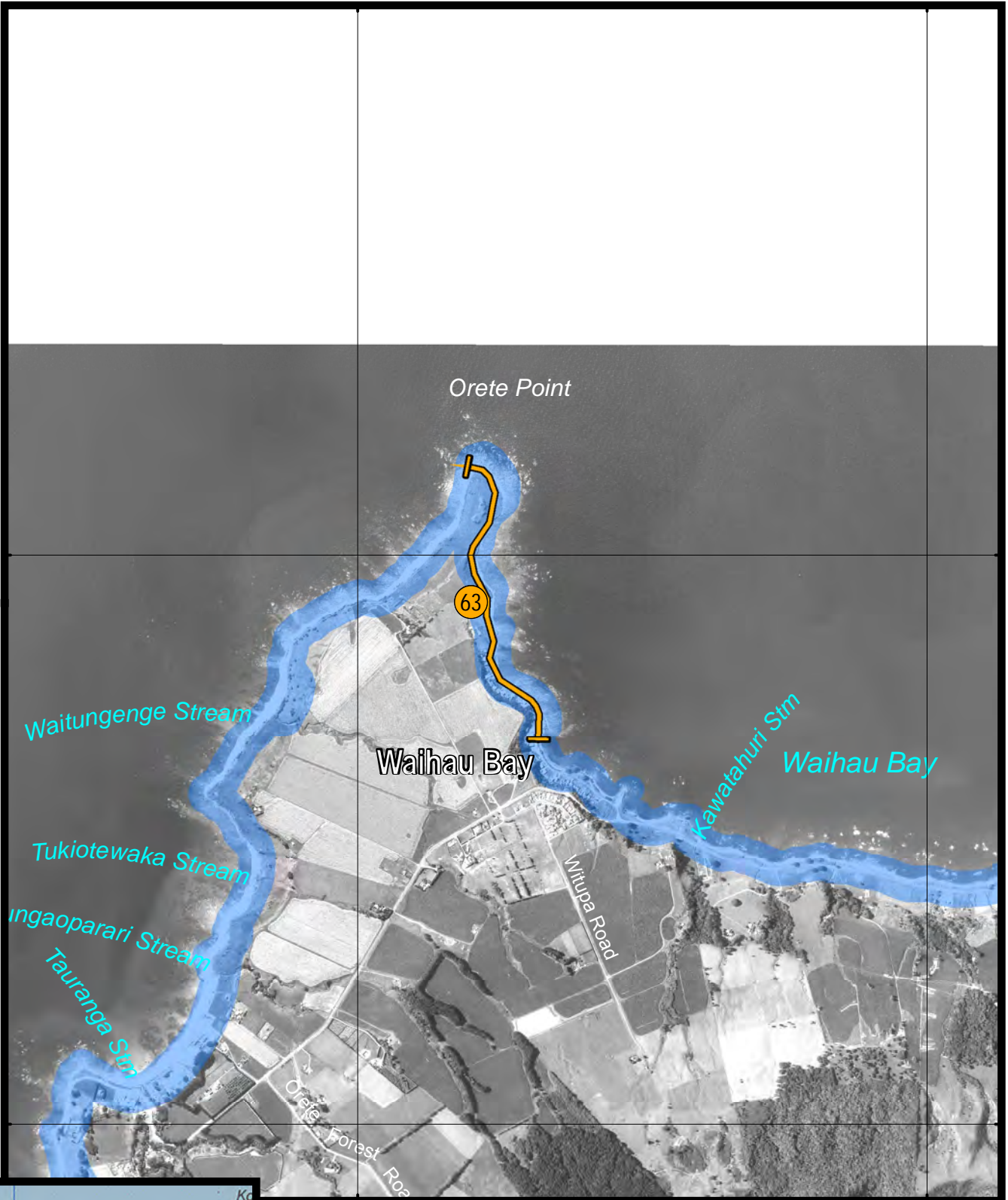


Site 63	Orete Point	Risk ranking: 3
DESCRIPTION The site is located between the Waihou Bay Wharf and Orete Point. The site comprises the inter-tidal platform which has been identified as a significant geological feature.		
Foreshore type/environmental value	Intertidal rock platform. important habitat for flora and fauna.	
Map sheets	NZ Topo 50 BD 43 Ruakokore	Chart Number NZ 542
Segments:		
At Risk Resources <ul style="list-style-type: none"> • Intertidal areas are identified in the Regional Coastal Plan as areas of significant conservation/cultural value • Cultural sites – Kaimoana 		
Notes <ul style="list-style-type: none"> • Where possible, oil should be prevented entering the sensitive areas. Prevention of oil reaching the platforms may best be achieved by the use of dispersants offshore • Limited communication 		
Access Road access is via State Highway 35. The nearest boat launching ramp is Waihou Bay adjacent to the Post Office. Vehicle access to the point is restricted to private access. Permission from the owner would be required to obtain access to the Point.		

Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		Shoreline not conducive to this
On water Recovery	Medium		Logistics an issue
Dispersant Application	High	Requires escalation to Tier 3 and MNZ approval	Off-shore use good option
Shoreline Clean-up	High		Rocky tidal foreshore area
Natural Recovery	Medium		Natural recovery may be required due to high intensity coastline



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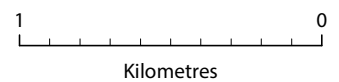
INSET

LEGEND

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

SITE 63 Orete Point

Oil Spill Management Plan



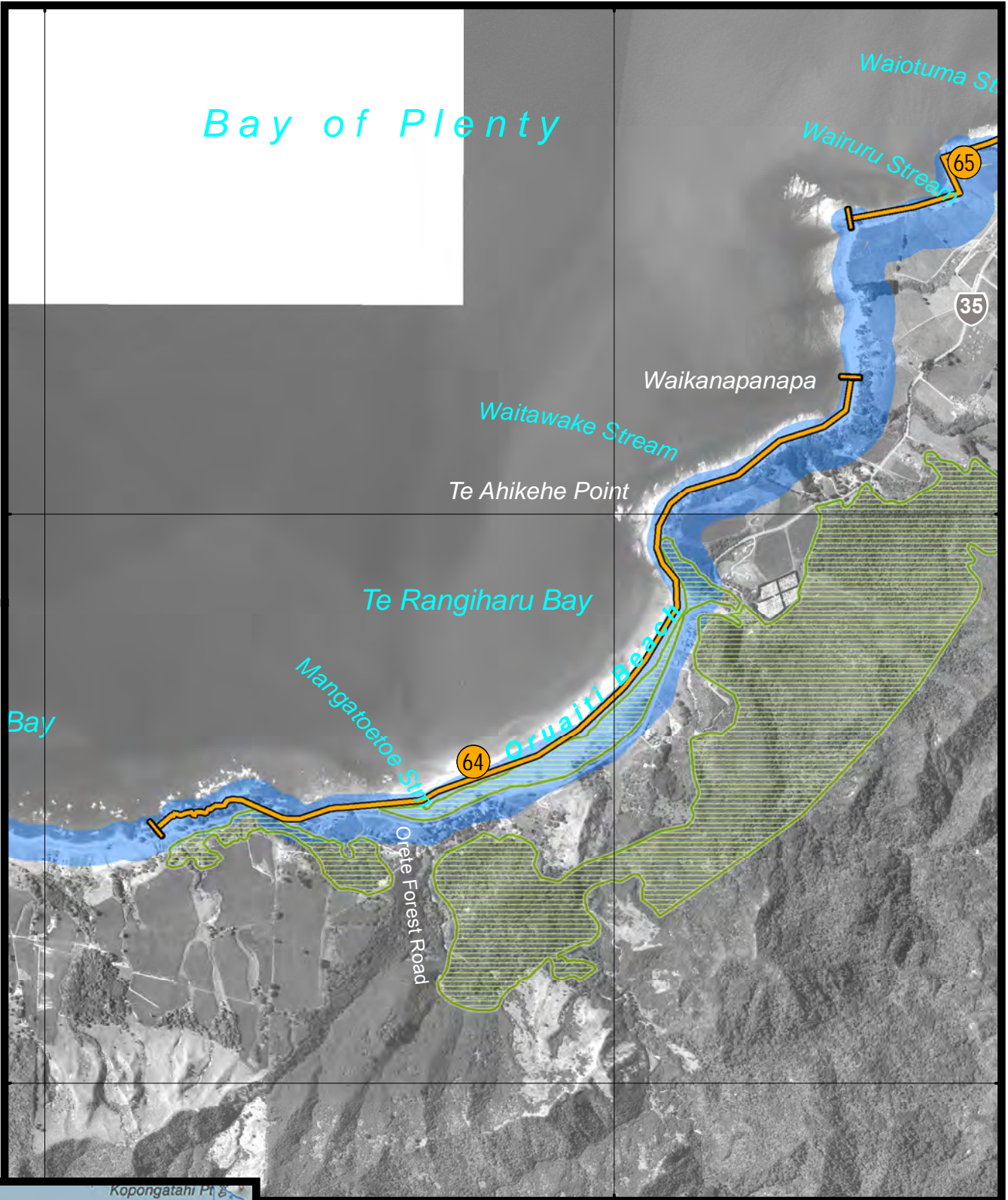
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 New Zealand Map Grid
 Aerial Photos flown summer of 2011



Site 64	Oruatiti and Waikanapana	Risk ranking: 3
DESCRIPTION		
The site is located to the east of Waihou Bay. The site comprises of wave cut platforms which have significant coastal landscape values.		
Foreshore type/environmental value	Intertidal rock platform important habitat for flora and fauna	
Map sheets	NZ Topo 50 BD 43 Ruakokore	Chart Number NZ 542
Segments:		
At Risk Resources		
<ul style="list-style-type: none"> • Intertidal areas are identified in the Regional Coastal Plan as areas of significant conservation/cultural value • Cultural sites – Kaimoana 		
Notes		
<ul style="list-style-type: none"> • Where possible, oil should be prevented entering the sensitive areas. Prevention of oil reaching the platforms may best be achieved by the use of dispersants offshore • These platforms would trap any oil that is washed onto them in the pools formed by the platforms • Limited communications 		
Access		
Road access to the sites is via State Highway 35 as indicated on the topographical map. The nearest boat launching ramp is Waihou Bay.		

Preferred Response Option Matrix

	Most preferred	Least preferred	Feasibility
Containment and Recovery	High		Shoreline not conducive to this
On water Recovery	Medium		Logistics an issue
Dispersant Application	High	Requires escalation to Tier 3 and MNZ approval	Off-shore use good option
Shoreline Clean-up	High		Rocky tidal foreshore area
Natural Recovery	Medium		Natural recovery may be required due to high intensity coastline










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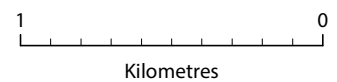


INSET

LEGEND

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

SITE 64 Oruaiti and Waikanapanapa Oil Spill Management Plan



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Site 65	Whangaparaoa River	Risk ranking: 3
DESCRIPTION		
This site comprises bar built estuary with a mobile mouth. A sandbar encloses areas of significant salt marsh 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		
<ul style="list-style-type: none"> • 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		
<ul style="list-style-type: none"> • 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		
<ul style="list-style-type: none"> • Limit the oil entering the salt marsh 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 		

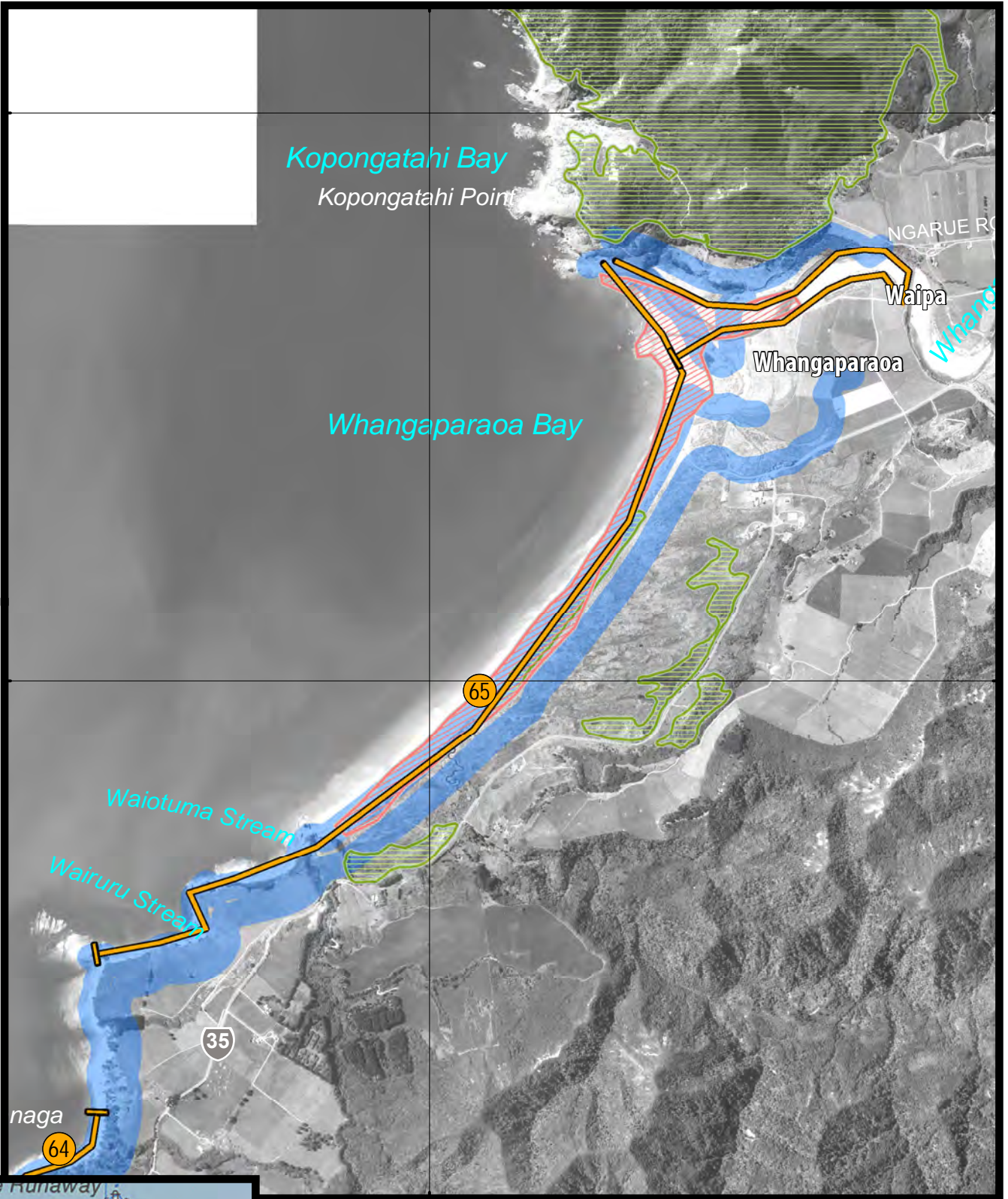
Access

Access to the entrance of the estuary is via State Highway 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 clean up options but labour intensive, pre-clean required
Natural Recovery	Medium		Can be a high intensive coastline, suitable to some natural recovery



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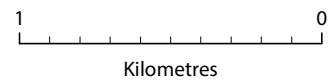
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LEGEND

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

SITE 65 Whangaparaoa River Oil Spill Management Plan



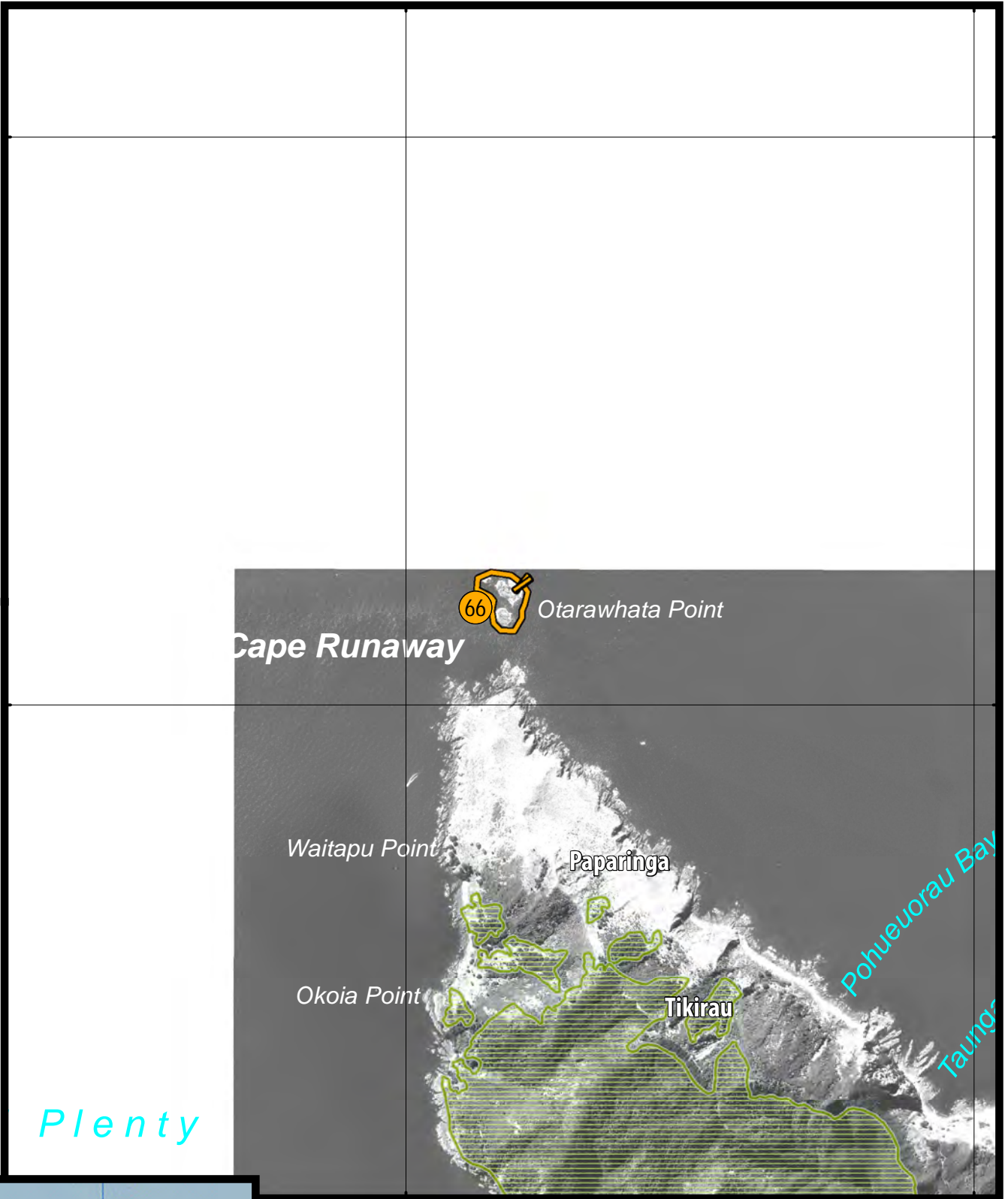
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Site 66	Otarawhata Island	Risk ranking: 3	
DESCRIPTION This small island is located just off the tip of Cape Runaway.			
Foreshore type	Exposed rocky foreshore.		
Map sheets	NZTopo 50 BD 43 Ruakokore	Chart Number NZ 542	
Segments:			
At Risk Resources <ul style="list-style-type: none"> • Special wildlife values • White fronted tern nesting season, which is from August to January 			
Notes <ul style="list-style-type: none"> • Limited communications 			
Actions <ul style="list-style-type: none"> • Activation of oiled wildlife response collection teams if required 			
Access Via boat. There are boat launching facilities at Waihou Bay.			

Preferred Response Option Matrix

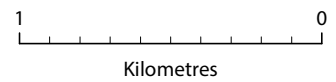
	Most preferred	Least preferred	Feasibility
Containment and Recovery	Low		Not possible due to location
On water Recovery	Low		Logistic and weather a negative
Dispersant Application	High	Requires escalation to Tier 3 and MNZ approval	Use dispersant guidelines but good possibilities for this option
Shoreline 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 Accessways
-  Area Sensitive to Coastal Hazards
-  Area of Significant Conservational Value

SITE 66 Otarawhata Island Oil Spill Management Plan



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Site 67	Whakaari (White Island)/ Volkner Rocks	Risk ranking: 1
DESCRIPTION		
White Island/Whakaari 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.		
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		
<ul style="list-style-type: none"> • 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		
<ul style="list-style-type: none"> • 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 but about 10,000 people visit the island a year with tourism operators. Marine radio channel 81 and cell phones provide communication to the mainland.		

Access

Owner's "official guardians": (The Buttle family who own the island have appointed the Tait's as their agents. This includes access permission).

For current Volcano Status contact GNS:

- GNS Science, Wairakei, 07 3748211
- Brad Scott (for general information) 0274447246
- Duty Scientist (for volcano status) 07 3748211

Primary tourist operators are:

- PeeJay White Island Tours: Owners Ngati Awa Group Holdings, www.whiteisland.co.nz, 15 Strand East, Whakatane
- Vulcan Helicopters: Owner/Operators Mark and Anna Law with partners Marcus and Lucy Dye of Whakatane; 07 308 4188, info@vulcanheli.co.nz

Volcanic Air Safaris: Owner/Operators Dorien Vroom and Phill Barclay, Rotorua, 07 348-9984, www.volcanicair.co.nz

- Helipro: Operations Manager Tim Barrow, Rotorua 07 357 2512, roturua@helipro.co.nz

The main landing used by PeeJay Tours 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 the PeeJay boats is via helicopter that land 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.

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		Limited access and steep rocky shores
Natural Recovery	Medium		High energy coastal environment but refer NEBA

White Island/Whakaari contingency planning for Operation Astrolabe

Notes compiled by Harry Keys, Conservation Analyst, Department of Conservation Turangi

25 October 2011

DOCDM-844641

Summary

White Island/Whakaari lies 48 kms off New Zealand's Bay of Plenty coastline. It is 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. Despite the island being volcanic, the risks to people involved would mainly be around small boat operations along the coast, and if necessary access to it and rockfall from the slopes above. Marine radio channel 81 and cell phones provide communication to the mainland. Large numbers of seabirds breed on the island and the gannet population there is one of the largest in the world. The island is privately owned but about 10,000 people visit the island a year with tourism operators.

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Summary

Contacts

General information

Shoreline types

Access

Hazards and Safety plans

Wildlife

Valued amenity areas

Ownership and cultural value

Camping areas

Communications

Contacts for island

- 1 Owner's "official guardians": Peter and Jenny Tait, 07 3089588. (The Buttle family who own the island have appointed the Tait's as their agents. This includes access permission).
- 2 Main tourist operators:
 - PeeJay White Island Tours: Owners Peter and Jenny Tait, 07 3089588, www.whiteisland.co.nz, 15 Strand East, Whakatane
 - Vulcan Helicopters: Owner/Operators Mark and Anna Law with partners Marcus and Lucy Dye of Whakatane; 07 308 4188, info@vulcanheli.co.nz
 - Volcanic Air Safaris: Owner/Operators Dorien Vroom and Phill Barclay, Rotorua, 07 348-9984, www.volcanicair.co.nz
 - Helipro: Operations Manager Tim Barrow, **Rotorua** 07 357 2512, rotorua@helipro.co.nz
- 3 GNS Science, Wairakei, 07 3748211
 - Brad Scott (for general information) 0274447246
 - Duty Scientist (for volcano status) 07 3748211

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

White Island (or Whakaari) lies 48 kms off New Zealand's Bay of Plenty coastline. It is exposed to ocean and weather conditions but small boats can obtain reasonable shelter in the lee of the island.

This active volcano and private scenic reserve is accessible by boat and helicopter. It is unique in that visitors to the island can walk right inside its main crater just above sea level, with a minimum of physical effort and without undue risk.

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

The main landing used by PeeJay Tours 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.

Most human activity on the island involves tourism, although volcano monitoring visits by GNS scientists occur monthly. Access other than by the PeeJay boats is via helicopter. The land 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.

Map copied from DOC_Sector_2_White



Hazards and safety plans

The main hazards relevant to Operation Astrolabe 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). Volcanic hazards are not significant at present outside the crater area.

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. 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 current volcanic Alert Level is 1 (signs of current activity) as it has been for some years, following the quietening down after the last eruption in March to September 2000 and a significant earthquake in 2008.

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 camping or other extensive 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*).*



Valued amenity areas

The areas where tourists land is the highest valued amenity coastal area at Crater (Awapuaia) Bay on the SSE coast. Most days, PeeJay Tours visit this area. More than 10,000 people to visit White Island every year.

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

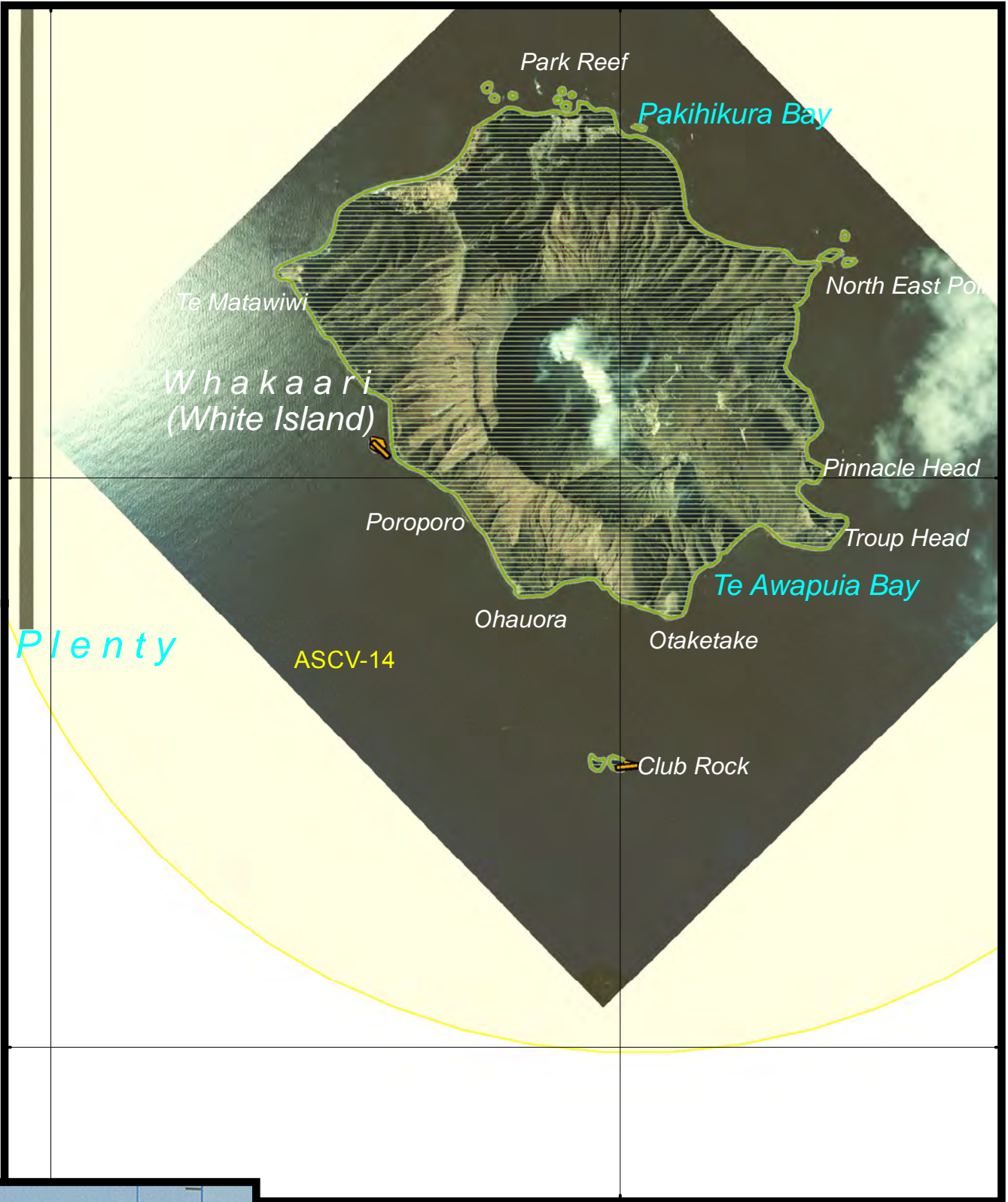
Acknowledgements

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



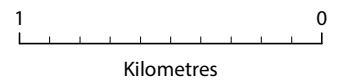
INSET

LEGEND

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

SITE 67 Whakaari (White Island)

Oil Spill Management Plan



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