOC offices in Christchurch, Dunedin and Invercargill; visitor centres in Dunedin and Wellington; and public libraries in Waimate, Oamaru and Balclutha during office hours. A map of the proposed marine reserves can be viewed outside the DOC office in Geraldine.

Objection or submissions

Online objections or submissions can be made at this website:
<https://survey.publicvoice.co.nz/s3/sempr-consultation>.

Objections and submissions can be made from 3 June 2020 until, 3 August 2020.

This notice of intention to apply for marine reserves is given by the applicant (the Director-General of Conservation) whose address is:

*Proposed southeast marine protection network
Department of Conservation
Conservation House
PO Box 10420
Wellington 6143
New Zealand*

Sincerely

9(2)(a)



Michael Slater

Deputy Director-General Operations - **Tumuaki Kāhui Matarautaki**

On behalf of the Director-General of Conservation.

Appendix 7

SEMP statutory consultation
recommencement letter – Marine
Reserves Act section 5(1)(d)(v)

Released under the Official Information Act



DOC-6305654

Mr Ray Smith
Director-General
Ministry for Primary Industries
PO Box 2526
Wellington 6011

3 June 2020

Dear Mr Smith

Notice of intention to apply for marine reserves on the southeast coast of the South Island

Background

In May 2019, the Ministers of Conservation and Fisheries announced that statutory processes would begin to establish six marine reserves under the Marine Reserves Act 1971 and five Type 2 marine protected areas and a kelp harvesting prohibition area under the Fisheries Act 1996. Together, these would create a network of marine protected areas on the southeastern coast of the South Island.

As the applicant for the proposed marine reserves, the Director-General of Conservation is required to give written notice to specified parties (section 5(1)(d) of the Marine Reserves Act 1971).

Public consultation on these proposed southeast marine protected areas (SEMP) began on 17 February 2020 but was withdrawn on 9 April 2020 due to New Zealand's emergency response to the global COVID-19 pandemic, which meant people could no longer participate meaningfully in the SEMP public consultation process.

On 14 May 2020, restrictions imposed as part of the national COVID-19 response were eased as the country moved to Alert Level 2.

Public consultation will recommence in early June 2020

This letter is to inform you that the Department of Conservation (DOC) and Fisheries New Zealand plan to recommence public consultation for two months from 3 June 2020.

We invite public feedback on the proposed network, which remains unchanged from that initially consulted on in February 2020.

A map of the proposed marine reserves, a consultation document with more information about the areas (including a formal application for the marine reserves) and a link to make an objection or submission are all available at this website:

<https://survey.publicvoice.co.nz/s3/sempp-consultation>.

The DOC website has information about the proposed marine reserves, including a history of the process, an outline of the current public consultation and the next steps: <https://www.doc.govt.nz/our-work/south-eastern-south-island-marine-protection/>.

¹ <http://www.legislation.govt.nz/act/public/1971/0015/latest/DLM397838.html>

Printed copies of the consultation document are available for viewing at DOC offices in Christchurch, Dunedin and Invercargill; visitor centres in Dunedin and Wellington; and public libraries in Waimate, Oamaru and Balclutha during office hours. A map of the proposed marine reserves can be viewed outside the DOC office in Geraldine.

Objection or submissions

Online objections or submissions can be made at this website:

<https://survey.publicvoice.co.nz/s3/sem-p-consultation>.

Objections and submissions can be made from 3 June 2020 until, 3 August 2020.

This notice of intention to apply for marine reserves is given by the applicant (the Director-General of Conservation) whose address is:

*Proposed southeast marine protection network
Department of Conservation
Conservation House
PO Box 10420
Wellington 6143
New Zealand*

Sincerely

9(2)(a)

Michael Slater

Deputy Director-General Operations - **Tumuaki Kāhui Matarautaki**

On behalf of the Director-General of Conservation.

cc. Mr Dan Bolger, Deputy Director-General – Fisheries New Zealand

Appendix 8

Commercial Fisheries Information for the Proposed SEMP Marine Protected Area Sites

Released under the Official Information Act

**Proposed Marine
Reserves in the South
East Marine Protection
Network – summarised
commercial fisheries
catch data**



Fisheries New Zealand

Tini a Tangaroa

IN-CONFIDENCE

Confidentiality

This data is In-Confidence and intended solely for advising the Minister of Conservation and Minister for Oceans and Fisheries in regard to the South East Marine Protection process. The data provided cannot be shared, copied, reproduced, used for any other purpose or distributed without Fisheries New Zealand's prior written consent. You will need to contact the Fisheries Data Management team for their approval (email: rdm@mpi.govt.nz). This document is not for public release.

Disclaimer

While every effort has been made to ensure the information in this analysis is accurate, Fisheries New Zealand disclaim all and any liability to any person in respect of anything, and the consequences of anything, done or omitted to be done in reliance, whether wholly or partly, upon the whole or any part of the contents of this publication.

Fisheries New Zealand
PO Box 2526 Wellington
Charles Fergusson Building
34-38 Bowen Str
0800 00 83 33
www.fisheries.govt.nz

Released under the Official Information Act

Contents

Confidentiality	1
Disclaimer	1
Introduction	4
Purpose	4
How level of interference was assessed	4
Data source	4
Proposed South East Marine Protection Network	6
Site by Site Analysis	7
Site B1 – proposed Waitaki marine reserve	7
Estimated affected commercial landings in the proposed Waitaki marine reserve (based on ERGPR data)	8
Estimated affected commercial landings in the proposed Waitaki marine reserve (based on Catchmapper data)	9
Site D1– Options for proposed Te Umu Koau marine reserve	11
Estimated affected commercial landings in the proposed Te Umu Koau marine reserve (based on ERGPR data)	12
Estimated affected commercial landings in the proposed Te Umu Koau marine reserve (based on Catchmapper data)	18
Analysis of further Te Umu Koau marine reserve options (based on ERGPR data)	20
Site H1 – proposed Papanui marine reserve	26
Estimated affected commercial landings in the proposed Papanui marine reserve (based on ERGPR data)	27
Estimated affected commercial landings in the proposed Papanui marine reserve (based on Catchmapper data)	28
Site I1 - Ōrau marine reserve	30
Estimated affected commercial landings in the proposed Ōrau marine reserve (based on ERGPR data)	31
Estimated affected commercial landings in the proposed Ōrau marine reserve (based on Catchmapper data)	32
Site K1 – proposed Okaihae marine reserve	34
Estimated affected commercial landings in the proposed Okaihae marine reserve (based on ERGPR data)	35
Estimated affected commercial landings in the proposed Okaihae marine reserve (based on Catchmapper data) - excludes rock lobster	36
Site M1 - Hākinikini marine reserve	38

Estimated affected commercial landings in the proposed Hākinikini marine reserve (based on ERGPR data)	39
Estimated affected commercial landings in the proposed Hākinikini marine reserve (based on Catchmapper data)	40
Cumulative interference of marine reserves on landings	42
Estimated affected commercial landings in the proposed marine reserves (based on ERGPR data)	42
Estimated affected commercial landings in the proposed marine reserves (based on Catchmapper data)	47
Cumulative interference of Type 2 Marine Protected Areas on landings	51
Estimated affected commercial landings in the proposed Type 2 MPAs (based on ERGPR data)	51
Estimated affected commercial landings in the proposed Type 2 MPAs (based on Catchmapper data)	54
Fishing methods used in the SEMP region – Heatmap analyses	59
Appendix One: Methodology	65
Electronic Reporting/ Geospatial Positioning Reporting (ERGPR)	65
Mapping methodology	65
Using ERGPR to estimate impact of proposed marine reserves	66
Converting catch data to landing data	66
Steps to link landed catch with the location of fishing activity	67
Field Descriptions	69
CatchMapper tool	71
Source	71
Time Period	71
Mapping methodology	71
Data	73
Catch effort from all reported catch events in the general area	73
All fishing vessel positions in the area	73
QMA totals for each species	73
Port price	73
Data Source Disclaimer	74
Limitations	74
Fisheries data types and limitations	75

Introduction

Purpose

The purpose of this report is to assess the estimated level of interference the SEMP proposed marine reserves would have on landings of commercial fish species.

How level of interference was assessed

The level of interference is estimated as the catch affected if the proposed marine protected areas (MPAs) are put in place. The affected catch is measured by assessing previous years' catch and calculating how much of that would be displaced if the proposed marine reserves were in place.

Data source

Fisheries reporting for most fish stocks occurs between 1 October – 30 September of the following year. Rock lobster, sea cucumber and surf clams are reported between 1 April – 31 March the following year. ERGPR data has been generated since 2019, therefore analysis in this report has primarily relied on data from the following fishing years:

October Fishing Year	April Fishing Year
2019 – 2020	2020 – 2021
2020 – 2021	2021 - 2022
2021 – 2022	2022 - 2023

Earlier Catchmapper data, which has lower spatial resolution but provides a longer time series, has also been provided in this analysis for the period from 2007/08 – 2019.

The methodology of how the data were derived and descriptions of the limitations of the data are provided in Appendix 1.

The tables in this document estimates the displaced catch of commercially harvested species at each proposed marine protected area, reporting the total quantity landed, the proportion of stock landed from the relevant Quota Management Area (QMA), and the estimated port value of landed catch from each reserve.

Impact on individual fishers¹ is assessed in terms of the quantity of their landed catch from each proposed reserve, the proportion of their total landed catch sourced from each reserve, and an estimate of the port value of their landed catch from each proposed reserve.

¹ The term “fisher” has been used in this document as shorthand for permit holder. Fishers have been randomly assigned identifiers to anonymise their activity. Fisher identifiers in ERGPR analysis are not comparable to identifiers used in Catchmapper analysis.

The estimated value of landed catch (calculated by multiplying the total green-weight of landed catch by the port price per kg) is not an assessment of the cumulative economic impacts, total loss of revenue associated with the proposed MPAs, or a fisher's ability to catch fish elsewhere and/or use different fishing methods to land the same species.

For the purposes of comparison, estimated landings of rock lobster has been included in tables displaying estimated landings of other fish stocks despite it being reported during a different fishing year.

Proposed South East Marine Protection Network

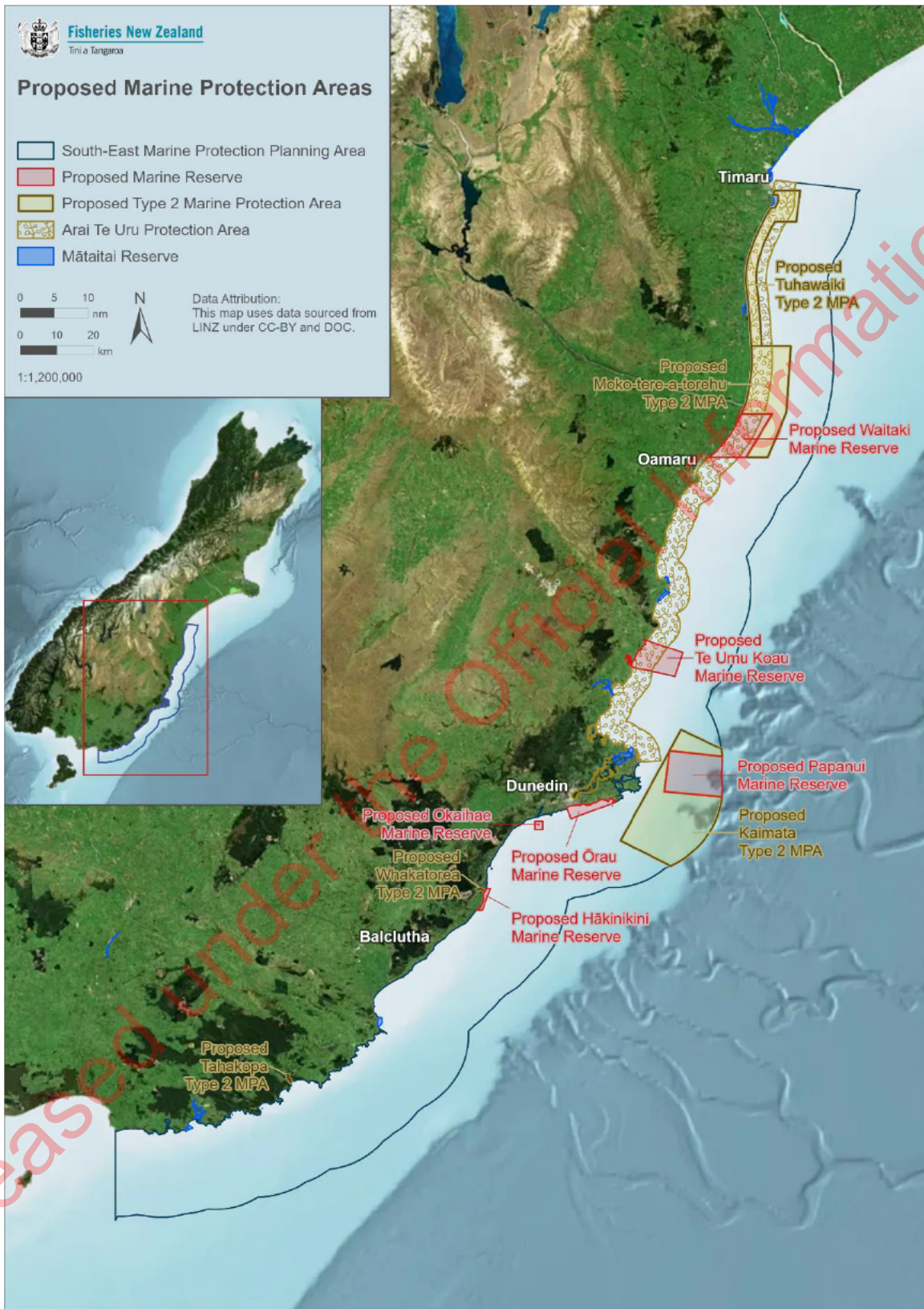


Figure 1. The Otago Region and location of proposed marine reserves, Type 2 MPAs, and KPA.

Site by Site Analysis

Site B1 – proposed Waitaki marine reserve

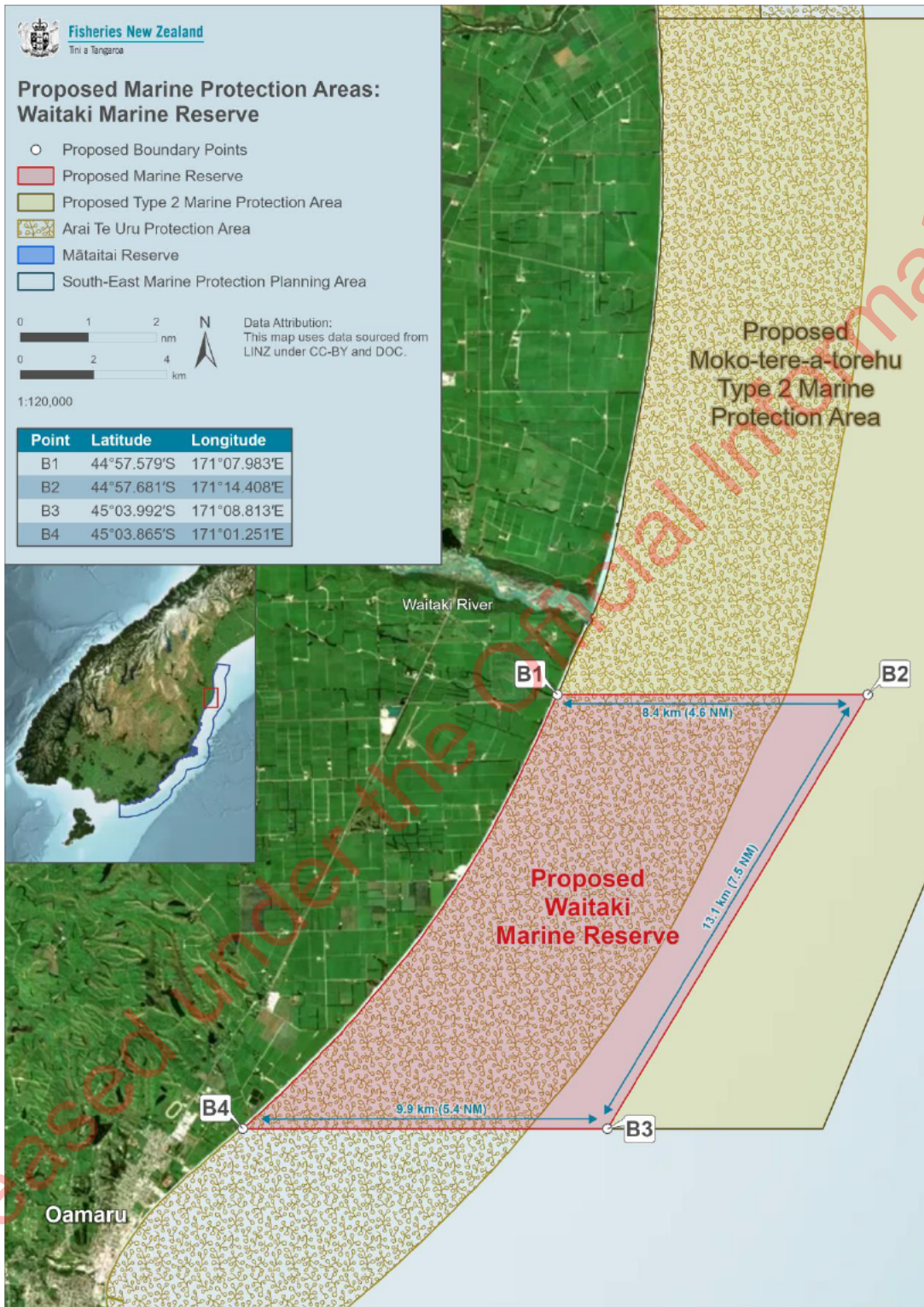


Figure 1: Location of proposed site B1 – Waitaki marine reserve

Estimated affected commercial landings in the proposed Waitaki marine reserve
(based on ERGPR data)

Table 1: Average annual landings of quota species caught in the proposed Waitaki marine reserve.

Species	Stock code	Average annual landings (kg)	Range of annual landings (kg)	Average percentage of annual QMA landings	Average port value of annual landings (NZD)
Rig	SPO3	1,443	143 - 3561	0.2099	6,041
Elephantfish	ELE3	229	11 - 525	0.0218	612
School shark	SCH3	9(2)(b)(ii)			
Spiny dogfish	SPD3				
Rough skate	RSK3				
Leatherjacket	LEA3				
Barracouta	BAR1				
Blue moki	MOK3				
Flatfish	FLA3				
Smooth skate	SSK3				
Red gurnard	GUR3				
Kahawai	KAH3				
Blue warehou	WAR3				
Southern Bluefin Tuna	STN1				
Kingfish	KIN3				
Pacific Bluefin Tuna	TOR1				
Tarakihi	TAR3				
Blue cod	BCO3				
Total		1,992			7,095

Estimated affected commercial landings in the proposed Waitaki marine reserve
(based on Catchmapper data)

Table 3: Average annual landings of quota species caught in the proposed Waitaki marine reserve.

Species	Stock code	Average annual landings (kg)	Percentage of QMA landings	Port Price (NZD/kg)	Average port value of annual landings (NZD)
Gurnard	GUR3	703	0.06	2.47	1,734
Rig	SPO3	390	0.08	4.07	1,585
Elephant fish	ELE3	605	0.06	2.59	1,565
Tarakihi	TAR3	412	0.04	2.30	947
Red cod	RCO3	823	0.02	0.70	578
Hapuku and bass	HPB3	91	0.03	5.59	508
Flatfish	FLA3	104	0.01	3.10	322
Rough skate	RSK3	357	0.02	0.45	160
School shark	SCH3	70	0.02	2.27	158
Squid	SQU1T	128	<0.01	1.22	156
Barracouta	BAR1	386	<0.01	0.31	119
Surf clam - large trough shell	MMI3	105	0.29	0.83	87
Paddle crab	PAD3	16	0.04	4.96	77
Blue cod	BCO3	10	0.01	7.09	72
Sea perch	SPE3	99	0.02	0.71	70
Stargazer - giant	STA3	48	0.01	1.35	64
Ghost shark - dark	GSH3	176	0.03	0.32	57
Trumpeter	TRU3	13	0.07	3.63	47

Leatherjacket	LEA3	62	0.05	0.65	40
Surf clam - triangle shell	SAE3	42	0.09	0.83	35
Spiny dogfish	SPD3	170	0.01	0.17	29
Blue moki	MOK3	18	0.01	1.43	26
Blue warehou	WAR3	17	<0.01	1.27	21
Smooth skate	SSK3	27	0.01	0.43	12
Silver warehou	SWA3	11	<0.01	0.78	9
Total	25	4,880			8,477

9(2)(b)(ii)



Site D1– Options for proposed Te Umu Koau marine reserve

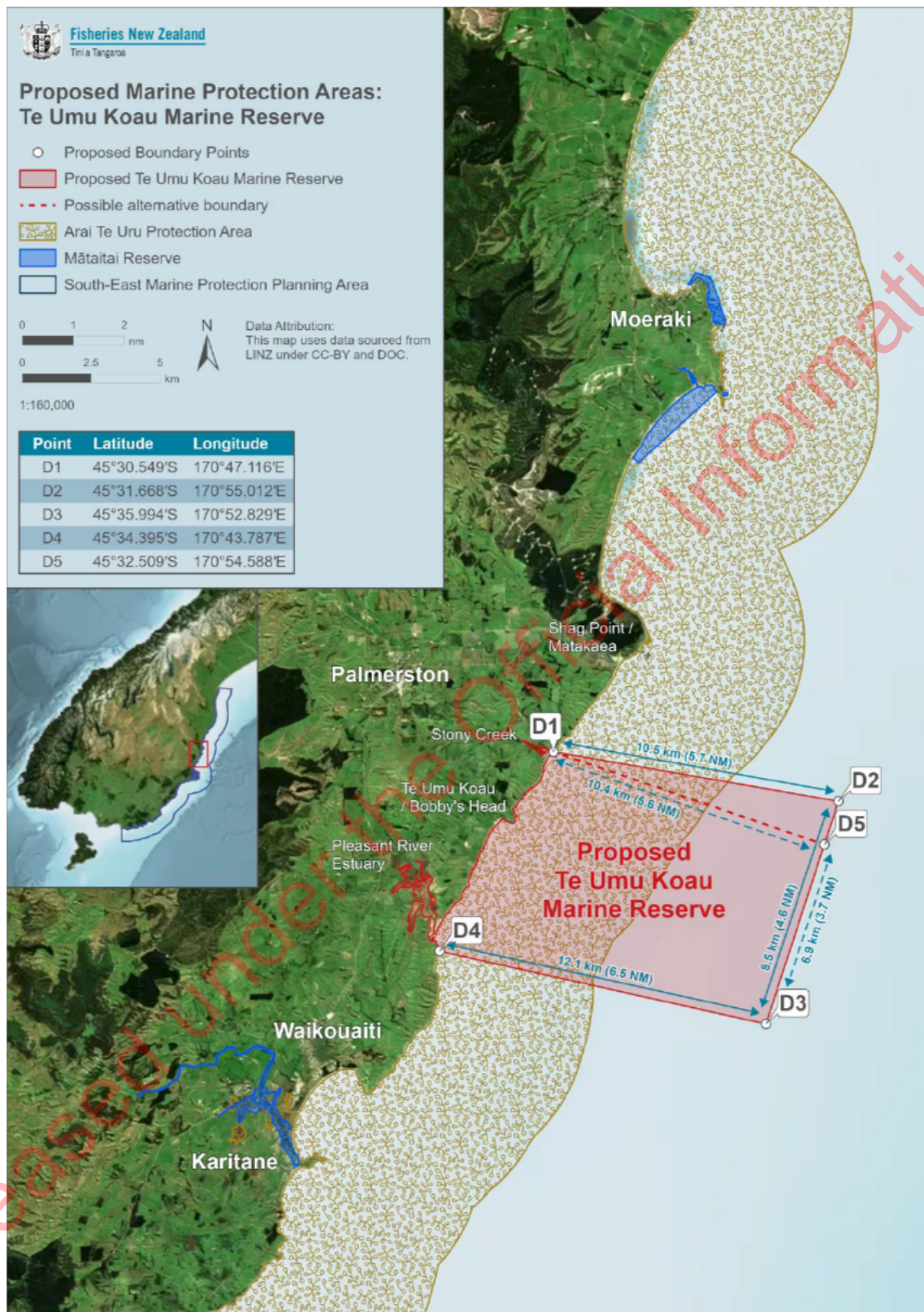


Figure 2: Location of proposed Umu Koau marine reserve showing proposed boundary (D1) and alternative amended boundary (D1A).

Estimated affected commercial landings in the proposed Te Umu Koau marine reserve (based on ERGPR data)

Table 5: Average annual landings of quota species caught in the proposed Te Umu Koau marine reserve with original boundary (site D1).

Species	Stock code	Average annual landings (kg)	Range of annual landings (kg)	Average percentage of annual QMA landings	Average port value of annual landings (NZD)
Rock lobster - spiny (red)	CRA7	14,273	12884 - 15166	13.1426	1,237,975
Red cod	RCO3	6,644	314 - 18509	0.2825	4,917
Blue cod	BCO3	6,317	4428 - 9048	3.8415	59,351
Blue warehou	WAR3	5,839	24 - 15402	0.3620	8,065
Elephantfish	ELE3	3,797	2278 - 4828	0.3589	10,094
Blue moki	MOK3	3,176	2542 - 3630	1.8737	4,564
Red gurnard	GUR3	2,549	1347 - 3235	0.1624	6,753
Rough skate	RSK3	2,380	1738 - 3510	0.2592	1,445
Flatfish	FLA3	1,708	1162 - 2761	0.1958	6,265
Rig	SPO3	1,437	433 - 2177	0.2157	6,588
Stargazer - giant	STA3	1,062	667 - 1317	0.1934	1,682
Sea urchin, kina, sea egg	SUR3	9(2)(b)(ii)			
School shark	SCH3	793	334 - 1092	0.2493	2,296
Spiny dogfish	SPD3	623	241 - 856	0.0291	106
Leatherjacket	LEA3	611	328 - 818	0.4631	455
Tarakihi	TAR3	570	123 - 1268	0.0676	1,452
Barracouta	BAR1	469	13 - 1209	0.0080	165
Ling	LIN3	180	64 - 268	0.0132	524
Paua	PAU5D	9(2)(b)(ii)			
Kingfish	KIN3	9(2)(b)(ii)			
Jack mackerel	JMA3	51	23 - 88	0.0009	17
Sea perch	SPE3	33	19 - 56	0.0086	28
Knobbed Whelk	KWH3	9(2)(b)(ii)			
Blue Mackerel	EMA3	9(2)(b)(ii)			
Trumpeter	TRU3	9(2)(b)(ii)			
Squid	SQU1T	9(2)(b)(ii)			
Whelks	WHE3	9(2)(b)(ii)			
Kahawai	KAH3	9(2)(b)(ii)			
Hapuku and bass	HPB3	9(2)(b)(ii)			
Ray's Bream	RBM1	9(2)(b)(ii)			

John Dory	JDO3	9(2)(b)(ii)		
Total		53,729		1,367,399

Table 6: Average annual landings of quota species caught in the proposed Te Umu Koau marine reserve with adjusted boundary (site D1A).

Species	Stock code	Average annual landings (kg)	Range of annual landings (kg)	Average percentage of annual QMA landings	Average value of annual landings (NZD)
Red cod	RCO3	6,569	298 - 18480	0.2779	4,862
Rock lobster - spiny (red)	CRA7	5,575	4228 - 6631	5.1383	490,673
Blue cod	BCO3	5,403	3767 - 7798	3.2829	50,828
Blue warehou	WAR3	4,105	24 - 10563	0.2556	5,661
Elephantfish	ELE3	3,514	2126 - 4408	0.3322	9,343
Blue moki	MOK3	2,713	1880 - 3197	1.5994	3,900
Red gurnard	GUR3	2,535	1340 - 3220	0.1615	6,716
Rough skate	RSK3	2,354	1701 - 3469	0.2563	1,426
Flatfish	FLA3	1,704	1156 - 2755	0.1953	6,251
Rig	SPO3	1,372	421 - 2071	0.2058	6,286
Stargazer - giant	STA3	1,057	654 - 1315	0.1926	1,671
Sea urchin, kina, sea egg	SUR3	9(2)(b)(ii)			
School shark	SCH3	750	327 - 1004	0.2356	2,183
Spiny dogfish	SPD3	602	178 - 856	0.0279	102
Leatherjacket	LEA3	583	318 - 783	0.4421	435
Tarakihi	TAR3	542	91 - 1225	0.0641	1,378
Barracouta	BAR1	468	13 - 1209	0.0080	165
Ling	LIN3	168	63 - 264	0.0125	491
Paua	PAU5D	9(2)(b)(ii)			
Kingfish	KIN3	9(2)(b)(ii)			
Jack mackerel	JMA3	38	23 - 49	0.0007	15
Sea perch	SPE3	25	15 - 45	0.0066	21
Knobbed Whelk	KWH3	9(2)(b)(ii)			
Blue Mackerel	EMA3	9(2)(b)(ii)			
Trumpeter	TRU3	9(2)(b)(ii)			
Squid	SQU1T	9(2)(b)(ii)			
Whelks	WHE3	9(2)(b)(ii)			
Kahawai	KAH3	9(2)(b)(ii)			
Hapuku and bass	HPB3	9(2)(b)(ii)			

Ray's Bream	RBM1	9(2)(b)(ii)			
John Dory	JDO3	9(2)(b)(ii)			
Total		41,282			606,995

9(2)(b)(ii)

9(2)(b)(ii)

9(2)(b)(ii)

Table 9: Estimates of landed rock lobster in the proposed Te Umu Koau marine reserve. *Port price for 2022/23 is estimated.

Fishing Year	Proposed area	Average estimated annual landings (kg)	Proportion of CRA7 landings (%)	Port price (/kg)	Average value of annual landings (NZD)
2020-2021 (Apr)	D	12,884	11.947	68.23	879,150
	D1A	4,228	3.921	68.23	288,517
2021-2022 (Apr)	D	14,768	13.899	94.70	1,398,559
	D1A	6,631	6.241	94.70	627,994

2022-2023 (Apr)*	D	15,166	13.582	94.70	1,436,217
	D1A	5,866	5.253	94.70	555,509

Released under the Official Information Act

Released under the Official Information Act

Estimated affected commercial landings in the proposed Te Umu Koau marine reserve (based on Catchmapper data)

Table 10: Average annual landings per year of quota species caught in the proposed Te Umu Koau marine reserve. Excludes rock lobster.

Species	Stock code	Average annual landings (kg)	Average annual percentage of QMA landings	Port price (NZD/kg)	Average port value of annual landings (NZD)
Blue Cod	BCO3	2,048	1.21	7.09	14,520
Paua	PAU5D	253	0.32	39.00	9,851
Flatfish	FLA3	2,640	0.20	3.10	8,195
Elephant fish	ELE3	2,685	0.24	2.59	6,946
Gurnard	GUR3	2,468	0.22	2.47	6,089
Hapuku and bass	HPB3	894	0.27	5.59	4,994
Moki	MOK3	1,514	1.04	1.43	2,165
Stargazer - giant	STA3	939	0.18	1.35	1,262
Ling	LIN3	459	0.03	2.73	1,252
Tarakahi	TAR3	455	0.04	2.30	1,047
Rough skate	RSK3	2,265	0.16	0.45	1,013
Red Cod	RCO3	1,083	0.03	0.70	761
Rig	SPO3	140	0.03	4.07	569
School shark	SCH3	155	0.04	2.27	352
Common warehou	WAR3	193	0.01	1.27	246
Spiny dogfish	SPD3	1,167	0.07	0.17	198
Sea perch	SPE3	243	0.05	0.71	172
Barracouta	BAR1	492	0.01	0.31	152
Kina	SUR3	71	2.05	1.98	140
Leatherjacket	LEA3	169	0.14	0.65	109
Paddle crab	PAD3	19	0.05	4.96	94
Bluenose	BNS3	27	0.01	3.13	84
Trumpeter	TRU3	15	0.08	3.63	54
Cockle	COC3	42	<0.01	0.97	41
Squid	SQU1T	29	<0.01	1.22	35
Smooth skate	SSK3	20	0.01	0.43	8
Bladder kelp	KBB3G	16	0.04	0.15	2
Total		20,499			60,351

9(2)(b)(ii)

Released under the Official Information Act

Analysis of further Te Umu Koau marine reserve options (based on ERGPR data)

The following map and data tables are presented to support the analysis of alternative boundary options for the proposed Te Umu Koau (D1) marine reserve that were put forward by Kāi Tahu during Treaty partner engagement.

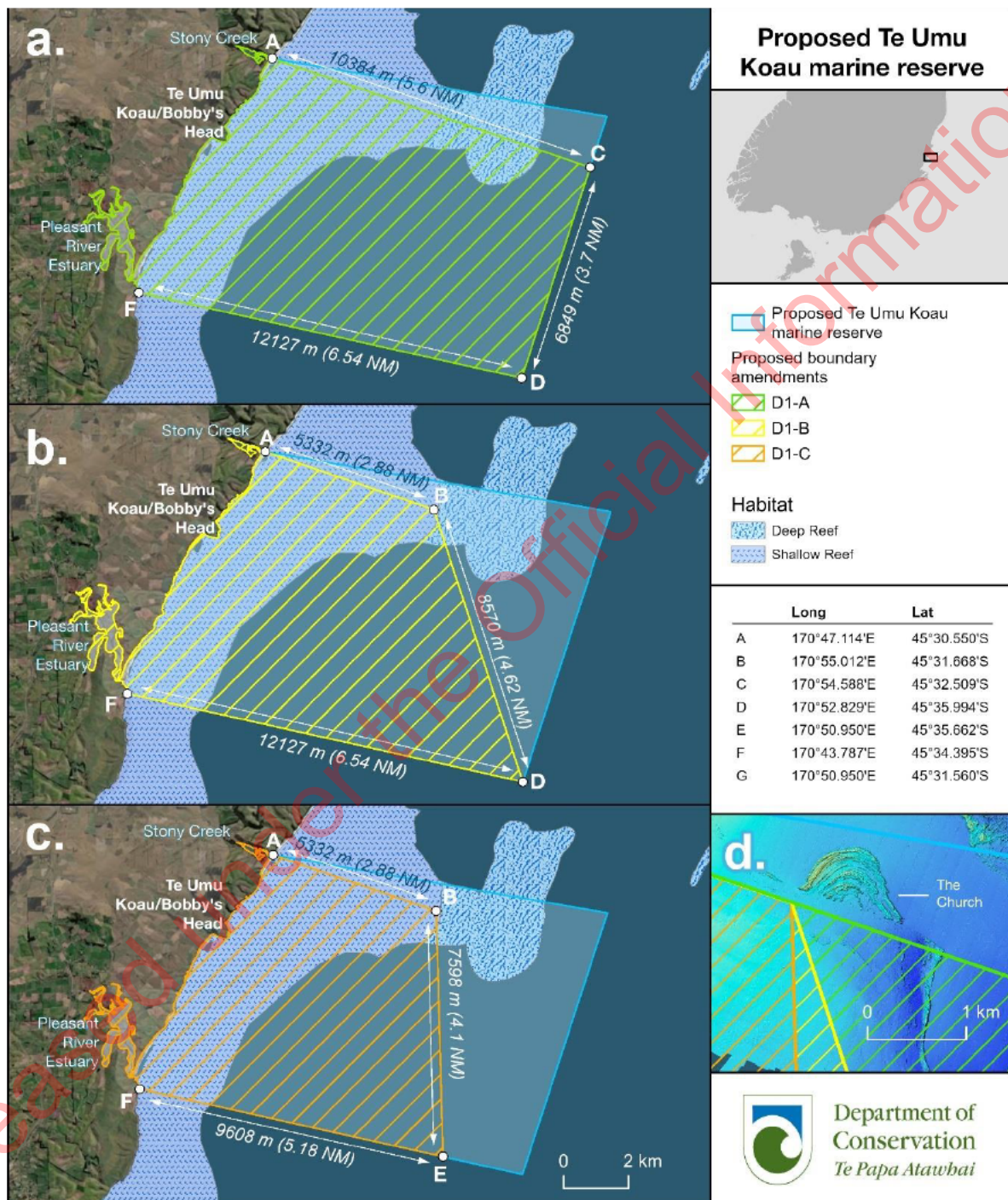


Figure 4: Alternative boundaries at proposed Te Umu Koau reserve

Table 12: Summary of Te Umu Koau variations

D variation	Area of proposed MR	Area of deep reef	Proportion of Forum region's deep reef
D1	~ 96 km ²	7.3 km ²	4.5%
D1A	~ 87 km ²	3.7 km ²	2.3%
D1B	~ 70 km ²	0.3 km ²	0.2%
D1C	~61 km ²	0.1 km ²	0.1%

Table 13: Estimated affected landings of Te Umu Koau variations - excluding CRA7

D1 Variation	2019-2020		2020-2021		2021-2022	
	Estimated landings (kg)	Estimated port value of landed catch (NZD)	Estimated landings (kg)	Estimated port value of landed catch (NZD)	Estimated landings (kg)	Estimated port value of landed catch (NZD)
D1	22,554	77,343	29,669	148,444	66,146	162,484
D1A	20,671	70,689	27,030	131,688	59,420	146,587
D1B	10,138	45,268	12,011	71,267	2,826	21,530
D1C	5,125	35,451	8,065	60,066	2,322	19,972

Table 14: Estimated affected landings of Te Umu Koau variations on CRA7

D1 Variation	2020-2021			2021 - 2022			2022 - 2023		
	Estimated landings (kg)	% of CRA7 landings	Estimated port value of landed catch (NZD)	Estimated landings (kg)	% of CRA7 landings	Estimated port value of landed catch (NZD)	Estimated landings (kg)	% of CRA7 landings	Estimated port value of landed catch (NZD)
D1	12,884	11.95	879,150	14,768	13.90	1,398,559	15,166	13.58	1,436,217
D1A	4,228	3.92	288,517	6,631	6.24	627,994	5,866	5.25	555,509
D1B	1,449	1.34	98,844	2,661	2.50	251,990	1,143	1.02	108,255
D1C	1,432	1.33	97,687	2,560	2.41	242,447	988	0.88	93,573

Table 15: Species landed from proposed Te Umu Koau options

Species	Stock Code	Average annual landings (kg)				Average percentage of annual QMA landings				Average port value of annual landings (NZD)			
		D	D1A	D1B	D1C	D	D1A	D1B	D1C	D	D1A	D1B	D1C
Rock lobster - spiny (red)	CRA7	14,273	5,575	1,751	1,660	13.14	5.14	1.62	1.54	1,237,975	490,673	153,029	144,569
Red cod	RCO3	6,644	6,569	244	126	0.28	0.28	0.01	0.01	4,917	4,862	181	93
Blue cod	BCO3	6,317	5,403	2,598	2,461	3.84	3.28	1.46	1.38	59,351	50,828	25,260	23,957
Blue warehou	WAR3	5,839	4,105	21	0	0.36	0.26	0.00	0.00	8,065	5,661	28	0
Elephantfish	ELE3	3,797	3,514	983	490	0.36	0.33	0.09	0.05	10,094	9,343	2,590	1,292
Blue moki	MOK3	3,176	2,713	202	107	1.87	1.60	0.12	0.06	4,564	3,900	270	139
Red gumard	GUR3	2,549	2,535	761	187	0.16	0.16	0.05	0.01	6,753	6,716	1,894	468
Rough skate	RSK3	2,380	2,354	639	205	0.26	0.26	0.06	0.02	1,445	1,426	444	148
Flatfish	FLA3	1,708	1,704	472	154	0.20	0.20	0.05	0.02	6,265	6,251	1,599	515
Rig	SPO3	1,437	1,372	276	134	0.22	0.21	0.04	0.02	6,588	6,286	1,379	670
Stargazer -giant	STA3	1,062	1,057	318	93	0.19	0.19	0.06	0.02	1,682	1,671	526	167
Sea urchin, kina, sea egg	SUR3	1,000	999	588	588	5.62	5.62	3.32	3.32	9,700	9,688	5,708	5,707
School shark	SCH3	793	750	144	60	0.25	0.24	0.04	0.02	2,296	2,183	490	210
Spiny dogfish	SPD3	623	602	237	97	0.03	0.03	0.01	0.00	106	102	40	17
Leatherjacket	LEA3	611	583	291	199	0.46	0.44	0.23	0.16	455	435	207	142
Tarakihi	TAR3	570	542	179	65	0.07	0.06	0.02	0.01	1,452	1,378	447	167
Barracouta	BAR1	9(2)(b)(ii)											
Ling	LIN3	180	168	62	45	0.01	0.01	0.00	0.00	524	491	182	133
Paua	PAU5D	9(2)(b)(ii)											
Kingfish	KIN3	9(2)(b)(ii)											
Jack mackerel	JMA3	51	38	9	3	0.00	0.00	0.00	0.00	17	15	2	1
Sea perch	SPE3	33	25	9	9	0.01	0.01	0.00	0.00	28	21	7	7
Knobbed Whelk	KWH3	9(2)(b)(ii)											

Blue Mackerel	EMA3	9(2)(b)(ii)											
Trumpeter	TRU3												
Squid	SQU1T												
Whelks	WHE3												
Kahawai	KAH3												
Hapuku and bass	HPB3												
Ray's Bream	RBM1												
John Dory	JDO3												
Smooth skate	SSK3												
Total		53,729	41,282	10,076	6,830					1,367,399	606,995	199,051	183,065

Released under the Official Information Act

9(2)(b)(ii)

Released under the Official Information Act

9(2)(b)(ii)

Released under the Official Information Act

Site H1 – proposed Papanui marine reserve

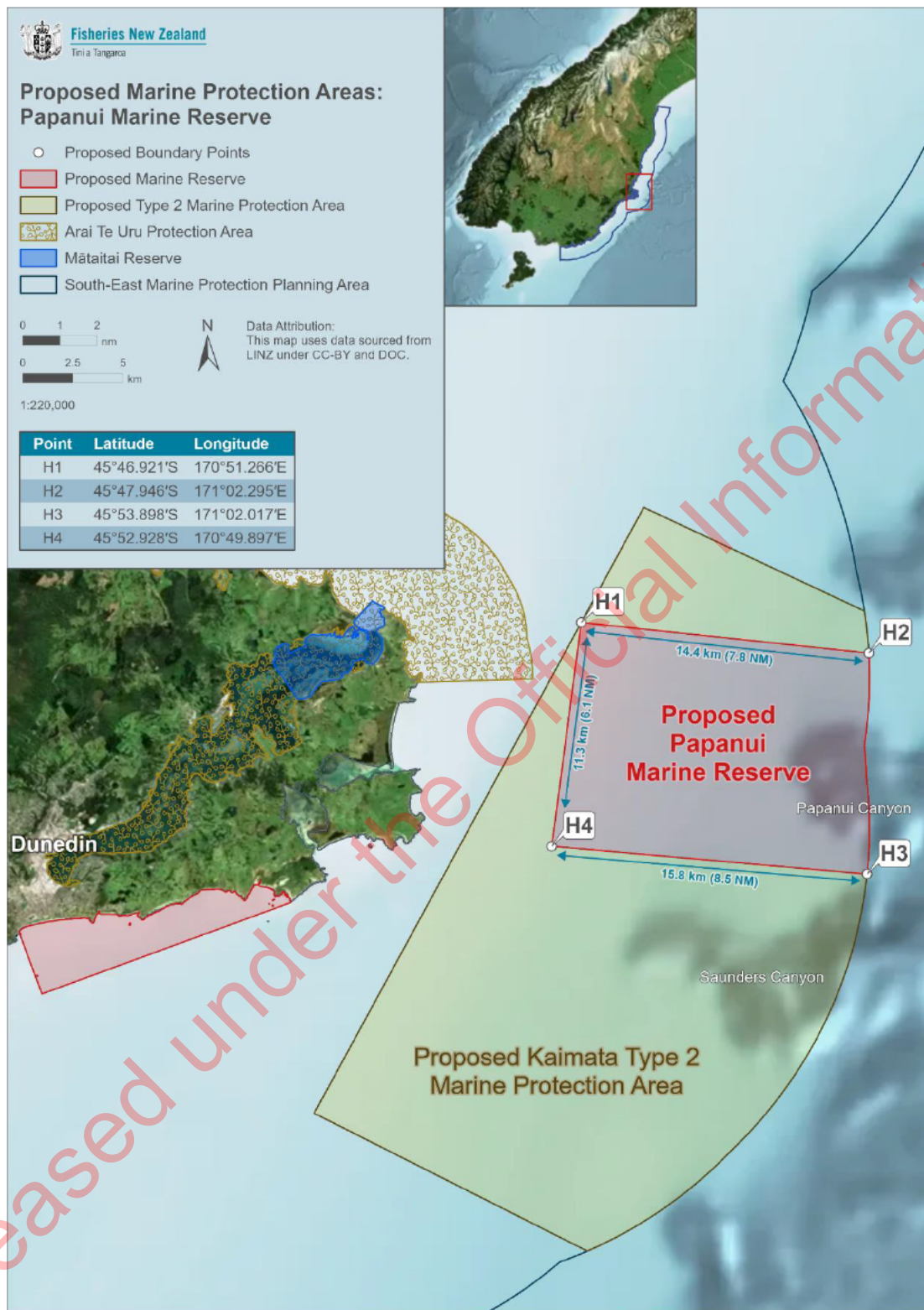


Figure 5: Map of proposed site H1 – Papanui marine reserve

Estimated affected commercial landings in the proposed Papanui marine reserve
(based on ERGPR data)

Table 17: Average annual landings of quota species caught in the proposed Papanui marine reserve.

Species	Stock code	Average annual landings (kg)	Range of annual landings (kg)	Average percentage of annual QMA landings	Average port value of annual landings (NZD)
Rig	SPO3	9(2)(b)(ii)			
School shark	SCH3	9,025	5621 - 11411	2.6731	25,734
Ling	LIN3	7,386	2453 - 11248	0.4819	21,777
Elephantfish	ELE3	9(2)(b)(ii)			
Spiny dogfish	SPD3	3,882	1623 - 6701	0.2014	660
Blue warehou	WAR3	9(2)(b)(ii)			
Blue cod	BCO3	2,063	340 - 3122	1.1592	18,702
Hapuku and bass	HPB3	1,588	662 - 2085	0.5662	8,490
Blue moki	MOK3	1,371	1225 - 1651	0.8115	1,951
Red cod	RCO3	1,319	697 - 1640	0.0721	991
Rough skate	RSK3	1,301	881 - 2002	0.1318	946
Stargazer -giant	STA3	999	845 - 1166	0.1814	1,654
Ghost shark - dark	GSH3	493	72 - 1289	0.1385	226
Tarakihi	TAR3	302	22 - 800	0.0349	751
Sea perch	SPE3	280	157 - 412	0.0701	230
Jack mackerel	JMA3	201	9 - 524	0.0037	47
Red gurnard	GUR3	165	58 - 334	0.0102	439
Flatfish	FLA3	9(2)(b)(ii)			
Kingfish	KIN3	9(2)(b)(ii)			
Bluenose	BNS3	9(2)(b)(ii)			
Smooth skate	SSK3	9(2)(b)(ii)			
Barracouta	BAR1	9(2)(b)(ii)			
Trumpeter	TRU3	9(2)(b)(ii)			
Ribaldo	RIB3	9(2)(b)(ii)			
Mako Shark	MAK1	9(2)(b)(ii)			
Hoki	HOK1	9(2)(b)(ii)			
White Warehou	WWA3	9(2)(b)(ii)			
Queen Scallop	QSC3	9(2)(b)(ii)			
Blue Shark	BWS1	9(2)(b)(ii)			
Paddle crab	PAD3	9(2)(b)(ii)			
Total		70,319			242,050

Estimated affected commercial landings in the proposed Papanui marine reserve
(based on Catchmapper data)

Table 19: Average annual landings of quota species caught in the proposed Papanui marine reserve.

Species	Stock code	Average annual landings (kg)	Average annual percentage of QMA landings	Port price (NZD/kg)	Average port value of annual landings (NZD)
Blue cod	BCO3	2,579	1.52	7.09	18,283
Rig	SPO3	4,148	0.85	4.07	16,871
Squid	SQU1J	10,689	1.44	1.14	12,186
School shark	SCH3	3,001	0.82	2.27	6,805
Ling	LIN3	2,302	0.14	2.73	6,282
Elephantfish	ELE3	978	0.09	2.59	2,528
Hapuku and bass	HPB3	190	0.06	5.59	1,064
Flatfish	FLA3	260	0.02	3.10	806
Red cod	RCO3	705	0.02	0.70	495
Spiny dogfish	SPD3	2,386	0.14	0.17	406
Tarakihi	TAR3	162	0.02	2.30	372

Sea perch	SPE3	510	0.1	0.71	361
Blue warehou	WAR3	229	0.01	1.27	292
Stargazer -giant	STA3	212	0.04	1.35	285
Blue moki	MOK3	194	0.13	1.43	278
Red gurnard	GUR3	104	0.01	2.47	256
Rough skate	RSK3	390	0.03	0.45	174
Ghost shark - dark	GSH3	431	0.08	0.32	140
Bluenose	BNS3	31	0.01	3.13	97
Trumpeter	TRU3	19	0.11	3.63	70
Barracouta	BAR1	113	0.00	0.31	35
Squid	SQU1T	22	0.00	1.22	27
Leatherjacket	LEA3	18	0.01	0.65	12
Smooth skate	SSK3	23	0.01	0.43	10
Jack mackerel	JMA3	22	0.00	0.21	5
Ghost shark - pale	GSP1	11	0.00	0.38	4
Total		29,727			68,142

9(2)(b)(ii)

Site I1 - Ōrau marine reserve

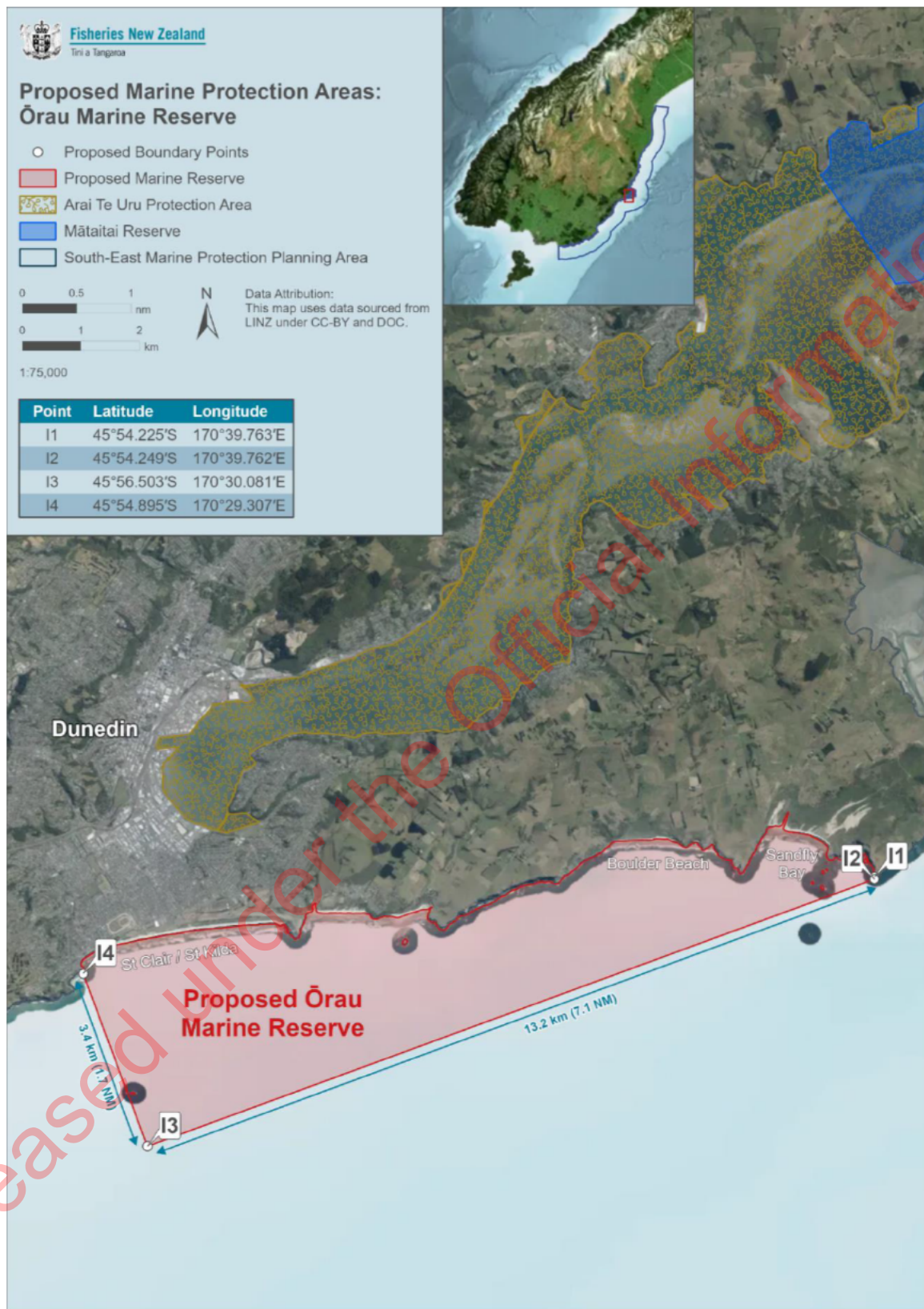


Figure 6: Map of proposed site I1 – Ōrau marine reserve

Estimated affected commercial landings in the proposed Ōrau marine reserve
(based on ERGPR data)

Table 21: Average annual landings of quota species caught in the proposed Ōrau marine reserve.

Species	Stock code	Average annual landings (kg)	Range of annual landings (kg)	Average percentage of annual QMA landings	Average port value of annual landings (NZD)
Rig	SPO3	9(2)(b)(ii)			
Paddle crab	PAD3				
Rock lobster - spiny (red)	CRA7				
Tarakihi	TAR3				
Red gurnard	GUR3				
Flatfish	FLA3				
Rough skate	RSK3				
School shark	SCH3				
Blue cod	BCO3				
Blue moki	MOK3				
Elephantfish	ELE3				
Stargazer - giant	STA3				
Red cod	RCO3				
Barracouta	BAR1				
Sea perch	SPE3				
Total		335			5,247

9(2)(b)(ii)

Table 23: Estimates of landed rock lobster in the proposed Ōrau marine reserve. Catches overlap with the boundary line of the proposed marine reserve. *Port price for 2022/23 is estimated.

Data Source	Average estimated annual landings (kg)	Percentage of CRA7 landings	Port price (NZD/kg)	Average port value of annual landings (NZD)
ERGPR Apr 2020/21				
ERGPR Apr 2020/21				
ERGPR Apr 2022/23*				

Estimated affected commercial landings in the proposed Ōrau marine reserve (based on Catchmapper data)

Table 24: Average annual landings of quota species caught in the proposed Ōrau marine reserve.

Species	Stock code	Average annual landings (kg)	Average annual percentage of QMA landings	Port price (NZD/kg)	Average port value of annual landings (NZD)
Blue cod	BCO3	504	0.30	7.09	3,575
Paddle crab	PAD3	680	1.84	4.96	3,373
Hapuku bass	HPB3	215	0.06	5.59	1,202
Flatfish	FLA3	223	0.02	3.10	691
Squid	SQU1J	361	0.05	1.14	412
Ling	LIN3	101	0.01	2.73	277
Tarakihi	TAR3	119	0.01	2.30	273
Elephantfish	ELE3	91	0.01	2.59	235
Red cod	RCO3	215	0.01	0.70	151
Gurnard	GUR3	60	0.01	2.47	147
Rough skate	RSK3	196	0.01	0.45	88
Stargazer	STA3	54	0.01	1.35	73
Rig	SPO3	11	<0.01	4.07	43
Cockle	COC3	38	<0.01	0.97	37
Moki	MOK3	18	0.01	1.43	25
Sea perch	SPE3	32	0.01	0.71	23
Barracouta	BAR1	27	<0.01	0.31	8
Bladder kelp	KBB3G	15	0.04	0.15	2
Total	18	2,959			10,634

9(2)(b)(ii)



Released under the Official Information Act

Site K1 – proposed Okaihae marine reserve

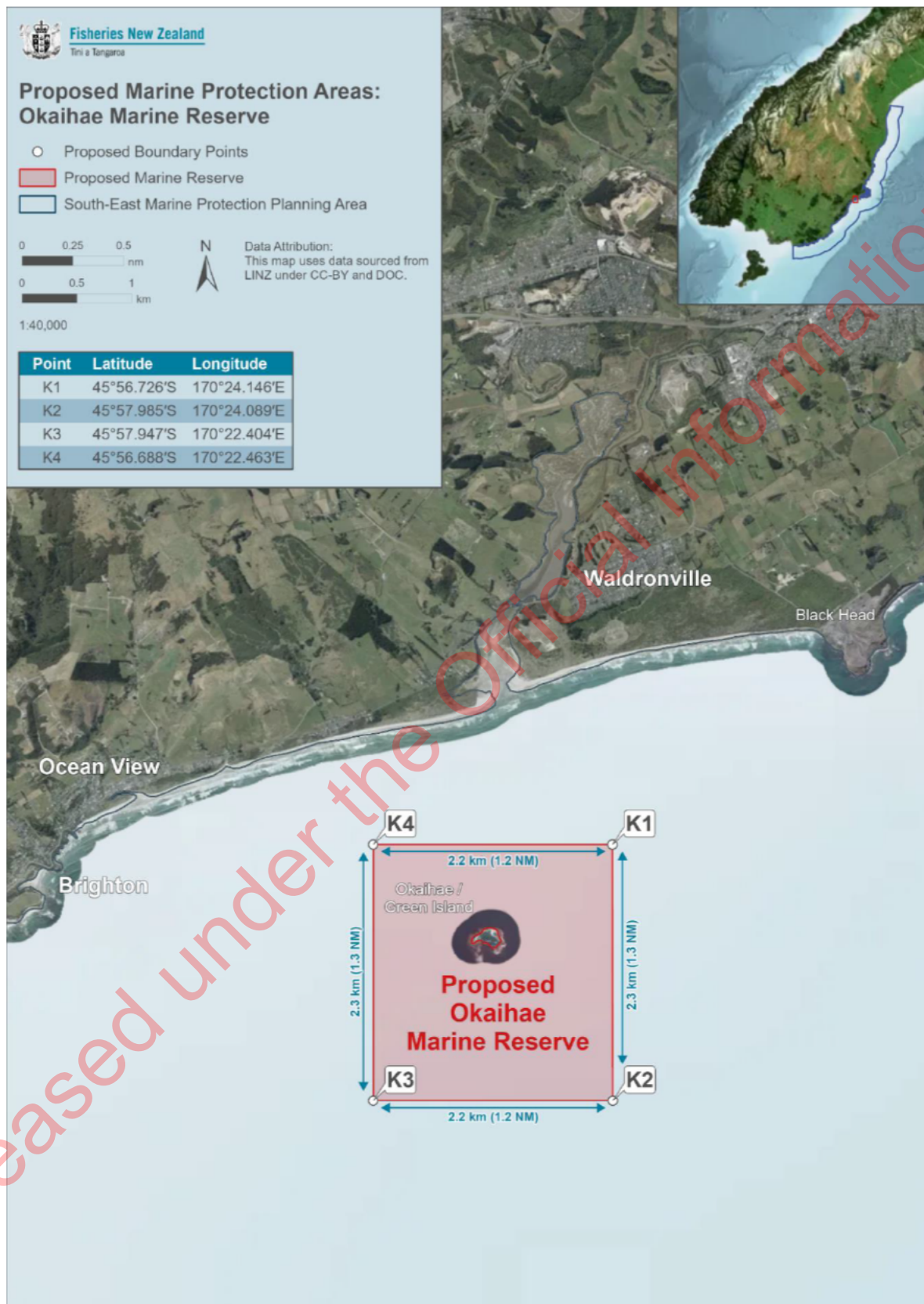


Figure 7: Map of proposed site K1 – Okaihae marine reserve

Estimated affected commercial landings in the proposed Okaihae marine reserve
(based on ERGPR data)

Table 26: Average annual landings of quota species caught in the proposed Okaihae marine reserve.

Species	Stock code	Average annual landings (kg)	Range of annual landings (kg)	Average percentage of annual QMA landings	Average port value of annual landings (NZD)
Rock lobster - spiny (red)	CRA7	9(2)(b)(ii)			
Sea urchin, kina, sea egg	SUR3				
Flatfish	FLA3				
Blue cod	BCO3				
Ling	LIN3				
Tarakihi	TAR3				
Red gurnard	GUR3				
Rough skate	RSK3				
Rig	SPO3				
Red cod	RCO3				
Stargazer - giant	STA3				
Elephantfish	ELE3				
Total		752			62,319

9(2)(b)(ii)

Table 28: Estimates of landed rock lobster in the proposed Okaihae marine reserve.

*Port price for 2022/23 is estimated.

Data Source	Average estimated annual landings (kg)	Proportion of CRA7 landings (%)	Port price (/kg)	Average value of annual landings (NZD)
ERGPR Apr 2020/21	9(2)(b)(ii)			
ERGPR Apr 2021/22				
ERGPR Apr 2022/23*				

Estimated affected commercial landings in the proposed Okaihae marine reserve (based on Catchmapper data) - excludes rock lobster

Table 29: Average annual landings of quota species caught in the proposed Okaihae marine reserve.

Species	Stock code	Average annual landings (kg)	Average annual percentage of QMA landings	Port price (NZD/kg)	Average port value of annual landings (NZD)
Blue cod	BCO3	91	0.05	7.09	648
Flatfish	FLA3	128	0.01	3.10	396
Tarakihi	TAR3	74	0.01	2.30	171
Red gurnard	GUR3	35	<0.01	2.47	87
Red cod	RCO3	120	<0.01	0.70	84
Hapuku and bass	HPB3	14	<0.01	5.59	78
Ling	LIN3	27	<0.01	2.73	74
Elephantfish	ELE3	20	<0.01	2.59	51
Rough skate	RSK3	76	0.01	0.45	34
Stargazer -giant	STA3	12	<0.01	1.35	16
Total	10	598			1,639

9(2)(b)(ii)

9(2)(b)(ii)



Released under the Official Information Act

Site M1 - Hākinikini marine reserve

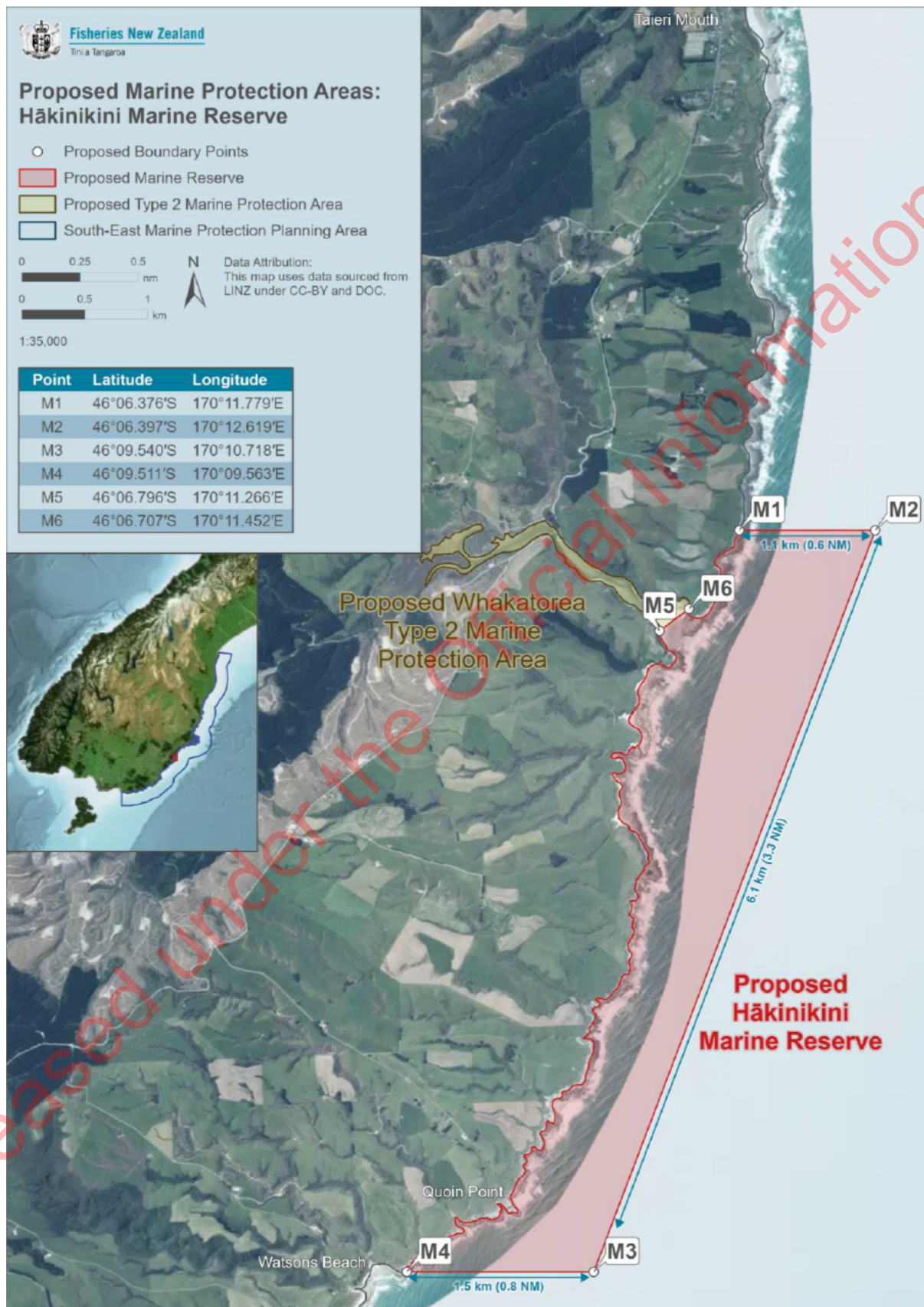


Figure 8: Map of proposed site M1 – Hākinikini marine reserve

Estimated affected commercial landings in the proposed Hākinikini marine reserve
(based on ERGPR data)

Table 31: Average annual landings of quota species caught in the proposed Hākinikini marine reserve.

Species	Stock code	Average annual landings (kg)	Range of annual landings (kg)	Average percentage of annual QMA landings	Average port value of annual landings (NZD)
Flatfish	FLA3	9(2)(b)(ii)			
Rig	SPO3				
Ling	LIN3				
Red cod	RCO3				
Red gurnard	GUR3				
Rough skate	RSK3				
Elephantfish	ELE3				
Stargazer -giant	STA3				
Tarakihi	TAR3				
Barracouta	BAR1				
Kahawai	KAH3				
Smooth skate	SSK3				
Total		813			2,736



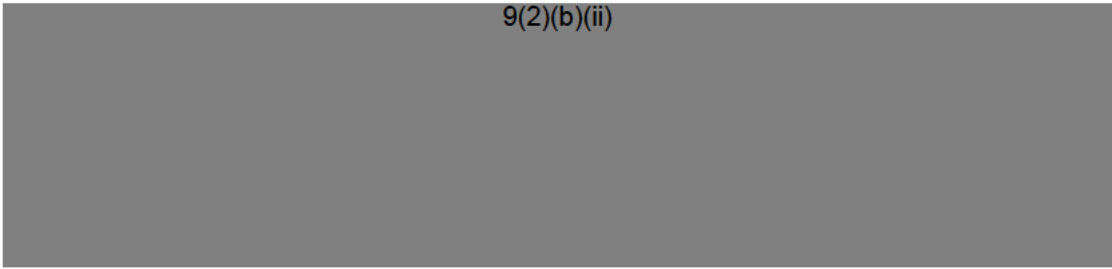
Estimated affected commercial landings in the proposed Hākinikini marine reserve
(based on Catchmapper data)

Table 33: Average annual landings of quota species caught in the proposed Hākinikini marine reserve.

Species	Stock code	Average annual landings (kg)	Average annual percentage of QMA landings	Port price (NZD/kg)	Average port value of annual landings (NZD)
Flatfish	FLA3	2,559	0.19	3.10	7,944
Paddle crab	PAD3	341	0.92	4.96	1,690
Hapuku and bass	HPB3	245	0.07	5.59	1,369
Paua	PAU5D	16	0.02	39.00	631
Blue cod	BCO3	70	0.04	7.09	494
Elephantfish	ELE3	136	0.01	2.59	351
Red cod	RCO3	431	0.01	0.70	303
Ling	LIN3	96	0.01	2.73	261
Gurnard	GUR3	78	0.01	2.47	191
Rough skate	RSK3	244	0.02	0.45	109
Rig	SPO3	23	<0.01	4.07	93
Stargazer - giant	STA3	55	0.01	1.35	74
Tarakihi	TAR3	27	<0.01	2.30	61
Barracouta	BAR1	16	<0.01	0.31	5
Total		4,335			13,576

9(2)(b)(ii)

9(2)(b)(ii)



Released under the Official Information Act

Cumulative interference of marine reserves on landings

Estimated affected commercial landings in the proposed marine reserves (based on ERGPR data)

Table 35: Landings and estimated port value by site (including rock lobster) (October – 2019/20, 2020/21, 2021/22 and April - 2020/21, 2021/22, 2022/23). Note – based on proposed Te Umu Koau boundary (D1)

Site	October fishing Year		April Fishing Year		Annual average landings (kg)	Annual average port value (NZD)
	Average landing (Kg)	Average port price (NZD)	Average landing (Kg)	Average port price (NZD)		
Waitaki marine reserve (B1)	1,992	7,095			1,992	7,095
Te Umu Koau marine reserve (D1)	39,456	129,424	14,273	1,237,975	53,729	1,367,399
Papanui marine reserve (H1)	70,319	242,050			70,319	242,050
Orau marine reserve (I1)	289	1,279	46	3,968	335	5,247
Okaihae marine reserve (K1)	40	266	711	62,053	751	62,319
Hākinikini marine reserve (M1)	813	2,736			813	2,736
Total	112,909	382,850	15,030	1,303,996	127,939	1,686,846

Table 36: Landings and estimated port value by site (including rock lobster) (October – 2019/20, 2020/21, 2021/22 and April - 2020/21, 2021/22, 2022/23). Note – based on amended Te Umu Koau boundary (D1A)

Site	October fishing year		April fishing year		Annual average landings (kg)	Annual average port value (NZD)
	Average landings (Kg)	Average port value (NZD)	Average landings (Kg)	Average port value (NZD)		
Waitaki marine reserve (B1)	1,992	7,095			1,992	7,095
Te Umu Koau marine reserve (D1A)	35,707	116,321	5,575	490,673	41,282	606,995
Papanui marine reserve (H1)	70,319	242,050			70,319	242,050

Ōrau marine reserve (I1)	289	1,279	46	3,968	335	5,247
Okaihae marine reserve (K1)	40	266	711	62,053	751	62,319
Hākinikini marine reserve (M1)	813	2,736			813	2,736
Total	1,394	369,747	2,080	556,694	115,492	926,441

Table 37: Average landing per year of quota species caught in the proposed marine reserves (including D1). Data combines October and April fish stocks.

Species	Stock code	Average annual landings (kg)	Range of annual landings (kg)	Average percentage of annual QMA landings	Average port value of annual landings (NZD)
Rig	SPO3	34,023	30424 - 37972	5.1425	151,922
Rock lobster - spiny (red)	CRA7	15,030	13526 - 15839	13.8418	1,303,996
Elephantfish	ELE3	10,250	7088 - 12729	0.9660	27,207
School shark	SCH3	9,926	6849 - 11772	2.9567	28,360
Blue cod	BCO3	8,395	5827 - 11805	5.0096	78,205
Blue warehou	WAR3	8,126	3918 - 16189	0.4941	11,071
Red cod	RCO3	7,987	1957 - 19248	0.3557	5,926
Ling	LIN3	7,610	2727 - 11578	0.4978	22,426
Spiny dogfish	SPD3	4,588	2550 - 6945	0.2341	780
Blue moki	MOK3	4,563	4193 - 4868	2.6949	6,536
Rough skate	RSK3	3,779	2939 - 4577	0.4020	2,451
Red gurnard	GUR3	2,753	1748 - 3327	0.1750	7,297
Flatfish	FLA3	2,549	1670 - 3511	0.2875	9,208
Stargazer - giant	STA3	2,066	1520 - 2487	0.3758	3,346
Hapuku and bass	HPB3	1,589	662 - 2086	0.5664	8,492
Sea urchin, kina, sea egg	SUR3	1,015	0 - 2851	5.7156	9,849
Tarakihi	TAR3	912	146 - 2078	0.1076	2,316
Leatherjacket	LEA3	627	330 - 864	0.4758	468
Barracouta	BAR1	511	57 - 1219	0.0085	187
Ghost shark - dark	GSH3	493	72 - 1289	0.1385	226
Sea perch	SPE3	313	176 - 436	0.0787	258
Jack mackerel	JMA3	252	33 - 566	0.0047	64
Kingfish	KIN3	206	100 - 402	1.6302	961
Paua	PAU5D	117	0 - 351	0.2068	4,560
Paddle crab	PAD3	76	0 - 197	0.8041	376

Smooth skate	SSK3	61	0 - 132	0.0162	28
Bluenose	BNS3	54	25 - 92	0.0566	215
Trumpeter	TRU3	21	12 - 28	0.1477	77
Knobbed Whelk	KWH3	10	0 - 31	0.5905	7
Ribaldo	RIB3	8	0 - 25	0.0047	0
Blue Mackerel	EMA3	8	0 - 25	0.0811	5
Kahawai	KAH3	5	1 - 13	0.0027	6
Mako Shark	MAK1	4	0 - 13	0.0146	0
Squid	SQU1T	4	0 - 9	0.0000	5
Hoki	HOK1	2	0 - 5	0.0000	0
Whelks	WHE3	2	0 - 5	0.2450	0
White Warehou	WWA3	1	0 - 4	0.0008	0
Southern Bluefin Tuna	STN1	1	0 - 4	0.0002	10
Queen Scallop	QSC3	1	0 - 4	0.0068	0
Blue Shark	BWS1	1	0 - 2	0.0008	0
Ray's Bream	RBM1	0	0 - 1	0.0000	0
Pacific Bluefin Tuna	TOR1	0	0 - 1	0.0009	3
John Dory	JDO3	0	0 - 0	0.0002	0
Total		127,939			1,686,846

9(2)(b)(ii)

9(2)(b)(ii)

Released under the Official Information Act

9(2)(b)(ii)

Released under the Official Information Act

Estimated affected commercial landings in the proposed marine reserves (based on Catchmapper data)

Table 42: Historical landings (2007/08-2018/19) (including rock lobster)

Proposed MPA	Average estimated landings (kg)	Average weighted value per year (NZD)
Waitaki marine reserve (B1)	4,880	8,477
Te Umu Koau marine reserve (D1)	38,974	1,646,237
Papanui marine reserve (H1)	29,727	68,142
Ōrau marine reserve (I1)	3,033	17,048
Okaihae marine reserve (K1)	750	14,721
Hākinikini marine reserve (M1)	6,452	195,325
Total	83,816	1,949,951

Table 43: Average annual landings of quota species caught in the proposed marine reserves.

Species	Stock Code	Average annual landings (kg)	Average annual percentage of QMA landings	Port price (NZD/kg)	Average port value of annual landings (NZD)
Rock lobster	CRA7	33,260	23.43	85.84	1,787,131
Blue Cod	BCO3	5,303	3.13	7.09	37,593
Rig	SPO3	4,711	0.96	4.07	19,161
Flatfish	FLA3	5,912	0.45	3.10	18,354
Squid	SQU1J	11,051	1.49	1.14	12,598
Elephant Fish	ELE3	4,515	0.41	2.59	11,677
Paua	PAU5D	269	0.34	39.00	10,482
Hapuka & Bass	HPB3	1,649	0.49	5.59	9,215
Gurnard	GUR3	3,447	0.31	2.47	8,504
Ling	LIN3	2,984	0.19	2.73	8,146
School shark	SCH3	3,225	0.88	2.27	7,315
Paddle crab	PAD3	1,055	2.85	4.96	5,233
Tarakihi	TAR3	1,248	0.12	2.30	2,870
Moki	MOK3	1,745	1.19	1.43	2,494
Red Cod	RCO3	3,377	0.09	0.70	2,371
Stargazer	STA3	1,319	0.25	1.35	1,775
Rough Skate	RSK3	3,527	0.25	0.45	1,578
Spiney Dogfish	SPD3	3,723	0.22	0.17	633
Sea Perch	SPE3	884	0.18	0.71	626

Common Warehou	WAR3	439	0.02	1.27	560
Barracoutta	BAR1	1,033	0.01	0.31	319
Squid	SQU1T	178	<0.01	1.22	218
Ghost Shark	GSH3	607	0.11	0.32	197
Blue Nose	BNS3	58	0.02	3.13	180
Trumpeter	TRU3	47	0.26	3.63	172
Leatherjacket	LEA3	249	0.20	0.65	161
Sea Urchin	SUR3	71	2.05	1.98	140
Large Trough Shell	MMI3	105	0.29	0.83	87
Cockle	COC3	80	<0.01	0.97	78
Surf clam - triangle	SAE3	42	0.09	0.83	35
Smooth Skate	SSK3	69	0.03	0.43	30
Silver Warehou	SWA3	11	<0.01	0.78	9
Bladder Kelp	KBB3G	31	3.98	0.15	5
Jack Mackerel	JMA3	22	<0.01	0.21	5
Ghost shark -pale	GSP1	11	<0.01%	0.38	4
Total	35	96257			1,949,956

9(2)(b)(ii)

Released under the Official Information Act

9(2)(b)(ii)

Released under the Official Information Act

Cumulative interference of Type 2 Marine Protected Areas on landings

Estimated affected commercial landings in the proposed Type 2 MPAs (based on ERGPR data)

Table 45: Total estimated affected commercial landings for Type 2 MPAs (with restrictions as consulted on) (October – 2019/20, 2020/21, 2021/22). No catch was recorded in the April fishing year for these MPA sites.

	Average annual landings (kg)	Average annual port value (NZD)
Tuhawaiki (A1)	80,107	204,239
Moko-tere-a-torehu (C1)	15,291	48,447
Kaimata (E1)	23,007	54,154
Total	118,406	306,839

Table 46: Estimated affected commercial landings by stock for Type 2 MPAs (with restrictions as consulted on) (October – 2019/20, 2020/21, 2021/22). No catch was recorded in the April fishing year for these MPA sites.

Species	Stock code	Tuhawaiki (A1)		Moko-tere-a-torehu (C1)		Kaimata (E1)		Average for all 3 proposed type 2 MPAs		
		Average annual landing (kg)	Average annual percentage of QMA landings	Average annual landing (kg)	Average annual percentage of QMA landings	Average annual landing (kg)	Average annual percentage of QMA landings	Average annual landing (kg)	Average annual percentage of QMA landings	Average annual Port Value (NZD)
Elephantfish	ELE3	42,977	4.00	2,295	0.21	928	0.08	46,200	4.30	121,735
Rig	SPO3	9,367	1.38	5,076	0.76	7,134	1.08	21,577	3.22	90,484
School shark	SCH3	1,038	0.32	5,780	1.66	4,926	1.45	11,744	3.44	32,770
Red gurnard	GUR3	9,687	0.62	721	0.05	20	0.00	10,428	0.66	27,126
Rough skate	RSK3	4,762	0.47	170	0.02	770	0.08	5,701	0.56	3,553
Flatfish	FLA3	4,934	0.52	22	0.00	33	0.00	4,989	0.53	16,802
Spiny dogfish	SPD3	906	0.04	87	0.00	3,216	0.17	4,209	0.22	716

Barracouta	BAR1	2,863	0.04	99	0.00	15	0.00	2,976	0.04	1,336
Ghost shark - dark	GSH3	0	0.00	4	0.00	2,435	0.64	2,439	0.64	1,079
Red cod	RCO3	2,152	0.13	19	0.00	141	0.01	2,311	0.14	1,703
Leatherjacket	LEA3	466	0.31	815	0.51	0	0.00	1,281	0.83	1,095
Blue warehou	WAR3	0	0.00	17	0.00	1,180	0.08	1,198	0.08	1,568
Stargazer - giant	STA3	10	0.00	16	0.00	664	0.12	691	0.13	1,085
Ling	LIN3	127	0.01	0	0.00	432	0.03	559	0.04	1,623
Blue moki	MOK3	0	0.00	53	0.03	452	0.27	505	0.30	684
Kahawai	KAH3	398	0.22	24	0.01	0	0.00	422	0.23	423
Smooth skate	SSK3	401	0.11	13	0.00	0	0.00	414	0.12	195
Hapuku and bass	HPB3	0	0.00	4	0.00	296	0.10	300	0.11	1,595
Kingfish	KIN3	0	0.00	41	0.33	91	0.84	132	1.17	541
Jack mackerel	JMA3	0	0.00	24	0.00	65	0.00	89	0.00	26
Blue cod	BCO3	0	0.00	0	0.00	58	0.04	58	0.04	444
Queen Scallop	QSC3	0	0.00	0	0.00	56	0.27	56	0.27	0
Sea perch	SPE3	0	0.00	0	0.00	54	0.01	54	0.01	42
Tarakihi	TAR3	0	0.00	4	0.00	33	0.00	37	0.00	99
Southern Bluefin Tuna	STN1	9(2)(b)(ii)								
Squid	SQU1T									
Porbeagle Shark	POS1									
Blue Shark	BWS1									

John Dory	JDO3	9(2)(b)(ii)								
Trumpeter	TRU3									
Blue Mackerel	EMA3									
Tevally	TRE3									
Ray's Bream	RBM1									
Total		80,107		15,291		23,007		118,406		306,839

Released under the Official Information Act

Estimated affected commercial landings in the proposed Type 2 MPAs (based on Catchmapper data)

Table 48: Total estimated affected commercial landings for Type 2 MPAs (with restrictions as consulted on) (2007/08-2018/19).

Proposed MPA	Average estimated landings-greenweight (kg)	Average weighted value per year (NZD)
Tuhawaiki (A1)	124,151	233,550

Moko-tere-a-torehu (C1)	36,247	73,712
Kaimata (E1)	19,683	38,494
Total	180,081	345,756

Released under the Official Information Act

Table 49: Estimated affected commercial landings by species for Type 2 MPAs (with restrictions as consulted on) (2007/08-2018/19).

		Tuhawaiki Type 2 MPA		Moko-tere-a-torehu Type 2 MPA		Kaimata Type 2 MPA		Total from all 3 proposed Type 2 MPAs			
Species	Fish Stock Code	Average annual landing (kg)	Average annual percentage of QMA landings	Average annual landing (kg)	Average annual percentage of QMA landings	Average annual landing (kg)	Average annual percentage of QMA landings	Average annual landing (kg)	Average annual percentage of QMA landings	Port price (NZD/kg)	Average annual Port Value (NZD)
Elephant fish	ELE3	27,264	2.48	5,116	0.47	660	0.06	33,041	3.01	2.59	85,456
Flatfish	FLA3	21,037	1.58	472	0.04	623	0.05	22,131	1.66	3.11	68,708
Red gurnard	GUR3	19,349	1.70	5,063	0.44	176	0.02	24,588	2.15	2.47	60,657
Rig	SPO3	2,777	0.57	3,996	0.82	2,730	0.56	9,503	1.95	4.07	38,651
School shark	SCH3	680	0.18	4,823	1.31	6,174	1.68	11,677	3.17	2.27	26,484
Red cod	RCO3	19,748	0.55	3,973	0.11	291	0.01	24,011	0.67	0.70	16,862
Hāpuku and Bass	HPB3	1,594	0.48	693	0.21	229	0.07	2,516	0.75	5.59	14,056
Rough skate	RSK3	20,427	1.43	2,087	0.15	788	0.06	23,302	1.63	0.45	10,426
Tarakihi	TAR3	276	0.03	2,085	0.20	546	0.05	2,907	0.28	2.30	6,685
Ling	LIN3	392	0.02	68	<0.01	707	0.04	1,166	0.07	2.73	3,183
Barracouta	BAR1	5,757	0.07	2,567	0.03	393	<0.01	8,718	0.10	0.31	2,694

Stargazer - giant	STA3	388	0.07	329	0.06	493	0.09	1,210	0.23	1.35	1,627
Blue cod	BCO3	105	0.06	34	0.02	66	0.04	206	0.12	7.09	1,457
Squid	SQU1 T	172	<0.01	264	<0.01	561	<0.01	996	0.01	1.23	1,220
Leatherjacket	LEA3	748	0.60	793	0.64	16	0.01	1,556	1.26	0.65	1,008
Spiny dogfish	SPD3	1,255	0.07	1,553	0.09	3,086	0.18	5,894	0.34	0.17	1,002
Blue moki	MOK3	0	0.00	282	0.19	393	0.27	674	0.46	1.43	964
Blue warehou	WAR3	15	<0.01	116	0.01	600	0.03	731	0.04	1.27	931
Ghost shark - dark	GSH3	282	0.05	1,241	0.24	840	0.16	2,363	0.45	0.32	766
Sea perch	SPE3	545	0.10	203	0.04	264	0.05	1,013	0.19	0.71	716
Smooth skate	SSK3	1,119	0.30	160	0.04	4	<0.01	1,283	0.34	0.43	551
Surf clam - large trough shell	MMI3	-	-	153	0.43	-	-	153	0.43	0.83	127
Silver warehou	SWA3	41	<0.01	101	<0.01	-	-	142	<0.01	0.78	110
Kahawai	KAH3	168	0.13	28	0.02	-	-	196	0.15	0.56	109
Jack mackerel	JMA3	13	<0.01	47	<0.01	43	<0.01	103	<0.01	0.21	22
Total		124,152		36,247		19,683		180,080			344,472

9(2)(b)(ii)



Released under the Official Information Act

Released under the Official Information Act

Released under the Official Information Act

Released under the Official Information Act

Released under the Official Information Act

Released under the Official Information Act

Released under the Official Information Act

Appendix One: Methodology

Electronic Reporting/ Geospatial Positioning Reporting (ERGPR)

Mapping methodology

Electronic Reporting/ Geospatial Positioning Reporting (ERGPR) is an improved process for mapping fishing effort using electronically reported fishing effort reports (ER) and vessel locations (GPR). ERGPR fishing data for species reported in the October - September fishing year was available and analysed for 2019/20, 2020/21 and 2021/22. ERGPR fishing data for the April – March fishing year, applicable to species such as rock lobster, was also analysed for 2020/21, 2021/22 and 2022/23.

ERGPR produces a similar output to CatchMapper data but provides higher spatial accuracy, due to the addition of Geospatial Positioning Reporting which can be related to fishing events. Position data during fishing periods allows for estimations of where fishing is occurring inside an event area. For example, when GPR data indicates a vessel spends more time in one location it can be estimated that more catch has been sourced from that location. This contrasts with analysis of CatchMapper data, which assumes catch is evenly spreading catch over an event area.

The ERGPR method is particularly useful for rock lobster fishing analysis because catch locations are related to reef habitat distribution rather than being evenly distributed over a reported fishing area. Rock lobster potting events still have a reasonably low spatial resolution despite the introduction of electronic reporting because fishers can travel up to 10 nautical miles before starting a new effort report. ERGPR allows for the analysis of boat speed to indicate where rock lobster potting events occur. A rock lobster potting vessel travelling below 4 knots can be assumed to be fishing, allowing for improved estimates of the impact of spatial fishing restrictions.

Table 51: Method for calculating fishing area using ERGPR

Method	Input	Resolution
Bottom longline	Vessel tracks during the gear set	15m
Danish Seine	Vessel tracks closed to form a circular perimeter	0m
Dive	Vessel tracks with speeds ≤ 3 knots	150m
Hand Line	Vessel tracks with speeds ≤ 4 knots	10m
Set Net	Straight lines between the reported start and end points for each set	25m
Pot	Vessel tracks with speeds ≤ 4 knots	25m

Trawl ²	Vessel tracks	Estimated door width (70m for most inshore trawl effort)
--------------------	---------------	--

Using ERGPR to estimate impact of proposed marine reserves

When a spatial marine management area such as a marine reserve is proposed, reported fishing data can be used to estimate the landed catch from each geographic area.

A proposed marine reserve covers an area where a certain proportion of the catch from fishing events occur. By accumulating this data across all fishing events, we can estimate the effect of the proposed marine reserve on the stock and individual fishers.

Converting catch data to landing data

The ERGPR (and CatchMapper) methods both rely on reports estimated catch, which is estimated by fishers at sea, and estimated landings, which is the final quantity of catch that is sold at port. The metric desired for this analysis is estimated landings because they are directly related to the value received by fishers through the act of fishing.

Estimated landings are trip based and currently there is no tool that links landing data to a precise geographical location, thus relative proportions of fishing activity from catch estimations are projected onto the landings data (see example below). This is necessary because estimated catch often differs from actual landings for reasons including, but not limited to:

- Estimated catch is “eyeballed” at the time of fishing, while landings are accurately weighed or counted onshore
- Fish legally returned to the sea (e.g. rock lobster that is in-berry) are recorded in estimated catch but not reported as landings
- Estimated catch only records up to 8 species per event, while landings include all species landed at port

² Applies to both midwater trawl and bottom trawl

Steps to link landed catch with the location of fishing activity

Step A - ER catch reports are submitted by the fisher. The reports contain species catch weights estimated at the time of fishing. GPR vessel positions are reported automatically and show the path of the vessel while at sea.

Step B - Every fishing event is plotted using ERGPR data to create an estimated area fished. GPR tracks are subset to the fishing periods reported using ER, the vessel tracks are then converted into areas fished. The proportional area of a fishing event inside a proposed closure is measured.

Step C - Reported ER catch is reduced by the proportion of the mapped fishing event inside the proposed closure to give the ERGPR estimated catch.

Step D - All catch reports are summed over a fishing year. The proportions of the total reported catch and ERGPR estimated catch is calculated for each fisher, species, fishing method, and fishing year.

Step E - The proportion of a fishers annual estimated catch inside the proposed area is applied to the fishers annual landings (from monthly harvest returns) to calculate the estimated landings originating inside the proposed closure. Port prices are applied to the estimated landings weights of each stock.

Table 52: ERGPR analysis data and outputs

Step	Data type	Description
A	Fish Catch Report (ER)	Details surrounding individual fishing events, including fishing method, time, start/end positions, and estimated greenweight for the top 8 species caught. Estimated greenweight is not measured and includes fish returned to sea (as allowed by fishing regulations).
B	GPR	Near real time vessel positions. Commercial fishing vessels will report their position every 10 minutes

C	Spatial representation of fished area	ER and GPR are combined to estimate the area where the fishing activity occurred. All catch from a fishing event is assumed to be spread evenly across the fished area. Each pair of GPR positions create a unique section of fished area, if a vessel is near stationary these fished area sections will overlap and the overlapping areas count towards the total fished area measurement. Locations with many overlapping fished area sections, caused by vessels spending more time in an area, have a greater fished area than areas with fewer overlapping sections, which results in some locations within the same fishing event receiving higher proportions of the estimated catch than other locations.
D	ERGPR estimated catch	Measuring the proportions of a fished area (B) falling inside an area of interest provides a metric used to estimate the amount of fish caught within the area of interest (on an event basis). Species catch weights are sourced from fish catch reports. For example, 50% of a fishing event fell inside a proposed closure, thus 50% of all catch from that event is estimated to originate inside the proposed area.
E	Annual totals	<p>The reported green-weight (from fish catch reports) and the estimated ERGPR catch within a proposed closure are summed to produce:</p> <ol style="list-style-type: none"> 1. Annual species totals of all er catch from all events by each fisher; and 2. All catch estimated to originate inside the proposed area (ERGPR estimated catch). <p>The totals are aggregated by year, fisher, species, fishing method and proposed closure.</p>
F	Annual catch proportions	For each fisher and species, the total ER estimated green-weight is compared with the total species weight estimated to originate inside an area of interest, this comparison forms a stock proportion metric. For example, 15% of a fishers CRA7 take may be estimated to occur within an area of interest.
G	Monthly Harvest Returns (MHR)	Landings weights reported by fishers and based on measured green-weight of fish landed at port. The weights reported on MHR count towards a fishers annual catch entitlement (ACE)

H	Estimated landings	The annual catch proportions are applied to each fishers MHR weights to create estimated landings weights. For example, if 15% of a fishers CRA7 catch was estimated to originate inside a proposed closure, 15% of their CRA7 landings is estimated to be impacted by the closure.
---	--------------------	---

Field Descriptions

Table 53: Field names and descriptions relating to the fisher impact assessment analysis tables used to produce values used in this report.

Field Name	Description
Name_ID	Proposed area description. Estimates for both the original and current boundaries for Te Umu Koau are included. The current proposed area is listed as D_a
FishingYear	April or October fishing year. Stock dependant
FisherIdentifier	Unique fisher identifier. Has been anonymised
Fishing_Method	Fishing method code
FishstockCode	Fishstock code
ERS_ReportedCatch*	Estimated greenweight reported on ERS forms for events intersecting the area. Split by stock and method
ERS_TotalFishersStockCatch*	Total stock greenweight reported on ERS forms from all events reported by the fisher
EstimatedCatchInArea_kg*	Catch estimated to originate from the proposed area. [ERS_ReportedCatch * proportion of the fishing event inside the area]
MHR_FishersLandings*	Total fisher landings for the fishstock
MHR_QMATotal*	Total stock landings from all fishers
EstimatedLandingsInArea_kg	Landings weights estimated to originate in the proposed area. Stocks not listed on MHR returns are not be estimated. [EstimatedCatchInArea_kg / ERS_TotalFishersStockCatch * MHR_FishersLandings]
PercentageOfFishersStock	Percentage of the fishers stock estimated to originate in the proposed area. [EstimatedLandingsInArea_kg / MHR_FishersLandings * 100]
PercentageOfQMA	Percentage of the QMA estimated to originate in the proposed area. [EstimatedLandingsInArea_kg / MHR_QMATotal * 100]

CPUE_EstimatedInArea*	CRA potting only. Catch per unit effort estimated to originate in proposed area. [ERS green weight / number of pot lifts * proportion of the event inside the area of interest]
PercentageOfFishersCPUE	CRA potting only. Catch per unit effort estimated to originate in proposed area. [CPUE_EstimatedInArea / total fisher CPUE from all events * 100]
Price*	Stock based port price by year. Prices were not available for all stocks. The 21/22 CRA7 price was reused for the 22/23 year
EstimatedPortValue	Estimated port value of fish originated in the proposed area. [EstimatedLandingsInArea_kg * Price]
TotalFisherLandings_AllStocks*	Annual quantity of fish landed by a fisher. All stocks combined
PercentageOfFishersLandings	Percentage of a fishers total landed quantity of fish impacted by a proposed closure. [EstimatedLandingsInArea_kg / TotalFisherLandings_AllStocks * 100]

The following conditions or processes were applied to the data used in analysis of ERGPR data.

- *Intermediate and/or reference values not intended for reporting
- All rows are an aggregation of fishing events by; fishing year, stock, fisher, method and proposed closure
- Calculations applied across columns are shown in square brackets
- All landed catch in this report refers to the landed green-weight of a fish species
- Port prices were derived from MPI surveys. A port price was not available for all stocks. The 21/22 CRA7 price was reused for the 22/23 year. Port prices are applied to the estimated landings weights of each stock.

CatchMapper tool

Source

CatchMapper is a process of mapping historic commercial fishing events reported via **catch effort return forms**.

Time Period

CatchMapper provides an indication of past fishing activity in an area. Completed annual datasets (post grooming) are available from the 2007/2008 to 2018/2019 fishing years (included in this analysis). CatchMapper data sets for the 2019/2020 and 2020/21 fishing years are not included in this analysis. Data for these years is available from the Electronic Reporting and Geospatial Positioning Reporting (ERGPR) tool.

Mapping methodology

CatchMapper is a process of mapping all commercial fishing events reported via catch effort return forms which include details on the species caught, where they were caught and when. CatchMapper follows a similar process to the ERGPR method but uses more complex landings apportioning methods and trip based landings instead of monthly harvest returns³.

CatchMapper calculates the area of a fishing event and evenly distributes recorded catch across this area (excluding any areas where fishing is not possible or permitted). The method for calculating the fishing area is dependent on the fishing method. Some fishing methods (like potting) historically reported locations using fishery statistical area codes, while other fishing methods (like trawling) reported coordinates.

In CatchMapper the fished area for statistical area events are represented using the habitat extent of the target species within each statistical area (e.g., Rock lobster catch is spread evenly across all reef areas within a Rock lobster statistical area). 'Jittering' is required to smooth the records over the distance of reporting error. This stops records from falling into a grid pattern. Due to this grooming and the conversion into areas, CatchMapper locations are not suitable for any compliance-like investigations.

The CatchMapper data was averaged across the available fishing years. CatchMapper has a lower spatial accuracy than Electronic Reporting Geospatial Positioning Reporting (ERGPR) discussed below.

³ Osborne 2018; <https://fs.fish.govt.nz/Doc/24611/AEBR-2018-200-Forecasting-quantity-of-displaced-fishing-Part-2.pdf.aspx>

Table 54: Method for calculating fishing area using CatchMapper

Fishing method	Mapping method	Buffer size
Bottom longline	Start point only	Estimated line length in a circle around start point
Dive	Stat Area	Evenly distributed over stat area
Net	Start point only or stat area	2nm
Pot	Reef extent within stat area	Evenly distributed over stat area
Trawl	Straight line between start and stop	Estimated door width

Data

Catch effort from all reported catch events in the general area

All catch weights were estimates at the time of fishing recorded in the Fish Catch Report. Lower value or uncommon species may be omitted from these reports. Any fish later returned to sea are included in all estimated catch weights.

All fishing vessel positions in the area

The reporting rate is approximately one position every 10 minutes. Method specific vessel speed rules are used to reduce the vessel positions to only include locations where fishing is likely to occur (see Table 54).

QMA totals for each species

Generated by aggregating all estimated catch from effort returns in every QMA. Only stock managed using the Quota Management System were included in the final analysis.

Stock landings were generated from fisher-specific monthly harvest returns⁴ (MHR).

Port price

This analysis uses the port prices for each fishing year. The annual process of determining the port prices is governed by the Fisheries (Cost Recovery) Rules 2001 (SR 2001/229). A voluntary survey is sent to licensed fish receivers (LFR) whereby the LFR enters the landed price (port price), this price is for a particular day and not an average, for example, of the whole year. The fishing method is not included in the survey even though a particular method may receive a higher landed price. The same is true for any onboard processing; any increase in landed price due to onboard processing is ignored.

⁴ A return required to be submitted to FishServe by all fishing permit holders and other persons. A return is to be completed for each calendar month for all fish taken during that month, there are some exceptions to this rule. The rules are defined in the Fisheries (Reporting) Regulations 2001.

Data Source Disclaimer

Limitations

While the catch estimates have been generated using the best available information, many assumptions have been used in their generation. All values should be treated as indicative and MPI cannot guarantee their 100% accuracy.

Extract of data and conversion for analysis performed by Spatial Intelligence – MPI (r230020)

Table 55: MPI rep log references for data extracts used in this analysis:

ID	Description
1008	ERGPR for CRA7 only (01/11/2019 and 31/10/2021). Incomplete 21/22 year
14047	ERGPR for all October stocks (2020/21 years). No landings were calculated
14188	MHR landings weights to apply to relog 14047
14773	ERGPR for the 21/22 October fishing year
14820	ERGPR April stocks (21/22 + April 2022 to Feb 2023). Incomplete 22/23 year
15000	ERGPR and associated landings values. Includes all CRA7 ERGPR for 3 complete April fishing years, previous CRA7 estimates were superseded.

Fisheries data types and limitations

Electronic Reporting and Geospatial Positioning reporting							
Timeframe	How is the data collected?	What is the spatial resolution? How accurate spatially?			FNZ data confidence ranking	Key limitations	
Rock Lobster on April Fishing year: Apr 2020- Mar 2023 All other species on October fishing year: Oct 2019- Sept 2022	Electronic reporting (ER) – electronic catch effort return (2019) <ul style="list-style-type: none"> - Every event can have multiple point locations - All locations have high precision - Locations can be manually entered - Fisher indicates where and when they started and stopped fishing Global Position Reporting (GPR) <ul style="list-style-type: none"> - Vessel/device locations - Recording period approx. 10 mins (varies) - Automated reporting - Speed is calculated based on time and 	All effort mapped using ERGPR data will have greater accuracy than available through CatchMapper				Confidence rating is estimated as it hasn't been tested in real life. Low confidence for ERGPR is better than high confidence Catchmapper Confidence varies by method: High: Trawl and set netting Med: All other methods Low: Rock lobster potting, Diving,	Rock Lobster Potting: a single report could include fishing with 10NM of a start point. However, the assumption is that slow vessel speeds during the fishing period are indicative of pot lifting Diving: GPR tracks reflect the support vessel and not the divers. Larger buffers account for the difference
		Method	CatchMapper mapping	ERGPR mapping	ERGPR Buffer distance		
		Trawling	Straight line between start and stop	Subset of GPR tracks into sections	Estimated door width		
		Bottom Longline	Start point only	GPR tracks	15m either side of track lines		
	Net	Start point buffered by 2nm or stat area	Straight line between reported start and end locations	25m either side of track lines			

<p>distance between reported location</p> <ul style="list-style-type: none"> - Fills the gap between start and end of ER <p>Each event is plotted as an area fished:</p> <ul style="list-style-type: none"> - Calculate the proportion of the fished area inside an area of interest - Use the area proportions to scale the catch weights - GPR tracks can allow fishing ground productivity to be approximated. <p>For our purposes we used landings greenweight to estimate catch.</p>	Pot	Stat area	GPR tracks between start and stop with speed ≤ 4 Knots	25m either side of track lines		
	Diving	Stat Area	GPR tracks between start and stop with speed ≤ 3 Knots	150m either side of track lines		

CatchMapper							
Timeframe	How is the data collected?	What is the spatial resolution? How accurate spatially?	FNZ data confidence ranking	Key limitations			
CatchMapper data for the fishing years <ul style="list-style-type: none"> • 2007/2008 • 2008/2009 • 2009/2010 • 2010/2011 • 2011/2012 • 2012/2013 • 2013/2014 • 2014/2015 • 2015/2016 • 2016/2017 • 2017/2018 • 2018/2019 * *electronic reporting was introduced	CatchMapper is a process of mapping all commercial fishing events reported via catch effort return forms . Locations are converted from a coordinate or a location description (stat area name), into an area likely affected by the fishing activity. Each area receives a unique identifier and some details relating to each particular fishing activity (method, target species, reported catch, fisher etc.) Examples of each area type:	Spatial accuracy depends on the type of return forms used by the fishers. <ul style="list-style-type: none"> - Return forms types relate to fishing methods, target species, vessel size, etc. - Some forms require fine scale location reporting (to the nearest minute) - Others are coarse (e.g. by statistical area) 	The confidence categories are assigned on a stock basis within CatchMapper and represent a combination of 1: the accuracy of how the fishing effort mapped (i.e. the proportion of effort mapped using coordinates vs. statistical area codes); and 2: the size of the scaling factors needed to bring the stock estimates in line with the official take for that stock. For example, a stock with a HIGH confidence ranking will be mapped using the best available location information (coordinates) and have received relatively small catch weight scaling factors (the estimates for this stock as a whole are close to the official reported take). Example confidence ratings from site D1 species:	Only as good as the mapper data. Trust based model as catch effort return forms are submitted by fishers and largely unverified by observer coverage in the SEMP area.			
					Method	CatchMapper mapping accuracy (within the SEMP area)	Buffer distance
					Trawl	High	Estimated door width
					Set net (vessel length >5m)	High	2 nautical miles
Set net (vessel	Low	Subset of a statistical area (no	<table border="1"> <thead> <tr> <th>Confidence</th> <th>Species</th> </tr> </thead> <tbody> <tr> <td>High</td> <td>Barracouta, Blue moki, Blue</td> </tr> </tbody> </table>	Confidence	Species	High	Barracouta, Blue moki, Blue
Confidence	Species						
High	Barracouta, Blue moki, Blue						

<p>gradually during this period. Some fishing methods traditionally mapped using statistical areas could now be mapped using buffered coordinates (e.g. some potting and set netting)</p>	<ul style="list-style-type: none"> - Lines = trawl, surface longline - Points = Danish/purse seine, set net and some pot - Custom area = some set net and shellfish - Stat area = dredge, hand gathering etc. <p>In some cases, statistical areas can be reduced in size using:</p> <ul style="list-style-type: none"> - Depth: ex. Finfish potting - Distance: ex. Set netting - Habitat: ex. Rock lobster and pāua 	length <5m)		reported coordinates)	<p>Warehou, Elephantfish, Flatfish, Leatherjacket, Red gurnard, Rig, Rough skate, School shark, Squid, Stargazer – giant, Tarakihi</p>	
		Bottom longline	High-Low	Estimated line length		
				Subset of a statistical area, or 1 nautical mile (when coordinates are present)		
		Potting	Low			
				Subset of a statistical area		
		Dive	Low			
		Danish Seine	Medium-Low	3 nautical miles, or subset of a statistical area		
		Dredge	Low	Subset of a statistical area		
Jig	Medium-Low	5 nautical miles				
			Medium	Ling, Red cod, Smooth skate		
			Low	Bladder kelp, Blue cod, Bluenose, Cockle, Hāpuka and bass, Paddle crab, Pāua, Rock lobster – spiny (red), Sea perch, Sea urchin, kina, sea egg, Spiny dogfish, Trumpeter		

	<p>are confined to rocky reefs within statistical areas</p> <p>Removal of areas: If fishing is not permitted or possible in an area then we remove these areas from analysis.</p> <p>Jittering is required to smooth the records over the distance of reporting error. This stops records from falling into a grid pattern.</p> <p>Due to this grooming and the conversion into areas, CatchMapper locations are not suitable for any</p>			
--	---	--	--	--

	<p>compliance like investigations.</p> <p>For our purposes we used landings greenweight to estimate catch.</p> <p>Landings</p> <ul style="list-style-type: none">- Sourced from landings forms- Trip based- Measured weights- Includes all species landed at port			
--	--	--	--	--

Released under the Official Information Act

Released under the Official Information Act

CONFIDENTIAL