

Annex 4 – Sensitive Areas and Coastal information



Chatham Islands Council

Sensitive Areas and Coastal Information

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Available records show that most significant spills that occur in the Chatham Islands occur in the wharf areas during bunkering of ships, loading/discharge operations or the internal transfer of oil within ships. Spills that occur in other harbours or the coastal area of the region are generally very small and are of a non-persistent oil nature (petrol, diesel). However international shipping casualties in recent years illustrate the potential for a large spill.

1.1.1 Target Spill Size

For planning and equipment deployment purposes, the Chatham Islands has been assessed as having a target spill size of 1 tonne of Heavy Fuel Oil.

1.1.2 Bunkering and Bulk Transfer Risk

The following table showing oil transfer sites, anticipated spill volumes, and oil types, outlines the bunkering and bulk transfer risk within the Islands. The locations of these sites are indicated on the site sheets

LOCATION	POTENTIAL SPILL VOLUME	OIL TYPES	CONTACT NAME/NO
Bulk Transfer (ship to shore)			
Waitangi Wharf – ship Rangatira to road tanker	167 litres per minute	Diesel	Shirley King 305 0440 or 305 0029
Bunkering – shore to ship			
Owenga Wharf 2 pumps	33 litres per minute	Diesel	Nigel Ryan 305 0264
Port Hutt	16 litres per minute	Diesel	Ken Pasco 305 0213
Kaiangaroa Wharf	66 litres per minute	Diesel	Danny Whitiri 305 0251

The ship Rangatira (Lesley Shipping, Timaru) also offloads diesel in 1000 litre plastic containers – contact Black Robin Freighters – Gary Carton – 305 0440 or 305 0029

1.1.3 Other Potential Spill Sites

The supply ship unloads petrol for the Island in ISO Tanks and AvGas in 210 litre drums. The AvGas is used to fuel the Cessna KAI which services Pitt Island. Also, used gearbox oil and the like from Pitt Island are transferred by drum onto Owenga Wharf for collection. Jet A1 is flown into the Chatham Islands and transferred to other aircraft at the airport.

1.1.4 Shipping Routes

Maritime New Zealand has initiated a voluntary navigation guideline, recommending that ships stay at least 5 nautical miles away from any coastline. This guideline is targeted towards vessels laden with oil or other harmful liquid substances in bulk. Ships pose a threat of oil spill with low probability of occurrence but with high potential effects for the environment.

No formal records of coastal shipping routes are kept for the Chatham Islands. Container ships have been spotted passing through Pitt Strait. Occasionally, a cruise vessel will enter Waitangi Harbour. Supply ships, for residents of Chatham Islands, dock at the Waitangi Wharf every three to four weeks. The supply ships' bunkers contain light fuel oil.

1.1.5 Coastal Summary

Rock Formations are located everywhere around the shore or coastline of the Chatham Islands. Although the Chatham Islands have very large beaches, all have rock formations along or near them. Paua, rock lobster, blue cod and kina all thrive in these areas, as do tua tua, pipi and other surf clam shellfish on all beaches (some containing more dense populations than others). Therefore, the entire coastline is sensitive.

Wildlife Summary

1.2.1 Mammals

There are several breeding colonies and haulout sites for fur seals in the Chatham islands. Sightings of sea lions, leopard seals and elephant seals have also been made however these are a matter of chance encounters around the coasts. Whales and dolphins are regularly seen at sea.

1.2.2 Sea Birds

Threatened endemic sea birds in the Chatham Islands include toroa (northern royal albatross) which also breeds at Taiaroa Head near Dunedin, taiko (now confined to one tiny population), torea (Chatham Island oystercatcher) found around the shores, Chatham Island shag and Pitt Island shag, and Chatham petrel which was confined for many years to Rangatira Island but DOC is in the process of establishing a second population on Pitt Island.

Many other sea bird species are quite common around the Chatham Islands. Buller's mollymawk, prions, skuas, sooty shearwaters, storm petrels and little blue penguins are most likely to be seen at sea. Around the coasts, those most frequently seen include black-backed gull, red-billed gull, white-fronted tern, shags and skuas. Banded dotterel and pipit are often on the shore too.

Te Whanga provides extensive habitat for wetland birds. Most common are black swan, black shag, mallard and grey ducks, pukeko, welcome swallow, pied stilt and various migratory waders.

Coastal Plants of Conservation Concern

(Refer to Chatham Islands- Plants of Conservation Concern current status and future management – 2004 – DoC Publication)

There are a number of coastal plants of conservation concern that need to be taken into consideration when considering response options that involve activities along the foreshore and adjacent areas.

Atriplex billarlieri (orache, saltbush)

Pages 72-88

Site distribution – refer map page 72

Generally found in front of dune system

Conservation status: Threatened – Declining

Desmoschoenus spiralis (pingao, golden sand sedge)

Pages 164-177

Site distribution – refer map page 166

Generally found in fore dune area

Conservation status: Recovering – Conservation dependent

Embergeria grandifolia (Chatham Island sow thistle)

Pages 178-197

Site distribution – refer map page 180

Generally found in sand dunes (fore-dune area), coastal cliff ledges, clay promontories and talus slopes

Conservation status: Threatened – Vulnerable

Euphorbia glauca (shore spurge, sea spurge, sand milkweed)

Pages 198-213

Site distribution – refer map page 200

Generally found in coastal cliff, sand dunes

Conservation status: Threatened – Declining

Lepidium oleraceum (Cook's scurvy grass, nau)

Pages 226-236

Site distribution – refer map page 229

Generally found in coastal cliffs and rocky places; usually associated with the high fertility and disturbance of sea bird colonies

Conservation status: Critically Endangered and Threatened – Endangered

Leptinella featherstonii (Chatham Island button daisy, mutton bird plant)

Pages 237-247

Site distribution – refer map page 239

Found in Chatham Islands only, growing in association with burrowing or nesting sea birds

Conservation status: Threatened – Vulnerable

Myostidium hortensia (Chatham Island forget-me-not)

Pages 268-283

Site distribution – refer map page 270

Generally found in coastal cliffs, rock outcrops, beaches just above the strand zone, coastal forest openings

Conservation status: Threatened – Declining

Puccinellia walkeri subsp. chathamica (Chatham Island salt grass)

Pages 329-343

Site distribution – refer map page 331

Generally found in coastal cliffs, clay faces, rocky shores and islets. Usually growing within the zone of heavy salt influence near the shore, frequently in seepages

Conservation status; No Rank

Site Sheets for Sensitive Areas

CI 1-Mangere Island

SITE	CI 1– MANGERE ISLAND	RISK RATING (1 = HIGH) 1 2 3
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DESCRIPTION

Situated to the West of Pitt Island, Mangere Island is 113ha in area, surrounded by cliffs and rises to 286m at its summit. Mangere island is a designated Nature Reserve and is vital for the conservation of the Chatham Islands flora, fauna and ecosystems. Free of all introduced predators and pests, these are some of the last remaining refuges of Chatham endemic species.

FORESHORE TYPE	Sloping rock and cliffs.
PLANNING SECTORS	
MAP SHEETS	NZMS 260 Series Sheet D40

AT RISK RESOURCES

Manager Island is a Wildlife Sanctuary and is considered by DoC to be the second most sensitive site in the Chatham Islands.

Hundreds of thousands of seabirds inhabit the island.

Breeding ground for the Chatham island Oystercatcher (Oct – Feb)

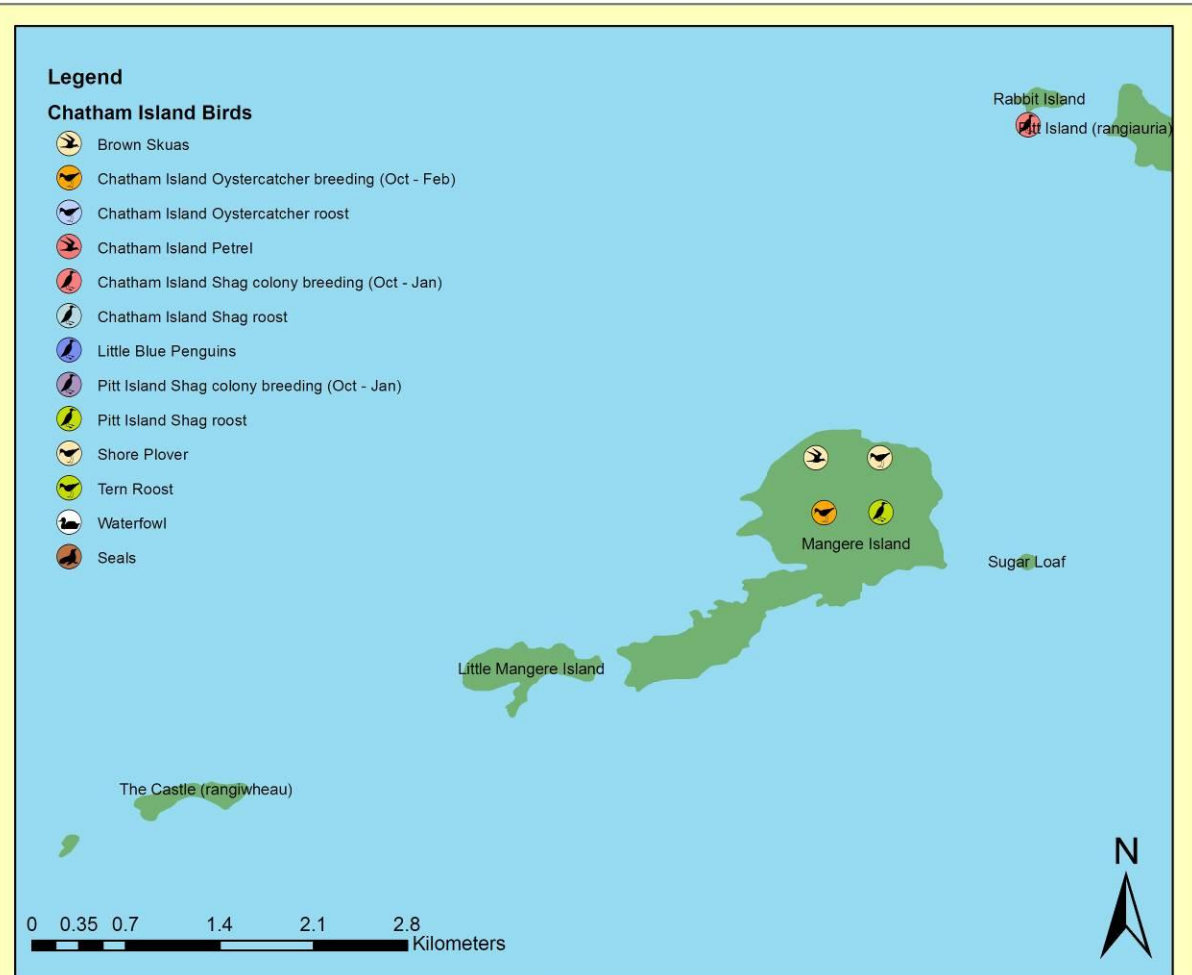
Roosting area for the Pitt Island Shag,

NOTES

- This area has been assessed as being of high risk to any degree of surface oil impacting birds.
- Natural recovery rates are likely to be high due to exposed location of site.
- Mangere Island is largely inaccessible.
- access to Mangere Island is tightly-controlled. Access is by permit only and is generally restricted to those undertaking management activities.
- Capture and re-release is an option for endangered birdlife.

PREFERRED RESPONSE OPTIONS MATRIX

	PREFERRED	NOT PREFERRED	FEASIBILITY
Containment and recovery		✓	Low
On water recovery			Low
Dispersant application	✓		Medium
Shoreline cleanup		✓	Low
Natural recovery	✓		High



Mangere Island



Shore Plover

Mangere Island - CI 2

CI 2-Pitt Island

SITE	CI 2 – PITT ISLAND	RISK RATING (1 = HIGH) 1 2 3
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DESCRIPTION

Situated to the South East of Chatham Island, Pitt Island, is the only large inhabited island in the Chathams group. It is 6,326 ha in area, rising to 241m. The island coastline is a mix of steep cliffs interspersed with sandy beaches. There are a number of DoC conservation areas on the Island. The landuse is a mixture of pasture, wetlands, bush and open scrub and bracken.

FORESHORE TYPE	Steep cliffs interspersed with sandy beaches, rocky slopes.
PLANNING SECTORS	
MAP SHEETS	

AT RISK RESOURCES

Chatham Island Oyster Catcher roosting and breeding (Oct – Feb)

Chatham island Shag colony roosting and breeding (Oct – Jan)

NOTES

- This area has been assessed as being of high risk to any degree of surface oil impacting birds.
- Natural recovery rates are likely to be high due to exposed location of site.
- Capture and re-release is an option for endangered birdlife.

PREFERRED RESPONSE OPTIONS MATRIX

	PREFERRED	NOT PREFERRED	FEASIBILITY
Containment and recovery		✓	Low
On water recovery			Low
Dispersant application	✓		Medium
Shoreline cleanup	✓		Medium
Natural recovery	✓		High



Pitt Island with South East Island in the foreground



Pitt Island Shag

Pitt Island - CI 2

CI 3-Rangatira (South East Island)

SITE	CI 3 – RANGATIRA (SOUTH EAST ISLAND)	RISK RATING (1 = HIGH) 1 2 3
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DESCRIPTION

Situated to the South East of Pitt Island, It is 219ha in area, rising to 224m above the western cliffs. Rangatira has been described as one of the world's premier bird islands. It is a Nature Reserve managed by the Department of Conservation.

FORESHORE TYPE	Sloping rock and cliffs.
PLANNING SECTORS	
MAP SHEETS	NZMS 260 Series Sheet D40 CRI Site No. 140069

AT RISK RESOURCES

Rangatira Island is a Wildlife Sanctuary and considered by DoC to be the most sensitive site in the Chatham Islands due to the populations of endangered birdlife.

Only breeding ground for Chatham petrels

Millions of seabirds resting on and feeding around the island including storm petrels, sooty shearwaters and broad-billed prions

Very large fur seal colony's and nursery area's at south east end of Rangatira, Eastern Reef and the Pyramid.

NOTES

- This area has been assessed as being of high risk to any degree of surface oil impacting birds.
- Natural recovery rates are likely to be high due to exposed location of site.
- access to Rangatira Island is tightly-controlled. Access is by permit only and is generally restricted to those undertaking management activities.
- Capture and re-release is an option for endangered birdlife.

PREFERRED RESPONSE OPTIONS MATRIX

	PREFERRED	NOT PREFERRED	FEASIBILITY
Containment and recovery		✓	Low
On water recovery			Low
Dispersant application	✓		Medium
Shoreline cleanup		✓	Medium
Natural recovery	✓		High



Chatham Petrel (Taiko)



South East Island

South East Island (Rangatira) - CI 3

CI 4-Southern Chatham Island

SITE	CI 4 – SOUTHERN CHATHAM ISLAND	RISK RATING (1 = HIGH) 1 2 3.
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DESCRIPTION

The south Chathams from Waitangi to Owenga are characterised by rocky platforms and cliffs with numerous offshore reefs. The coastline, from Tuku-a-tamata River in the southwest to Cape Fournier in the south west is very rugged, comprising steep cliffs up to 200m high, offshore reefs and islets, blow holes, stacks and caves. From Te Awatapu eastward to Cape Fournier, the coastal cliffs are fringed by boulder beaches and rock platforms at their base.

The coastline from Tuku-a-tamata River north is made up of boulder beaches and rocky platforms backing on to farmland.

FORESHORE TYPE	Rocky platforms, boulder beaches and cliffs.
PLANNING SECTORS	
MAP SHEETS	

AT RISK RESOURCES

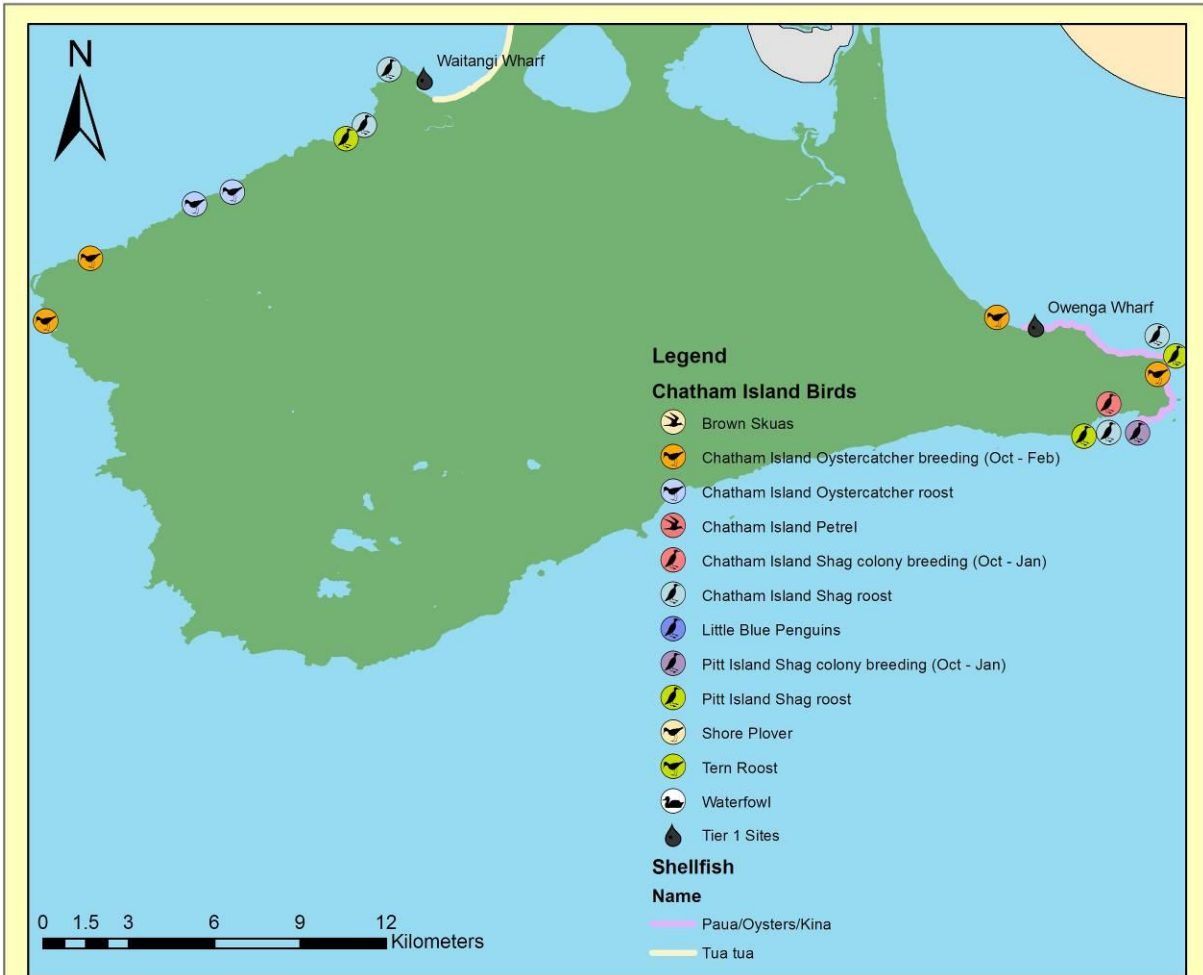
- Pitt Island Shag breeding and roosting
- Chatham Island Shag breeding and roosting
- Chatham island Oystercatcher breeding and roosting
- Important Shellfish collection site at Owenga
- Taiko Breeding ground inland from the south west coast

NOTES

- Natural recovery rates are likely to be high due to exposed location of site.
- The south west coast from Waitangi to Point Gap is accessible over farm land from the coastal road. The south coast from Point Gap to Cape Fournier is inaccessible by land.
- Capture and re-release is an option for endangered birdlife.

PREFERRED RESPONSE OPTIONS MATRIX

	PREFERRED	NOT PREFERRED	FEASIBILITY
Containment and recovery		✓	Low
On water recovery			Low
Dispersant application	✓		Medium
Shoreline cleanup		✓	Low
Natural recovery	✓		High



Southwest Coast

Southern Chatham Island - CI 4

CI 5-Central Chatham Island (Excluding Te Whanga)

SITE	CI 5 - CENTRAL CHATHAM ISLAND (EXCLUDING TE WHANGA)	RISK RATING (1 = HIGH) 1 2 3
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DESCRIPTION

Central Chatham Island is a made up of two narrow strips of land adjacent to Te Whanga. The open coastline is predominantly sandy beaches and dune systems.

FORESHORE TYPE	Sandy beaches with rocky outcrops
PLANNING SECTORS	
MAP SHEETS	

AT RISK RESOURCES

Chatham Island Shag roosting

Little blue penguin nesting

Shellfish (Tua tua)

Various burial sites amongst the dunes and along the sandy beaches on both the west and east coasts.

NOTES

- Natural recovery rates are likely to be high on the open coast due to exposed location of site.
- Limited foot access along Long beach, low tide 4wd access along Waitangi bay.
- 4wd access along Petre Bay (summer only, no heavy equipment)
- Consult with Iwi before commencing foreshore activities due to burial sites along beaches and dunes.

PREFERRED RESPONSE OPTIONS MATRIX

	PREFERRED	NOT PREFERRED	FEASIBILITY
Containment and recovery		✓	Low
On water recovery	✓		Low
Dispersant application			Medium
Shoreline cleanup	✓		Medium
Natural recovery		✓	Medium



Hikurangi Channel - Te Whanga Lagoon Entrance

Central Chatham Island - CI 6

CI 6-Te Whanga

SITE	CI 6 – TE WHANGA	RISK RATING (1 = HIGH) 1 2 3
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DESCRIPTION

Te Whanga is a shallow lagoon 24kms in length and about 18,600 hectares in area. To the west and south it is bounded by old sea cliffs. To the north and East it is confined by long, low lying sand bars. The lagoons water level varies due to both natural and artificial processes. The rising water levels in the lagoon result in water escaping naturally or being artificially released.

FORESHORE TYPE	Sand/mud flats, sandy beaches, cliffs.
PLANNING SECTORS	
MAP SHEETS	

AT RISK RESOURCES

Chatham Island Shag roosting

The lagoon is extensively used as a food source, especially for flounder, eel and whitebait

Shellfish (cockles)

Tens of thousands of waterfowl including various duck species and Swans inhabit the lagoon

NOTES

- When the Hikurangi Channel is closed Te Whanga behaves like a shallow lake.
- When the Hikurangi Channel is open, Te Whanga behaves like a tidal inlet near the mouth, but the northern basin continues to behave like a shallow lake:
 - Flows in the Hikurangi Channel reach up to c. 100 cumecs outflow on an ebbing tide and c. 200 cumecs inflow on a flooding tide, depending on the tidal range at sea.
 - The extent of tidal influence in the lagoon is limited to the region near the mouth, representing between 5 and 25% of the total lagoon area.
- *Comment on option of manually closing the lagoon?*
- Vessel launch site at abandoned flying boat base at Waikato Point

PREFERRED RESPONSE OPTIONS MATRIX

	PREFERRED	NOT PREFERRED	FEASIBILITY
Containment and recovery	✓		Low
On water recovery	✓		high
Dispersant application		✓	Medium
Shoreline cleanup			Medium
Natural recovery		✓	Low



Te Whanga Shoreline



Hikurangi Channel - Te Whanga Entrance

Te Whanga - CI 5

CI 7-Northern Chatham Island

SITE	CI 7 – NORTHERN CHATHAM ISLAND	RISK RATING (1 = HIGH) 1 2 3
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DESCRIPTION

The Northern Chatham Island coastline is highly indented with offshore islets and reefs. Larger sandy beaches with associated dune complexes are located between the major and more elevated headlands, with smaller beaches at bay heads of some of the more indented coastline.

FORESHORE TYPE	Sandy beaches with rocky outcrops
PLANNING SECTORS	
MAP SHEETS	

AT RISK RESOURCES

Pitt Island Shag breeding and roosting

Chatham Island Shag breeding and roosting

Chatham island Oystercatcher breeding and roosting

Furseals

Shellfish (Paua, oyster, kina) on most rocky outcrops. Tua tua along northern beaches.

Coastal restoration site at Maunganui Beach and Pingao site at Kaingaroa

NOTES

- Natural recovery rates are likely to be high on the open coast due to exposed location of site.
- Consult with Iwi before commencing foreshore activities due to burial sites along beaches and dunes.
- Consult with DoC before commencing foreshore activities due to sensitive vegetation on northern beaches.
- 4 wd low tide access along most north coast beaches.

PREFERRED RESPONSE OPTIONS MATRIX

	PREFERRED	NOT PREFERRED	FEASIBILITY
Containment and recovery		☑	Low
On water recovery		☑	Low
Dispersant application			Medium
Shoreline cleanup	☑		Medium
Natural recovery		☑	Medium



Kaingaroa Beach



Chatham Island Oystercatcher



Chatham Island Shag

Legend

Chatham Island Birds

- Brown Skuas
- Chatham Island Oystercatcher breeding (Oct - Feb)
- Chatham Island Oystercatcher roost
- Chatham Island Petrel
- Chatham Island Shag colony breeding (Oct - Jan)
- Chatham Island Shag roost
- Little Blue Penguins
- Pitt Island Shag colony breeding (Oct - Jan)
- Pitt Island Shag roost
- Shore Plover
- Tern Roost
- Waterfowl
- Seals

Shellfish

- Name**
- Paual/Oysters/Kina
 - Tua tua

Northern Chatham Island - CI 7

Places of Refuge

Because of the exposed nature of the coastline and the changeable weather conditions, the Chatham Islands do not have a designated Place of Refuge. However, Port Hutt has been identified as a safe anchorage in most weather conditions for ships up to 2,500 tonnes. Other anchorages are in the lee of Chatham Island. However, these anchorages cannot be used at all times.