Moutohorā (Whale Island) Research Strategy

Technical Report Series 5

Department of Conservation
Te Papa Atawhai

Moutohorā (Whale Island) Research Strategy

Technical report series 5

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Published by
Department of Conservation
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This report may be cited as: Christensen, B.R. 2012: Moutohorā (Whale Island) Research Strategy. *Technical Report Series 5*. East Coast Bay of Plenty Conservancy, Department of Conservation, Rotorua.

ISBN (Hard copy): 978-0-478-14946-3
ISBN (Web PDF): 978-0-478-14947-0
ISSN (Print): 1176-2764
ISSN (Online): 1176-2772

This report was prepared for publication by the Conservation Support Supervisor / Conservation Analyst, East Coast Bay of Plenty Conservancy. Publication was approved by the Conservation Support Manager, East Coast Bay of Plenty Conservancy, Department of Conservation, Rotorua, New Zealand.

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RAETIHI KĀWATAWATA-KŌANGIANGI PĀ: ***(The Summit of gentle breezes)***

Ka pōwhiri a Raetihi Kāwatawata-Kōangiangi,	***The Ancient Pā of gentle breezes beckons in welcome***
Ka karanga ngā ngaru whatiwhati	***Accompanied by the call of the pounding surf***
ō Te Moana-nui-ā-Toi,	***Of the mighty ocean of Toi***
Ka waiata mōteatea ngā	***The Pohutukawa of Moutohorā sings the lament***
Pohutukawa ō Moutohora	***Of the Ancient ones, and***
Ki tewhai-ao, ki te ao mārama	***Behold there is enlightenment***

Foreword

Kei te mihi ake ki tēnei kaupapa whakahirahira te **"Rautaki Mahere Rangahau ki Moutohorā"** e ngākaunui nei te Tapatoru ā Toi, Ngāti Awa, me Te Papa Atawhai ki te whakakikokiko i "Te Tāpui Tokotoru" me ōna kaupeka hei arataki i te hunga e manako ana ki te rangahau i ngā taonga koiora me ngā taonga tuku iho ō Moutohorā ki te whaiao, ki te ao mārama.

It is with gratitude and appreciation that I take the opportunity on behalf of "Te Tapatoru ā Toi" to acknowledge and applaud the efforts of those who contributed to the establishment of this important document especially the author Brendon Christensen representing the East Coast Bay of Plenty Conservancy, The Department of Conservation and the contribution provided by Ngāti Awa and Te Tapatoru ā Toi.

This document will enhance "Te Tāpui Tokotoru" *(Conservation Management Plan)* regarding the desire to increase scientific knowledge of Moutohorā ecosystems and will also encapsulate the key signposts and navigational aids that will provide direction for researchers to address;

- Ngāti Awa's traditional values according to the historical and contemporary practices of its culture which is considered as a key component of Moutohorā biological diversity
- The importance of protecting the mauri (spiritual and life giving essence) of the environment, and the species on Moutohorā.
- The physical and spiritual safety of researchers
- The alignment and acknowledgement of Ngāti Awa kawa and tikanga (*traditional rituals and rules*)
- The alignment and acknowledgement of New Zealand *(Ao-tea-roa)* legislative imperatives
- The importance and sanctity of research, and the development of appropriate and sustainable conservation management.

Moutohorā has an extensive contemporary history of research, with a large number of projects completed, and well over fifty published and unpublished reports. By following this strategy, researchers will be making a tangible contribution towards the conservation of ecological, cultural and scientific knowledge of Moutohorā both now and into the future.

Te Kei Merito

Chair, Te Tapatoru ā Toi

1. Introduction

Moutohorā (Whale Island) Wildlife Management Reserve is managed by the Te Tapatoru ā Toi, a Joint Management Committee with the Treaty Partners, Ngati Awa and the Department of Conservation (DOC) (DOC 2008). The island itself is private land owned by Ngati Awa. Operational delivery actions, such as biosecurity, track and facilities maintenance, weed control, threatened species recovery, is done primarily by the Gisborne/Whakatane Area Office, East Coast Bay of Plenty Conservancy, DOC.

The island (Moutohorā) has had a long history of conservation research, and continues to offer opportunities in a variety of research areas. A bibliography on the island's conservation management history is currently in preparation.

Research on or about Moutohorā is encouraged, especially on key aspects of conservation that would benefit management operations for the island, surrounding waters and its biota. This strategy outlines the purpose, process, documentation, and logistical issues for external researchers interested in pursuing research on the island. This is a 'living document', in that parts of this strategy, such as the identified research needs, research outputs and current research are constantly being updated. In addition, the processes are reviewed on an annual basis. It will be published on a three-yearly basis.

1.1 SITE

Moutohorā (also known as Whale Island) lies approximately 7km off the Bay of Plenty coastline, 9km offshore from the mouth of the Whakatane River and about 10km from Whakatane (Fig. 1.). The island is approximately 143ha in size, with an additional foreshore area of 78 ha approx. Its high point (Motu Harapaki) is 353m above sea level (DOC 1999).

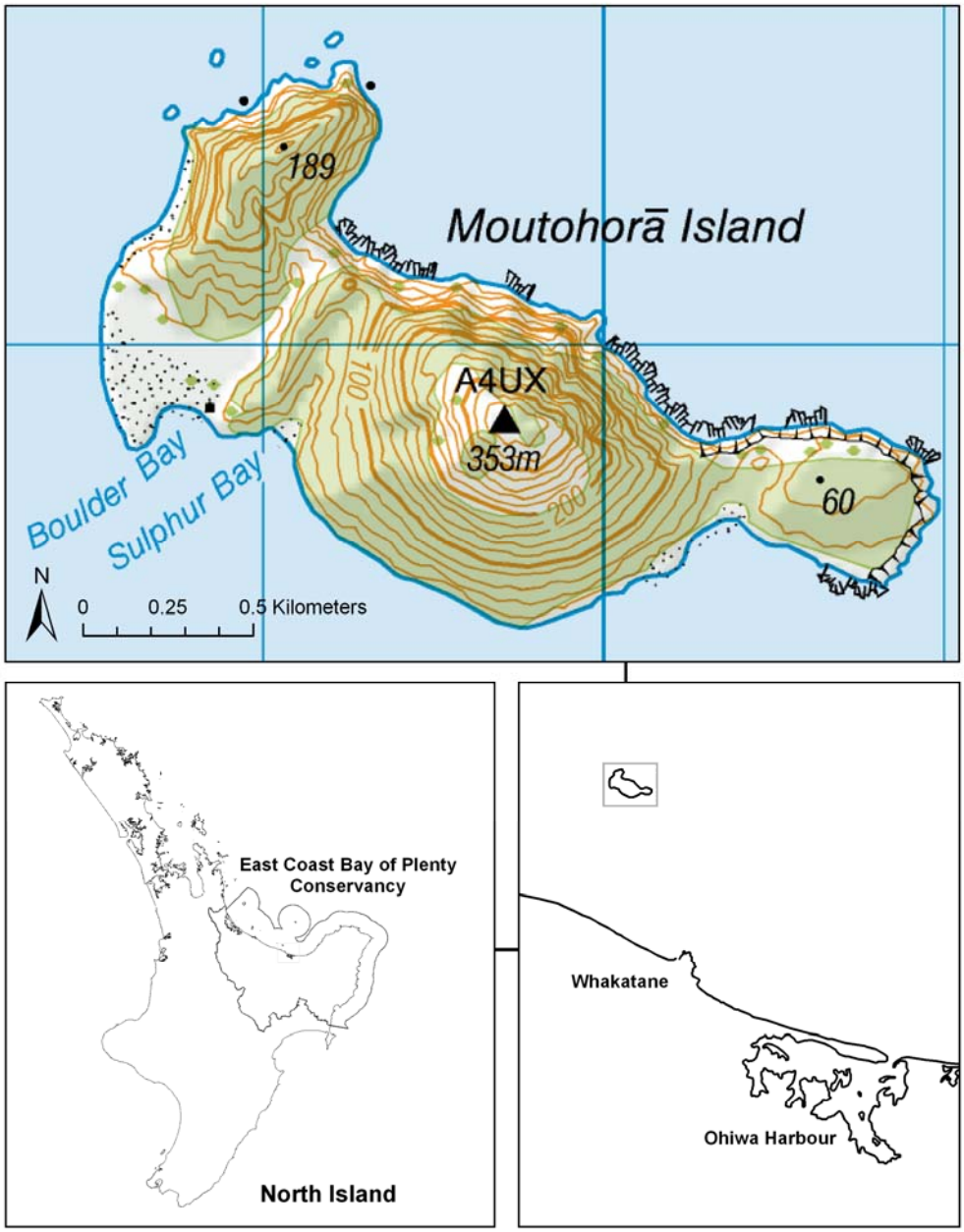

Figure 1. Location of Moutohorā (Whale Island), Bay of Plenty. Source NZMS Topo50 1:50 000 scale map series.

1.2 LEGAL STATUS

Moutohorā and its foreshore is classified as a Government Purpose Wildlife Management Reserve pursuant to the Reserves Act 1977. The island was gazetted as a Wildlife Refuge in 1984 pursuant to the Wildlife Act 1953. It was also gazetted as a Wildlife Management Reserve in 1991 and the foreshore in 2009. As of 27 April 2012, the Wildlife Refuge classification has been revoked, though the Wildlife Management Reserve status remains. The primary purpose of the reserve is for wildlife management, such as to;

- Protect wildlife in the reserve, and to
- Provide wildlife habitat.

As the island has this reserve status, all research requires a Department of Conservation research permit.

2. Purpose of this research strategy

The purpose of this research strategy is to provide a specific guide to external researchers for study on Moutohorā. It outlines the process for research proposal applications, approvals and permitting. It also particularly promotes research important and useful for the management of conservation of the island, its surrounding waters and biota.

2.1 TE TĀPUI TOKOTORU DRAFT CONSERVATION MANAGEMENT PLAN

This statutory document provides overall direction of management including research on the island. The key objectives and policies pertinent to research are stated below;

Te Tāpui Tokotoru Draft Conservation Management Plan – Alignment

4.11 Objectives for Moutohorā Wildlife Management Reserve

…

4. To increase scientific knowledge of the island's ecosystem.
   - Provides history (and chronology) of research and management work
   - Tracking of unpublished work, e.g. reports on keys events: fires, earthquakes, etc.
   - Provides a basis for future research strategy. Will limit impact on island ecosystem, by identifying key research needs and approaches, i.e. "does not reinvent the wheel".

...

7. To increase public understanding of the island's natural and historical values
   - As a published work, this is the detailed account of what has occurred on the island [to date]. This will be sent out to libraries and key groups.

Page 14.

4.12 Policies for Moutohorā Wildlife Management Reserve

…

5. Will develop an appropriate research strategy and methodology
   - Provides and initial basis to determine research needs, methodology and strategy.

…

10. Will re-establish and restore cultural sites and practices where appropriate, and where consistent with legislation and conservation values.
    - Provides an initial understanding of the detail of conservation values to all parties.

…

16. Will establish concessionaire standards relating to interpretation and education.
    - Provides a key resource for concessionaires on history of conservation management on the island and the island's ecosystem.'

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2.2 RESEARCH APPROACH

Research is encouraged on Moutohorā, as directed by the CMP and the DOC Island Strategy (DOC 2010). All research proposals will be evaluated (see Appendix 9.2 & 9.3) in terms of their potential impact on the island ecosystems and biota. Research that may have adverse effects (such as undue destructive or negative impacts) may be declined on such basis.

A relatively large body of research has occurred on Moutohorā to date, e.g. long term studies of the grey-faced petrel population. While such repeated and expanded investigations are likely to continue into the future, research proposals that '*reinvent the wheel*' in terms of conservation management or that have limited significance in improving our baseline knowledge may not be successful in getting approval.

All researchers, whether past, present or future are encouraged to complete and publish their work. Tracking the status of past and current research outputs occurs annually by the Conservancy Biodiversity Supervisor / Conservation Analyst (or delegated DOC employee).

2.2.1 Supporting Documents for Researchers

Three sets of documents that can provide additional and specific guidance or support to researchers in their applications and investigations are listed below;

Researcher Guidelines

This set of guidelines was established to minimize risks to researchers, the public, DOC structures and facilities, indigenous fauna and flora, and sites within the East Coast Bay of Plenty Conservancy from any research activity (Christensen 2012). It notes that as Te Tapatoru ā Toi meets once every three months, permit applications should be placed well in advance. In addition it identifies the behaviours that researchers are expected to adhere to. It is available either from the Conservancy, Area Office (contact the Programme Manager Biodiversity) or from the DOC Research & Collection Permit webpage:
http://www.doc.govt.nz/about-doc/concessions-and-permits/research-collection-and-wildlife-permits/

Inappropriate behaviours, actions and impacts while on the island will result in response from the Te Tapatoru ā Toi and the Department (see section 3.4 Research Permit Conditions – that has an outline of such responses).

East Coast Bay of Plenty Conservancy Science & Research Prospectus

The ECBOP Conservancy's science and research prospectus lists currently identified (although not active) science and research needs (Christensen 2011). The prospectus outlines key research questions for the Conservancy. These questions address Conservancy objectives and researchers are encouraged to view these. This prospectus is available on the DOC Research & Collection Permit (ECBOP Conservancy science and research prospectus) webpage:
http://www.doc.govt.nz/publications/about-doc/concessions-and-permits/ecbop-conservancy-science-and-research-prospectus/

Moutohorā (Whale Island) Bibliography

A bibliography is currently in preparation and lists articles, primarily abstracts and summaries, with some annotated papers both published and unpublished, scientific and popular, in print and other media – relating to the ecology, management, and history of Moutohorā. This work will be added to the Conservancy website during 2012 and specific information is available upon request to the Conservancy.

3. Research: criteria, evaluation and application process

3.1 RESEARCH EVALUATION

All research proposals are vetted, primarily for risk (impact on species, ecosystems, cultural and historic sites, affect on visitors, health & safety, etc), and also for conservation importance by Te Tapatoru ā Toi and the Department of Conservation. Special conditions will be applied to all permits as appropriate, for example;

- "copies of all research outputs, also research data and information should be forwarded to DOC & Te Tapatoru ā Toi, as this can improve operational conservation knowledge and management."

3.2 RESEARCH APPLICATION PROCESS

All research will require a permit (pursuant to the Wildlife Act 1953, Reserves Act 1977 and/or Conservation Act 1987). Research applications are approved by both Te Tapatoru ā Toi and DOC. Researchers are strongly encouraged to apply for permits well in advance (see Section 2.2.1 Researcher Guidelines). All permits will incur a cost for processing, although depending on the nature and extent of the research the DOC costs may at times be waived. The following diagram presents the research application process (Figure. 2). Communication between the applicant and the three groups (i.e. including Ngati Awa) will occur at all stages of the process as required.

	Department of Conservation[1]	**Te Tapatoru ā Toi** (Joint Management Committee)	**Ngati Awa** (Environment Ngati Awa)
Stage		Note: Meets three times per year	
Pre-Application	Upon contact, free advice on permit requirements to potential applicants is available. DOC will inform Te Tapatoru ā Toi and Ngati Awa of interest.	Upon contact, Te Tapatoru ā Toi will inform DOC and Ngati Awa of interest.	Upon contact, Environment Ngati Awa will inform Te Tapatoru ā Toi and DOC of interest.
	Decision made on whether the Application is Low or High Impact according to DOC Criteria[1, 2]		Applicant to consult with Ngati Awa if the permit is a High Impact
Application & research[3] proposal received	Application is classified as above. DOC will forward information to Te Tapatoru ā Toi and Ngati Awa.	Application is considered.	Application is considered.
Further information on research	Information may be required to enable the decision-maker to consider the effects of the application.	If Te Tapatoru ā Toi do not support and approve the research, the research application will be declined.	Environment Ngati Awa may require further information.
Draft report & permit	A draft report and draft permit with attached research proposal and approval from Te Tapatoru ā Toi (if available) are forwarded to the decision-maker.		
Decision-making	A decision is made on the application by a delegated decision-maker, either approved or declined.		Decision sent by DOC to Ngati Awa.
Documentation	The permit is sent to the applicant. Signed and witnessed copies are forwarded back to DOC.		DOC to send final copy of permit to Ngati Awa.

Figure 2. Research Application Process

[1] Source: DOC Research, Collection and Wildlife Act Permitting Standard Operating Procedure Page x.

[2] For current criteria refer to: http://www.doc.govt.nz/about-doc/concessions-and-permits/research-collection-and-wildlife-permits/high-vs-low-impact-proposals/, with criteria as of 1/07/2011 listed in the appendix. The DOC processes; Low Impact process will take on average approx. five working days, whereas the High Impact process will take approximately six weeks. Applicants should note that Te Tapatoru a Toi meets only three times per year, and that early contact is vital for research permits to be successful.

[3] This includes an update of current research permits, i.e. when re-applying for a permit.

Direct consultation with Ngati Awa by the researcher is expected. Ngati Awa have indicated an interest in hearing and consulting with interested researchers directly. DOC can support or represent researchers in terms of iwi consultation if the research is of high impact. The high impact permitting process will take at least six weeks upon receipt of all key information, whereas low impact permits will take approximate five days to process (DOC Research, Collection and Wildlife Act Permitting Standard Operating Procedure).

Te Tapatoru ā Toi (Joint Management Committee):
Research applications for Moutohorā (Whale Island), and also Tauwhare Pā and Ōhope Scenic Reserve need to be approved by Te Tapatoru ā Toi (Joint Management Committee). Te Tapatoru ā Toi meets once every three months, so a lead time of over four months is required. Te Tapatoru ā Toi contacts and Research application forms can be sourced from:

Ranger (Community Relations)
Ph (07) 308 7079, (06) 869 0460, or (07) 315 1001. Email: whakatanefc@doc.govt.nz; gisbornewhakatane-ao@doc.govt.nz; opotiki-ao@doc.govt.nz
1/100 Valley Road, Whakatane Field Centre, Department of Conservation, Whakatane 3194

DOC – documents:
The DOC research and collection, and wildlife permit application forms and process are found on DOC website, on the following webpage; http://www.doc.govt.nz/about-doc/concessions-and-permits/research-collection-and-wildlife-permits/

Options may be available for some funding support and/or dovetailing additional research efforts with the Department's own research and management projects. Logistical issues including quarantine and transport support are listed in Section 6[4].

[4] Contact with the DOC Gisborne/Whakatane Area Office for Operational support is essential. Lead contact is the Programme Manager Biodiversity Assets, Ph: 06 869 0460, 63 Carnarvon Street, Gisborne 4010.

3.3 RESEARCH PERMIT CONDITIONS

Both standard and special conditions will be added to all research permits. Examples of 'Special conditions' are;

- If archaeological, historical and cultural sites or human remains are found, the Permit Holder is to stop work immediately and report the find to the relevant Area Office Manager.
- The Permit Holder must adhere to current biosecurity and quarantine protocols set by the Department to prevent the spread of pests, diseases or pathogens.
- The Permit Holder shall forward an electronic copy of the raw data, meta-data, research findings, reports and publications to the Department of Conservation (whakatanefc@doc.govt.nz; gisbornewhakatane-ao@doc.govt.nz; opotiki-ao@doc.govt.nz). Reports and/or publications will be distributed to DOC staff, Te Tapatoru ā Toi and Ngati Awa and also filed.

Offences, inappropriate behaviours, actions and impact (pursuant to the Wildlife Act 1953, Reserves Act 1977, Conservation Act 1987, or the Historic Places Act 1993 on the island's biota, ecosystems and sites by researchers or people in their parties will have cause for Te Tapatoru ā Toi and the department to respond. Such response may include and not be limited to;

- Research permits may be rendered void, and researchers requested to stop all work, and leave the island. Note: All research permits are listed on a National database, and voiding of the permit may affect future permit approvals for the researcher and/or their employers throughout the country.
- The researcher/s managers and/or their employers will be contacted and be requested to make mitigation towards any rehabilitation efforts and costs. The DOC Chief Scientist will be contacted to ensure that due process occurs.

4. Identified research needs by portfolio

The Department has identified the following research needs that are of particular interest to our conservation management operations. The research needs are arranged into five research portfolios, following the Department of Conservation (2001; 2002; 2003): Science Counts! National Strategic Science Research Portfolios, Programmes. These research needs are also divided into Conservation Management Strategy (CMS) 'places', although most would come primarily under 'Islands', and also the occasional 'Volcanic & Geothermal' projects. Annual updates for the Conservancy, including Moutohorā have been listed in the Research Prospectuses, as outlined in Christensen (2009; 2010; 2011). The majority of the aquatic protection and restoration issues are identified from the Marine Functional Strategy & Tactical Plan[5], and while not necessarily under the administration of the Department or Te Tapatoru ā Toi (and hence not requiring a research permit) are included here for inclusive comprehensive purposes. Some research needs have been identified in previous (DOC 1999) and current Conservation Management Plans (CMP). The current Tāpui Tokotoru CMP identifies increasing scientific knowledge of the island's ecosystem as a key objective (see section 2.1).

4.1 AQUATIC PROTECTION & RESTORATION

Currently identified needs:

- Economic and social benefits, and associated marine threatened species, habitat impacts resulting from the sinking of the Boston Seafire ship (October 2008) and associated dive visitors
- Biogenic reefs: development of a GIS layer of biogenic reefs within the coastal margins of the Conservancy
- A description of mobile and sessile biological communities associated with geothermal vents about Moutohorā
- The production of GIS layers of community values and stakeholder interests in the Conservancy such as recreational fishing interests, diving interests and kaimoana gathering areas (Conservancy-wide)
- The spatio-temporal distribution of fur seals and the distribution of breeding (Conservancy-wide)
- The seasonal composition of fur seal diets (Conservancy-wide)

[5] The Marine Functional Strategy – primarily research and Marine Protected Area (MPA) based.

4.2 CONSERVATION ASSESSMENT

Currently identified needs:

- Moutohorā: local climate influence of a re-vegetated island
- LIDAR analysis of Moutohorā (Whale Island) – landscape and vegetation habitat influences
- Mainland vs islands ecosystem processes - what are the limitations of ECBOP islands for threatened species and threatened ecosystem restoration?
- Moutohorā Inventory (information on populations of plants and animals)

4.3 PEOPLE, HISTORY & CONSERVATION

Currently identified needs:

- Ecology of Moutohorā at the time of original human occupation
- Archaeology of the kumara gardens
- Archaeology of the mining history
- Moutohorā marine threatened species and visitor impacts - sinking of the Boston Seafire ship (see Aquatic Protection and Restoration – above)

4.4 SPECIES & ECOSYSTEMS UNDER THREAT

Currently identified needs:

- Mainland vs islands ecosystem processes - what are the most important components (and proportions) missing from different mainland ecosystems (eg seabirds, lizards, weta, pollinators), and what is the impact of this on ecosystems?
- Population monitoring research on Tuatara
- Investigation into the future of the island's North Island brown kiwi population
- Speckled skink ecology: extent, home ranges, habitat requirements, tuatara predation
- Reasons for recruitment failure of *Lepidium oleraceum* (Cooks Scurvy Grass)

4.4.1 Geothermal areas and influences

An increasing theme of interest for the Conservancy is geothermal research. Moutohorā and its surrounding waters have some unique geothermal features. The extent and influence of such features alongside biodiversity protection, historic conservation and visitor management is of specific interest to the conservation management of the island.

- Geothermal impacts on ground nesting seabirds
- Geothermal vents: A description of mobile and sessile biological communities associated with geothermal vents

4.5 TERRESTRIAL RESTORATION & PESTS

Currently identified needs:

- The re-establishment of sooty shearwater and fluttering shearwater populations back onto Moutohorā by the use of audio calling and possible translocations [Both species were breeding there last century (mid 1900's) but were exterminated by cats and rats.]

5. Previous and current research

Appendix 9.1 lists the previous published work on Moutohorā (Whale Island). An expanded bibliography is currently in production and lists the recent conservation management history of the island.

Current research (both internal and external) includes:

- Compilation of the research and conservation management history of the island, including a bibliography of work to date
- Re-measure and analysis of the 1990 Moutohorā Dive Survey Data
- A determination of the vegetation coverage change of Moutohorā (Whale) Island over the last sixty years using aerial photography and GIS analysis
- Grey faced petrel: sustainable harvesting research: Mauriora ki nga kuia-oi-titi - Safe-guarding the grey-faced petrel population *Pterodroma macroptera gouldi* on Moutohorā (Whale Island)
- *Te Hiringa Tangata Ki Te Tai Timu Ki Te Tai Pari*
  - (Facilitating bicultural restoration of coastal forests using seabirds as ecosystem engineers)
  - Oi (grey-faced petrel) population dynamics and the impacts of fisheries interactions on specific meta-populations
- The presence and distribution of *Lepidium oleraceum*
- GeoNet geochemical monitoring programme: gas sampling from Sulphur Bay
- The production of GIS layers of community values and stakeholder interests in the Conservancy such as recreational fishing interests, diving interests and kaimoana gathering areas (Conservancy-wide)
- The population and spatio-temporal distributional response of bottlenose and common dolphins to commercial tourism operations (Conservancy-wide)
- The spatio-temporal distribution of fur seals and the distribution of breeding (Conservancy-wide)
- The seasonal composition of fur seal diets (Conservancy-wide)

6. Logistics & Facilities:

All researchers must refer to and adhere to;

- Guidelines for researchers planning to work on lands administered by the East Coast Bay of Plenty Conservancy
- Permit requirements – Schedule 2: Conditions & Special Conditions
- Moutohorā (Whale Island) biosecurity and quarantine protocols (see Appendix 9.4)
- Moutohorā Historic Guidelines (see Appendix 9.5)

The following general rules are to be followed by all visitors:

- No fires of any kind
- No smoking on the island including within the Ranger Hut
- Overnight stays are only allowed at the Ranger Hut

6.1 RANGER HUT

A Ranger hut is located at the western end of the island, at Boulder Bay. The primary use of this hut is for conservation operational delivery including cultural visits by Ngati Awa. This hut can be used by external researchers subject to availability, although researchers may be required to share with conservation staff and iwi representatives if more than one group is on the island. Cleaning of the hut and associated facilities including the composting toilet is required after any overnight stay. Contact for booking accommodation in the hut is:

Ranger (Community Relations)
Ph (07) 308 7079, (06) 869 0460, or (07) 315 1001. Email:
whakatanefc@doc.govt.nz; gisbornewhakatane-ao@doc.govt.nz;
opotiki-ao@doc.govt.nz
1/100 Valley Road, Whakatane Field Centre, Department of Conservation, Whakatane 3194

6.2 TRANSPORT

Transport to the island is (primarily) by boat. Researchers are to arrange their own boat transport. Helicopter access to the island is prohibited, and is only used for essential conservation management purposes, key research requirements, servicing the telecommunications base or emergencies.

6.3 SITE & BIOSECURITY ISSUES

The following impact and risks are pertinent to all visitors to Moutohorā;

- Cultural sensitivity: Sites such as Raetihi (Pa Hill), and Te Pari Kawau – the boulder field are no entry sites (see Fig. 3). All visitors must observe the tapu nature of Te Pari Kawau and avoid this area.
- Archaeological sites and issues: a large area of the island is considered of high archaeological importance (Fig. 3). Depending on the scope of the research (e.g. ground disturbance), a High Impact permit application and/or concession may be required if any study sites are in these areas. Historic objects including artefacts must not be removed or disturbed (see Appendix 9.5).
- Biosecurity: is a very important consideration for any permit approval. Quarantine measures are rigorous, and all parties visiting the island will go through this procedure (see Appendix 9.4). This is updated on an annual basis, and all researchers are required to follow directions of the Biosecurity Rangers.
- Dogs: are not allowed on the island, with the exception of DOC's certified pest or threatened species dogs. A separate process is required for approving access for certified dogs.
- Seabird nesting areas-burrows: are widespread throughout the island, care is required not to destroy these. If inadvertently a researcher puts a foot through the soil crust, they should put their arm in the hole and ensure that any animal is not buried. This is especially important during winter and summer nesting seasons for petrels and tuatara.
- Threatened species: breed, nest and use the island for resting throughout the year. It is important not to disturb animals especially during the breeding and nesting seasons. In addition, seal colonies often require space for haul-out sites, as well as having a parenting cycle that lasts approximately one year – thus these colonies should be avoided.
- Development: No development is allowed on the island. Any temporary structures will need to go through a separate concessions permit process.
- Destruction (i.e. collection and removal) of any vegetation: is not allowed unless specified in the special conditions of the research permit.
- Collection of any article, sample or substance: is not allowed unless specified in the special conditions of the research permit.

The following key hazards have been identified;

- Fire: No fires are permitted on the island. In addition smoking is not permitted on the island.
- Geothermal sites: Extreme care is required around the geothermal sites.
- Cliff faces: These are often sheer, high (up to 350m), often crumbly and highly dangerous. Extreme care is required if and when near the cliffs.

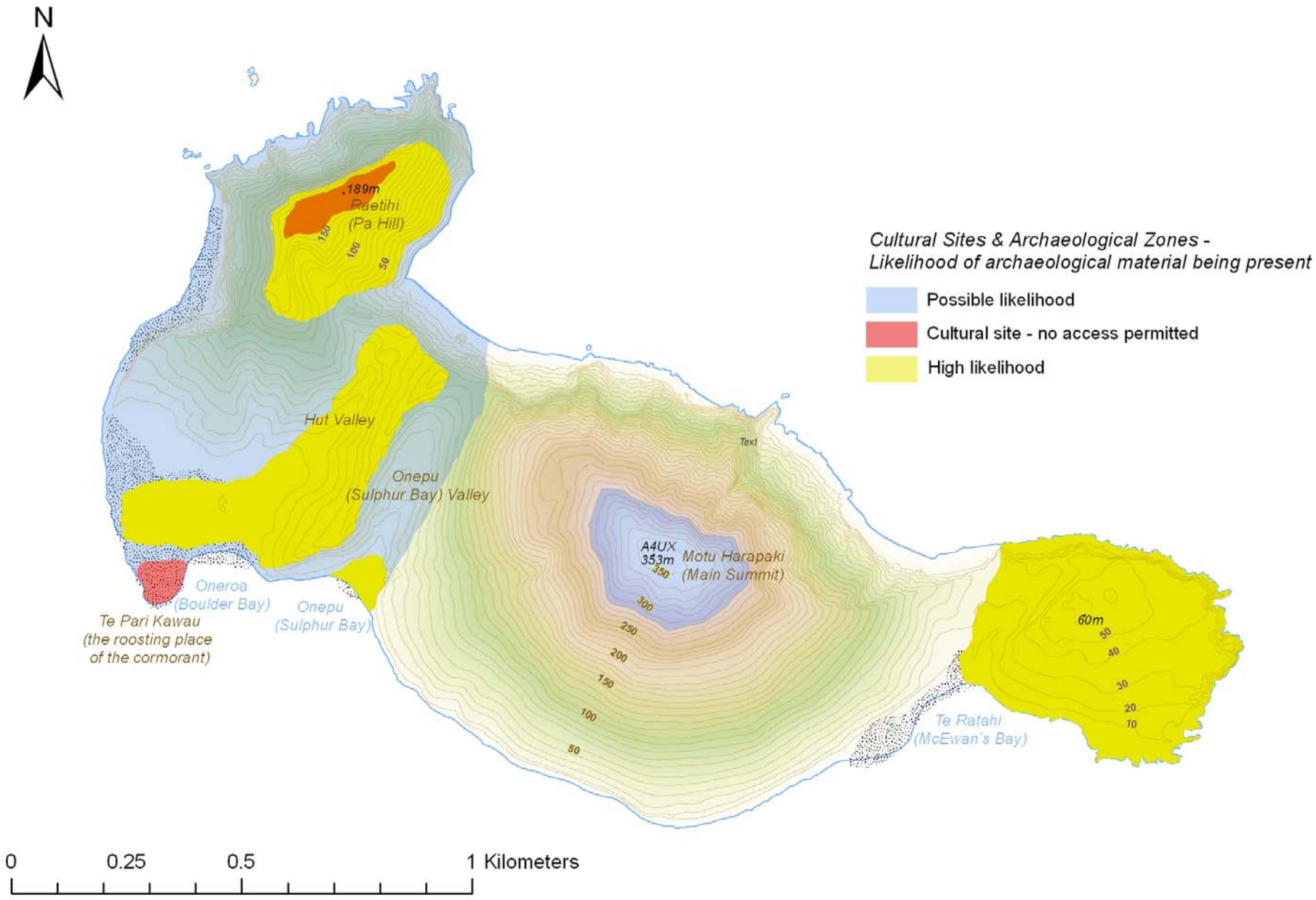

Figure 3. Cultural and archaeological sites on Moutohorā. Shows approximate cultural sites and archaeological zones (adapted from DOC & Te Tapatoru ā Toi nd: Moutohorā Historic Heritage Guidelines).

7. Acknowledgements:

I would like to thank Te Tapatoru ā Toi for their commitment in seeing this document get completed. A special thanks goes to Te Kei Merito for the excellent foreword, and guiding some key directions for this research strategy. I would like to thank Environment Ngati Awa, and especially Beverley Hughes for their input and discussions on research management pertinent to Moutohorā.

I would like to thank particularly the current and previous East Coast Bay of Plenty Conservancy and Gisborne/Whakatane Area staff; of Kim Young, Charlotte Skeet, Keith Owen, Paul Cashmore, Dean Strachan, Helen Neale, Anastacia Kirk, Fiona Hennessey and Andy Bassett for their contribution and advice to this document. Carol West's 2005 New Zealand Subantarctic Islands Research Strategy, was used as an outline for this document. Rob Griffiths of the Rotorua Lakes Area Office kindly created the cover for this document.

I would also like to acknowledge the large amount of work from previous researchers and staff instrumental in developing the previous Conservation Management Plans for the island reserve.

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9. Appendices

9.1 RESEARCH PUBLICATIONS[6]

Anon. 2011: *An Inventory of Archaeological Sites on Moutohorā (Whale Island), Bay of Plenty*. Unpublished report commissioned by Te Runanga o Ngati Awa. Prepared by Southern Pacific Archaeological Research University of Otago. Dunedin.

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9.2 DOC ISLAND STRATEGY: RESEARCH SECTION

"Research is often one of the most intensive activities undertaken on islands, for diverse purposes and by a wide range of researchers. The outcomes of research can have significant benefit to the understanding of island ecosystems, as well as contributing to the broader conservation knowledge-base nationally and globally. Research is essential in order to inventory, measure and improve management outcomes for islands.

Due to the scale and extent of this work, and the fact that island research involves visiting (often for extended periods of time) some of the most vulnerable ecosystems DOC manages, the potential for impact is significant. It is essential that research activity on islands is closely managed to ensure that the benefits outweigh the costs of visiting these reserves. Decisions on whether to allow research are therefore based on the following principles:

- Research undertaken on the island or islands is specific to that place and unable to be conducted on the mainland or an island of lower category.
- The benefits or value to that place (or wider island management programmes) must clearly outweigh the impacts or risks of undertaking the research.
- Risk assessment must be undertaken for each research application (for both external and DOC research). Risks assessed might include: environmental impacts; biosecurity; health and safety implications and the risk of fire.
- Research undertaken must support the management goals for the category of island, or contribute to wider understanding of island ecosystems, or inform global and regional issues that rely upon the special characteristics of that place.
- As part of an independent but related exercise an Island Research Strategy is in development. This strategy will identify the Department's key research themes and priorities (pers comm. Dave Towns, 2007) with the intention of focusing the research undertaken by DOC and other agencies on providing direct support for the key outcomes for island management. A strategy is also currently in place to guide research activities on New Zealand's subantarctic islands (West 2005)."

Page 18. The Island Strategy

9.3 DOC RESEARCH, COLLECTION AND WILDLIFE ACT PERMIT CRITERIA

The purpose of providing the following criteria is to ensure that applications with potentially significant effects are given proper consideration and those activities that will have little or no effect are not subjected to an unnecessarily lengthy process.

The criteria below provides a guide to determine whether the application should be subjected to the low or high impact process. The principle behind these criteria is based on the potential effects of the activity. If the criteria does not cover particular circumstances, then the question is '…is this activity likely to have any significant effects on conservation, historic, cultural or recreational values?' If the answer is 'yes' then a high impact process will be used.

3.1 LOW IMPACT CRITERIA

- The term of the permit is less than five years (including the public/private display of wildlife); And
- The effects of the proposed activity on the species, its habitat or other conservation values are considered to be insignificant; And
- The isolation of any genetic material/DNA does not involve significant and invasive collection methods for wildlife and is for taxonomic classification, ecological or evolutionary study, or diversity estimation purposes only; And
- The material being removed from NZ is for purely taxonomic classification purposes. Please note there are specific special conditions for material being removed from NZ.

3.2 HIGH IMPACT CRITERIA

- The effect of the proposed activity will significantly impact on the species or its habitat, or will have any other potentially significant effects; And/or
- The activity involves disturbance to culturally significant species or involves research of cultural interest. This will be guided by discussions with iwi, and a DOC list. And/or
- The activity involves:
  - Commercial use of the material; or
  - Taking of any sample (incl. DNA) for genetic modification purposes e.g. the creation of a new organism; or
  - Material being removed from NZ (except for purely taxonomic classification purposes); And/or
- The activity involves a nature reserve, or wildlife sanctuary, or a specially protected area of a national park. And/or
- The application or conduct of the activity will generate significant public interest. And/or
- The activity involves significant and invasive collection methods for wildlife. For example:
  - significant adverse effects on the individuals including blood or tissue sampling.
  - killing of the sample (with the exception of non-threatened invertebrates).
  - the removal of any species from their natural habitat (with the exception of non-threatened invertebrates).

Source: DOC Research, Collection and Wildlife Act Permitting SOP, Page 2 & 3.

9.4 DOC QUARANTINE PROCEDURES FOR MOUTOHORĀ

Help keep the islands free of predators, weeds and diseases

The Department of Conservation (DOC) and Ngati Awa jointly manage Moutohorā to protect and enhance it's ecological, historical, cultural, recreational, and educational values. In recent years, a range of threatened native plant and animal species, thought to have previously occurred on the island have been reintroduced. These include tuatara, tieke (Northern saddleback), North Island Brown Kiwi, Cook's scurvy grass and sand pimelia.

One of the greatest threats to the species living on the island is the introduction of plants, animals or diseases that do not naturally occur on the island. One way that these threats can arrive is via human visitors, and their gear, bags and clothing. Rats, mice, insects and diseases that affect birds or reptiles have been shown to be able to be readily transported on, or in gear and equipment moved to islands with people.

To minimise the risk of these threats reaching the island, DOC requires all equipment, supplies and personal gear to go through a quarantine process before leaving the mainland. The quarantine process will occur at the Quarantine Store, old Whakatane Field Centre, 21 Gateway West, Whakatane. A Quarantine Ranger will meet you there and take you through the process. Each individual trip member must complete a Quarantine Self Audit Checklist form (attached). HAVING CLEAN AND WELL ORDERED GEAR WILL SPEED UP THE PROCESS SIGNIFICANTLY. If any gear is thought by the Quarantine Ranger to be of an unacceptable standard it will not be allowed on to the island.

When planned tasks include the handling of native wildlife, any equipment that has been in contact with birds (especially aviary birds, waterfowl, poultry) and/or reptiles, must be disinfected with Trigene™ or Virkon™. All clothing should be freshly laundered and air/sun dried. On no occasion should there be travel from a known or suspected disease outbreak area to an island without seeking specific advice from a recognised expert or a veterinarian.

The following is an example of what will be checked during the quarantine process:

- <u>Packs</u>
  It has been shown that packs are an extremely good way of transporting weed seeds. They often contain numerous flaps, pockets, straps and cavities that are difficult to thoroughly clean. We recommend that the exterior and interior of your pack is vacuumed thoroughly. Straps and zips must be able to be fully closed or tightened. Only non-food items may be packed into packs and day bags.

- <u>Gaiters</u>
  Gaiters and other leg/boot protection devices are often dirty and have seeds embedded in the fabric or Velcro fastenings. All gaiters must be completely clean and free of seeds and dirt.

- Footwear
  Fungal diseases have been shown to be able to be transported on damp footwear. Any soil is also unacceptable. All footwear will be checked by the Quarantine Ranger and if necessary scrubbed with a disinfectant solution. Weed seeds can also be carried on boots and shoes. These are most commonly found attached to laces and in the base of the tongue where it joins the body of the shoe/boot, or in soil embedded in the sole.

- Socks
  Like shoes/boots, weed seeds are commonly found embedded in socks. Your socks must be clean and will be checked by the Quarantine Ranger to ensure they are weed free.

- Rain coats/Jackets
  Weed seeds, leaf litter, vegetation, and insects can be found in jacket pockets, flaps, seams and Velcro fastenings. Thoroughly check that your pockets are clean and empty.

- Equipment
  All additional equipment such as scientific gear, tents, field equipment etc must be thoroughly cleaned and if possible treated with a sterilising solution such as Trigene™, Virkon™ or a bleach solution. Any equipment found to be unclean will not be allowed on the island. Tents will need to be thoroughly checked and cleaned. The quarantine process required for large, bulky items will need to be discussed with the Quarantine Ranger prior to arrival at the quarantine store. Any equipment and materials considered to be high-risk may be subjected to fumigation.

- Clothing
  All clothing must be clean, dry, and free of any organic material. Clothing should be freshly washed just before packing.

- Food Supplies
  Food supplies will need to be repacked into sealed, plastic drums which are provided. Each item, particularly fresh fruit and vegetables, should be checked for insects and be clean of any dirt. Only WASHED root vegetables are allowed. No home grown or ORGANIC produce should be taken, as it very often holds soil and large numbers of invertebrates and their eggs, and is incredibly difficult to quarantine. For leafy vegetables, outside leaves are to be removed. The Quarantine Ranger will oversee this operation.

Once items are checked, they will not be available until on the island. Make sure you have enough warm clothing for the trip to the island as you will not be able to access clothing once the equipment and containers are sealed. All stores and equipment must not be opened until inside the hut on the island.

EN TRANSIT TO THE ISLAND

If any pest is detected during travel to, or on arrival at an island, then the planned visit must not proceed until that pest has been killed and pest free status of the stores or vessel is confirmed by the Trip Leader to the Programme Manager, Biodiversity Threats (mobile: 027 295 7395). Approval to proceed is with the Area Manager.

A voucher specimen with full details should be collected. Trip leaders should be aware that they may be called on to carry out contingency responses in the event of a pest incursion.

QUARANTINE WHILST ON THE ISLAND

All stores and equipment must be unpacked and checked inside the hut immediately after arrival. All doors and windows must be kept closed during this time. Rodent traps must be set whilst the stores are unpacked.

No organic matter is to be buried on the island. All rubbish must be removed from the island including pips from fruit and vegetables e.g. pumpkin, tomato. Any slugs, snails or other invertebrates found on any vegetables must be killed and sealed as rubbish for removal from islands. All containers being returned to the quarantine store must be thoroughly cleaned and checked before entry.

If a pest invasion or incursion is reported, full details are to be recorded and the Programme Manager (Biodiversity Threats) must be notified as soon as possible (phone: 06 869 0493; mobile: 027 295 7395; radio call sign: Gisborne 12).

When leaving the island, check that there are no threatened stowaways among your gear. Geckos and skinks can easily hitch a ride and may not survive on the mainland.

Source: DOC Quarantine Procedures for Moutohorā.

QUARANTINE SELF AUDIT SHEET

Form to be completed prior to departure by each person travelling to the island

Departure Date: / /			**Departure Time: am / pm**
			Departure point:
Name:			**Destination:**
Items being transported	Items have been scrubbed clean of all soil, seeds and vegetation, and have been checked for the presence of rodents and invertebrates. Boxed = in approved rodent proof container Unboxed = loose items or in cardboard boxes or double bagged.		**Date Inspected: / /** **Who inspected?**
	Tick if in compliance	**Inspected by quarantine person**	**Comments**
Pack			
Day bag			
Boots			
Other footwear			
Gaiters			
Socks			
Clothing			
Parka			
Swandri			
Sleeping Bag			
Field equipment (boxed)			
Field equipment (unboxed)			
Food stores (boxed)			
Food stores (unboxed)			
Other			
Any items of extra risk			
SIGNED: Person travelling		SIGNED: Staff member responsible for quarantine	

9.5 MOUTOHORĀ HISTORIC HERITAGE GUIDELINES

This appendix outlines the following guidelines:

Department of Conservation, Te Tapatoru ā Toi. nd: Moutohora Historic Heritage Guidelines. Unpublished report. Gisborne / Whakatane Area Office, Department of Conservation. Gisborne.

Protecting Historic Heritage Places on Moutohorā

There are many Maori cultural and historic places, including archaeological sites, on Moutohorā. There are also archaeological sites of European origin. Buried archaeological deposits with no visible surface evidence probably occur over most of the island.

Moutohorā is of cultural significance to Ngati Awa. Te Pari Kawau (the roosting place of the cormorant) on the boulder bank at wahi tapu (sacred place).

Moutohorā possesses important archaeological values, as sites on the island have the potential to contribute information about a wide range of research questions about the human history of the Bay of Plenty region. Raetihi Pa features a regionally rare use of stone revetting on terraces, and the evidence of stone alignments and revetting at Te Rawhiti is also an unusual features in the Bay of Plenty.

Heritage places and archaeological sites on Moutohorā are found all across the island. They fragile, and cannot be repaired or replaced if they are damaged or destroyed.

All archaeological sites are legally protected by the Historic Places Act 1993.

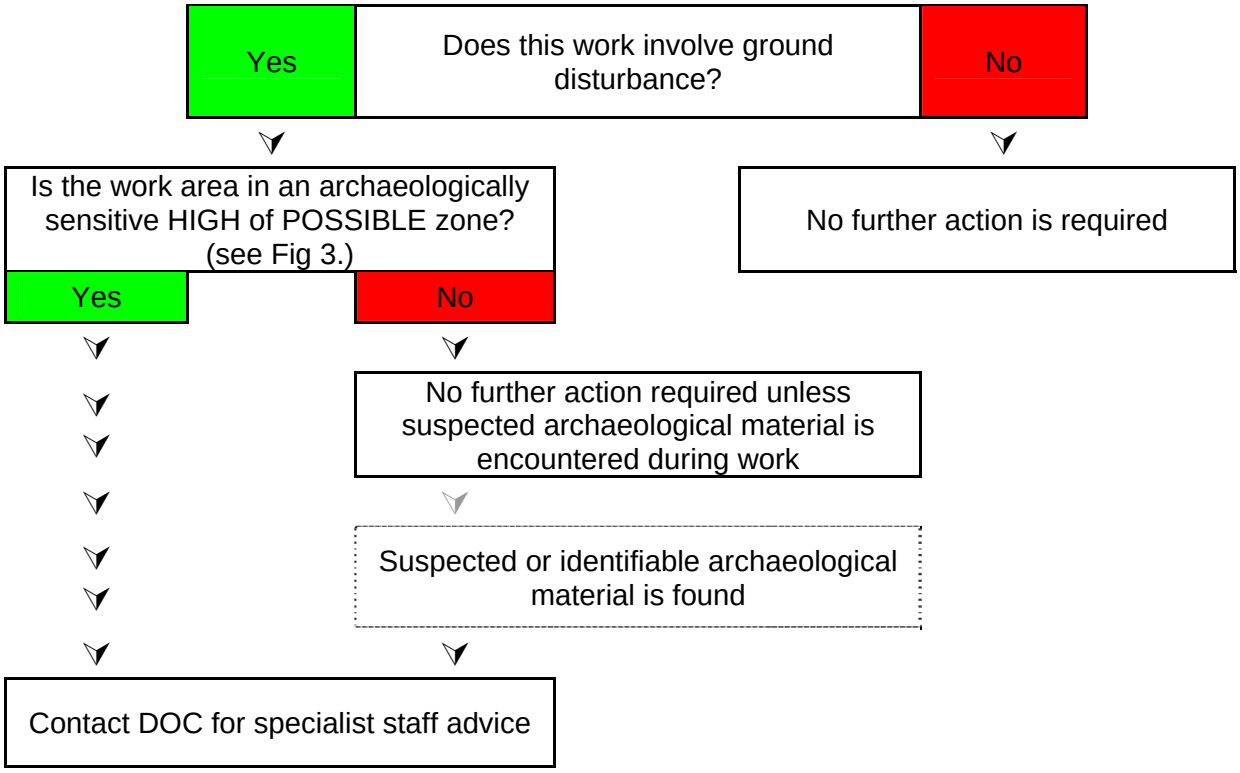
NO ground disturbance on any archaeological sites is permitted without the prior written permission of the NZ Historic Places Trust. Please follow the procedure overleaf.

Historic objects and/or artefacts MUST NOT be removed or disturbed.

NO access to the boulder bank is permitted. All visitors to Moutohorā must observe the tapu nature of Te Pari Kawau and stay away.

Are you planning to do some work on Moutohorā?

Archaeological sites planning procedure:



The one sheet guidelines is available from the Gisborne / Whakatane Area Office:

Ph (07) 308 7079, (06) 869 0460, or (07) 315 1001. Email: whakatanefc@doc.govt.nz; gisbornewhakatane-ao@doc.govt.nz; opotiki-ao@doc.govt.nz

1/100 Valley Road, Whakatane Field Centre, Department of Conservation, Whakatane 3194