



# PUWHEKE

## PUWHEKE PROPOSAL VISION SKETCHBOOK

Prepared for The **Ashley Berrysmith Family Trust**, December 2008 by Boffa Miskell Ltd





PUWHIEKE

# TE WHEKE

the octopus - celebrates wisdom in terms of the ancient teachings of Hawaiiki

An explanation of the symbol is as follows:

- *The head represents the child/family.*
- *Each tentacle represents a dimension that requires and needs certain things to help give sustenance to the whole.*
- *The suckers on each tentacle represent the many facets that exist within each dimension.*
- *The tentacles move out in an infinite direction for sustenance when the octopus moves laterally.*

The tentacles can be intertwined so that there is a mergeance, with no clear cut boundaries. The dimensions need to be understood in relation to each other, and within the context of the whole.

Source: "*Te Wheke, a celebration of infinite wisdom*". Dr Rangimarie Turuki Pere. Illustration by Nancy Nicholson, 1991

# Puwheke

Puwheke is of significance to local people Te Whanau Moana and the significance of its name is told in their stories. Te Whanau Moana ancestor Te Parata came on the Mamaru canoe to the district. The canoe could not enter the Rangaunu harbour because when they reached the entrance, octopus was stretched out there at the mouth of the harbour and they could not get through. Te Parata said to his whanau, 'we'd better paddle to the foot of that mountain'. So Te Parata's canoe turned round and landed beneath the mountain on the seacoast of Karikari.

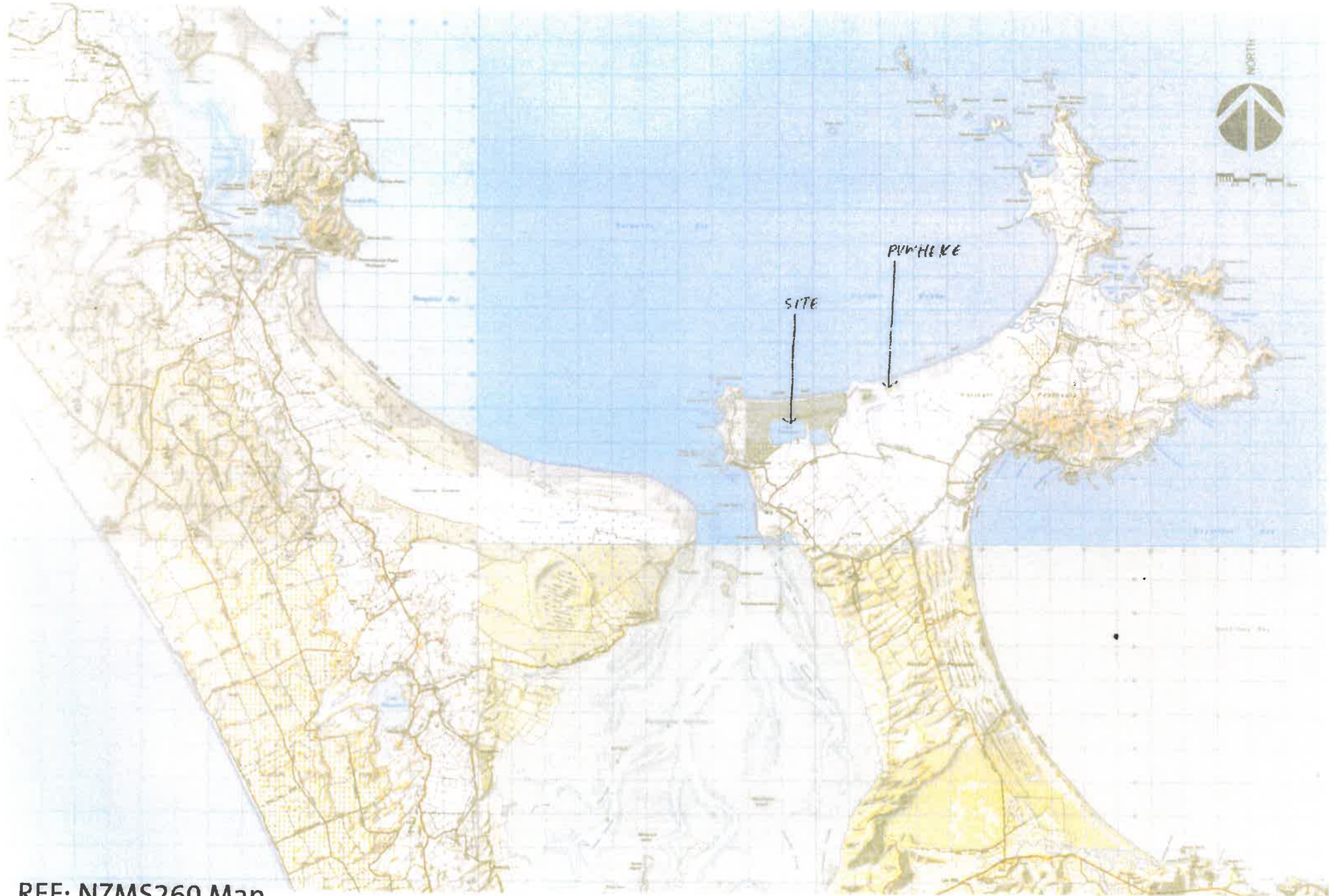
The name of this mountain today is Puwheke. It is from this landing that the saying "Puwheke is the mountain" originates.

McCully Matiu records in "Te Whanau Moana, Nga kaupapa me nga tikanga, Customs and protocols, McCully Matiu and Margaret Mutu, 2003", that Ngati Kahu is very angry at the incorrect place names that have been recorded on maps and wants them corrected.

For Puwheke, its full name is given as Te Pu-o-te-Wheke. The reason it became Puwheke is because it is a hill with the contours of an octopus (Wheke means octopus in Maori). The head of the octopus is on the right hand side, the legs are on the left. It is said that the eyes and pouch of the octopus from can seen from its seaward side. The legs of the octopus are visible in the contours of Puwheke.

Source: "Te Whanau Moana, Nga kaupapa me nga tikanga, Customs and protocols", McCully Matiu and Margaret Mutu, 2003.





REF: NZMS260 Map

rev C 19.12.08

# Puwheke Restoration: The Possibilities

World renowned ecological restoration, conservation and protection project

Inspirational to current and future generations

Educate others

- *School groups etc.*
- *Research: engage with Universities*
- *Through the interactive experience*

Capture the interest, imagination and support of local community

- *Winning the support of key organisations and agencies (Far North District Council, DOC and Northland Regional Council).*
- *Direct involvement of community in planting etc.*
- *Communication to gain support leading to RMA consent processes.*

Move forward with Iwi

- *Obtain support to use the Puwheke Brand*
- *Involve and give back to local iwi*
- *Joint management of Puwheke*

An authentic New Zealand experience

- *Appropriate to place*

A fun, exiting and interactive experience

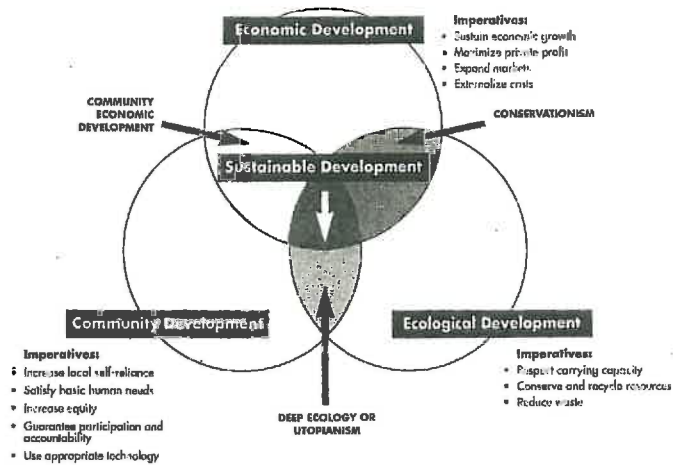
- *Lodge, Dining, Walking, Camping, Canoeing, Cultural Tours, Relaxation.*

Financially sustainable over time

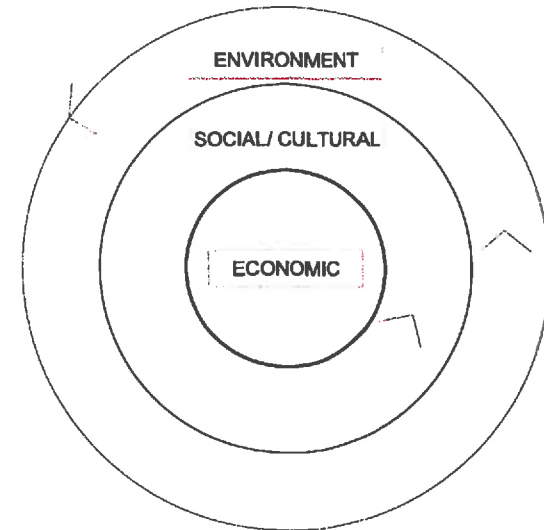
- *Marketing Plan to attract supporters*
- *Raise sufficient seed capital to get started and ongoing funding streams to complete and maintain the project*
- *Based on sound financial model*

Source: "Te Wheke, a celebration of infinite wisdom", Dr Rangimarie Turuki Pere - Illustration by Nancy Nicholson, 1991





Standard sustainability model (three spheres)



Puwheke sustainability model (closed loop)

## Definitions

The opportunity for purchase to create a coastal sanctuary is rare. Puwheke could be a natural setting, connected to wetland and dune habitats, pristine beaches and large areas of regenerating coastal forest.

Puwheke presents both a unique opportunities and responsibilities.

Making this wild place and unspoiled place available to a small number of people and their families could present them with an extraordinary recreational amenity, and the opportunity to protect and enhance New Zealand's unique environmental heritage for future generations.

Restoration –noun 1. the act of restoring; renewal, revival, or reestablishment. 2. the state or fact of being restored. 3. a return of something to a former, original, normal, or unimpaired condition.

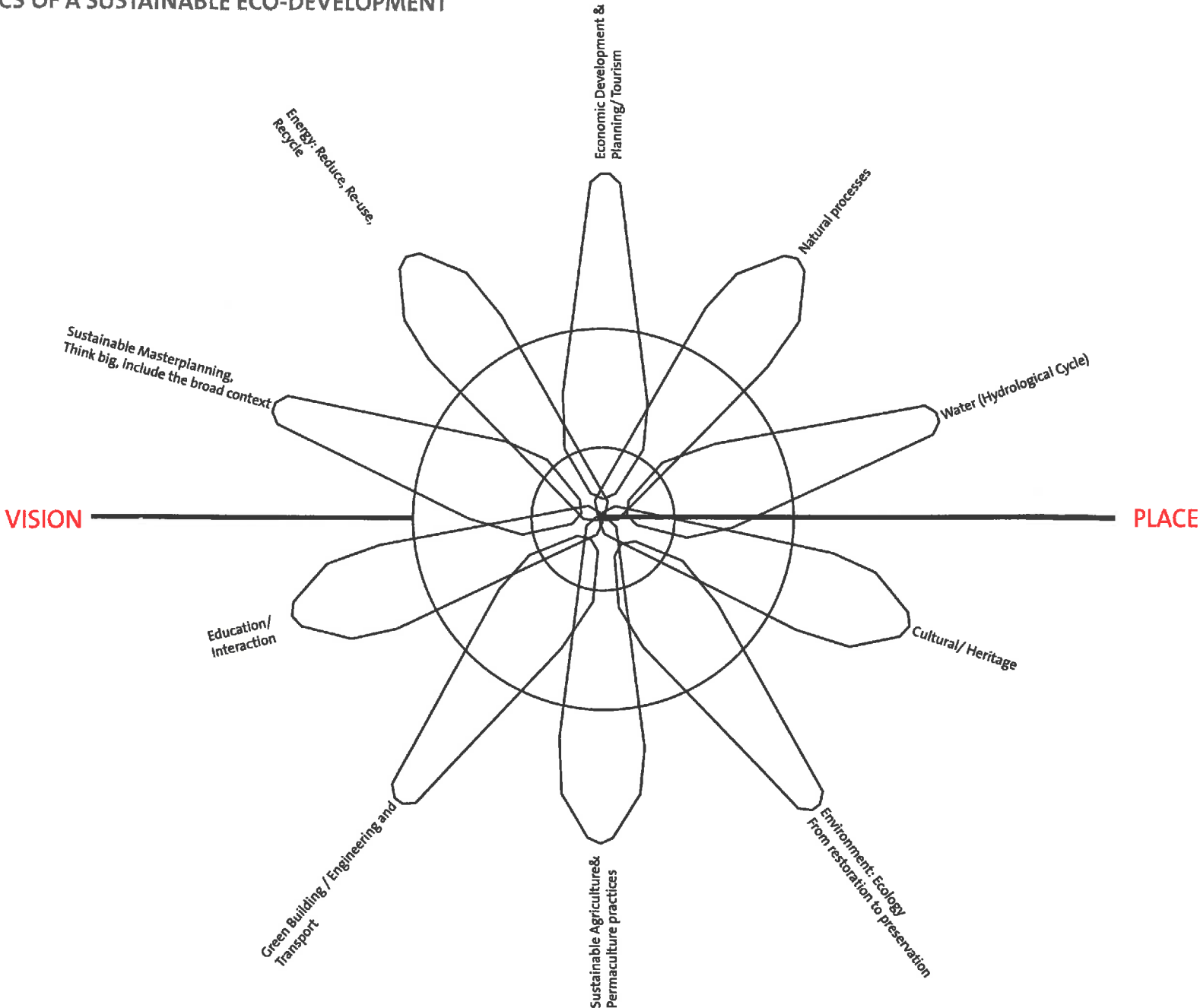
4. restitution of something taken away or lost. 5. something that is restored, as by renovating. 6. a reconstruction or reproduction of an ancient building, extinct animal, or the like, showing it in its original state. 7. a putting back into a former position, dignity, etc.

Sanctuary –noun, plural -aries. 1. a sacred or holy place. 2. Judaism. a. the Biblical tabernacle or the Temple in Jerusalem. b. the holy of holies of these places of worship. 3. an especially holy place in a temple or church. 4. the part of a church around the altar; the chancel. 5. a church or other sacred place where fugitives were formerly entitled to immunity from arrest. 6. immunity afforded by refuge in such a place. 7. any place of refuge; asylum. 8. a tract of land where birds and wildlife, esp. those hunted for sport, can breed and take refuge in safety from hunters.

Legacy noun, plural -cies. 1. Law. a gift of property, esp. personal property, as money, by will; a bequest. 2. anything handed down from the past, as from an ancestor or predecessor: the legacy of ancient Rome. 3. an applicant to or student at a school that was attended by his or her parent. 4. Obsolete. the office, function, or commission of a legate.

Source: <http://dictionary.reference.com>

# CHARACTERISTICS OF A SUSTAINABLE ECO-DEVELOPMENT



**Sustainable Integrated Development**

# Case Studies

As part of suggesting a vision for a purchaser of Puwheke a number of case study examples were investigated. These case study examples are intended to stimulate discussion around what the key aspects of the Puwheke project could be. The following is a list of attributes featured in the case study examples:

- *eco-tourism: ecosystem focused, activities associated with a unique landscape*
- *accommodation, cafe and restaurant facilities*
- *sustainable development: renewable energy production, sustainable usage of resources, recycling of waste, water, architecture and environmental enhancement*
- *projects with similar attributes to the Puwheke site*
- *examples of outdoor activities that could be replicate at the Puwheke project site*



# Couran Cove Resort - GoldCoast, Australia

## SUSTAINABLE FEATURES

Planning - Marine resort and Nature resort in one, Ocean beach camp

Architecture and building - Consistent vernacular over the site, landscape dominates buildings, bushland/ country traditions and heritage architecture, Style and construction match Australia, Eco-cabins, protection of significant trees and vegetation.

Community & Education - Nature school

Ecology and the environment - mosquito management, habitat enhancement, pest control, replanting, on site nursery

Energy Efficiency and Energy Management - solar, wind and LPG

Waste Management - minimisation, recycle, all organic waste compost, vermiculture system

Water - protects dune lakes, recycling, conservation

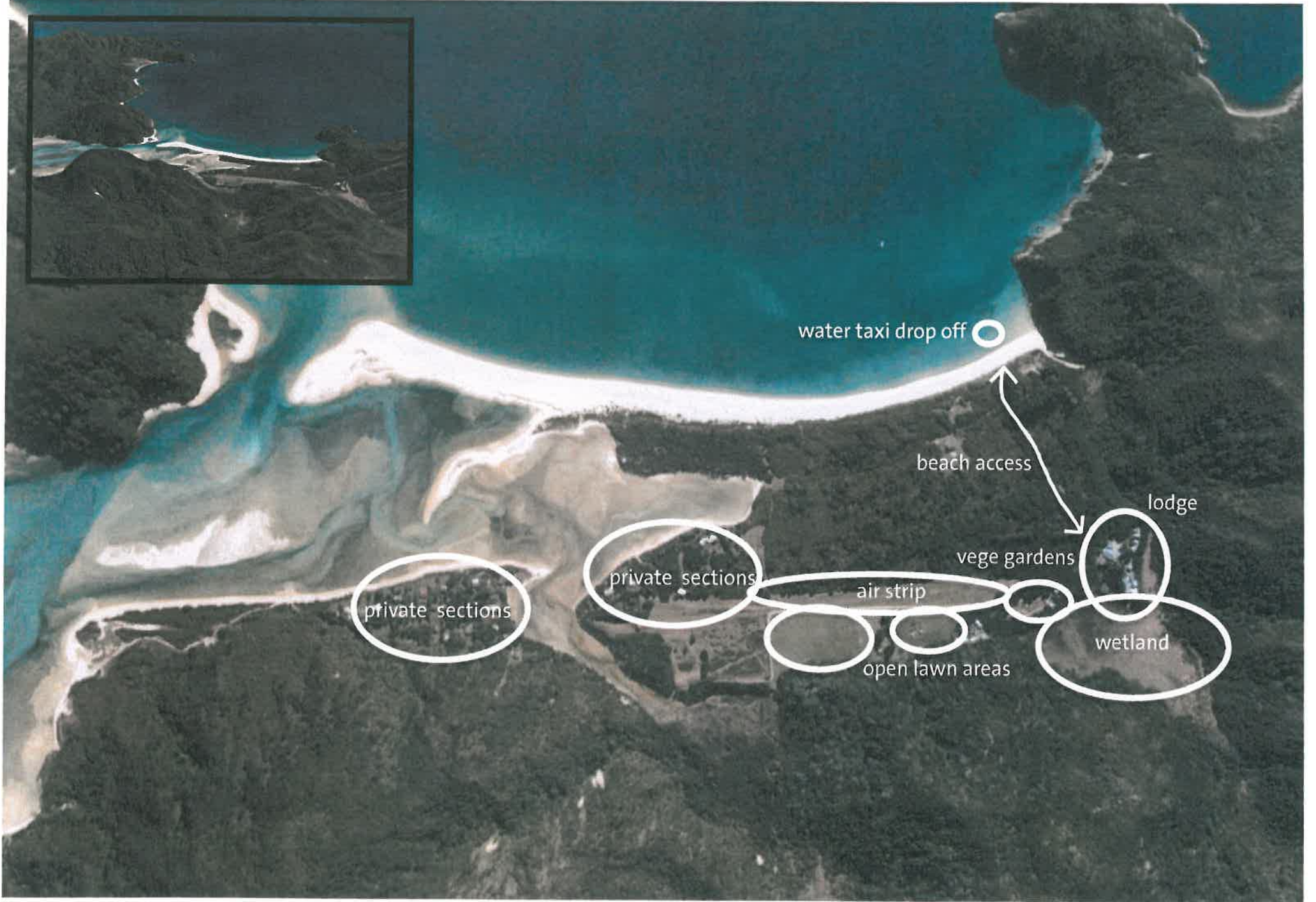
Transport - LPG or electric vehicles, limited petrol vehicles

Activities - Walking (planned to minimise impact on environment), coastal activities on beach. boating, surfing.









water taxi drop off

beach access

lodge

vege gardens

air strip

open lawn areas

wetland

private sections

private sections





elevated walkway through rainforest





# Awaroa Lodge - Abel Tasman National Park, NZ

## SUSTAINABLE FEATURES

Planning - Partnership with DoC to manage area, Private and Public interface, Small footprint of lodge and facilities, development confined to a small area for lower impact on the landscape, set back from the coast, effort required to get there.

Architecture and building - landscape dominates buildings, mix of old and new architecture, low key relaxed style, screened yet connected to natural features such as wetland and bush.

Community & Education - Stop over on the Abel Tasman walk, conference facilities, gathering spot.

Ecology and the environment - low impact, environmental sensibilities

Energy Efficiency and Energy Management - solar, generator

Water - rain water

Food - Organic vegetable garden, locally sourced products, organic restaurant

Transport - Walking, plane (air strip), water taxi

Activities - Walking (tracks and day walks), coastal activities on beach, sea kayaking, sailing



**Discerning travellers from all over the world visiting Awaroa Lodge & Cafe appreciate the distinctive architecture and relaxed ambience of this luxury lodge in Nelson. Discover a perfect balance of natural comfort and contemporary style, laidback hospitality and creative and organic cuisine.**

**Nestled in the South Islands northern tip, careful attention is made to preserving this pristine unique natural environment of white beaches, seal colonies, wetlands, native forests and birdlife. Many activities await the energetic, including sea kayaking and as our luxury resort in Nelson is on the edge of the Abel Tasman track, there are many delights for walkers.**

**Foodies can revel in the exquisite local cuisine with seasonal product from the lodges own gardens and local wines await the lover of grapes.**

**Voted in 2005 the New Zealand Tourism Awards winner of Innovation in Eco Tourism, our accommodation ranges from luxury to deluxe and family rooms.**

*source: [www.tourism.net.nz](http://www.tourism.net.nz)*

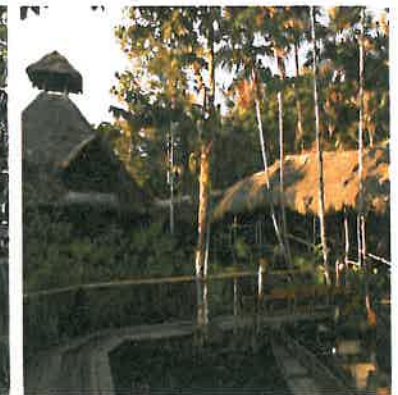
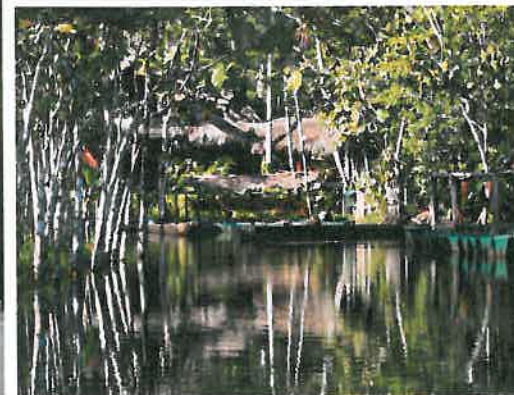
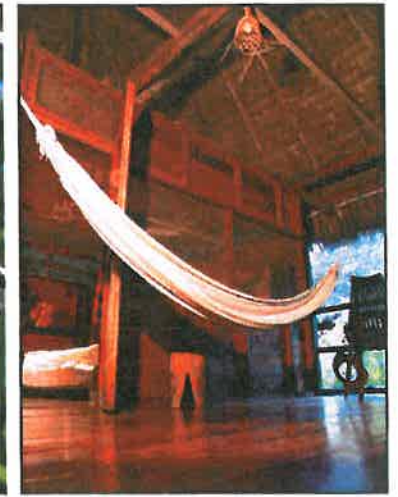
awaroa lodge - Abel Tasman National Park, New Zealand











# Sacha Lodge - Amazon, Ecuador

## SUSTAINABLE FEATURES

**Planning** - Isolated location, focused on eco-tourism

**Architecture and building** - Consistent vanacular over the site, landscape dominates buildings, traditional architecture, famous wooden tower (" La Torre "), out door structures for viewing birds and animals including a canopy walk in the tree tops.

**Community & Education** - Focused on the animals, guided tours

**Ecology and the environment** - ecological reserve in the rainforest

**Energy Efficiency and Energy Management** - generator

**Activities** - Guided walks, bird watching, canoe rides







## The Site

The Puwheke property is zoned General Coastal under the Far North District Plan. The site is comprised of two titles (Pt Section 3, Blk III Karikari SD and Pt Section 4 Blk III Karikari SD) and has a total area of 236ha. The District Plan provides for 20ha subdivisions in the General Coastal Zone as a restricted discretionary activity, which would allow 11 sites to be created. The District Plan also allows for a management plan subdivision where net environment gains are made with an allowable average lot size of 6ha as a full Discretionary Activity, translating to 39 sites being theoretically achievable.

The adjoining lakes, lake site serves and beach front esplanade reserve are in Crown ownership.

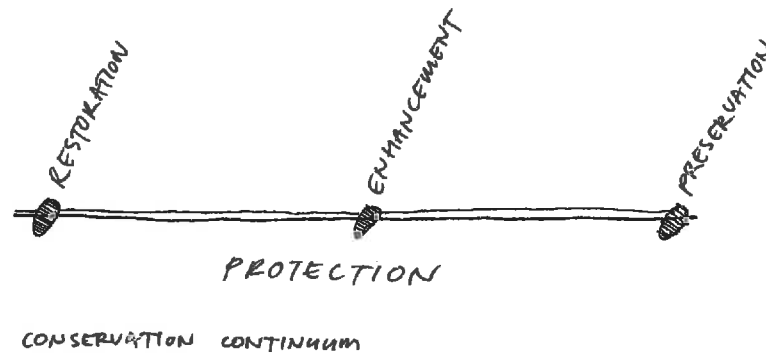












# Ecology - Values & Opportunities

## EXECUTIVE SUMMARY

New Zealand biota has a long history of numerous species extinctions following the arrival of humans. Changes in land-use and predation by introduced mammals are the two main factors responsible for the declines in New Zealand's native biodiversity. While these declines continue today, initiatives are being undertaken not only by government agencies but also by private landowners and groups to manage these threats and provide the conditions required to restore and enhance New Zealand's native biota and habitats: Puwheke Beach is one such site.

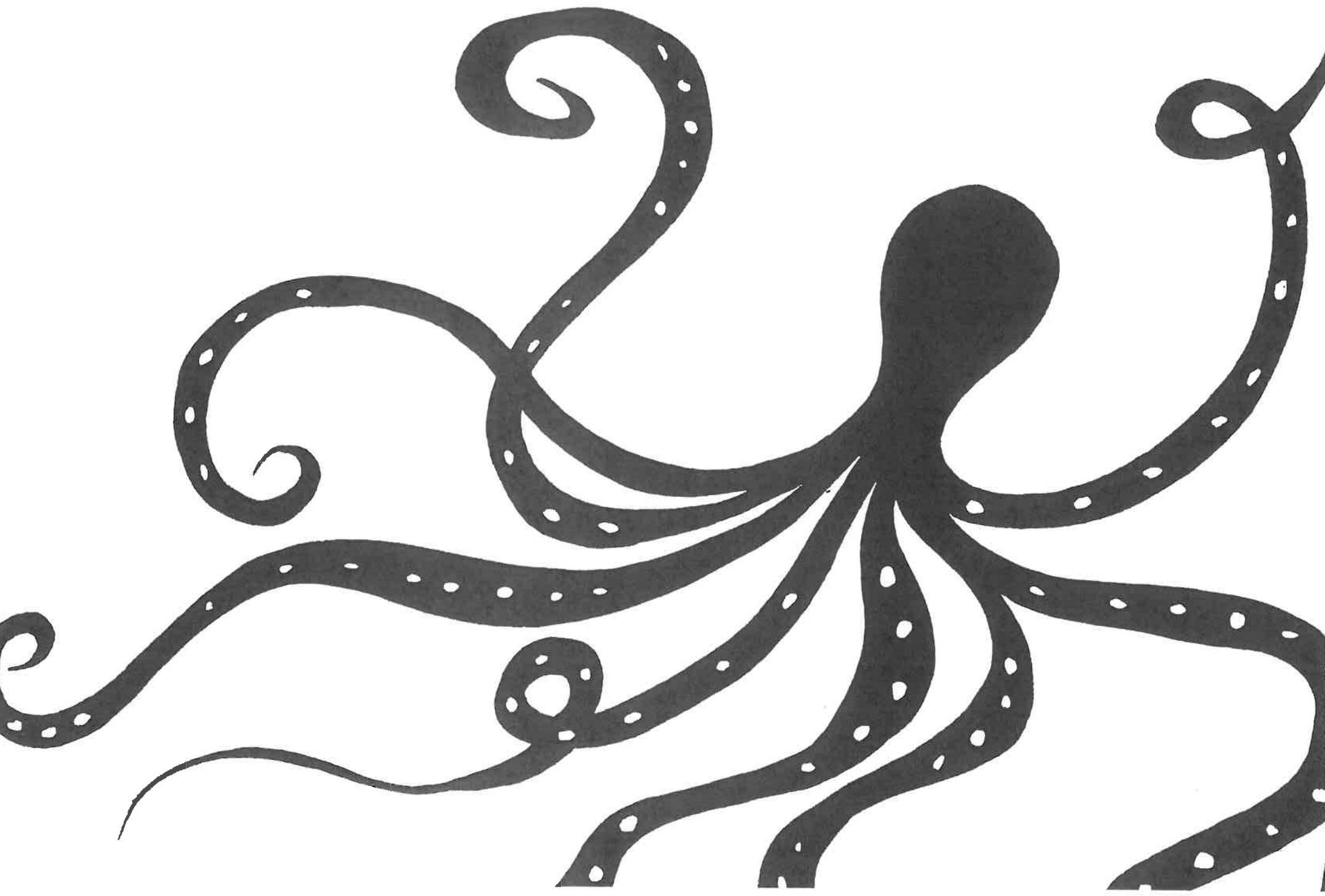
Puwheke Beach is recognised as being a site of ecological significance, both in terms of the habitat types that are present and the threatened species that occur there. This provides an excellent platform from which to aim not only for habitat restoration, but also the restoration of ecological processes to ensure the long-term viability of the site. Additionally, it could also serve as a representative example of the historic (pre-Maori) Northland coastal ecosystems and community assemblages that are presently severely depleted and under threat.

While restoring and protecting such sites is critical to contributing towards New Zealand's biodiversity, enabling visitors and community groups to experience the uniqueness of this site has the additional benefits of educating and inspiring others towards the conservation gains that can be made by individuals.

Source: "Puwheke Beach, ecological values and opportunities" - Boffa Miskell report by Dr Leigh Bull, November 2003



# Ecology - Wider Connections



# The story of Te Whanau Moana

*Ko Puwheke te maunga,*

*Ko Karikari te moana,*

*Ko Mamaru te waka,*

*Ko Kahutianui te tupuna,*

*Ko Te Parata te tangata,*

*Ko Ngati Kahu te iwi,*

*Ko Haiti-tai-marangai te marae,*

*Ko Te Whanau Moana me Te Rorohui nga hapu.*

*Puwheke is the mountain,*

*Karikari is the sea,*

*Mamaru is the canoe,*

*Kahutianui is the ancestor,*

*Te Parata is the man,*

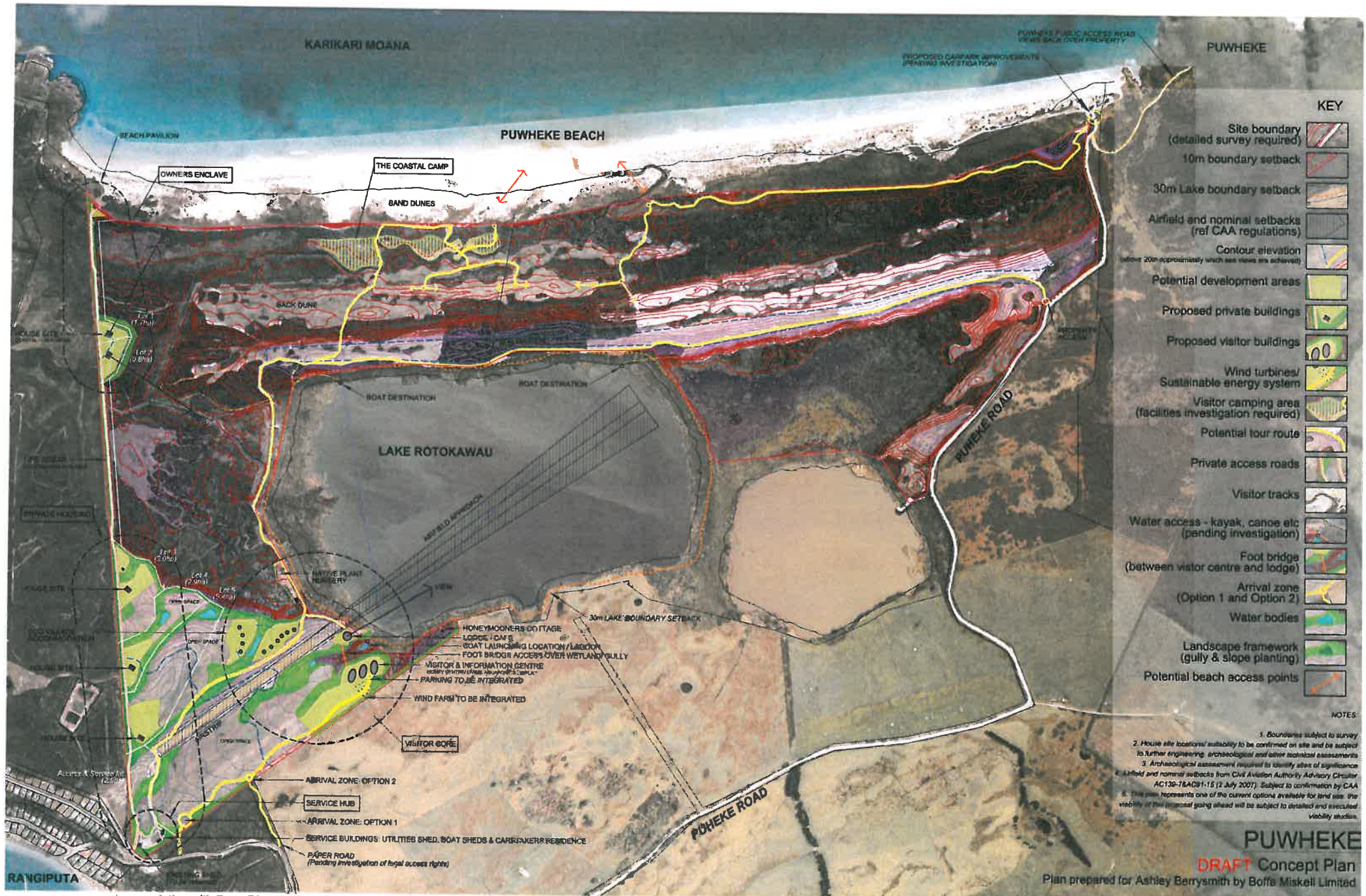
*Ngati Kahu is the tribe,*

*Haiti-tai-marangai is the marae,*

*Te Whanau Moana and Te Rorohui are the sub-tribes.*

Source: "Te Whanau Moana, Nga kaupapa me nga tikanga, Customs and protocols", McCully Matiu and Margaret Mutu, 2003.





**KEY**

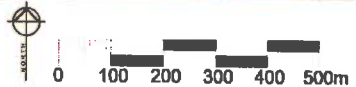
Site boundary (detailed survey required)	[Symbol: Red dashed line]
10m boundary setback	[Symbol: Red solid line]
30m Lake boundary setback	[Symbol: Orange solid line]
Airfield and nominal setbacks (ref CAA regulations)	[Symbol: Grey hatched area]
Contour elevation (above 20m approximately which see views are achieved)	[Symbol: Yellow contour lines]
Potential development areas	[Symbol: Green hatched area]
Proposed private buildings	[Symbol: Green solid area]
Proposed visitor buildings	[Symbol: Yellow solid area]
Wind turbines/Sustainable energy system	[Symbol: Yellow wind turbine icons]
Visitor camping area (facilities investigation required)	[Symbol: Yellow hatched area]
Potential tour route	[Symbol: Yellow dashed line]
Private access roads	[Symbol: Yellow dashed line]
Visitor tracks	[Symbol: Yellow dashed line]
Water access - kayak, canoe etc (pending investigation)	[Symbol: Blue hatched area]
Foot bridge (between visitor centre and lodge)	[Symbol: Yellow dashed line]
Arrival zone (Option 1 and Option 2)	[Symbol: Yellow hatched area]
Water bodies	[Symbol: Blue solid area]
Landscape framework (gully & slope planting)	[Symbol: Green hatched area]
Potential beach access points	[Symbol: Red dashed line]

- NOTES**
1. Boundaries subject to survey.
  2. House site locations/ suitability to be confirmed on site and be subject to further engineering, archaeological and other technical assessments.
  3. Archaeological assessment required to identify sites of significance.
  4. Airfield and nominal setbacks from Civil Aviation Authority Advisory Circular AC130-16AD9-1-15 (2 July 2007). Subject to confirmation by CAA.
  5. This plan represents one of the current options available for land use. The viability of this proposal going ahead will be subject to detailed and executed viability studies.

**PWUHEKE**  
**DRAFT** Concept Plan  
 Plan prepared for Ashley Berry Smith by Boffa Miskell Limited

In association with Rene Dino

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 Date: 19/12/2008 Revision: B  
 Scale: 1:5000 (A1) 1:10 000 (A3)





# Approach





## 2.0 ECOLOGICAL VALUES

### 2.1 DOC Northland Conservation Management Strategy

The overall task of the Northland Conservancy is to conserve the natural and historic resources of Northland for their intrinsic values and the benefit of present and future generations. The Conservation Management Strategy (CMS) for the Northland Conservancy is based on the following vision:

- *A natural environment which has been restored and protected so the diversity, viability and health of indigenous plant and animal species and populations is secured.*
- *A community which recognises that its long term survival, development, and spiritual well being are dependent on the biodiversity of other life forms and the maintenance of a healthy environment.*
- *A community dedicated to an approach to conservation which recognises and respects the special spiritual, traditional and cultural relationships of the tangata whenua to the land and sea, and their rights under the Treaty of Waitangi/Te Tiriti o Waitangi.*
- *A community that is aware and proud of the unique natural, spiritual and historic treasures of the region, and is actively involved in practical management and advocacy for their protection.*
- *Visitors who enjoy and gain a deeper understanding of the natural and historic treasures of the region during their stay and who support the conservation work of the community and the Department.*
- *A Department that is dedicated, efficient and effective in its management of the conservation resources in its trust, and in its advocacy for conservation generally.*

The Northland CMS identifies 10 priority areas for integrated conservation management within the Conservancy. Kaimaumau/Rangaunu/Karikari is listed as one of these Priority Areas. Puwheke Recreation Reserve and Karikari are among the major areas that are administered by DOC within this Priority Area. DOC (1999)<sup>1</sup> describes this Priority Area as the most diverse section of Northland's coast. Together with several shallow lakes, the area is important habitat for a variety of threatened ferns, mosses, orchids, freshwater fish and birds. The wetland and estuarine habitats are of international significance for wetland and migratory birds. Management issues identified within the Northland CMS for this Priority Area include:

- *Impacts of fire and subsequent increases in plant pests;*
- *Damage to archaeological sites and desecration of wahi tapu on conservation land;*
- *Impacts of possums and goats on forests; and rabbits, cats, and stoats on wetlands and wildlife;*
- *Maintaining fish passage/access in harbours, rivers and estuaries;*
- *Drainage of, and stock damage to, wetlands;*
- *Residential and tourist developments;*
- *Impacts of land clearance and farming on water levels, flows and quality.*

Among the list of Priority Actions for the Department in the Kaimaumau/Rangaunu/Karikari Priority Area, is to "Seek to expand areas of protected freshwater wetlands, dunelands, ocean beachfront and shrubland according to priorities established in Section 5.2 using methods identified in Appendix One".

### 2.2 Significant Habitat and Biota

The Puwheke Beach site is located within the Aupouri Ecological District (ED). Of the natural areas identified in the Aupouri ED, 44% are estuarine and harbours, 28.8% are shrubland, 17.6% are dunelands, 9% are wetlands and 0.46% is forest<sup>2</sup>. Thus, a distinctive aspect of this ED is that there is now virtually no indigenous forest, but wetlands are frequent.

Sites of ecological significance that occur on the Karikari Peninsula include the Rotokawau Lakes and Puwheke Beach (O03/002), Puheke Road Wetland (O03/011), Waimango Swamp (O03/001), Maitai Bay (O03/003), Taupiroroa Range Shrublands (O03/004), Cape Karikari Shrubland (O03/005), Whangatapere Bay (O03/006), S Urlich Rd Wetland (O03/008) and Karikari Moana (O03/009)<sup>2</sup>. These sites were determined to be significant based on the Protected Natural Areas Programme (PNAP) ecological criteria of representativeness, rarity and special features, diversity and pattern, naturalness, habitat structure and characteristics important for the maintenance of ecosystems (buffer, linkage or corridor, size and shape)<sup>2</sup>. Conning & Holland (2003)<sup>2</sup> list the following features of the Rotokawau Lakes and Puwheke Beach area of significance:

- *This area covers 433.6 ha (comprising 287.1 ha shrubland, 97.9 ha wetland and 48.6 ha duneland).*
- *Contains a complex of lakes with a hard sand pan, freshwater wetlands and shrublands linked to the Puwheke Beach dunes.*
- *Dune lakes are a rare habitat type in Northland and are especially rare on the east coast of Northland.*
- *This large area is one of the best examples in the Ecological Region of a wide diversity of habitats including coastal wetlands stretching from the Rangiputa coast to Karikari Moana, containing high wildlife values including many threatened species.*
- *Significant flora found at this site include *Lycopodiella serpentina*, *Todea barbara*, *Pimelea arenaria*, pingao, *Thelymitra* (a), *Pellaea falcata*, *Utricularia delicatula* and *Cyclosorus interruptus*.*
- *Important avifauna recorded in this area include the Northern New Zealand dotterel, New Zealand dabchick, white-fronted tern, variable oystercatcher, Caspian tern, Australasian bittern, North Island fernbird, spotless crane, New Zealand scaup, pied stilt, Australasian little grebe, marsh crane, black shag, pied shag, little black shag and little shag.*
- *Freshwater fish recorded in Lake Rotokawau and surrounding wetlands include the threatened black mudfish, inanga, common bully and short-finned eel.*
- *Archeys dune snail (*Succinea archeyi*) has been recorded within the Puwheke Beach area.*
- *This area is considered to be a representative site for 10 Ecological units: type (a) open water, type (b) pohutukawa coastal association, type (c) manuka swamp shrubland, type (d) kanuka/manuka shrubland, type (e) pingao sedgeland, type (g) *Coprosma acerosa*-pohuehue association, type (h) *Coprosma acerosa*-oiioi-pohuehue association, type (k) oiioi rushland, type (l) harakeke reedland, and type (m) *Coprosma tenuicaulis*-manuka swamp shrubland.*
- *This site provides the only record of Ecological unit type (b), (g), (h) and (m) in the Aupouri ED. Furthermore, type (b) pohutukawa coastal association associated with dune lakes is a very rare Ecological unit in the ED.*

<sup>2</sup> Conning, L.; Holland, W. 2003: Natural Areas of Aupouri Ecological District: Reconnaissance Survey Report for the Protected Natural Areas Programme. Department of Conservation, Whangarei.

According to the information contained within DOC's Herpetofaunal Database, five native terrestrial lizard species have been recorded on the Karikari Peninsula (see the table below). While the database does not contain any herpetofaunal records on the Puwheke property, the diverse native lizard community occurring in the surrounding area, as well as the availability of appropriate habitat (kanuka/manuka shrublands, sand dunes and grasslands) on the site, suggests that those species (excluding the egg-laying skink) recorded in the wider area are also likely to occur at Puwheke. Other native species not recorded in the database search which may occur on the Puwheke property include the ornate skink (*Cyclodina ornata*), and possibly the common gecko (*Hoplodactylus maculatus*) and moko skink (*Oligosoma moco*).

Species	No. records on Karikari Peninsula	Proximity of nearest individual to the Puwheke property (km)
Copper skink	4	11
Egg-laying skink	5	9
Northland green gecko	2	10
Pacific gecko	3	10
Shore skink	20	1

Sand kanuka (*Kunzea ericoides* var. *linearis*) is found extensively across the property. This threatened species is classified as being in a Human Induced Serious Decline<sup>3</sup>. This species is primarily threatened through loss of habitat, with very few populations occurring on protected land. Hybridism with other *Kunzea* species is a major problem, however this does not seem to be the case at Puwheke. The value of this species lies not only in its threat status, but also in the abundance of habitat that it provides for a variety of lizard species.

The Puwheke site and surrounding area provides significant habitat and resources for a number of threatened species. A list of these species (and their threat classifications) is provided in Appendix 1.

### 3.0 ECOLOGICAL OPPORTUNITES

Common threads include:

- *Restoration*
- *Protection*
- *Education*
- *Community support*
- *Visitor experience*

Even in its current state, the significant ecological value of this site is recognised through its listing as a Level 1 site for the Aupouri Ecological District Protected Natural Areas Programme by DOC. Thus, further conservation work on the property could only serve to increase the already numerous opportunities to educate and inspire visitors, as well as providing valuable conservation gains.

Essential to the restoration of any ecosystem are three key elements: protection, habitat and food. Any efforts directed at these elements will have flow on effects that are likely to enhance the visitor experience and educational opportunities of the site. Listed below are some of the opportunities that are present, all of which are conducive to the vision of both the Berrysmith Foundation and DOC.

- *Karikari/Puwheke is identified within the Department of Conservation New Zealand dotterel recovery plan<sup>4</sup> as a priority site for a new management programme. As such, an opportunity exists to assist DOC with protecting the breeding area of New Zealand dotterel and variable oystercatchers during the breeding season.*
- *Planting of rare and endangered species that are appropriate to the site and habitat (see Forester & Townsend 2004)<sup>5</sup> would serve to increase the floral biodiversity as well as associated fauna. Such biodiversity plantings could also be used as points of interest for visitor education.*
- *Planting of native species appropriate to the site that provide a food supply for native terrestrial bird species (e.g. bellbird, tui, silvereye and kukupa).*
- *The provision of sufficient and suitable habitat is the primary conservation need for New Zealand's native fish fauna. Thus, the protection of wetlands is important to the conservation of not only the plant species that are dependent on the wetland conditions, but also the biotat (e.g. threatened bird and freshwater fish species) that is associated with this habitat.*
- *Introduced mammalian species of particular concern in terms of their potential impact on coastal biodiversity include rabbits, stoats, possums, cats and dogs. Rabbits feed on plants such as pingao and young backdune shrubs. Stoats and possums predate young chicks and eggs, making ground nesting birds such as the dotterel very vulnerable. Cats and dogs left to roam attack young birds and eggs. Possums are a major threat to pohutukawa and other backdune plants; stripping the leaves, flowers and fruit leaving plants severely damaged. Animal pest control operations are therefore necessary to protect both the flora and fauna (including lizard, invertebrate and bird species) from direct damage and predation, as well as allowing for the growth and regeneration of existing native plant species and future revegetation plantings.*
- *Efforts should be made to provide for lizard habitat requirements (both skinks and geckos), particularly through increasing the abundance of refuges (these could include deadwood, thick low lying vegetation and/or artificial retreats such as gecko boxes, artificial burrows and artificial cover objects).*

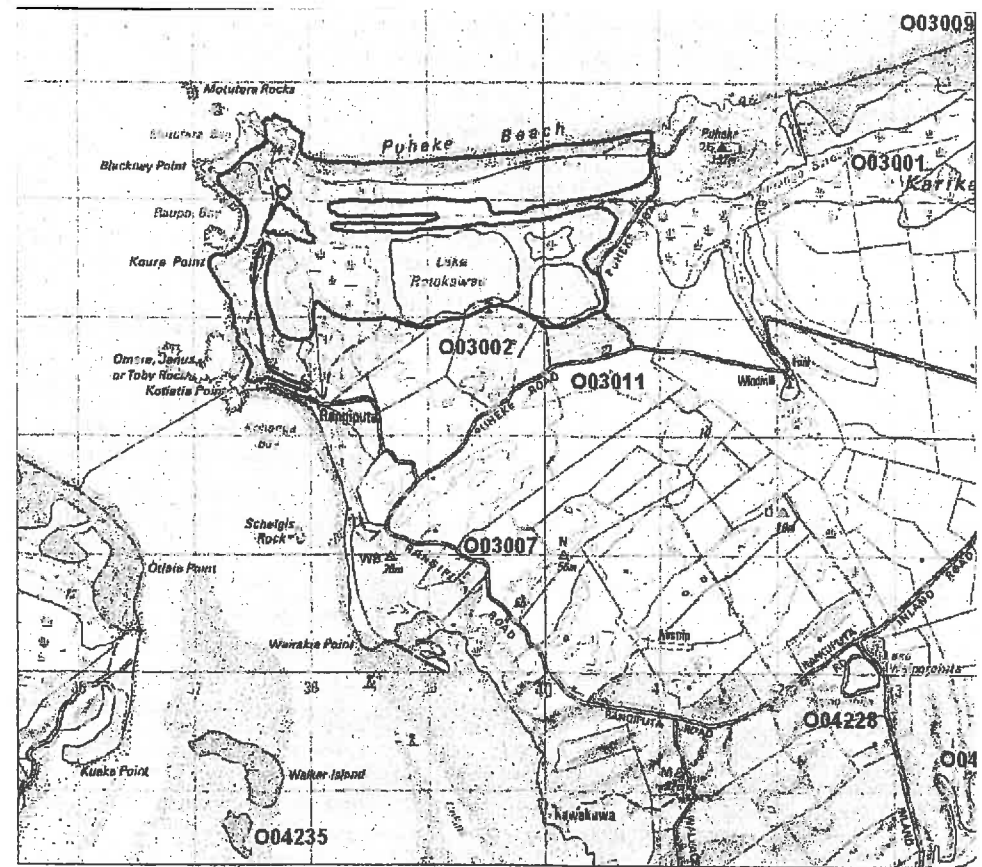
<sup>3</sup> Hitchmough, R.; Bull, L.; Cromarty, P. 2007: New Zealand Threat Classification System lists-2005. Department of Conservation, Wellington. 194 p.

<sup>4</sup> Dowding, J.E.; Davis, A.M. 2007: New Zealand dotterel (*Charadrius obscurus*) recovery plan, 2004-14. Threatened Species Recovery Plan 58. Department of Conservation, Wellington. 28 p.

<sup>5</sup> Forester, L.; Townsend, A. 2004: Threatened Plants of Northland Conservancy. Department of Conservation, Wellington. 80 p.



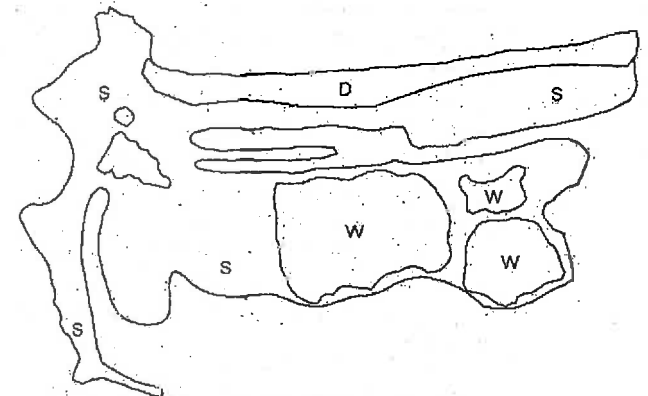
SPECIES	COMMON NAME	THREAT CLASSIFICATION*	SOURCE
<b>Vascular Plants</b>			
<i>Apodasmia similis</i>	Oioi	Not Threatened	Conning & Holland 2003
<i>Baumea arthropphylla</i>	Sedge	Not Threatened	D. Slaven pers. obs.
<i>Baumea articulata</i>	Jointed rush	Not Threatened	Conning & Holland 2003
<i>Baumea juncea</i>	Sedge	Not Threatened	D. Slaven pers. obs.; Conning & Holland 2003
<i>Baumea teretifolia</i>	Sedge	Not Threatened	D. Slaven pers. obs.; Conning & Holland 2003
<i>Calystegia soldanella</i>	Shore bindweed	Not Threatened	Conning & Holland 2003
<i>Carex flagellifera</i>		Not Threatened	Conning & Holland 2003
<i>Carex virgata</i>	Swamp sedge	Not Threatened	Conning & Holland 2003
<i>Coprosma acerosa</i>	Sand coprosma	Not Threatened	Conning & Holland 2003
<i>Coprosma repens</i>	Taupata	Not Threatened	Conning & Holland 2003
<i>Coprosma rhamnoides</i>		Not Threatened	Conning & Holland 2003
<i>Coprosma tenuicaulis</i>	Swamp coprosma	Not Threatened	Conning & Holland 2003
<i>Cordyline australis</i>	TI kouka	Not Threatened	Conning & Holland 2003
<i>Cryptostylis subulata</i>		Coloniser <sup>SO</sup>	Conning & Holland 2003
<i>Cyathia medullaris</i>	Mamaku	Not Threatened	Conning & Holland 2003
<i>Cyclosorus interruptus</i>		Gradual Decline <sup>SO</sup>	Conning & Holland 2003
<i>Desmoschoenus spiralis</i>	Pingao	Gradual Decline <sup>CD,EF</sup>	Conning & Holland 2003
<i>Dracophyllum lessonianum</i>		Not Threatened	D. Slaven pers. obs.
<i>Eleocharis acuta</i>	Sharp spike sedge	Not Threatened	Conning & Holland 2003
<i>Eleocharis sphacelata</i>	Bamboo spike sedge	Not Threatened	Conning & Holland 2003
<i>Hebe diosmifolia</i>		Not Threatened	Conning & Holland 2003
<i>Kunzea ericoides</i> var. <i>linearis</i>	Sand kanuka	Serious Decline <sup>HI</sup>	D. Slaven pers. obs.
<i>Lepidosperma laterale</i>	Sword sedge	Not Threatened	Conning & Holland 2003
<i>Leptospermum scoparium</i>	Manuka	Not Threatened	Conning & Holland 2003
<i>Leucopogon fraseri</i>	Dwarf mingimingi	Not Threatened	Conning & Holland 2003
<i>Lilaeopsis novae-zelandiae</i>		Not Threatened	Conning & Holland 2003
<i>Lycopodiella serpentina</i>	Bog clubmoss	Nationally Vulnerable <sup>TO</sup>	Conning & Holland 2003
<i>Metrosideros excelsa</i>	Pohutukawa	Not Threatened	Conning & Holland 2003
<i>Pellaea falcata</i>		Gradual Decline <sup>SO,HI</sup>	Conning & Holland 2003
<i>Phormium tenax</i>	Harakeke	Not Threatened	Conning & Holland 2003
<i>Pimelea arenaria</i>	Sand daphne	Gradual Decline <sup>CD,SO</sup>	D. Slaven pers. obs.; Conning & Holland 2003
<i>Pseudopanax lessonii</i>	Houpara	Not Threatened	Conning & Holland 2003
<i>Schoenus tendo</i>	Kauri sedge	Not Threatened	Conning & Holland 2003
<i>Spinifex sericeus</i>	Spinifex	Not Threatened	Conning & Holland 2003
<i>Tetragonia implexicoma</i>	NZ spinach	Not Threatened	Conning & Holland 2003
<i>Thelymitra</i> (a)		Nationally Critical <sup>CD,DP,HI,EF</sup>	Conning & Holland 2003
<i>Todea barbara</i>		Nationally Endangered <sup>SO</sup>	Conning & Holland 2003
<i>Typha orientalis</i>	Raupo	Not Threatened	Conning & Holland 2003
<i>Utricularia delicatula</i>		Gradual Decline <sup>HI</sup>	Conning & Holland 2003



Rotokawau Lakes & Puwheke Beach O03/002

Each grid is 1000m x 1000m  
and = 100 ha

S = shrubland  
F = forest  
W = wetland  
E = estuarine  
D = duneland



NATURAL AREAS OF AUPOURI ECOLOGICAL DISTRICT

\* Threat classification and qualifiers according to Hitchmough et al. (2007): CD=conservation dependent; ST=stable; HI=human induced; TO=threatened overseas; EF=extreme fluctuations; SO=secure overseas; DP=data poor.

- Identifying points of ecological interest on the Puwheke site through educational signage and a pamphlet would serve to inform people regarding the significance of particular species and habitats.
- The provision of bird hides around the wetland / lake area would provide visitors with the opportunity to observe birds at relatively close range without disturbing them.
- The use of such devices as bird hides and artificial cover objects for lizards, provides visitors (particularly community and school groups) would provide the opportunity to see species up close.
- The proposed initiatives identified in this report will have flow-on effects throughout the ecosystem, all the way through to the invertebrates. For instance, rodent control can increase invertebrate numbers, which in turn will provide additional food for lizards and insectivorous birds. These restoration and flow-on effects are key elements to the creation of an ecosystem, and provides significantly more potential benefits than programmes which concentrate on single species conservation.

Dr Leigh Bull  
Senior Ecologist  
BOFFA MISKELL LTD  
3 November 2008

## APPENDIX 1

- List of species and threat status recorded at Puwheke and the surrounding area.

SPECIES	COMMON NAME	THREAT CLASSIFICATION <sup>a</sup>	SOURCE
<b>Avifauna</b>			
Charadrius obscurus aquilonius	Northern NZ dotterel	Nationally Vulnerable <sup>CD, ST</sup>	Conning & Holland 2003
Anas chlorotis "North Island"	Pateke	Nationally Endangered <sup>HI, CD</sup>	D. Slaven
Anas superciliosa superciliosa	Grey duck	Nationally Endangered <sup>SO</sup>	D. Slaven
Aythya novaeseelandiae	NZ scaup	Not Threatened	Conning & Holland 2003
Botaurus polioptilus	Australasian bittern	Nationally Endangered <sup>TO, HI</sup>	Conning & Holland 2003
Bowdleria punctata vealeae	North Island fernbird	Sparse <sup>HI</sup>	Conning & Holland 2003
Haematopus unicolor	Variable oystercatcher	Not Threatened	Conning & Holland 2003
Himantopus himantopus	Pied stilt	Not Threatened	Conning & Holland 2003
Phalacrocorax carbo novaehollandiae	Black shag	Sparse <sup>SO</sup>	Conning & Holland 2003
Phalacrocorax melanoleucos	Little shag	Not Threatened	Conning & Holland 2003
Phalacrocorax sulcirostris	Little black shag	Range Restricted <sup>SO</sup>	Conning & Holland 2003
Phalacrocorax varius	Pied shag	Not Threatened	Conning & Holland 2003
Piatalea regia	Royal spoonbill	Not Threatened	D. Slaven
Poliocephalus rufopectus	NZ dabchick	Sparse <sup>ST</sup>	Conning & Holland 2003
Porzana pusilla affinis	Marsh crake	Sparse	Conning & Holland 2003
Porzana tabuensis	Spotless crake	Sparse <sup>SO</sup>	Conning & Holland 2003
Sterna caspia	Caspian tern	Nationally Vulnerable <sup>SO</sup>	Conning & Holland 2003
Sterna striata striata	White-fronted tern	Gradual Decline	Conning & Holland 2003
Tachybaptus novaehollandiae	Australasian little grebe	Coloniser	Conning & Holland 2003
<b>Freshwater fish</b>			
Anguilla australis	Short-fin eel	Not Threatened	NIWA FFDB; Conning & Holland 2003
Galaxias fasciatus	Banded kokopu	Not Threatened	NIWA FFDB
Galaxias maculatus	Inanga	Not Threatened	NIWA FFDB; Conning & Holland 2003
Gobiomorphus cotildanus	Common bully	Not Threatened	NIWA FFDB; Conning & Holland 2003
Grahamina sp.	Estuarine triplefin	Not Threatened	NIWA FFDB
Neochanna diversus	Black mudfish	Gradual Decline <sup>HI</sup>	NIWA FFDB; Conning & Holland 2003
<b>Herpetofauna</b>			
Cyclodina anaea	Copper skink	Not Threatened	DOC Herpetofauna Database
Oligosoma suteri	Egg-laying skink	Range Restricted <sup>HI</sup>	DOC Herpetofauna Database
Naultinus elegans grayi	Northland green gecko	Gradual Decline <sup>HI</sup>	DOC Herpetofauna Database
Hoplodactylus pacificus	Pacific gecko	Gradual Decline <sup>HI</sup>	DOC Herpetofauna Database
Oligosoma smithi	Shore skink	Not Threatened	DOC Herpetofauna Database
<b>Invertebrates</b>			
Succinea archeyi	Archey's dune snail	Serious Decline	Conning & Holland 2003

<sup>a</sup> Threat classification and qualifiers according to Hitchmough et al. (2007): CD=conservation dependent; ST=stable; HI=human induced; TO=threatened overseas; EF=extreme fluctuations; SO=secure overseas; DP=data poor.

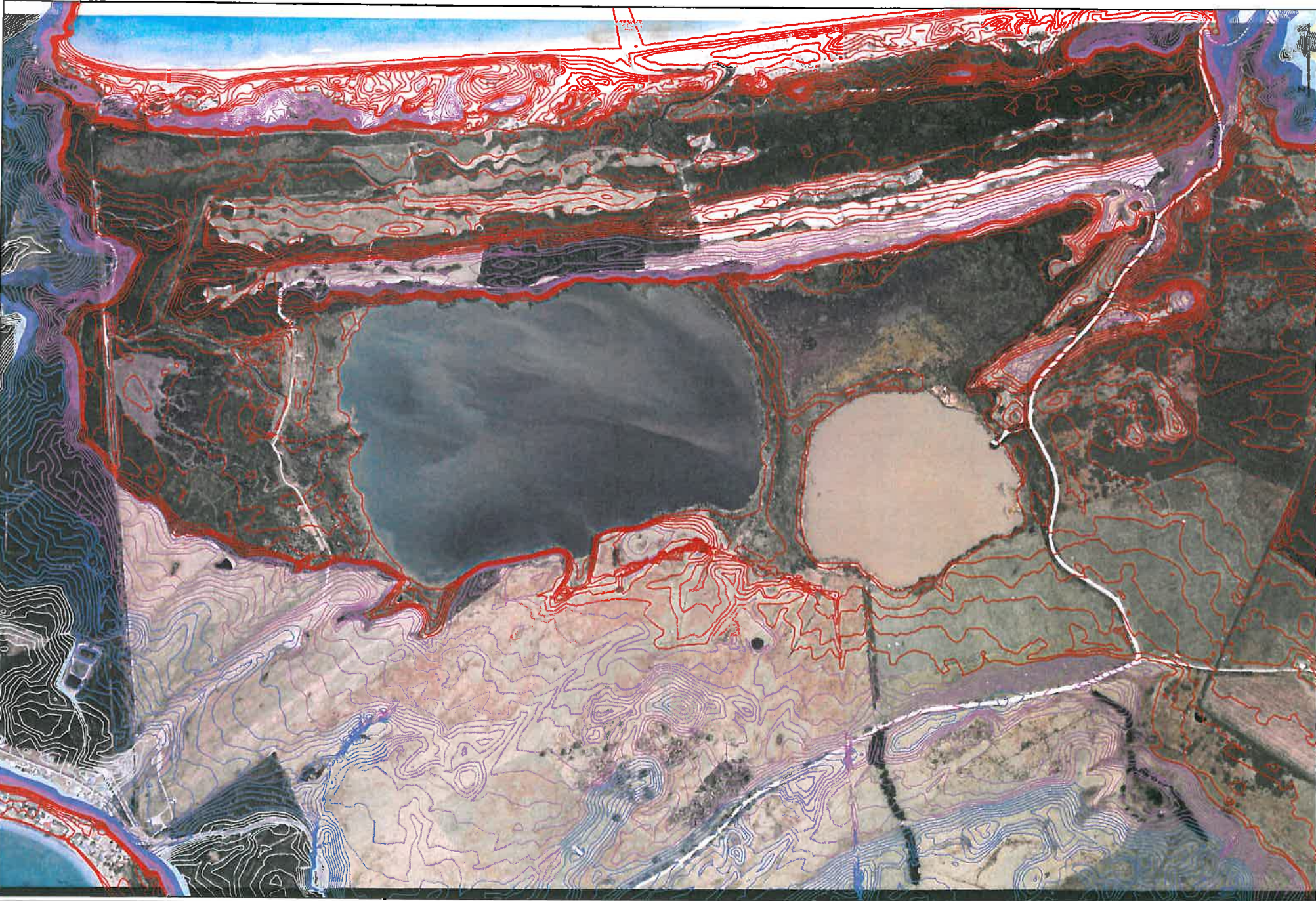




# Mapping the landscape



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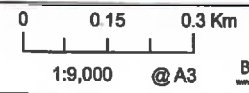


# A08272 Puheke Beach

## Elevation - Contours

1m Contours	— 19.1 - 30.0
— -1.0 - 10.0	30.1 - 45.0
— 10.1 - 19.0	45.1 - 63.0

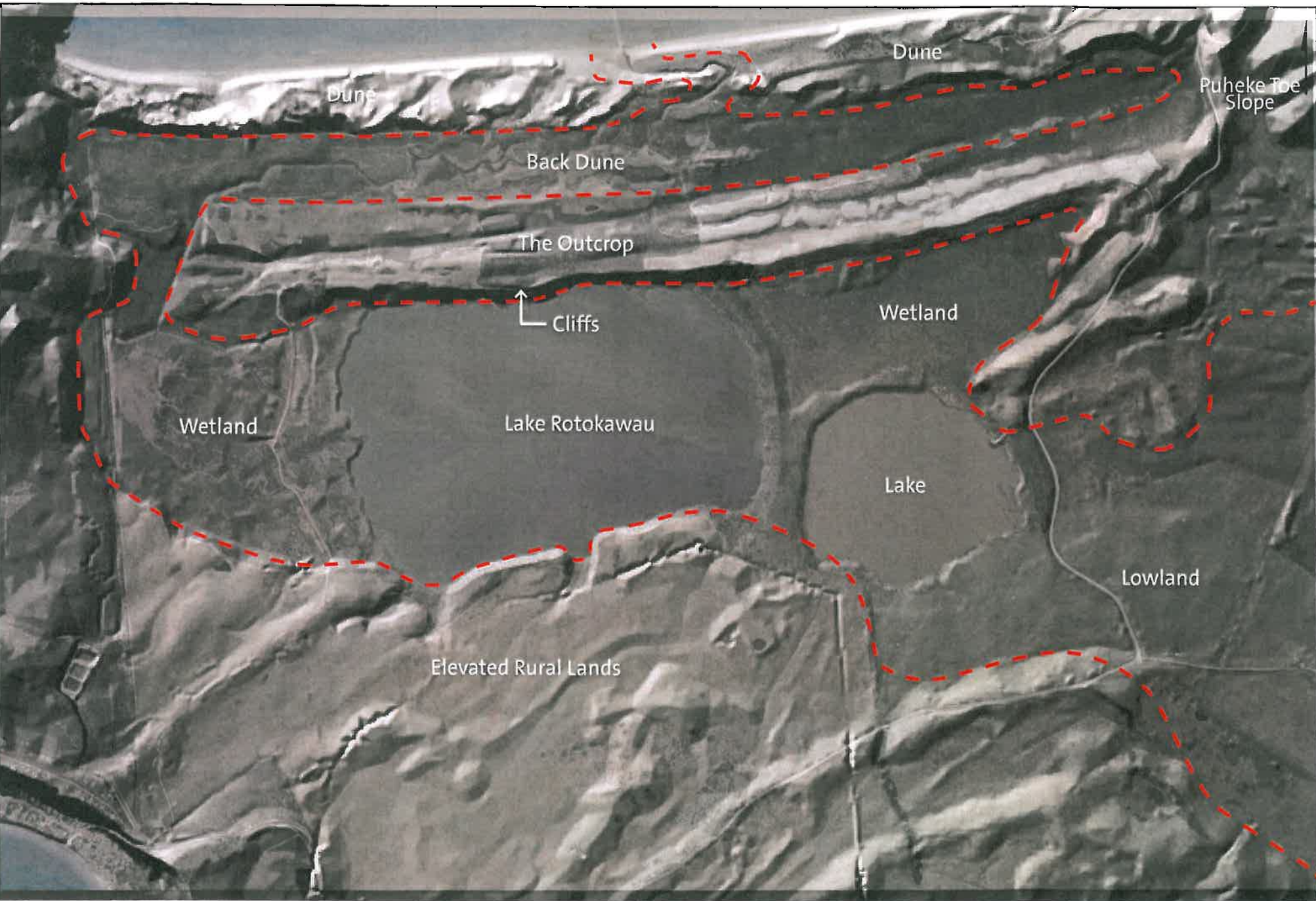
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Author: gaynora





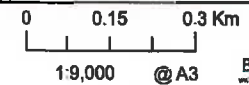
# Mapping the landscape - Hill Shade

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**A08272 Puheke Beach**  
Hillshade

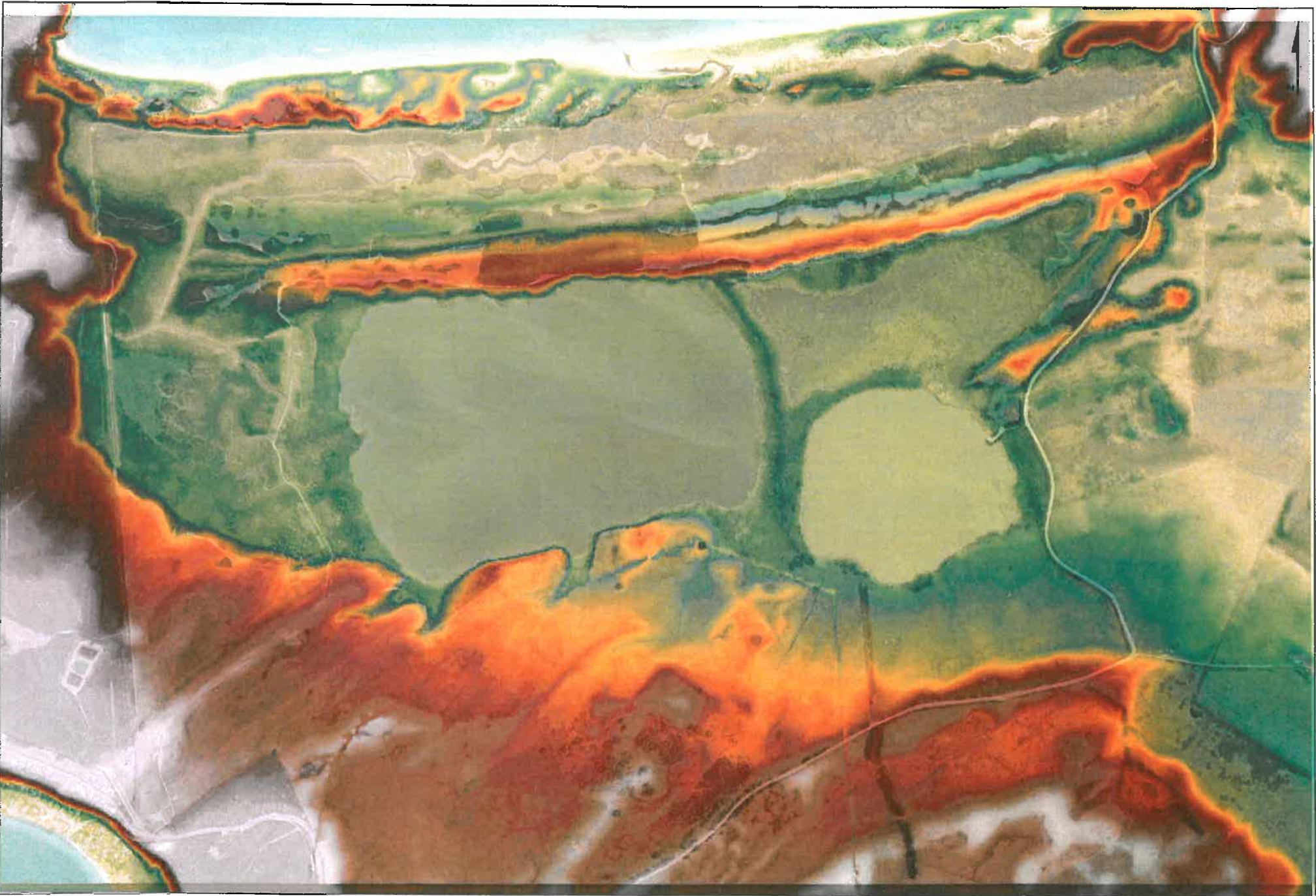
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Printing Date: 08/10/2008  
Author: gaynora



# Mapping the landscape - Elevation

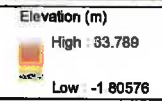


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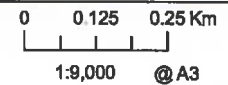


# A08272 Puheke Beach

## Elevation



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Printing Date: 08/10/2008  
Author: gaynora

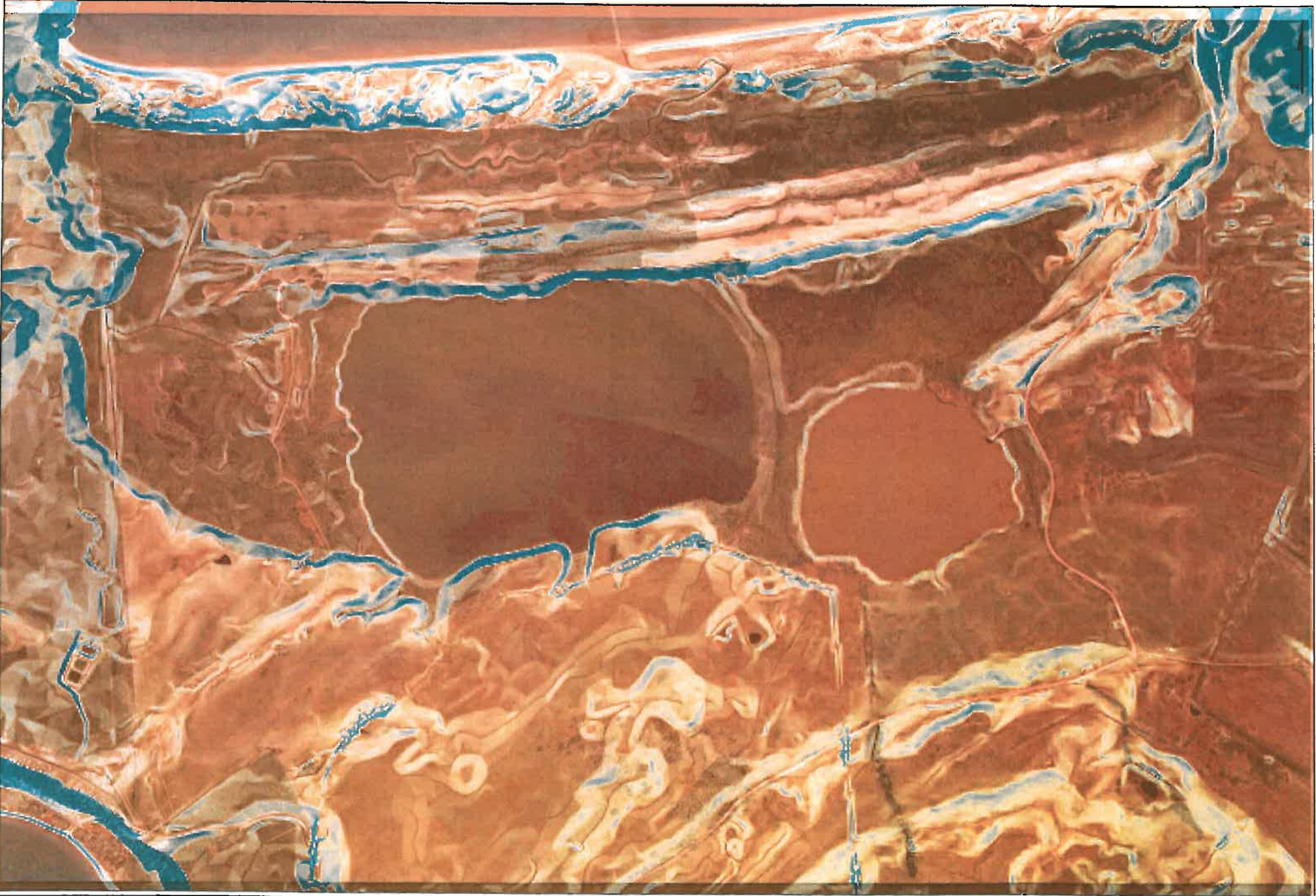


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# Mapping the landscape - Slope

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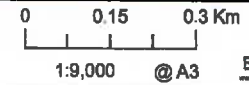


# A08272 Puheke Beach

## Slope



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Printing Date: 08/10/2008  
Author: gaynora



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# Mapping the landscape - Aspect



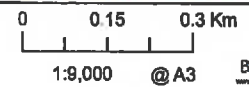
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# A08272 Puheke Beach Aspect

- Flat (-1)
- North (0-22.5)
- Northeast (22.5-87.5)
- East (87.5-112.5)
- Southeast (112.5-157.5)
- South (157.5-202.5)
- Southwest (202.5-247.5)
- West (247.5-292.5)
- Northwest (292.5-337.5)
- North (337.5-360)

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 Author: gaynora





# Mapping the landscape - Land Cover

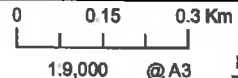
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- Land Cover Database 2**
- Built-up Area
  - Lake and Pond
  - Estuarine Open Water
  - Herbaceous Freshwater Vegetation
  - Coastal Sand and Gravel
  - Pine Forest - Closed Canopy
  - Pine Forest - Open Canopy
  - Indigenous Forest
  - Forest Harvested
  - Other Exotic Forest
  - High Producing Exotic Grassland
  - Low Producing Grassland
  - Manuka and/or Kanuka
  - Gorse and Broom

# A08272 Puheke Beach Land Cover Database 2

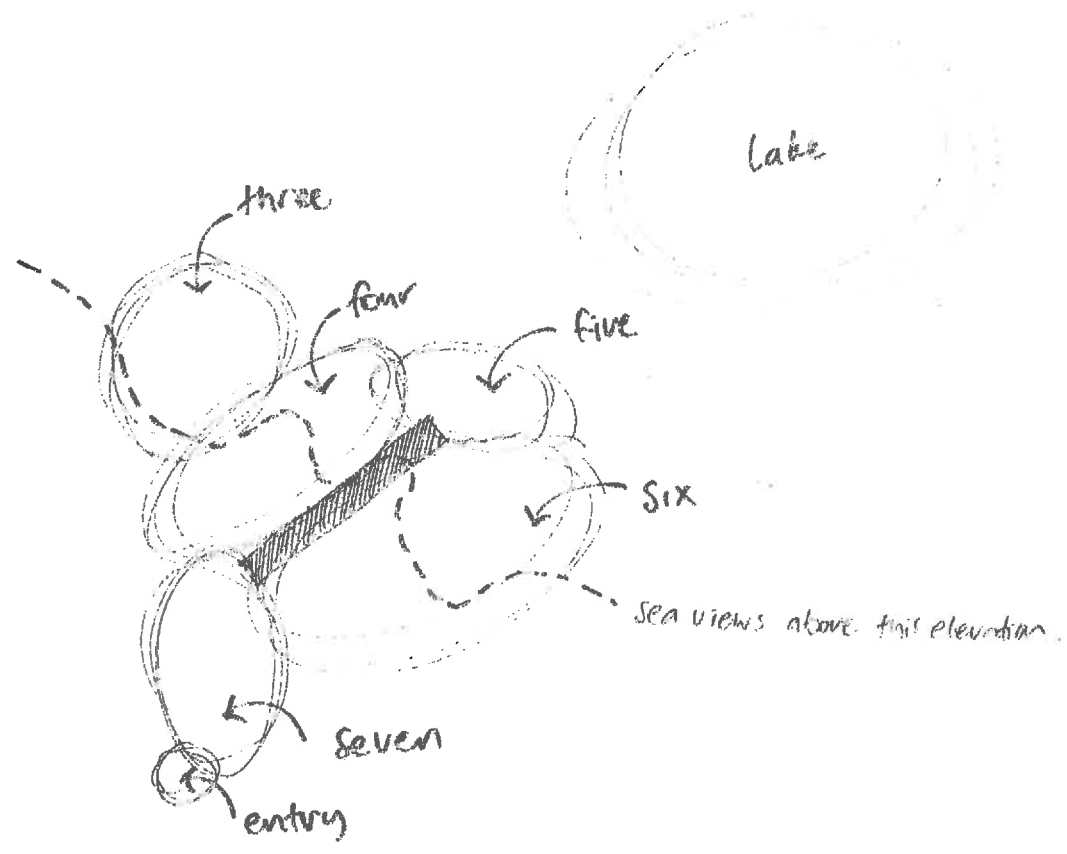
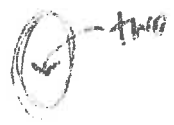
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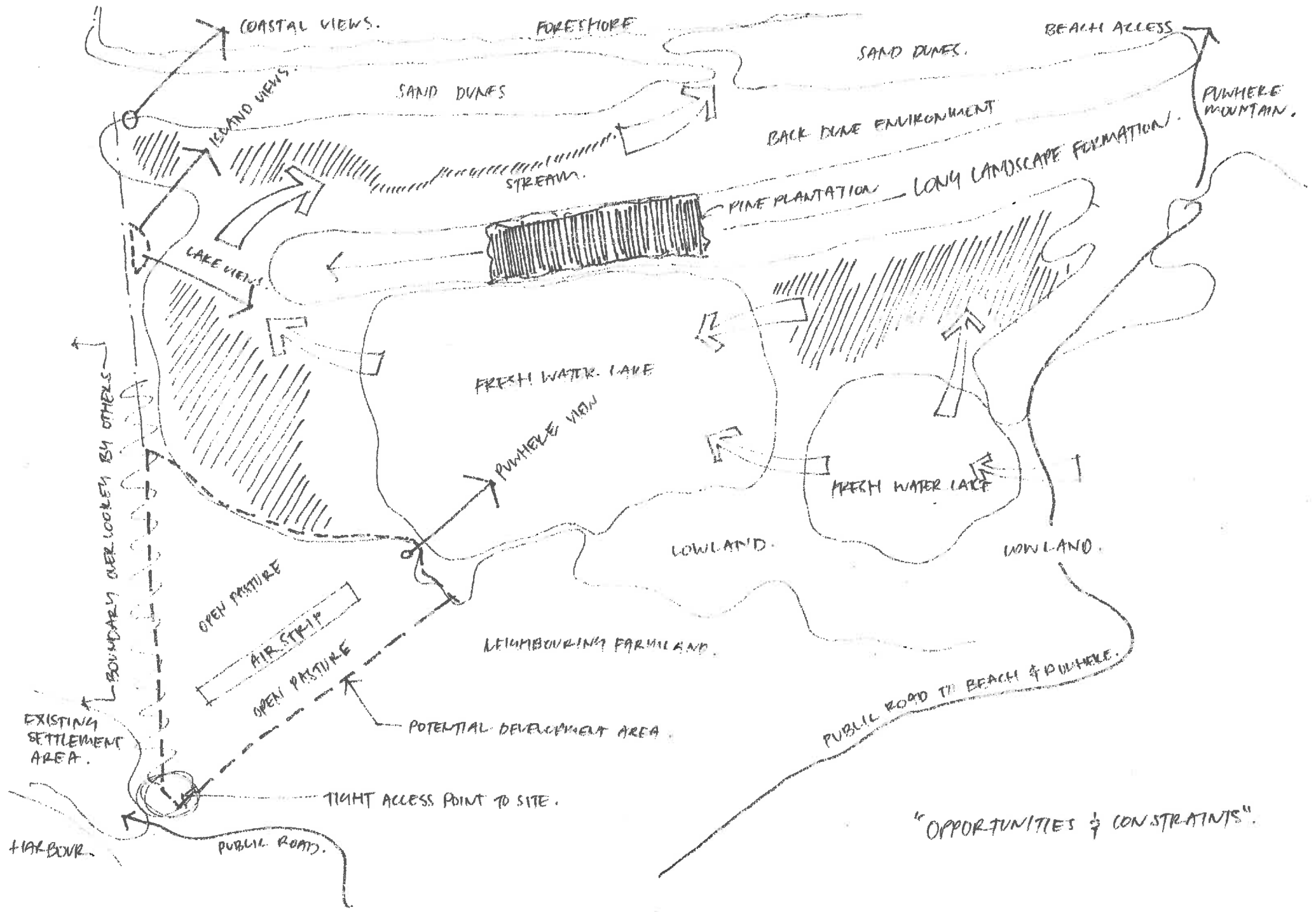
# Development Pods

Punjab





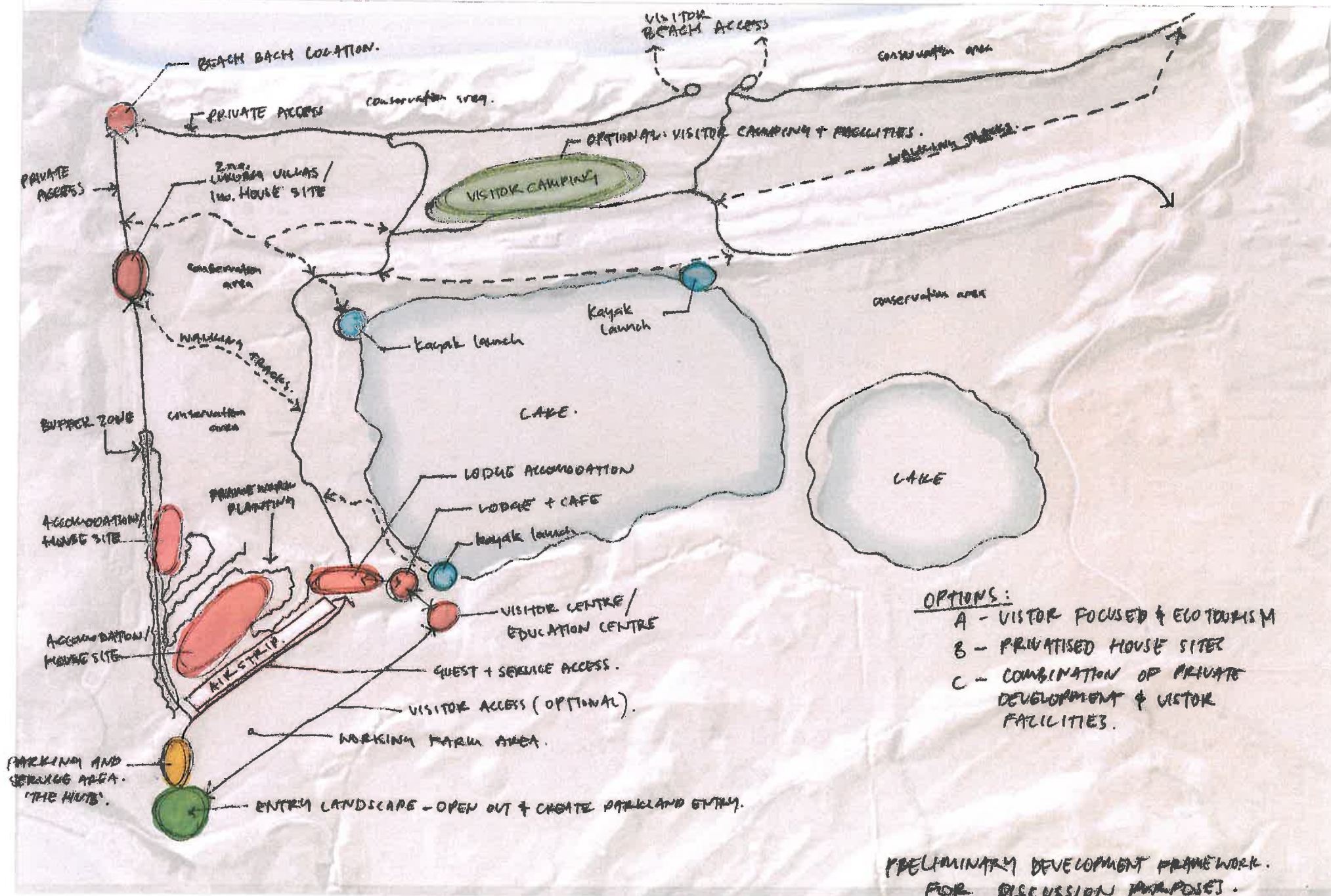
# Opportunities & Constraints



"OPPORTUNITIES & CONSTRAINTS"



# Development Scenarios

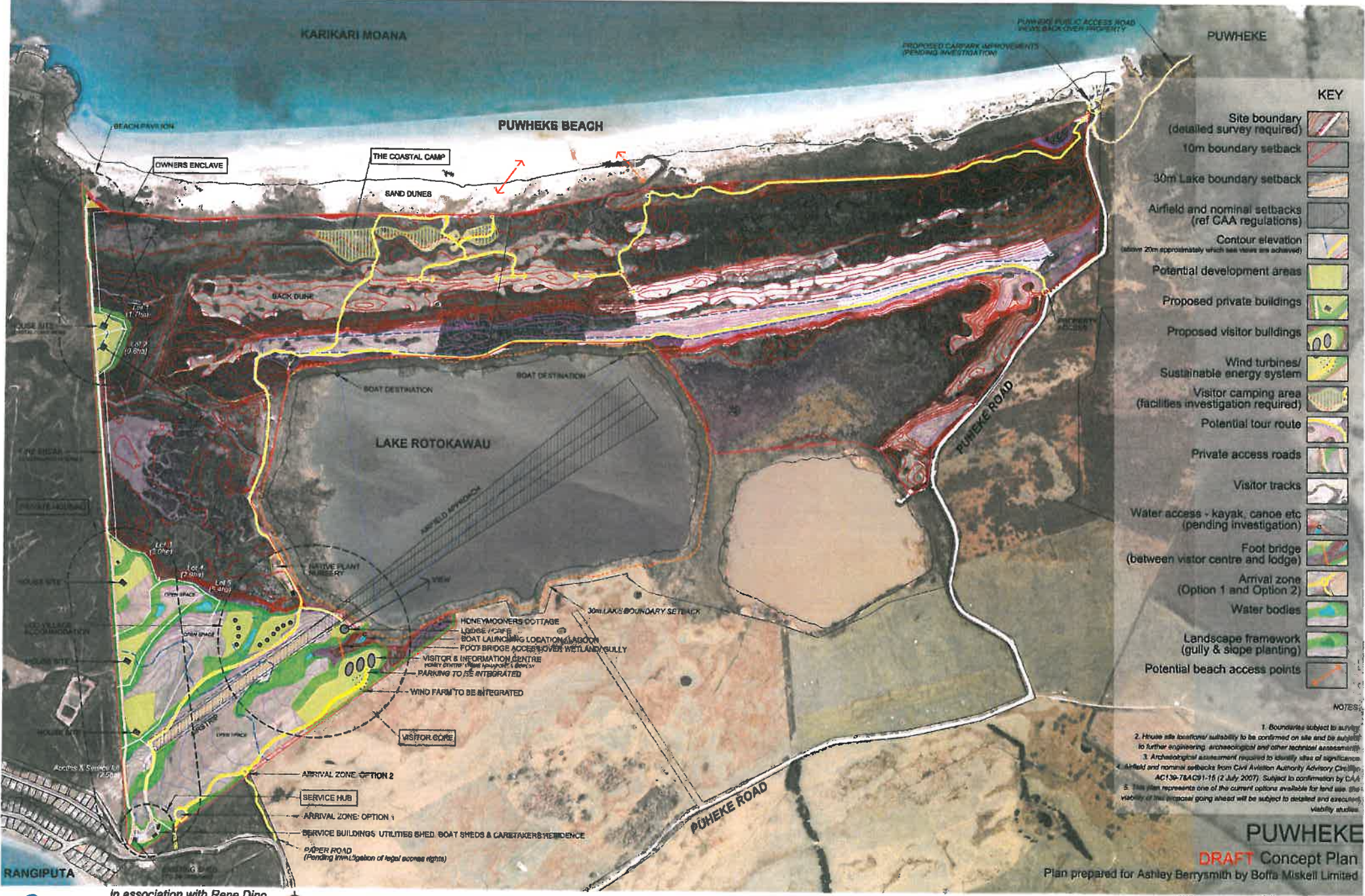


- OPTIONS:
- A - VISITOR FOCUSED & ECO TOURISM
  - B - PRIVATISED HOUSE SITE
  - C - COMBINATION OF PRIVATE DEVELOPMENT & VISITOR FACILITIES.

PRELIMINARY DEVELOPMENT FRAMEWORK.  
FOR DISCUSSION PURPOSES.



# **Concept Opportunities**



**KEY**

- Site boundary (detailed survey required)
- 10m boundary setback
- 30m Lake boundary setback
- Airfield and nominal setbacks (ref CAA regulations)
- Contour elevation (above 20m approximately which has views and achieved)
- Potential development areas
- Proposed private buildings
- Proposed visitor buildings
- Wind turbines/Sustainable energy system
- Visitor camping area (facilities investigation required)
- Potential tour route
- Private access roads
- Visitor tracks
- Water access - kayak, canoe etc (pending investigation)
- Foot bridge (between visitor centre and lodge)
- Arrival zone (Option 1 and Option 2)
- Water bodies
- Landscape framework (gully & slope planting)
- Potential beach access points

**NOTES**

1. Boundaries subject to survey
2. House site location/ suitability to be confirmed on site and be subject to further engineering, archaeological and other technical assessments
3. Archaeological assessment required to identify sites of significance
4. Airfield and nominal setbacks from Civil Aviation Authority Advisory Circular AC139-78AC91-16 (2 July 2007). Subject to confirmation by CAA
5. This plan represents one of the current options available for land use. The viability of this proposal going ahead will be subject to detailed and executed viability studies.

**PUWHEKE**

**DRAFT Concept Plan**

Plan prepared for Ashley Berrysmith by Boffa Miskell Limited

In association with Rene Dino

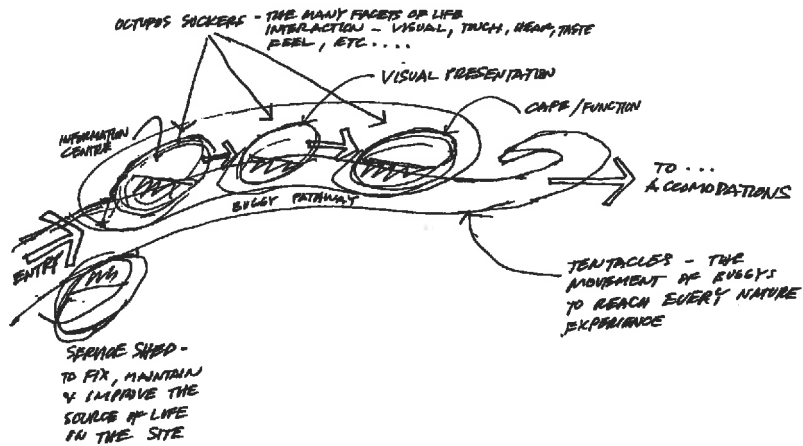
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Tel: 64-9-366-0267 Fax: 64-9-366-0268 Web: www.boffamiskell.co.nz



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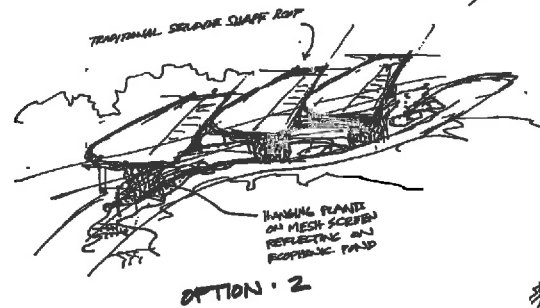
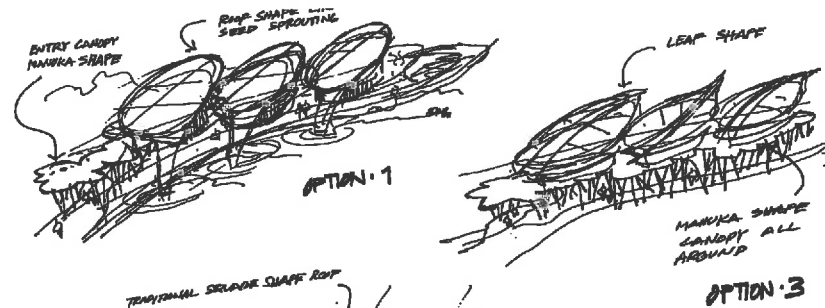




INFORMATION CENTRE  
 BUILDING SHAPES & ITS MEANING

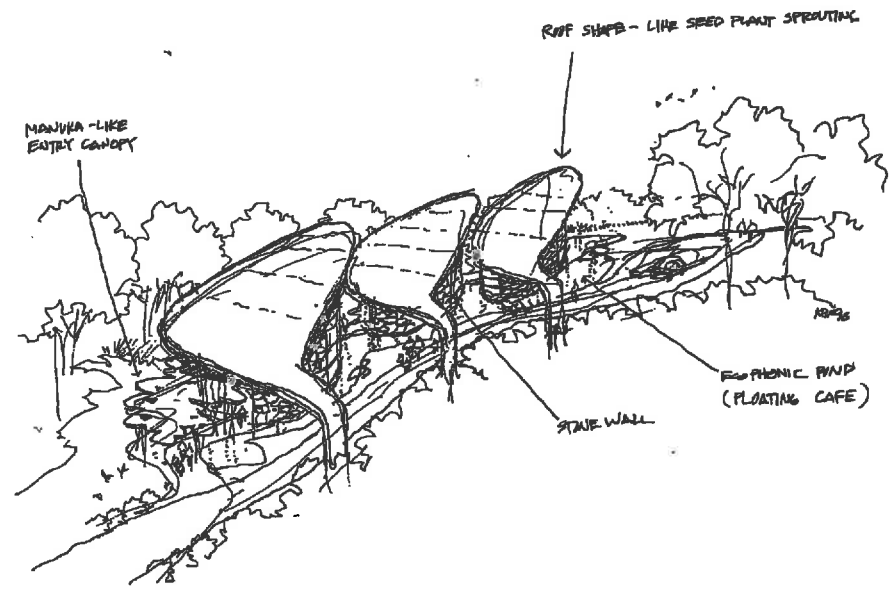
ROUND 17.11.08

SK7



RENE DINO  
 ARCHITECTURE DESIGN  
 SK.12

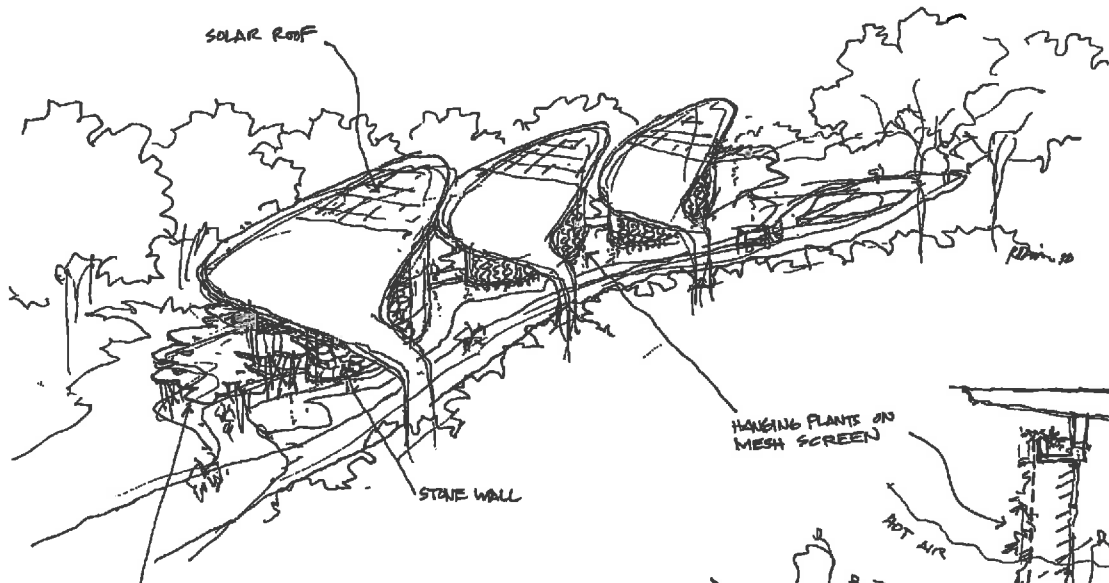
PUMHEKE  
 CONCEPT STUDY  
 ROUND 2011.08



INFORMATION CENTRE

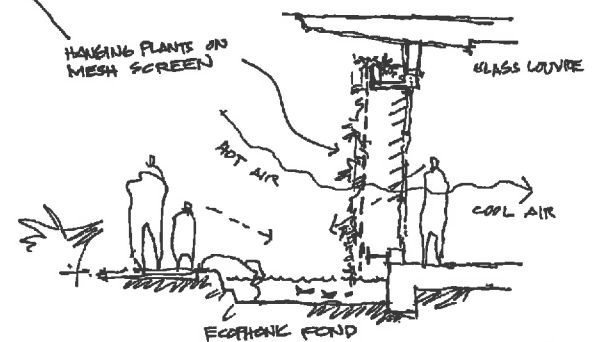
RENE DINO

# Design & Architecture Opportunities

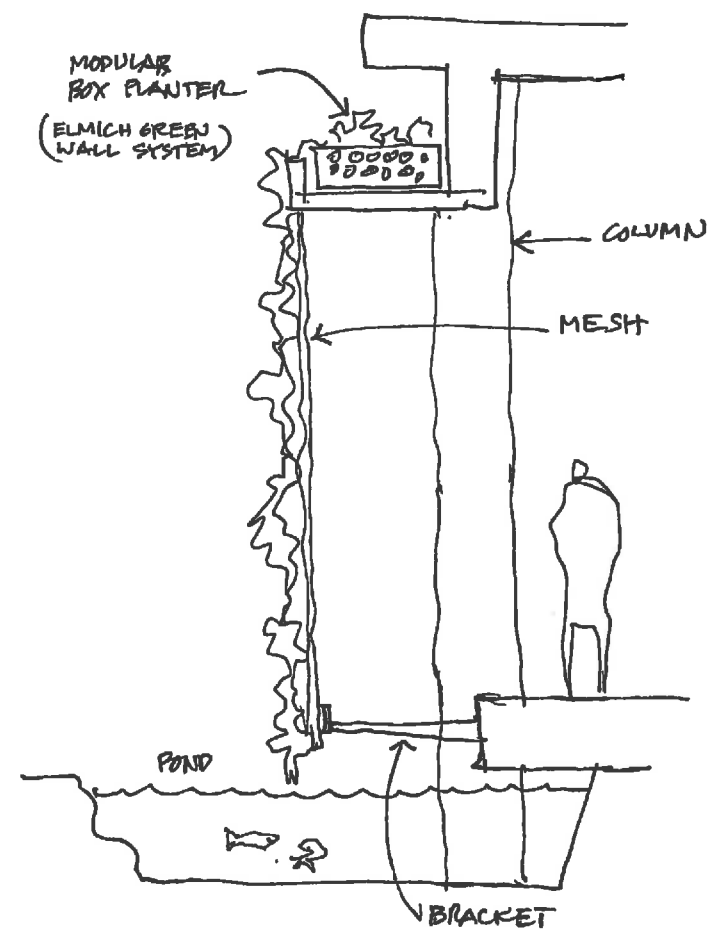


MANUKA-LIKE CANOPY AT ENTRY

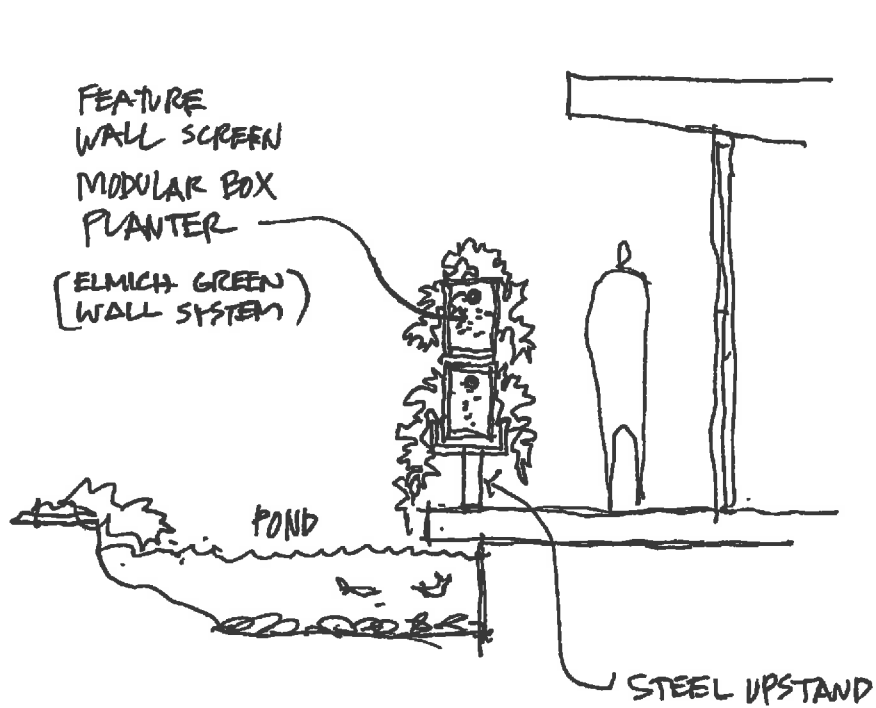
INFORMATION CENTRE  
OPTION 1



SECTION PLUMHEKE SK.14  
CONCEPT STUDY 20.11.08



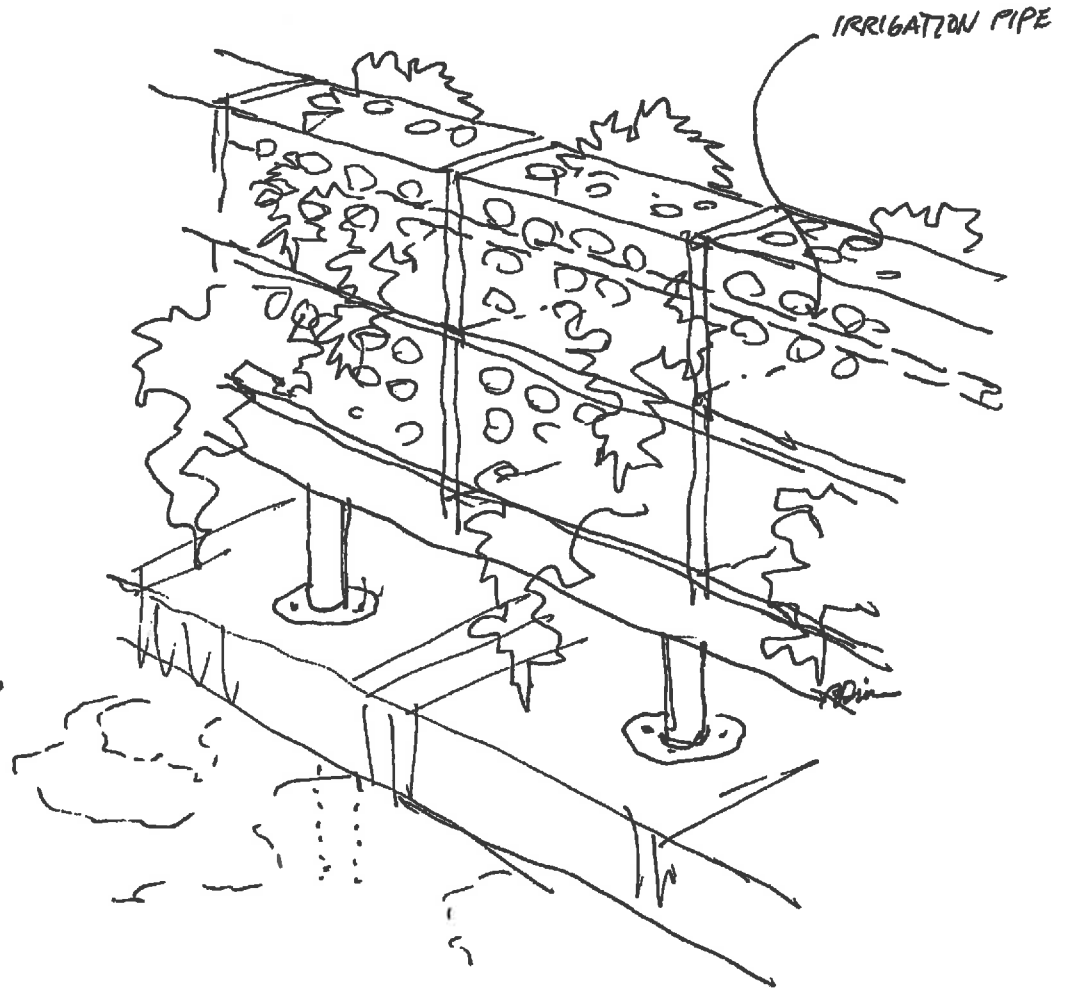




SECTION / OPTION

\* FOR EXTERIOR & INTERIOR APPLICATION

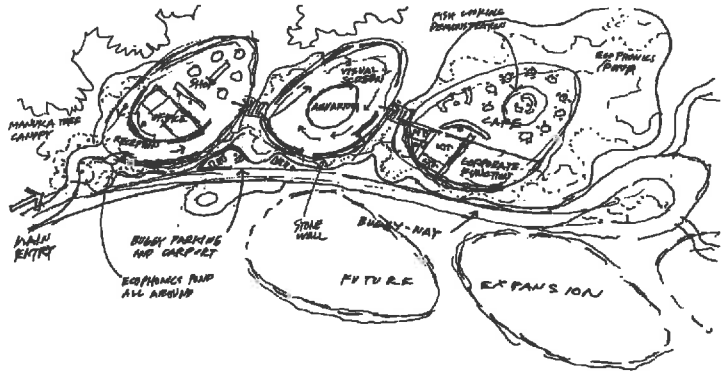
TYPICAL WALL SCREEN



FLUWHEKE  
 CONCEPT STUDY

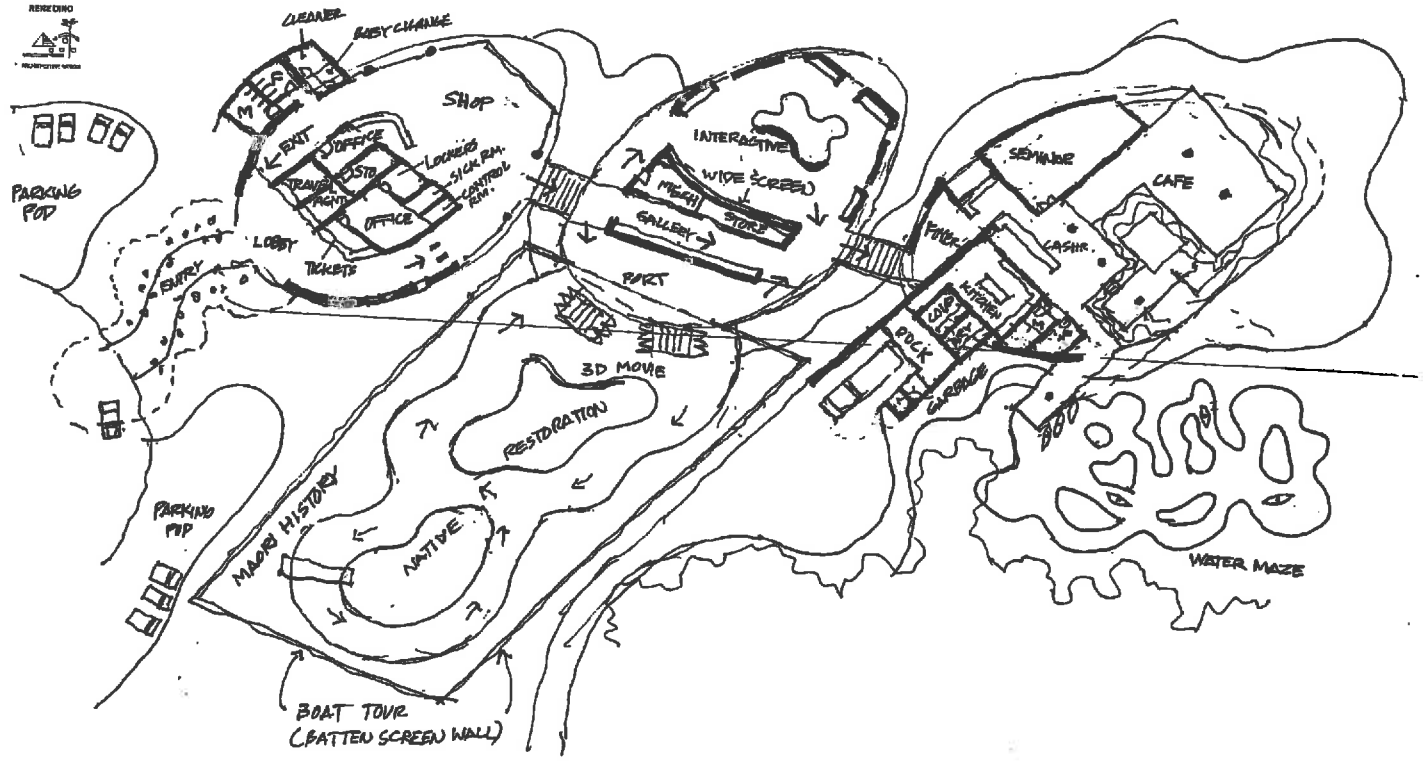
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20.11.08

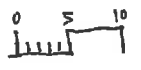


CONCEPT STUDY 0000  
 INFORMATION CENTRE / CAFE  
 A-PLAN 0. 18.11.08

SK.8  
 RESEARCHING  
  
 MANUFACTURING WORK



GROUND FLOOR PLAN



FLIWEKE



Road to Rangiputa Settlement/Kohanga Bay

Motutara Drive

Entry to adjoining subdivision



# Site Photography

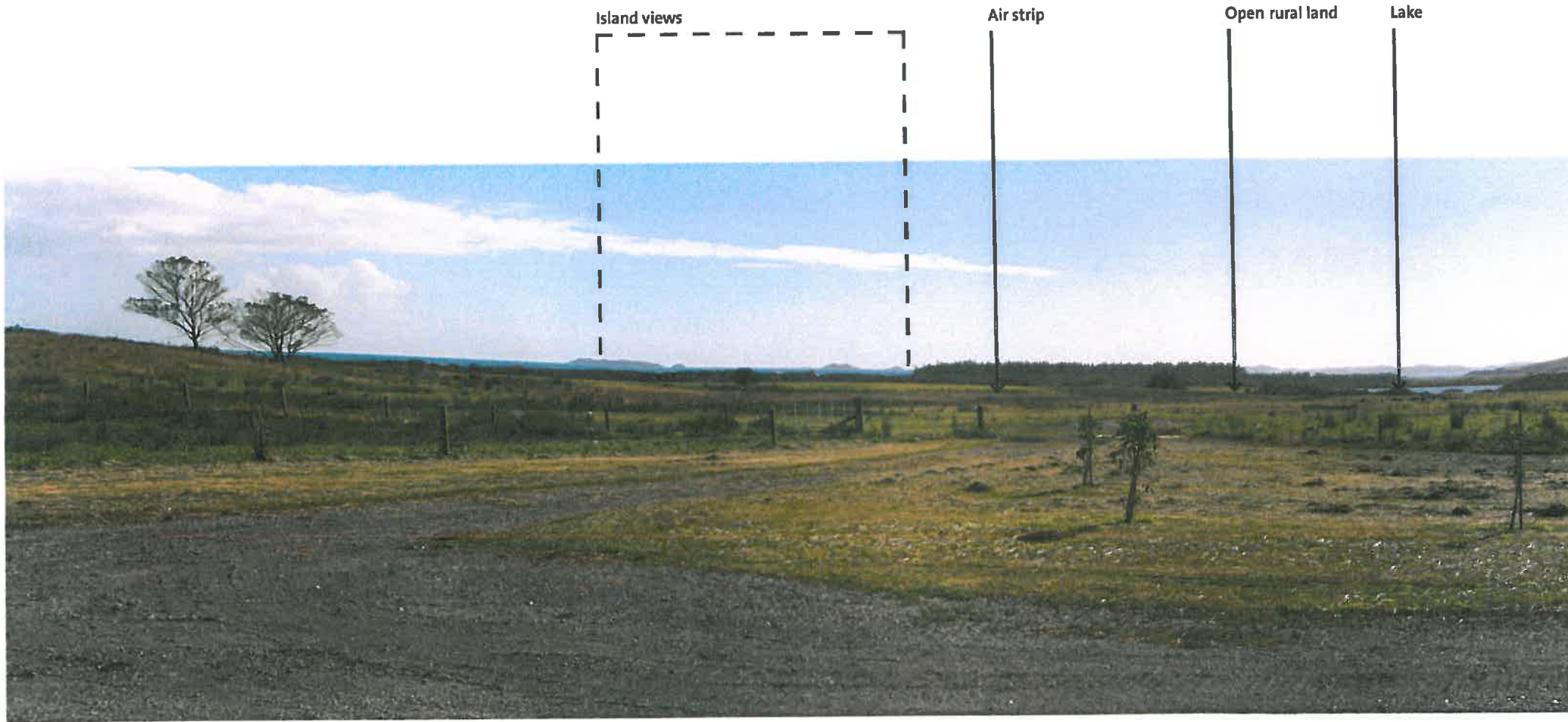
**Proposed site access  
(for discussion with council)**

**Council reserve**

**Rangiputa Road**







Site Photography

Mt Puwheke



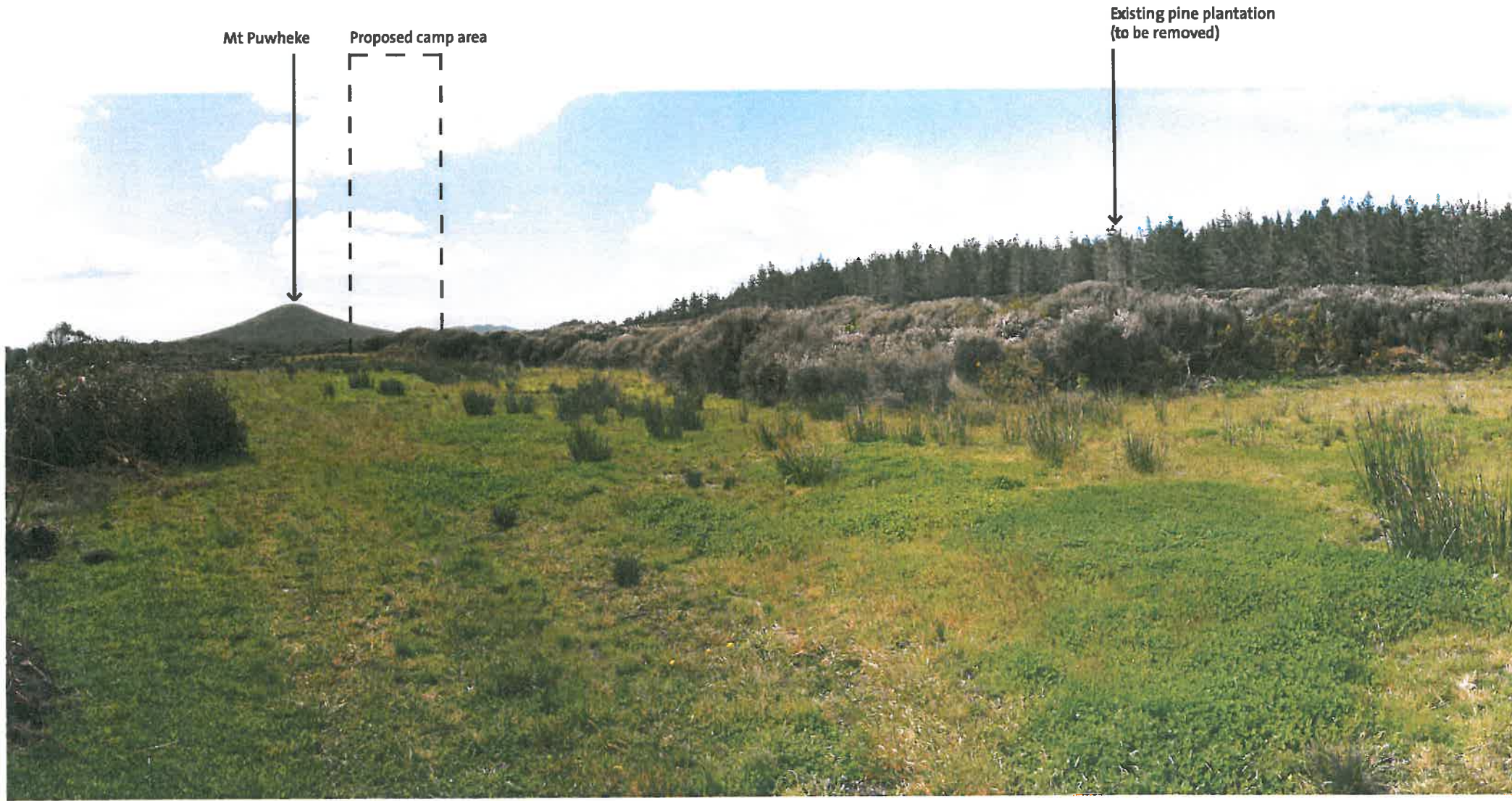
Boundary



Proposed entry







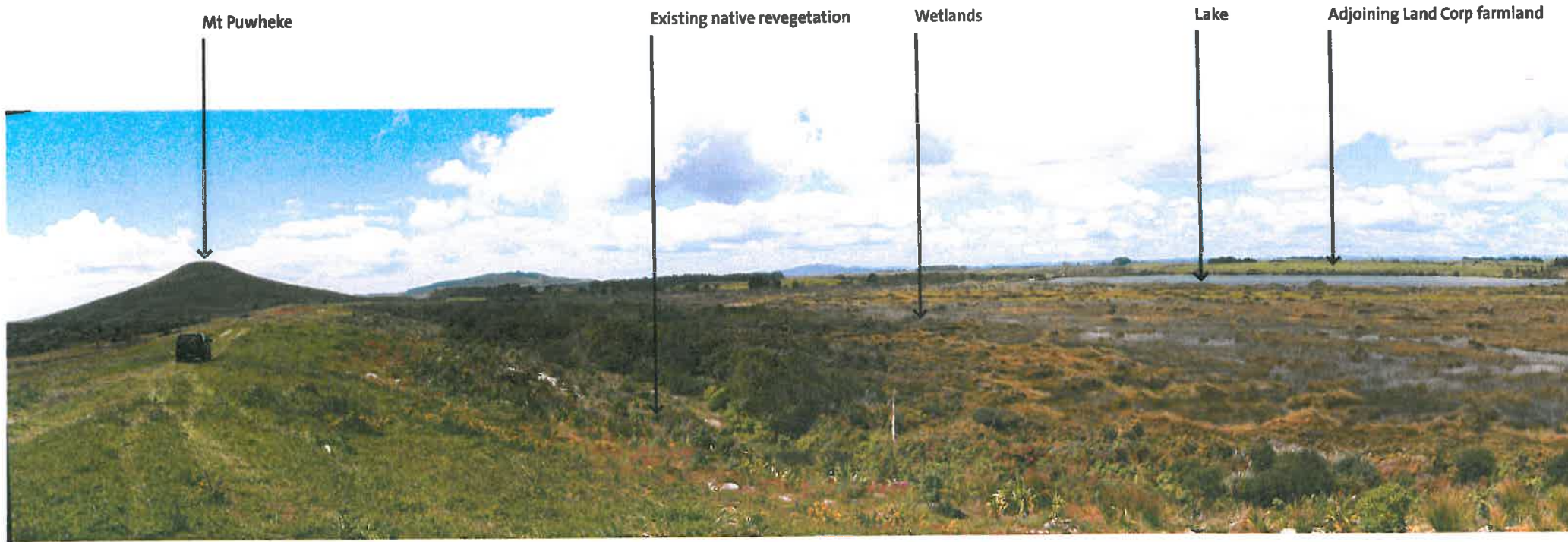
Site Photography



Access back to 'the hub'







**Site Photography**

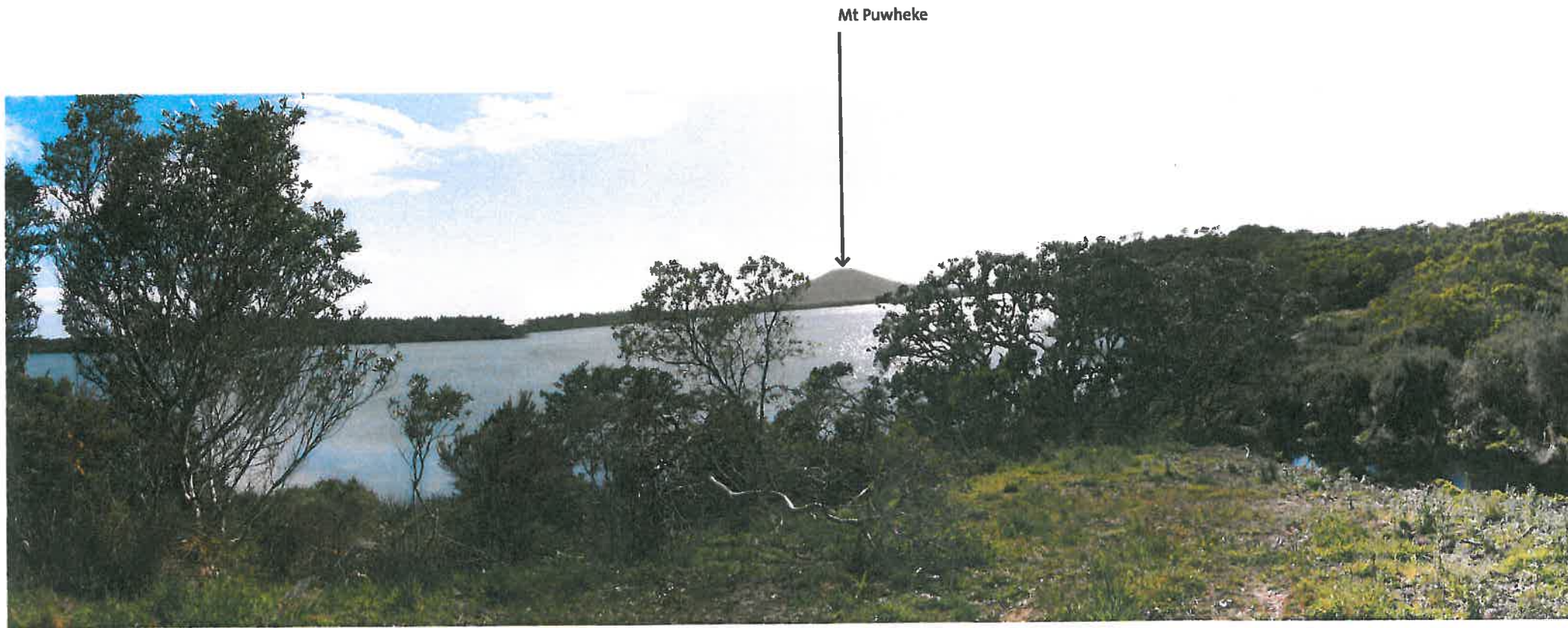
Lake Rotokawau

Existing shed

Existing pines







## Site Photography







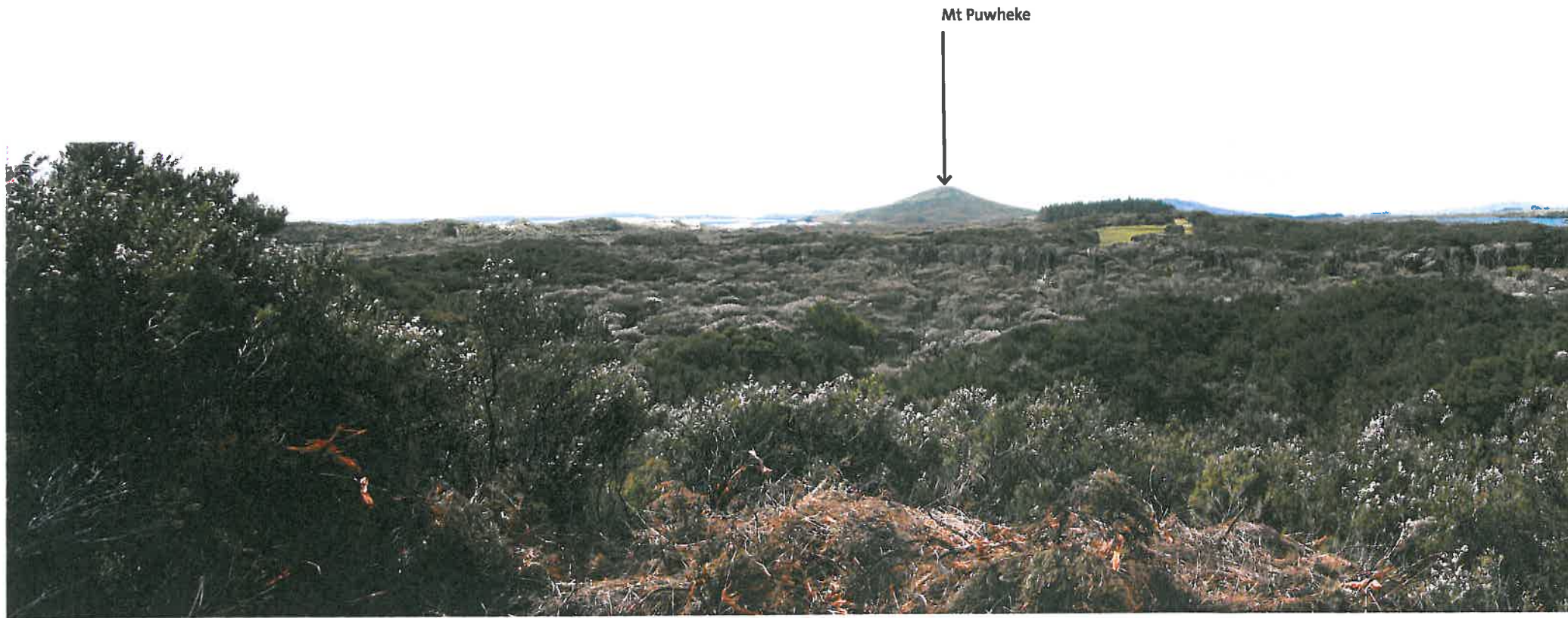
**View From High Point**



Mt Puwheke







## Site Photography



Air strip

Site access

Site boundary

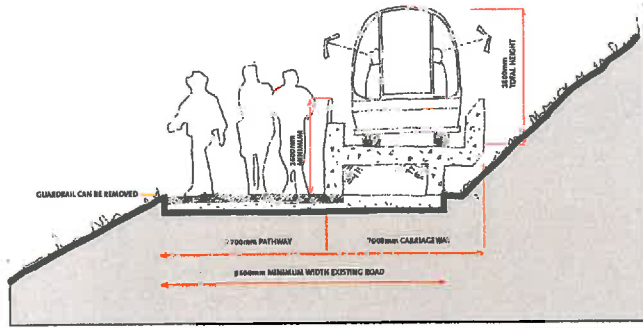


# Transport Options



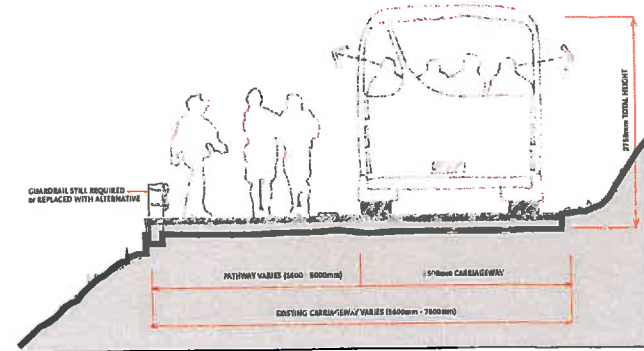


# PERSONAL RAPID TRANSPORT (PRT)

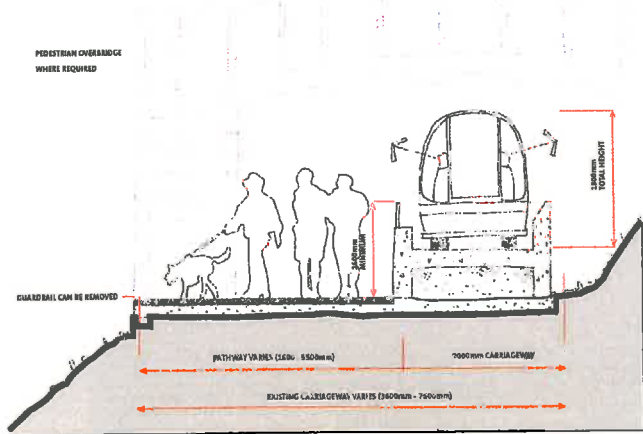


A - A' EXISTING PUHI HUIA ROAD NARROW SECTION

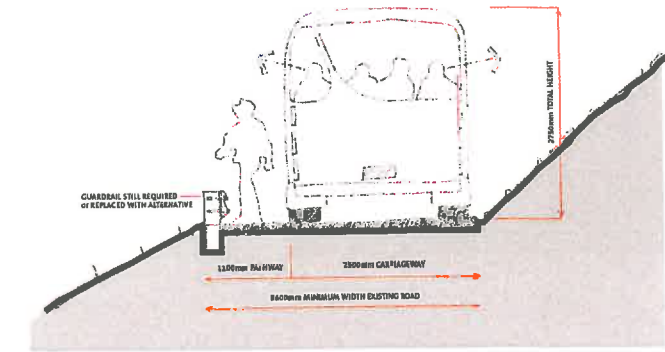
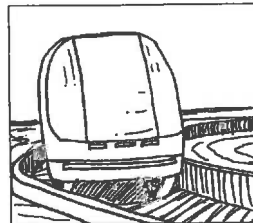
# ELECTRIC BUS



A - A' EXISTING PUHI HUIA ROAD TYPICAL SECTION



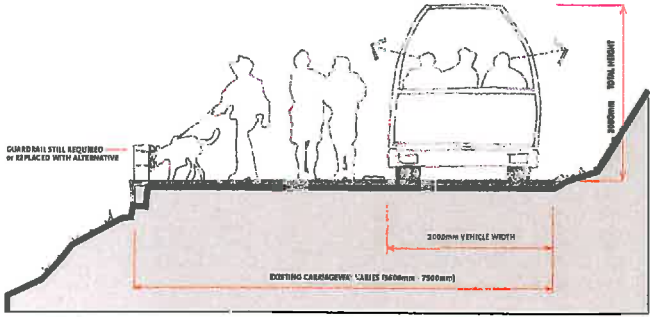
B - B' EXISTING PUHI HUIA ROAD TYPICAL SECTION



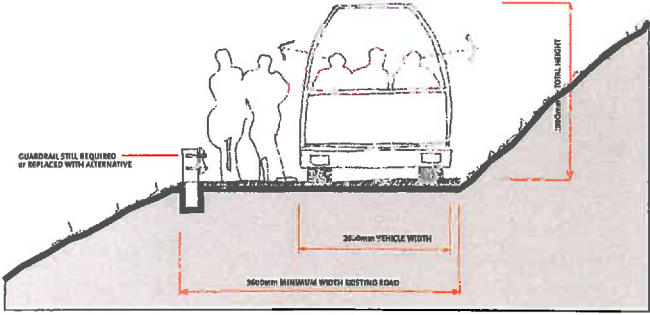
B - B' EXISTING PUHI HUIA ROAD NARROW SECTION



# LIGHT WEIGHT ELECTRIC VEHICLE



A - A' EXISTING PUHI HUIA ROAD TYPICAL SECTION



B - B' EXISTING PUHI HUIA ROAD NARROW SECTION





# Moving Forward

## Next Steps

### 1. Master Plan

Prepare a Master Plan to guide the project across a 10-year timeframe. The Master Plan will:

- a. Show a graphic representation of the completed project supported by illustrations suitable for publicity purposes.
- b. Clearly articulate project objectives and explain the various components of the project.
- c. Staging to best achieve the project based on budgetary, RMA 1991 and other constraints.
- d. Project phases and timeframes.
- e. Preliminary technical inputs including architecture and engineering to establish costs and test assumptions, opportunities and constraints.
- f. Budgets.

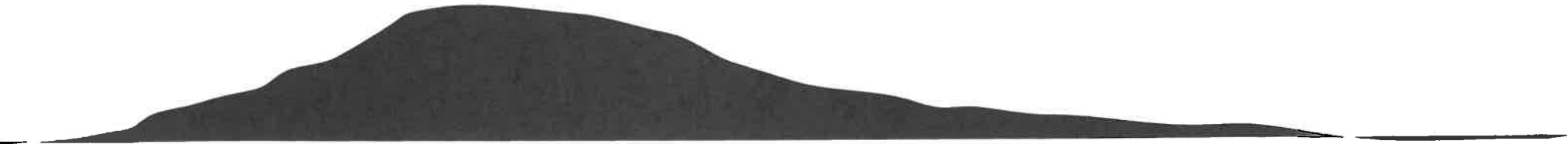
### 2. Consultation/Engagement

- a. Engagement with Te Whanau Moana to establish a relationship and protocols for its involvement in the project. In particular to gain its support to work together on initiatives relating to Puwheke Mountain.
- b. Consultation with DOC to introduce the project and obtain approval in principle for initiatives relating to Puwheke Mountain, concessions for activities on the lake and adjoining reserve and beach restoration initiatives.
- c. Consultation with wider community: media releases, web site and possibly open days.
- d. Far North District Council: establish approval in principle to take part of recreation reserve at entrance to property. Offer upgrade of road end beach carpark.

### 3. Consent Processes

- a. Apply for resource consents for development and subdivision. This establishes a 5-year timeframe to give effect to the consent (a longer period can be sought).
- b. Utilise and secure development potential allowed under current District Plan.
- c. Goal to obtain non-notified resource consent (see role of consultation above).

### 4. Implementation



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