Site 65	Whangaparaoa River	Risk ranking: 3
DESCRIPTION This site comprises bar built estuary with a mobile mouth. A sandbar encloses areas of significant saltmarsh and open water lagoon.		
Foreshore type	Lagoon, shorebird feeding areas, saltmarsh, open water in channel, exposed rocky foreshore.	
Map sheets	**NZTopo 50** BD 43 Ruakokore	**Chart Number** NZ 542
Segments: **EBOP-00360, EBOPR-00360**		

At Risk Resources

- Numerous at risk and threatened bird species including: No New Zealand dotterels (tuturiwhatu) (as of 2011-11-05), banded dotterel (pohowera)
  (4-6 pairs) and pied cormorant (kāruhiruhi) colony nesting at river mouth in trees
- Lagoon behind spit may be disconnected from river
- Usually good outflow of water from the river
- Saltmarsh vegetation along river
- Saltmarsh vegetation in lagoon and tidal areas behind spit
- Beach has pebble - cobble sized particles
- Mussel gathering on exposed rocky outcrop east of spit
- Several areas are identified in the Regional Coastal Plan as areas of significant conservation/cultural value
- Cultural sites

Notes

- Oil that enters the low energy systems of this estuary will remain for some time. Oil will harm saltmarsh habitat and New Zealand and banded dotterel feeding areas
- Oil may wash over into the estuary during a storm but is unlikely to move up with the tide due to the net outflow of water from the river

Actions

- Limit the oil entering the saltmarsh habitat and lagoon to the south through protective barrier/booming
- Consider pre-clean-up of intertidal debris - tidal range specific
- Consider pre-emptive capture of wildlife generally
- Activation of oiled wildlife response collection teams if required
- Pre-emptive clean-up of log debris (if deemed necessary) in intertidal area of southern spit
- Priority clean-up of spit entrances to limit remobilisation of oil into estuary

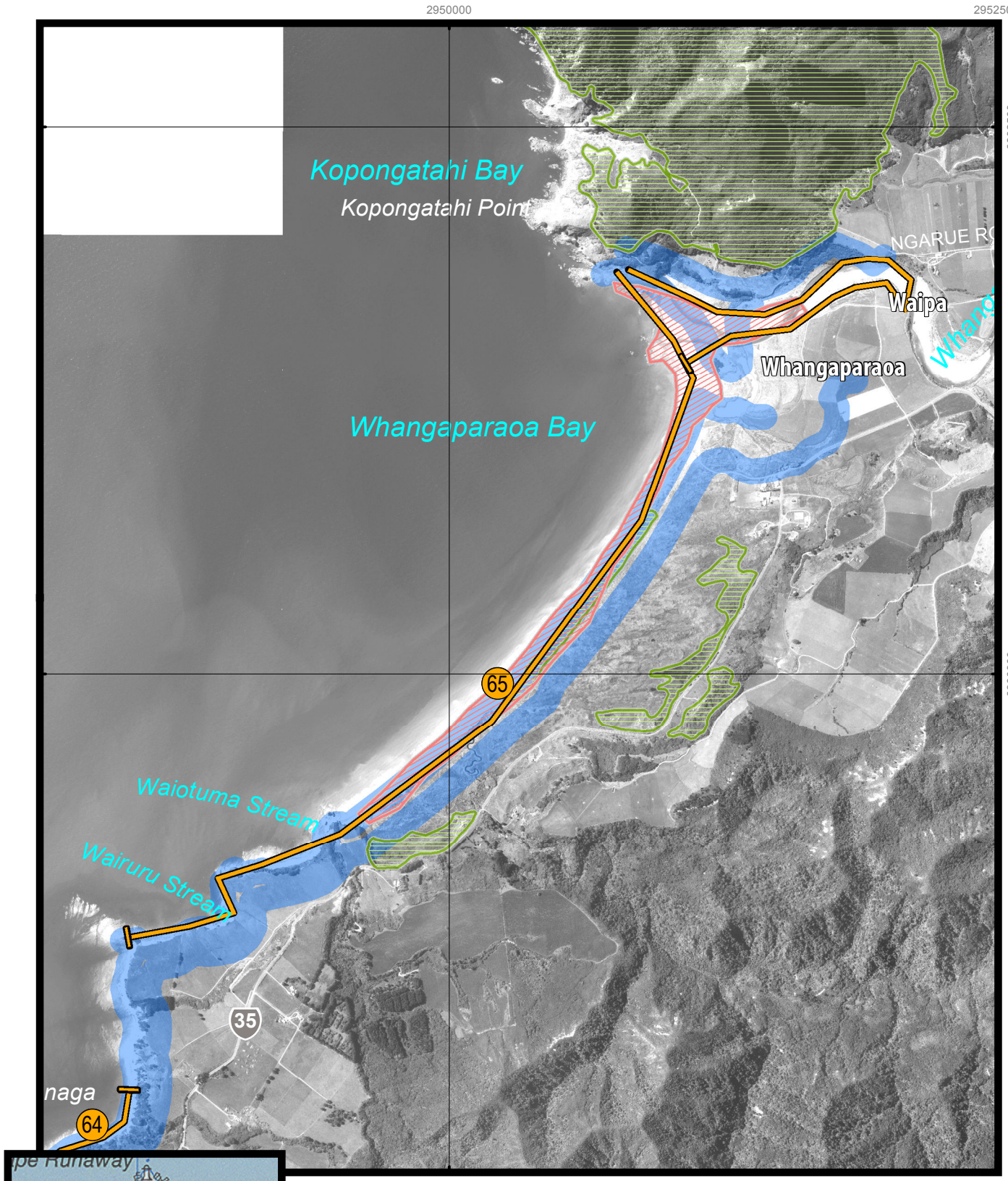
Access

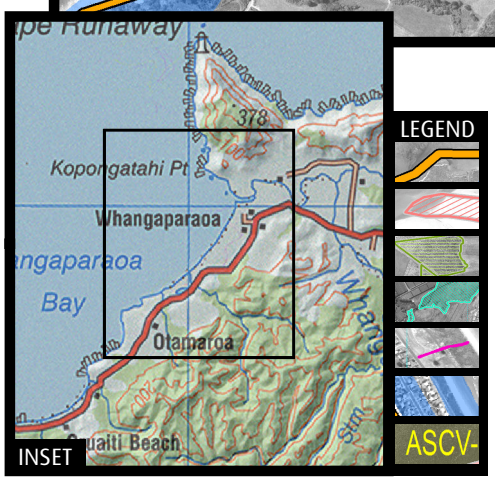
Access to the entrance of the estuary is via SH 35: track access to the south from post office on track through sand dunes: access to the north through private farmland (Jim Kemp).

Vehicle access from the end of the public road around to the mouth of the estuary is restricted to 4WD only.

Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		Deflection booming an option, possible closure of river mouth depending on river flows
On water Recovery	High		Logistics and weather may prohibit this
Dispersant Application	Medium	Requires escalation to Tier 3 and MNZ approval	Off-shore use of dispersants may be considered
Shoreline Clean-up	High		Reasonable cleanup options but labour intensive, pre-clean required
Natural Recovery	Medium		Can be a high intensive coastline, suitable to some natural recovery





LEGEND

- SCAT Sites
- Shorebird Roosts
- Site District of Local Significance
- Coastal Habitat Preservation Zone
- Beach Acessways
- Area Sensitive to Coastal Hazards
- Area of Significant Conservational Value

SITE 65 Whangaparaoa River

Oil Spill Management Plan

1 0

Kilometres

New Zealand Map Grid
Aerial Photos flown summer of 2011

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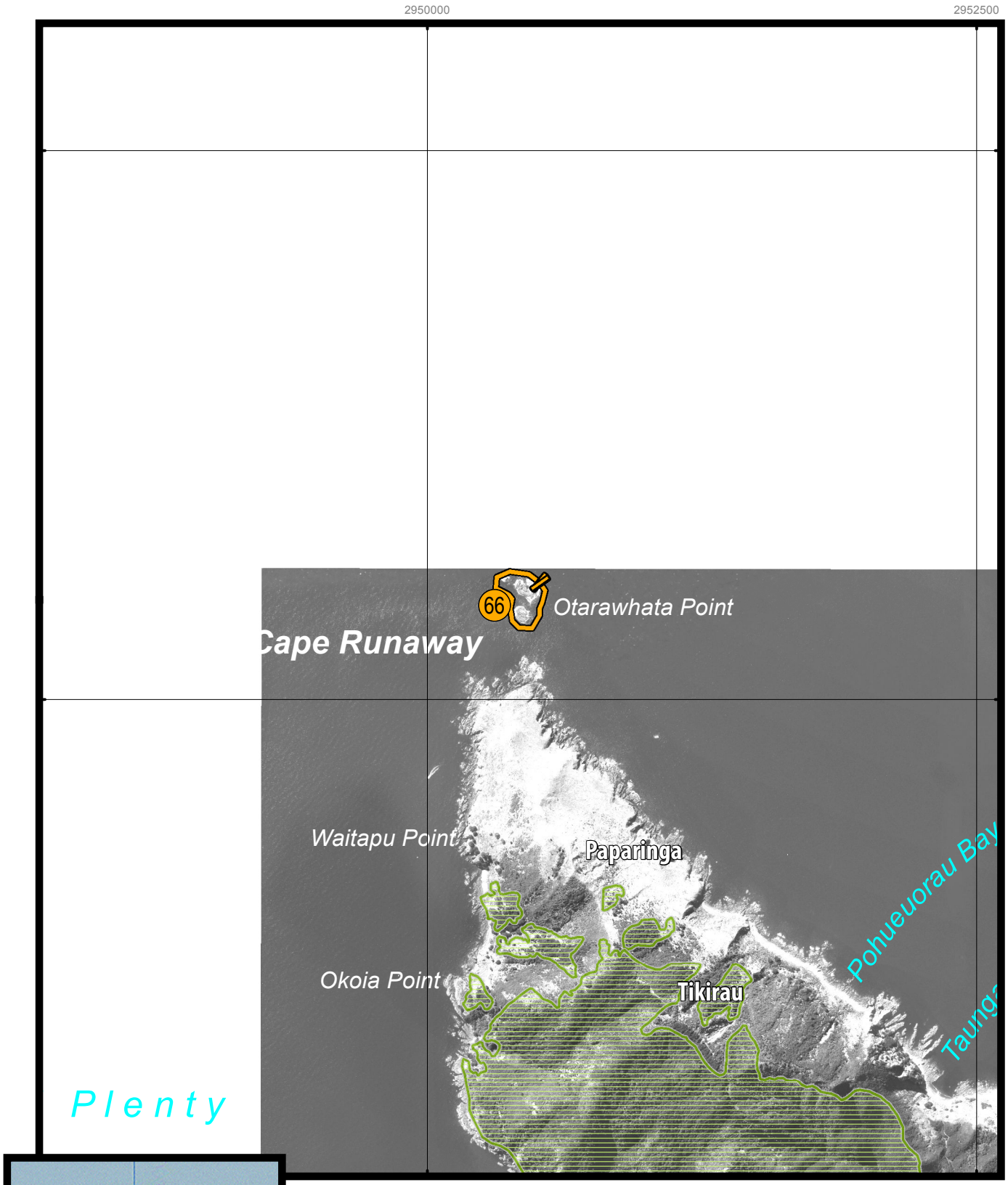
Bay of Plenty REGIONAL COUNCIL

Site 66	Otarawhata Island	Risk ranking: 3
DESCRIPTION This small island is located just off the tip of Cape Runaway.		
Foreshore type	Exposed rocky foreshore	
Map sheets	**NZTopo 50** BD 43 Ruakokore	**Chart Number** NZ 542
Segments:		
At Risk Resources • Special wildlife values • White fronted tern nesting season, which is from August to January		
Notes • Limited communications **Actions** • Activation of oiled wildlife response collection teams if required		
Access Via boat. There are boat launching facilities at Waihau Bay		

Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	Low		Not possible due to location
On water Recovery	Low		Logistic and weather a negative
Dispersant Application	High	Requires escalation to Tier 3 and MNZ approval	Use dispersant guidelines but good possibilities for this option
Shoreline Clean-up	Low		Logistically challenging
Natural Recovery	Medium		High intensive coastal area



LEGEND

- SCAT Sites
- Shorebird Roosts
- Site District of Local Significance
- Coastal Habitat Preservation Zone
- Beach Acessways
- Area Sensitive to Coastal Hazards
- Area of Significant Conservational Value (ASCV-)

SITE 66 Otarawhata Island

Oil Spill Management Plan

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Kilometres

New Zealand Map Grid
Aerial Photos flown summer of 2011

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Bay of Plenty REGIONAL COUNCIL

Site 67	Whakaari (White Island)/ Volkner Rocks	Risk ranking: 1

DESCRIPTION

White Island/Whakaari is an active and privately owned volcano that lies 48 km off New Zealand's Bay of Plenty coastline. It is very exposed to ocean and weather conditions but small boats can obtain reasonable shelter in the lee of the island. The shoreline is mostly rocky and access from the sea is easy only at the south-southeast point. Due to the risk of volcanic eruption and the nature of the shoreline the preferred response action is natural recovery. A primary consideration of all operations within the vicinity of the island will be the alert level at the time. Following the 2019 eruption of the crater all access to the island is tightly restricted with onshore commercial tourist visits suspended indefinitely. Oil spill response operations, including oiled wildlife response, on the island or its near vicinity will require a high level of cross agency cooperation, co-ordination and permission, as well as detailed operational, health and safety planning, monitoring and evacuation procedures. Proposed oil spill response operations will therefore draw on the experience and support of Civil Defence Emergency Management (CDEM) and specialist advice to help ensure that this work can be undertaken as safely as possible. It will also be necessary to sensitively manage responder welfare and anxiety given the active status of the volcano and tragic events of 2019.

Foreshore type/environmental value	Exposed rocky foreshore, exposed bedrock cliffs, bedrock platforms, boulder beaches. Mix fine grained/gravel/boulder beaches (south east).	
Map sheet	**NZ Topo 50** BC40 Whakaari/White Island	**Chart Number** NZ5423
Segments	**TAU-00641, TAU-00611**	

At Risk Resources

- Australasian gannet (breeding Jul – Jan), grey-faced petrel (breeding Jun–Jan), northern blue penguins and possibly other sea bird species nest on the island
- The island gannet population is one of the largest colonies in New Zealand. Colonies form from late July and the breeding population steadily increases reaching a peak by mid-November
- Other bird species noted include: white-fronted terns, grey faced petrel (breeding Jun–Jan)
- The Volkner Rock is one of three breeding areas in New Zealand for the grey ternlet (breeding Aug–Feb)
- Fur seals (kekeno), common (aihe) and bottlenose (terehu) dolphins, orca (kera wēra) and other whale species are present in the waters around the island
- Any responders attending on the island must be aware of other culturally important terrestrial species

Notes

Oil that enters the high energy systems of this Island will naturally weather. Oil will harm sea birds entering and exiting the sea.

Actions

- Containment and recovery of oil at sea to reduce amount that could impact the shoreline
- Any bulk oil should be removed as a priority to prevent remobilisation to cleaner areas. In addition, any contaminated cleaning equipment, water, solvents, etc. should be removed from the Island
- Shoreline clean-up along beaches south and east to be informed by SCAT/aerial observations
- Shoreline clean-up when sea state and tidal cycle allows access
- Notify wildlife team of potential for oiling
- Consider pre-emptive capture of wildlife generally
- Activation of oiled wildlife response collection teams if required

- The island is privately owned
- Marine radio channel 18 or 60 and cell phones provide communication to the mainland.

Access

The Buttle family own the island but access permission will require the involvement of multiple agencies.

For current Volcano Status contact GNS:

- Duty Scientist (for volcano status) 07 374 8211

Primary tourist operators are:

The main landing is at Crater (Awapuia) Bay on the SSE coast where there is an old wharf. Around Troup Head to the east are two more small gravelly beaches where landings are straight forward during normal westerly seas. Other beaches exist on the northwest, southwest and east coasts but waves and swells normally make landings difficult and rock-fall hazards exist above them.

Access other than by boat is via helicopter that lands inside the crater near the old factory at the southeast end. GNS Science sometimes land near their monitoring sites on the crater rim. There are many other helicopter landing possibilities although some are near gannet colonies posing risks to the aircraft and the birds.

It is generally not easy to walk around between flat areas on the outer slopes of the island. The terrain has many step sided gullies, some very exposed to rock-falls. Generally, depending on the alert level, the risk increases closer to the vent.

Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		Requires appropriate large vessels
On water Recovery	High		Requires appropriate large vessels
Dispersant Application	Low	Requires escalation to Tier 3 and MNZ approval	Off-shore this may be possible
Shoreline Clean-up	Medium/low		Limited access and steep rocky shores
Natural Recovery	High		High energy coastal environment but refer NEBA

General information (abbreviated from www.wi.co.nz)

Sea and bird life abounds in the sea surrounding the island. On the outer slopes of the island are large colonies of the majestic gannet. These "rookeries" show up like snow on points above the cliff-lined shores.

Shoreline types

The main shoreline types are exposed bedrock cliffs and boulder beaches. There are possibly some bedrock platforms in places. There are several beaches mixed types which I have marked on the Google Earth image ex Island_White.pdf. The finest-grained beaches are those at the SSE "mouth" of the crater.

Access

Hazards and safety plans

The main hazards are coastal-marine landings and operations, steep cliffy coastline and gullies, and rock-fall. Many of the cliffs at shoreline would be extremely difficult to climb. Terrain on the outer slopes of the volcano is generally steep, although people who are competent and experienced on their feet will be able to traverse many areas, or ascend and descend these slopes ok.

There will be no need to enter the general crater area of the volcano for this operation unless camping is required (see below).

*Despite being an active volcano, White Island volcanic hazards need to be mitigated only within a few hundred metres of the lake in its active crater, **unless the volcano status changes** from Level 1. Inside the crater, active fumaroles and other hot and soft areas, crater walls and an acid stream are the main volcanic hazards. Gas is a hazard only within 200 m of the crater or at fumaroles. GNS Science monitor the volcano and may change the Alert Level or issue an Alert Bulletin if seismic or other activity changes significantly.*

The DOC Safety Plan "Island Management" ID 1083 provides a good guide for risk management. I have marked a hard copy with the main hazards relevant to White Island and emphasised those needing most attention on land. In Hazard 891 Geothermal, I have noted the acid stream in the crater and caution regarding gas when downwind inside the crater. The Duty Scientist at GNS Science (07 374 8211) should be contacted before activities are carried out on shore. More information including up-to-date images of the island can be viewed hourly at www.geonet.org.nz. (http://www.geonet.org.nz/volcano/activity/white-island/).

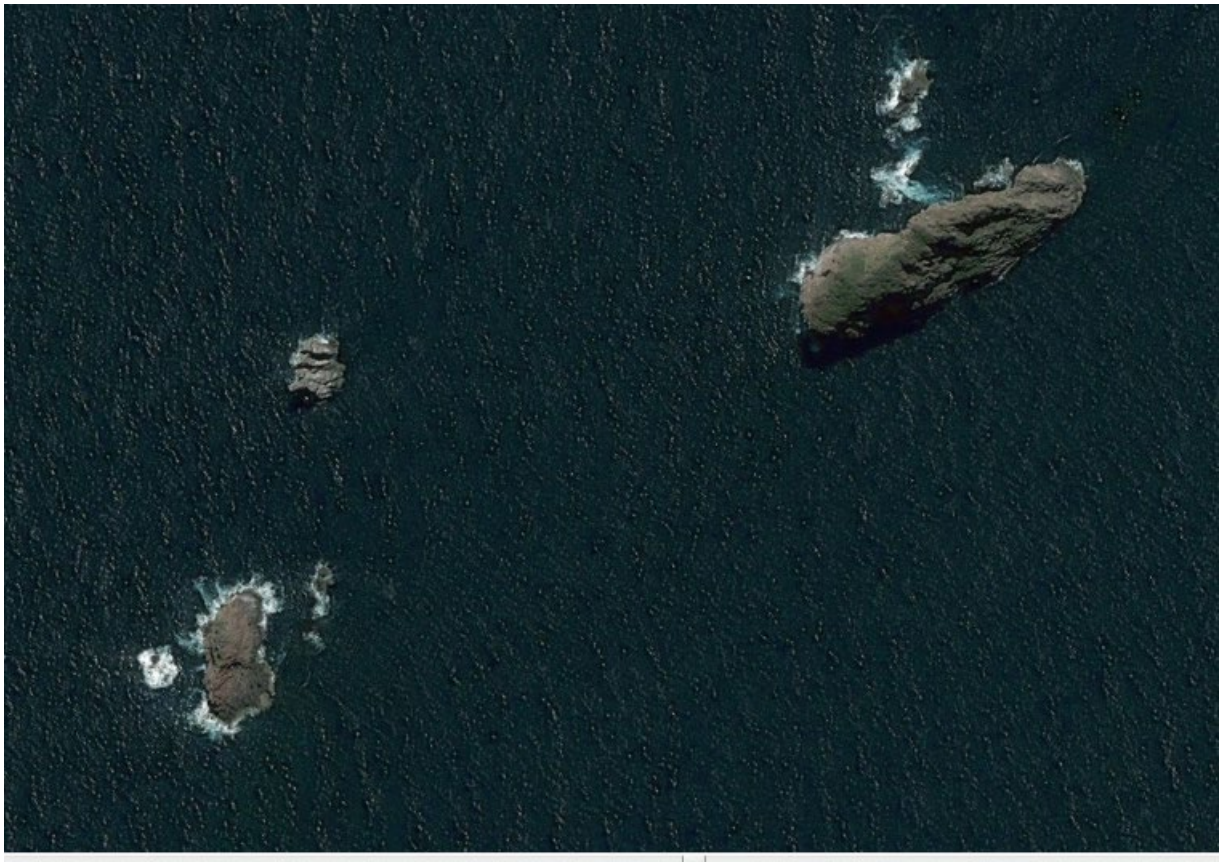
Wildlife

Australasian gannet (Morus serrator), grey-faced petrel (Pterodroma macroptera gouldi) and possibly other sea bird species nest on the island. The map on the I drive DOC_Sector_2_White.pdf shows two large gannet colonies on the W to SW coast and a third is located between them near Ohauora Point (Brad Scott personal communication). The island gannet population is one of the largest in the world. Gannets are present at their colonies from late July and the breeding population steadily increases reaching a peak by mid-November (http://www.nzbirds.com/birds/takapu.html). Native terrestrial flora and fauna on the island are not vulnerable to oil spills.

Fur seals, common and bottlenose dolphins, orca and other whale species are present in the waters around the island. One male fur seal was sighted hauled out in February 2011 by Mandy Hague (http://mandyart.blogspot.com/2011/02/seal-census-white-island.html).

Volkner Rocks

Recent ornithological visits to the Volkner Rocks 5 km NW of White Island were reported by Narena Olliver (2007, http://nzbirds.com/birds/greyternlet.html). They noted c. 500 white-fronted terns, Sterna striata; c. 30 short-tailed shearwaters, Puffinus tenuirostris; c. 80 Buller's shearwaters, P. bulleri, southern black-backed gull, Larus dominicanus, and some starlings, Sturnus vulgaris, plus the target of the search grey ternlet (Procelsterna cerulean).



Ownership and cultural value *(abbreviated from http://www.whiteisland.co.nz/white_island.html*

Maori visited the island to collect sea birds and their eggs before and after European contact. It is also suggested that early Maori recognised the value of sulphur as manure and collected it for their gardens on the mainland.

It is said the island passed into European hands in the late 1830s when Maori owners sold it to a Danish sea captain turned trader, Philip (Hans) Tapsell. Tapsell's ownership of the island was not officially recognised until 1867, when his son and daughter were awarded title by the Native Land Court. There is no record that the Tapsells ever made use of White Island. They sold it quite quickly, thus beginning a long series of European owners and a historic value mainly related to sulphur mining and a disastrous lahar in 1914. The Buttle family obtained ownership in 1936.

The island was declared a private scenic reserve in 1953. As such, several restrictions were introduced, including those to protect the bird life. This had an impact on the long-standing custom of three iwi to go mutton-birding at the island and, although it was not banned immediately, White Island was later added to the list of areas in New Zealand exempt from mutton-birding.

Camping areas

If the unlikely need arises to establish a base on the island, the best place is likely to be near the derelict factory at the south-southeast end of the island. This is where GNS Science sometimes camp. There is no drinking water in the vicinity and shelter is limited. Extra supplies would need to be taken in case bad weather delays the return from the island.

Communications

Marine Channel 71 to Bay of Plenty Regional Council Coast Guard in Whakatàne works well, as do cellphones from the wharf. Presumably cell phones will also work from other places near sea level on the southern half of the island.

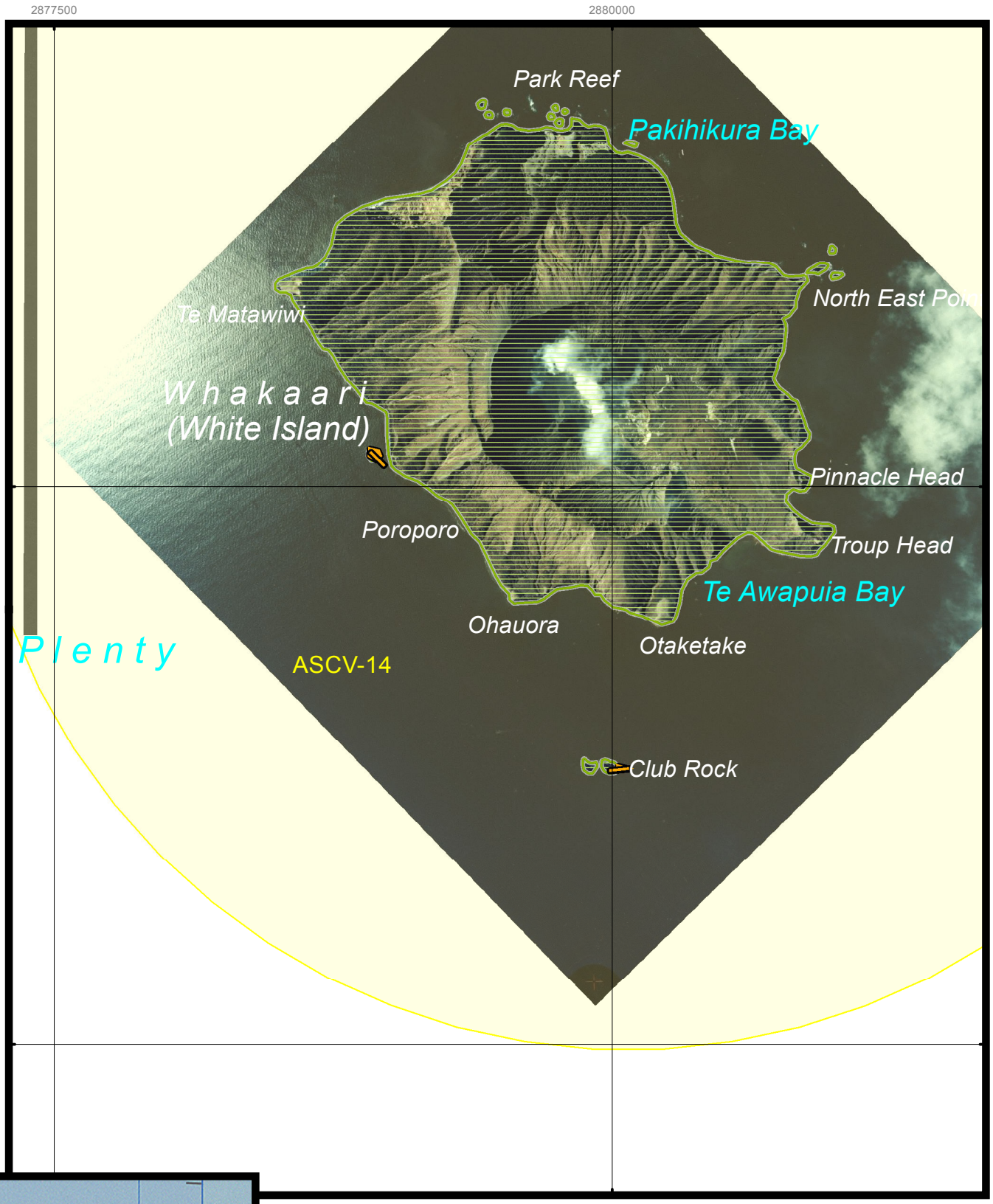
Acknowledgements

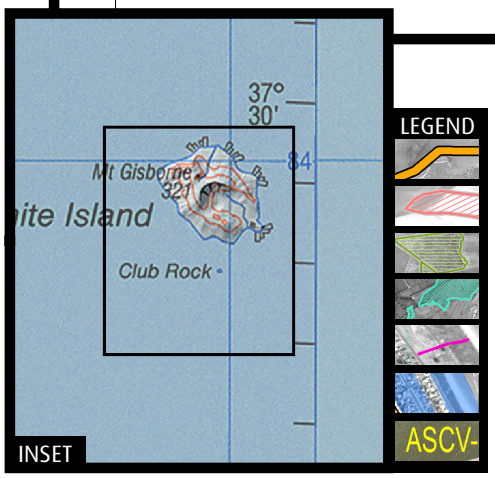
Brad Scott (GNS Science) provided some of the information in this note.

http://nzbirds.com/birds

http://geonet.org.nz

http://whiteisland.co.nz/white_island.html





LEGEND

- SCAT Sites
- Shorebird Roosts
- Site District of Local Significance
- Coastal Habitat Preservation Zone
- Beach Acessways
- Area Sensitive to Coastal Hazards
- ASCV- Area of Significant Conservational Value

SITE 67 Whakaari (White Island)

Oil Spill Management Plan

1 0

Kilometres

New Zealand Map Grid
Aerial Photos flown summer of 2011

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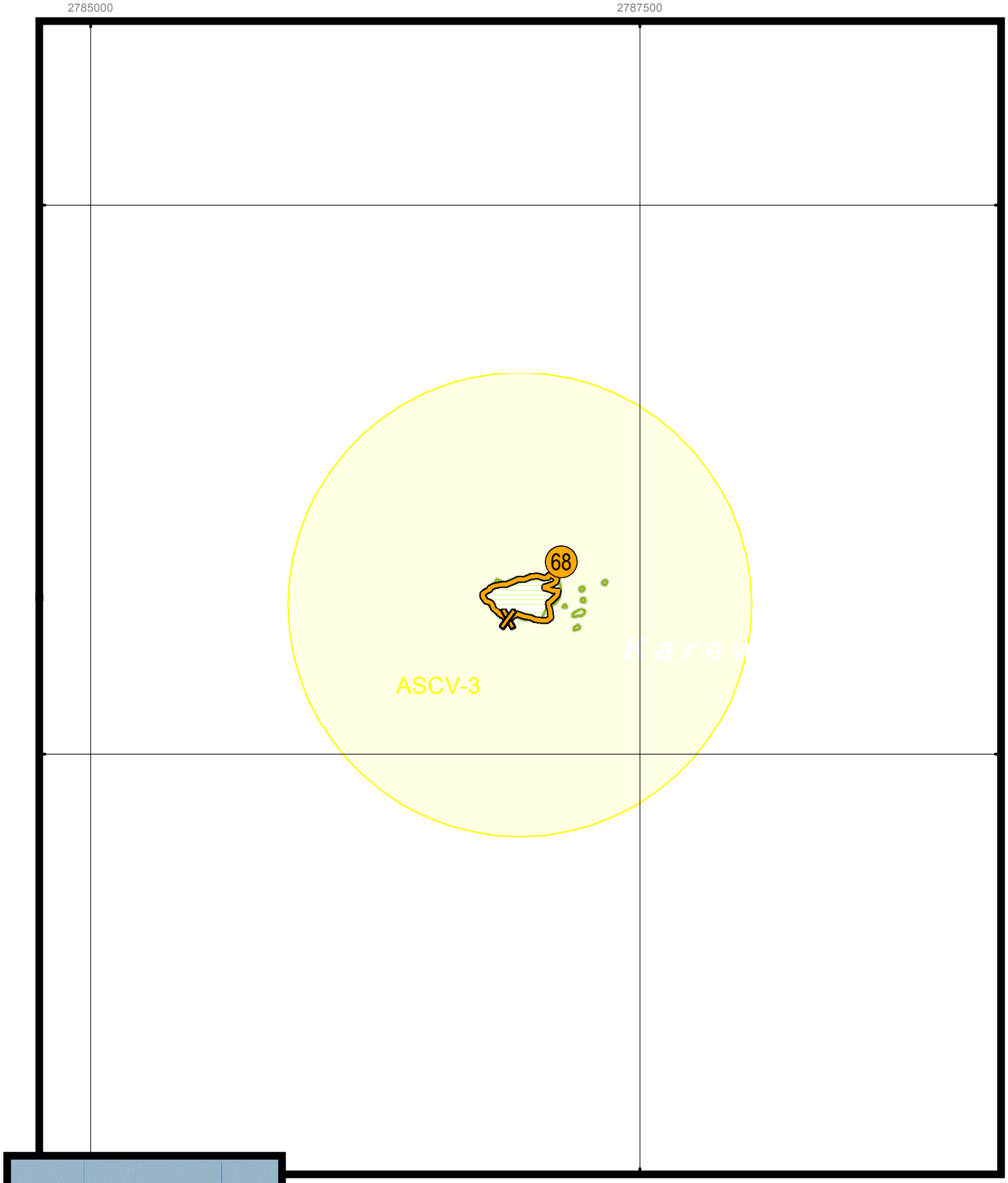
Bay of Plenty
REGIONAL COUNCIL

Site 68	Karewa Island	Risk ranking: 1
DESCRIPTION Karewa Island is a small 3.5 ha island situated approximately 6 km off the coast of Matakana Island. It is covered in Taupata Forest. The island is administered by the Department of Conservation (DoC) in close co-operation with tangata whenua, in recognition of its important cultural values. It is a pest free Wildlife Sanctuary, landing is prohibited without DoC permit.		
Foreshore type/environmental value	Primarily vertical and sloping bedrock, rocky reef, rock pools, sandy beaches Habitat (shoreline), contact, amenity (dive site). All shore segments have “habitat value”. All intertidal areas are identified in the Regional Coastal Plan as areas of significant conservation/cultural value.	
Map sheets	**NZ Topo 50** BD37 Tauranga	**Chart Number** NZ541; NZ542
Segments	**KARE-00010, KARE-00020, KARE-00030**	
At Risk Resources • High densities of Tuatara that are dependent on the continued productivity of the surrounding marine ecosystems especially the wellbeing of petrels and shearwaters which co-exist with the tuatara • The island is also home to fur seals (kekeno) • The Island is an important breeding area for northern diving petrel (Aug – Feb), flesh-footed shearwaters (breeding Nov – May) and grey-faced petrels • The island was traditionally a harvest site for titi (mutton birds) and kai moana, which is abundant on almost all rocky reefs (paua, cray and kina) • It is a very popular dive site and known for the variety of fish that are encountered. In November 1878, the steamer 'Taranaki' ran into Karewa Island. There are remains of the wreck on the northern side of the island, mainly the body of a large boiler from the ship's engine. • There are designated ships anchorages within close proximity of Karewa Island on our about the 30 metre depth contour line. In event of an unsourced oil spill in the area ships at anchor should not be ruled out as potential sources.		
Notes Oil may be difficult to remove from the shoreline especially in rock crevices. **Actions** Containment and recovery of oil at sea to reduce the amount that could impact the shoreline. Shoreline clean-up when sea state and tidal cycle allows access		
Access Access by boat, visitors must be accompanied by DoC staff and go through biosecurity checks.		

Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		If weather conditions allow
On water Recovery	High		ORV or similar if weather conditions allow
Dispersant Application	Low	Requires escalation to Tier 3 and MNZ approval	Off-shore dispersant use possible
Shoreline Clean-up	Medium		Requires permission (DoC)
Natural Recovery	Medium		Due to weather conditions this may become a possibility



LEGEND

- SCAT Sites
- Shorebird Roosts
- Site District of Local Significance
- Coastal Habitat Preservation Zone
- Beach Acessways
- Area Sensitive to Coastal Hazards
- ASCV- Area of Significant Conservational Value

SITE 68 Karewa Island

Oil Spill Management Plan

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Kilometres

New Zealand Map Grid
Aerial Photos flown summer of 2011

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Bay of Plenty REGIONAL COUNCIL