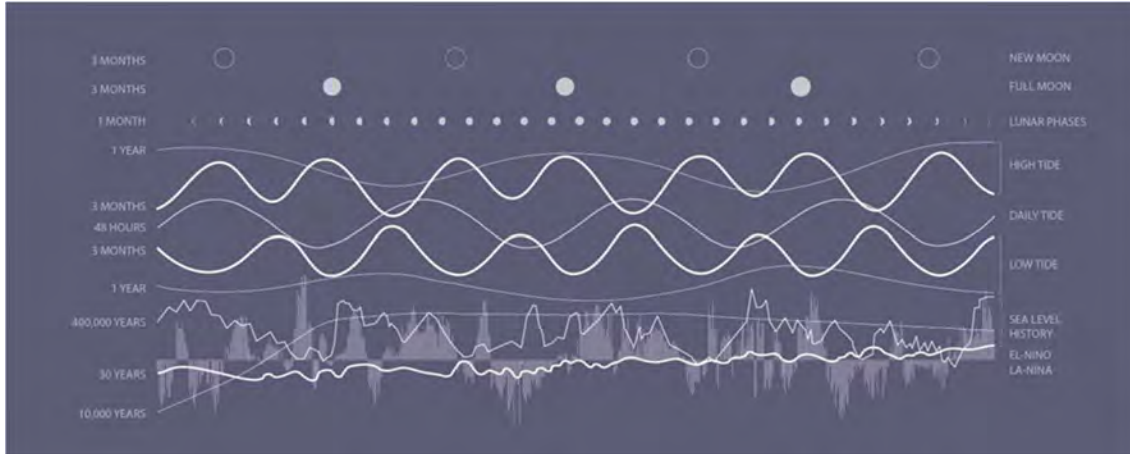


## Appendix A – Phase 1 Exhibitions

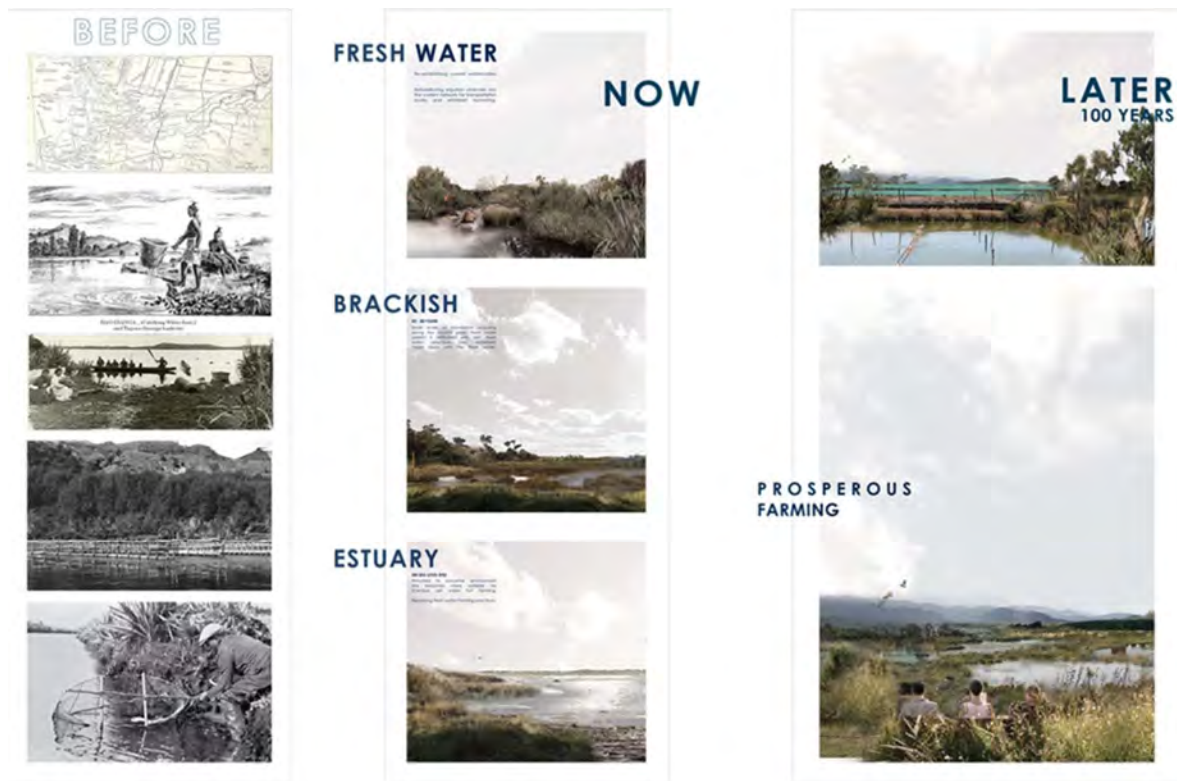
The following are examples of key displays at the first three Wai o Papa: Waterlands Exhibitions, during Phase 1 of this research. The first and second exhibitions (see figures on this below and on the following 2 pages) were in the School of Architecture gallery, Victoria University, Wellington.



*Geological Time* was an image used in the first exhibition, as an overlay on the window exhibition space. It featured historic to current weather cycles from 400,000 years to present. (Compiled by Penny Allan and Abdallah Richards, which drew on analysis conducted by wider research team)



The Maramataka (Māori lunar calendar) featured in the second exhibition at Victoria University, Wellington.

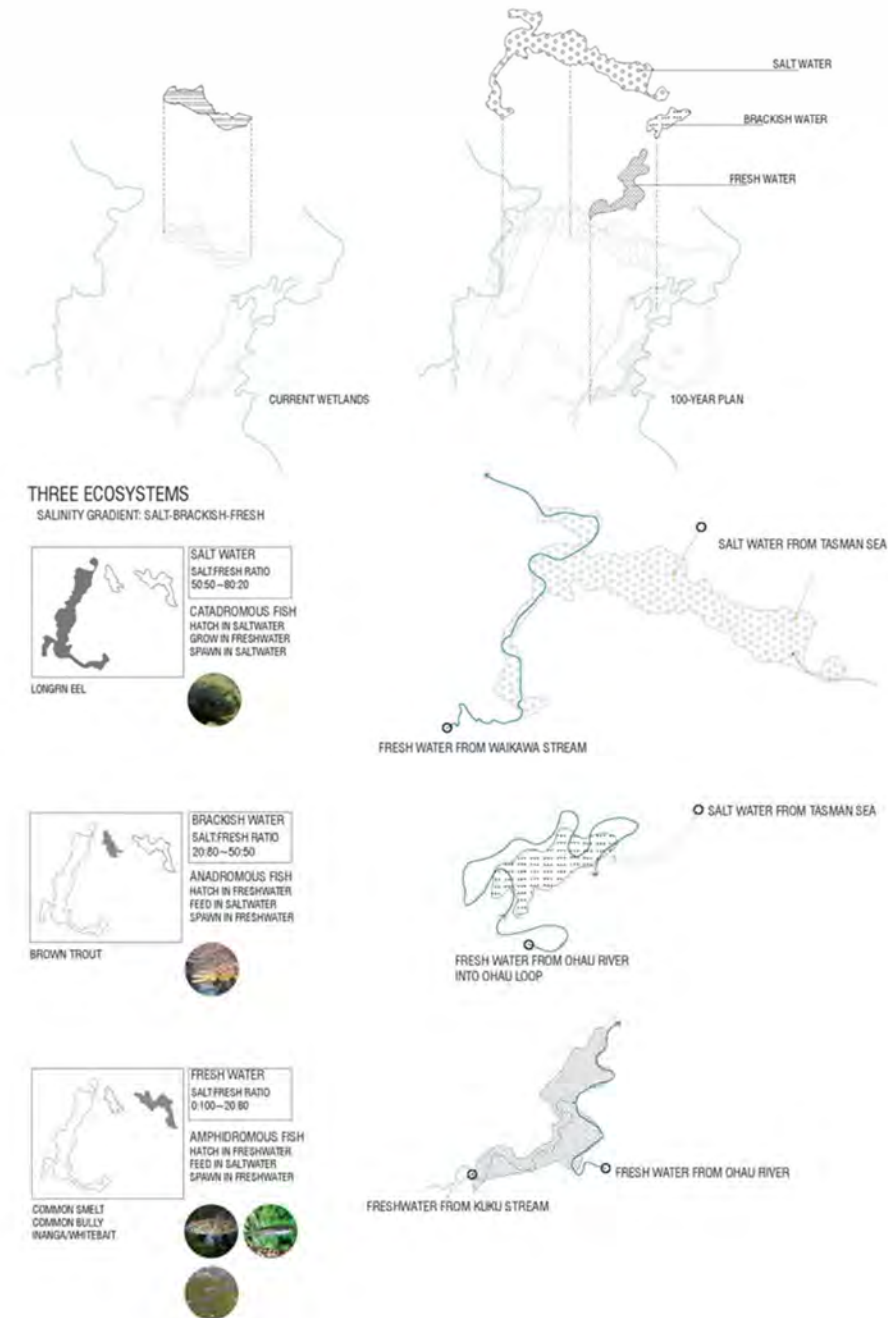


Student work by Alexandra Jackson and Ryan McCully (above and below)



## WETLAND RESTORATION

ECOLOGICAL RESILIENCE  
SALINITY GRADIENT  
OHAI LOOP



Student work by Yota Kojima showing potential restoration of wetlands for a food producing venture of the farm

The third exhibition, *Whakatairangitia – rere ki uta, rere ki tai*, was held in a collection of disused dairy sheds on the Tahamata farm. *Whakatairangitia – rere ki uta, rere ki tai* was later repurposed into the fourth iteration in the Dowse Art Museum, Lower Hutt, Wellington.



The following (see the next 2 pages) depict work in these latter exhibitions by Masters student, Deborah Scott, to revitalise the harakeke industry (NZ flax), planting the farm's waterways and wetland fringes with harekeke whilst prioritising dairying on higher ground. A revitalized harakeke industry works with Māori cultural traditions: in the 19th century, local iwi and hapū harvested it from the margins of wetlands and waterways to develop a significant and sustainable industry around its fibre. Re-establishing harakeke also has significant environmental benefits: cleaning polluted waters; encouraging biodiversity; minimising the effect of erosion and land loss; slowing down flood waters, and mitigating coastal impacts of higher or more salinised water tables. Particular emphasis is given to how such changes could be implemented on the Tahamata farm block, on which the exhibition was held.

Can productive landscapes be considered as a type of heritage landscape? What if heritage landscapes were an integral part of a new productive surface and could improve production?



Marjanka, New Zealand, wearing the

**Habitat**  
Commonly found in transitional zones from island to coastal areas in wetland areas and along river and stream banks.

Flowering

September - October - November

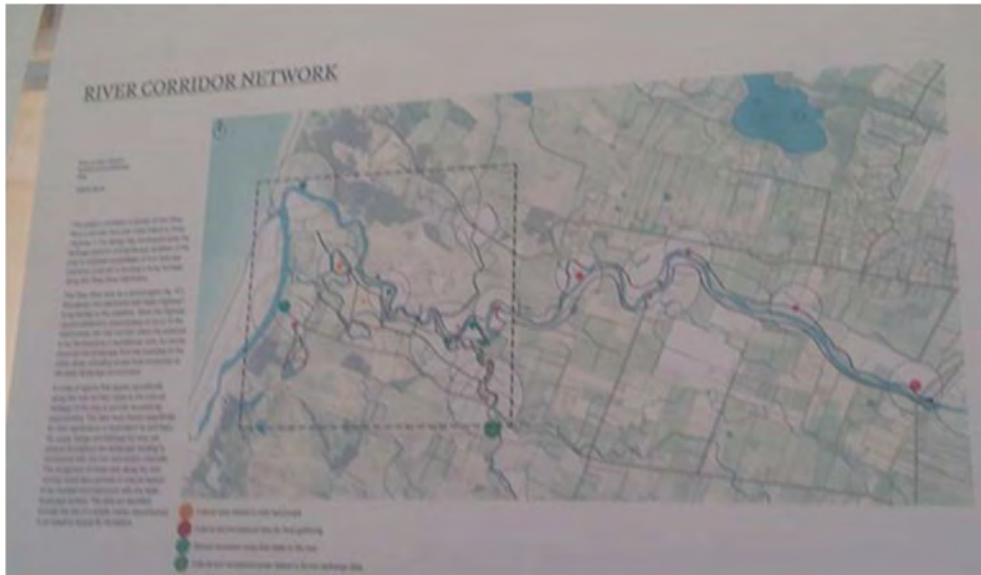
**Feeding/Weeding:**  
(November - ) December - May/June

Soils

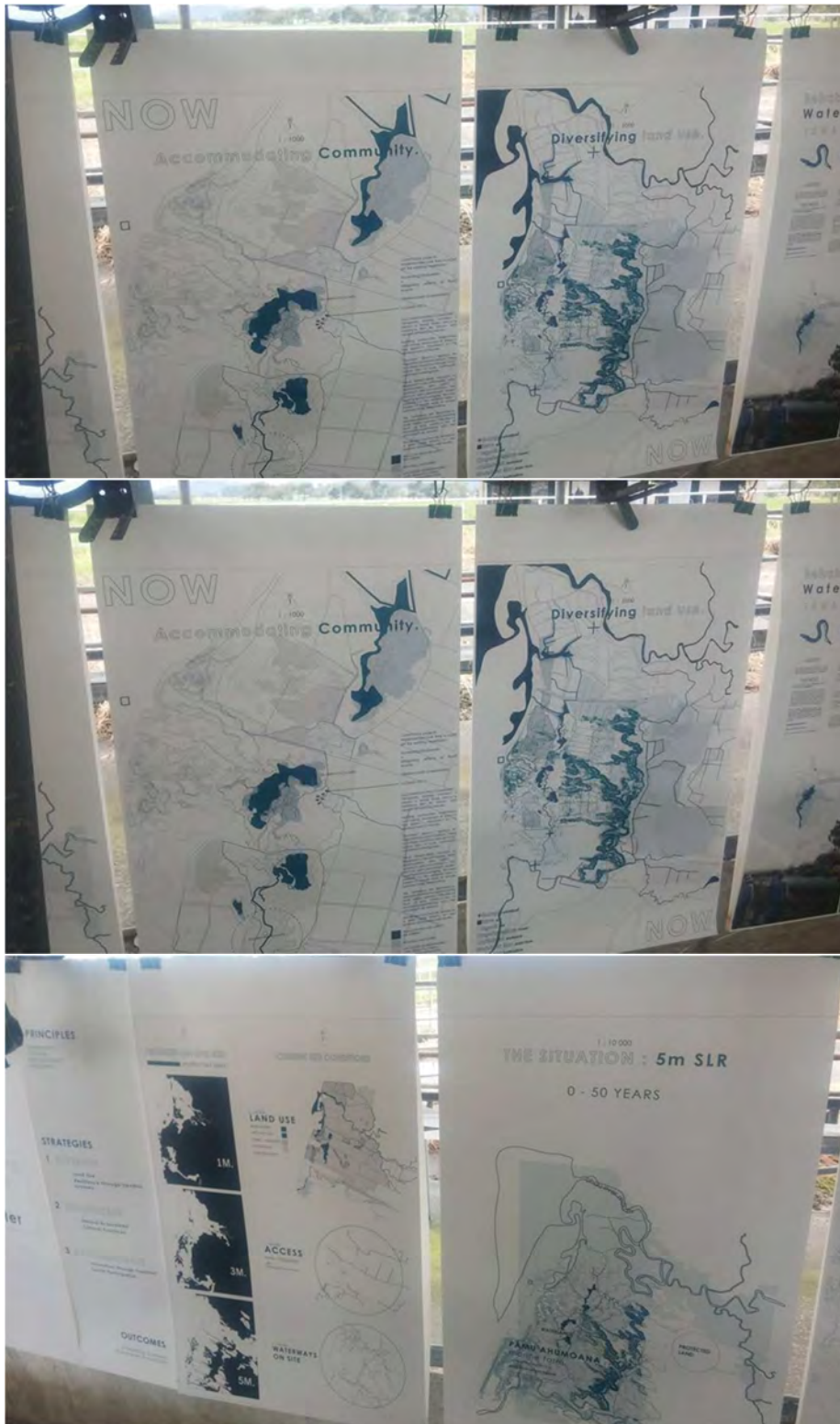
High school and free drawing



weight



Team work by Master's students from Victoria University, see below, was kaupapa about adapting to water inundation, including various land use changes that could be implemented over time.



One strategy explored is the use of tuna īnanga to rehabilitate waterways (see below).





### HABITAT

Eels thrive in places or habitats that provide good cover like free root clusters, woody debris and overhanging riparian vegetation.

### METHOD

A popular way of cultivating eels is by a method called **valliculture**.

Rather than using pond or tanks, farmers use the natural areas of the coast to grow the eels. This might be from making use of natural lagoons and by setting up a weir to keep the eels from escaping into the open waters, keeping them contained so that the can be harvested once they reach the desired size.

After slaughter, the eels are sent to a processing unit, **often located at the farming site**, where they are cleaned and cut up, then sold fresh or prepared (smoked, marinated, cooked, in sections, filets, preserved or frozen).

#### MARKET CONSIDERATIONS

Need chilled transportation  
\*  
Easy access to roads to take to processors.



### HABITAT

Catchment land use is not a critical factor; inanga occur equally in waterways draining pasture or native forest

Stream size is also not important as long as there is a permanent year-round flow; inanga are found in streams as small as 1m wide up to large waterways.

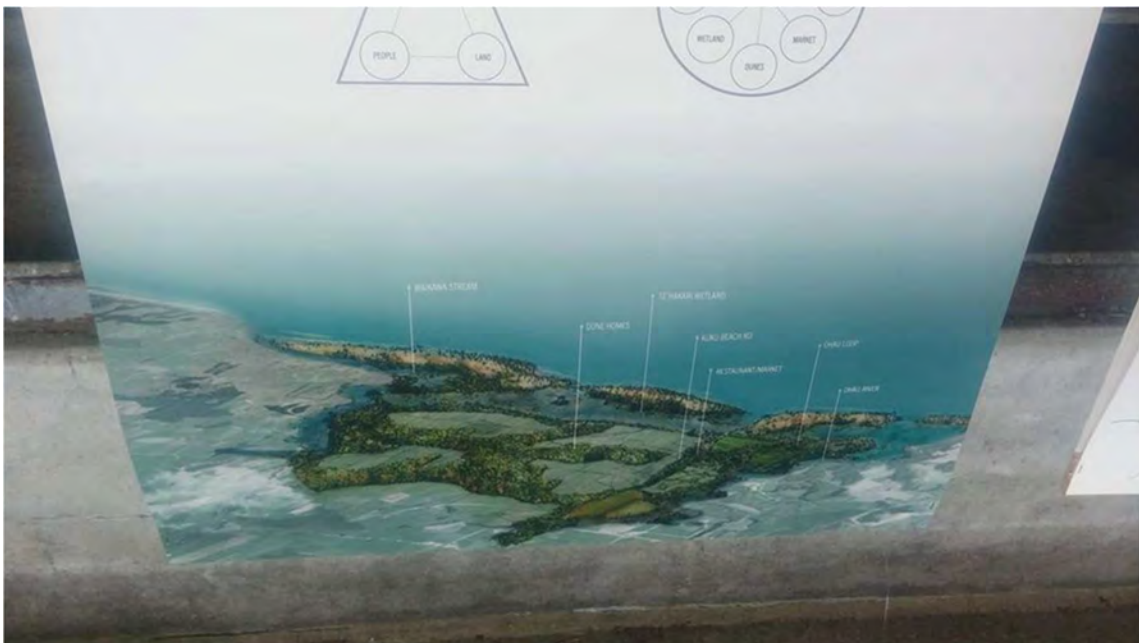
### METHOD

After migrating inland from the sea, inanga spend the next 6 months in fresh water growing to maturity.

Although both still and flowing waters are used by inanga, this document focuses on flowing water habitat

It is probably impractical to attempt a restoration project on a large waterway, so the farms irrigation channels and existing river and wetland systems create an established network within which we can optimise inanga habitat

Likewise, alternate housing using prefabricated housing suited to changed environmental conditions, was explored by Victoria University students. The kaupapa exhibited below and on the following page, explored returning whānau to the land via papakāinga that could adapt to living on higher ground, and also the return of the harakeke industry to whenua as adjuncts to other diversified economies.





Program Breakdown:

**Whakaako**

Visitors Centre/Pavilion and events centre/multi use space:  
Educating the public about climate change in specific relation to this overall scheme.

**Whakatipu**

Market: Produce grown on the farm to sell to the public.  
Grown also to serve the restaurant.

**Kai**

Restaurant: Public engagement, Iwi and Pakeha connections. Commercial-sized kitchen to be used as an education space. The public can come in and learn how to cook produce grown on the land. Kitchen also to be used to cater events centre.

**Food Store:**

Produce storage to occupy existing hay shed building. Store has space to house storage, refrigeration, germination rooms, pickles storage and a greenhouse. This space will predominantly be occupied by staff.

Section AA

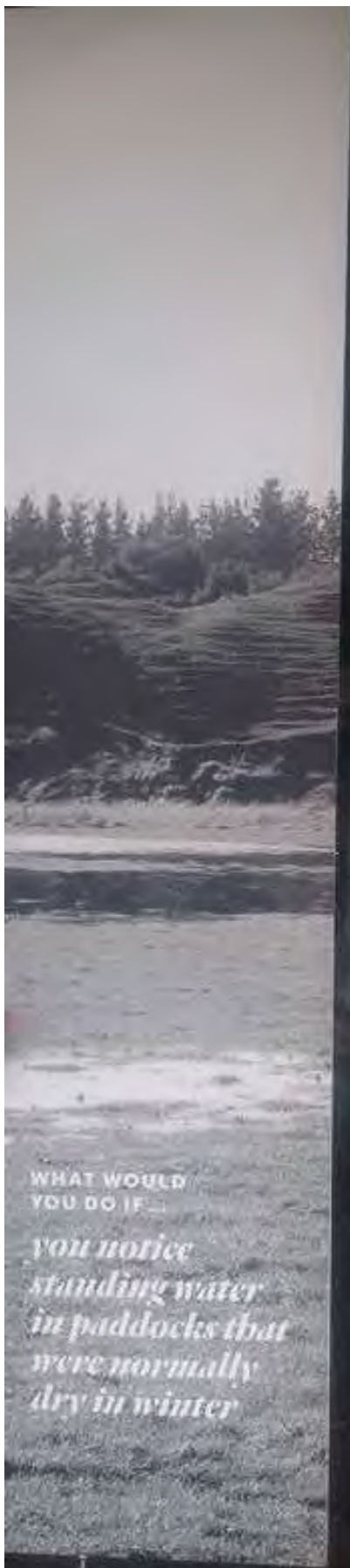
Section BB

Section CC

Section DD

What would you do if...?





WHAT WOULD  
YOU DO IF ...

*you notice  
standing water  
in paddocks that  
were normally  
dry in winter*

## thresholds

**A threshold is a change of state of a system and a point of no return.**

If a threshold is reached decisions you made according to business as usual now need revising. Thresholds take time; they could happen over 30 year duration or the duration might be shorter. Thresholds happen when recovery times aren't fast enough for systems to be sustainable.

what are you going to do if...

### 1. Rise in ground water

- The 2008 flood even happened every year?
- You notice standing water in paddocks that were normally dry in winter?
- You have trouble getting pasture species to thrive?
- You notice the appearance of more salt tolerant species?

#### Strategies

Protect arable land by draining or raising ground, farm the flood plain differently

### 2. Erosion of Coastal dunes

- The coastal dunes are eroding during storms and in high tides

#### Strategies

Plant coastal dunes and maintain them as a first defence

### 3. River flooding frequency

what are you going to do if ...

- The river mouth starts looking more like an estuary
- You lose arable land to collapse of river bank

#### Strategies

make room for water by increasing wetland area and re-connecting the loop; farm the flood plain differently-introduce aquaculture



The exhibition *Whakatairangitia – rere ki uta, rere ki tai* at the Dowse Museum, Lower Hutt.

Please refer to Phase 1 report on the Deep South NSC website<sup>358</sup> and also the range of papers and book chapters that have arisen from this work with landscape architecture and design in section 3.4.

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<sup>358</sup> <https://www.deepsouthchallenge.co.nz/programmes/vision-matauranga>

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## Appendix B –Adaptation Strategies to Address the Projected Climate Change Impacts in the Case Study Rohe

### Adaptation Strategies to Address Climate Change Impacts in the Rohe

A toolbox of eight adaptive strategies was formulated based on the research findings which indicated nine key strategies that (if implemented over time) the research team envisages will maximise economic productivity and protect coastal farms from the variability of climate change impacts. The toolbox is intended to be a guide to the choices farm managers, trustees and shareholders might make over time, based on the most current research about climate change and its potential impact on the coast. Our research has shown that coastal ecosystems are vital and important for stabilising the coastline, improving groundwater management, and acting as a buffer for the more intensively managed areas further inland. More resilient approaches to coastal stabilisation should involve maintaining a sequence of plant species starting with saltmarsh plants and salt tolerant grasses by the high tide level and then going back in stages using species such as harakeke, cabbage trees, kahikatea, manuka, and many more.

The strategies are based on three over-arching steps, with specific activities for each, as listed below. The strategy is explored further below, with maps depicting where such strategies are likely to be most relevant in the rohe.

#### PROTECT:

1. Protect coastal dunes  
*Protect and establish dunes as the first line of defence.*
2. Protect wetlands  
*Establish wetlands as a buffer against sea level rise and flooding.*
3. Protect the most arable land.  
*Establish and plant embankments to protect the most arable land*
4. Protect habitat and biodiversity  
*Restore existing and regenerate new habitats with links between ecosystems; e.g., salty, brackish, freshwater wetlands; dune habitats, terrestrial vegetation).*

#### ADAPT/ANTICIPATE:

5. Make room for water  
*Anticipating areas for expansion of water will reduce ecological disturbance and protect arable land from inundation. Activating the Ōhau loop will prevent erosion, slow the river down and improve hydrology.*
6. Diversify farming practices  
*Minimise economic risk by maximising diversity using culturally specific farming practices, e.g., harakeke, forestry, manuka, aquaculture.*
7. Develop adaptive infrastructure  
*Adapt existing farm buildings for an extra revenue stream.*

---

*Establish robust all weather connections: (bridges, boardwalks, roads connecting high ground) to serve as the foundational infrastructure for all future development.*

8. Celebrate the high ground

*Provide infrastructure for cultural festivals that might eventually be the basis for new settlement.*

RETREAT:

9. Settle the high ground.

*Establish plans for existing whare and new papakāinga to be re-sited on flat, unproductive, north facing high ground, above the 5m level*

## 1. Protect coastal dunes

Protect and establish dunes as the first line of defence



SCALE: 1:25 000 @ A4

PROTECT

Figure 7.1 Protect Coastal Dunes

Figure 7.1 shows the location of existing coastal dunes (in pink) and where these might be supplemented to protect the farm in the short term (in yellow). The darker green depicts pine plantations, some of which have recently been removed.

## 2. Protect wetlands

Establish wetlands as a buffer against sea level rise and flooding

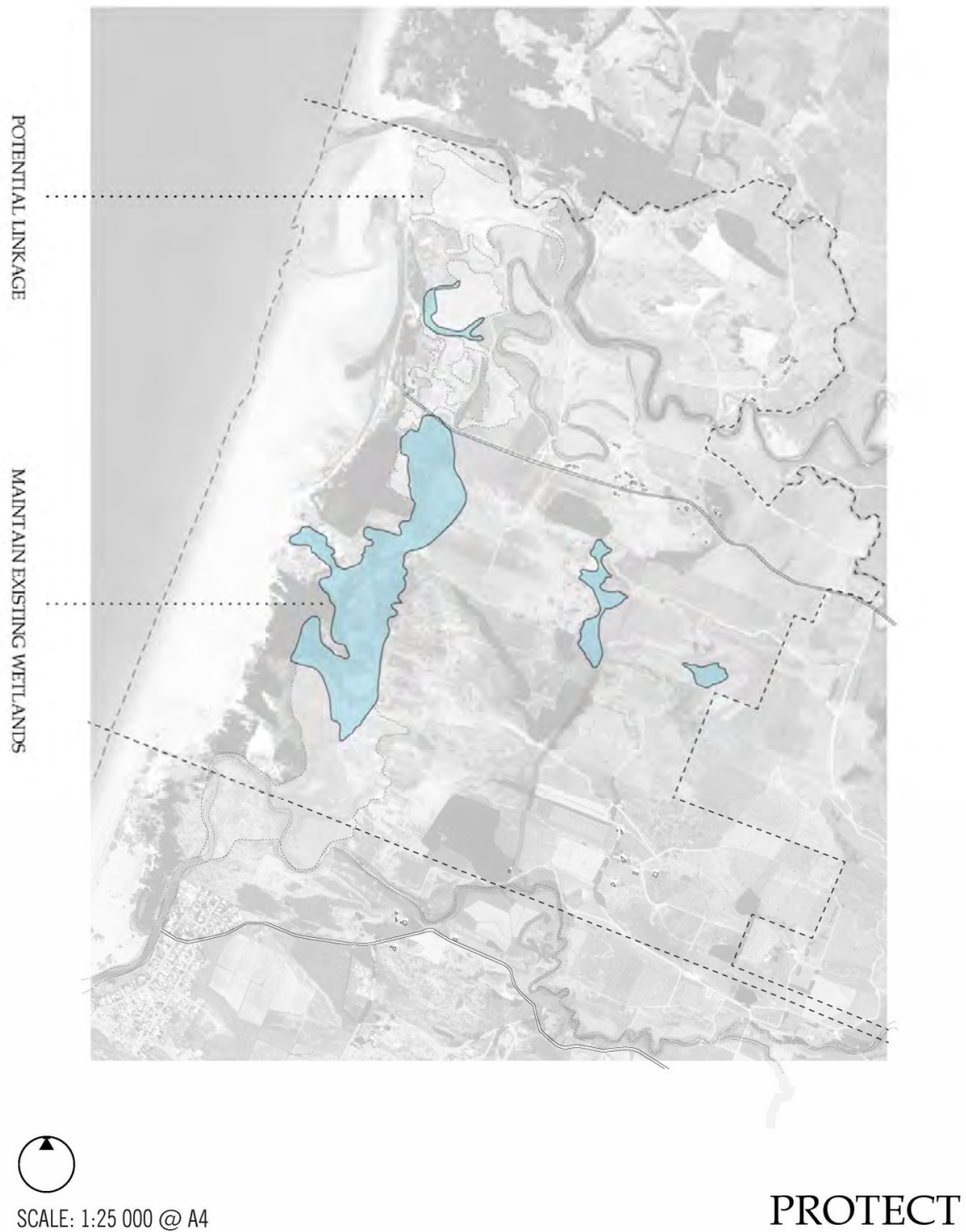
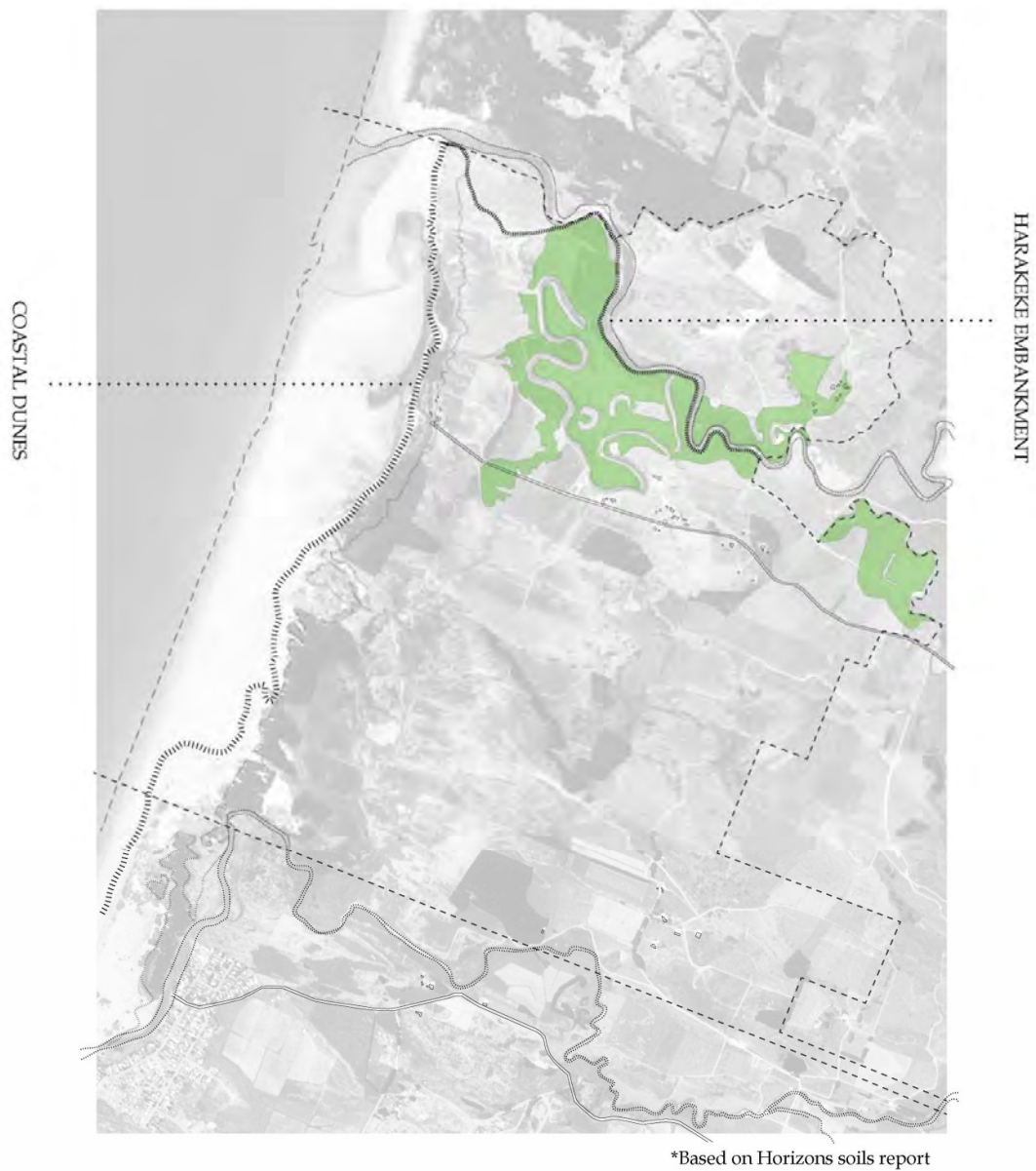


Figure 7.2 Protect Wetlands

Figure 7.2 describes where wetlands should be protected and potentially linked to the Ōhau River network to act as a buffer against storm surge and rising salinated ground water.

### 3. Protect the most arable land

Establish and plant embankments to protect the most arable land



SCALE: 1:25 000 @ A4

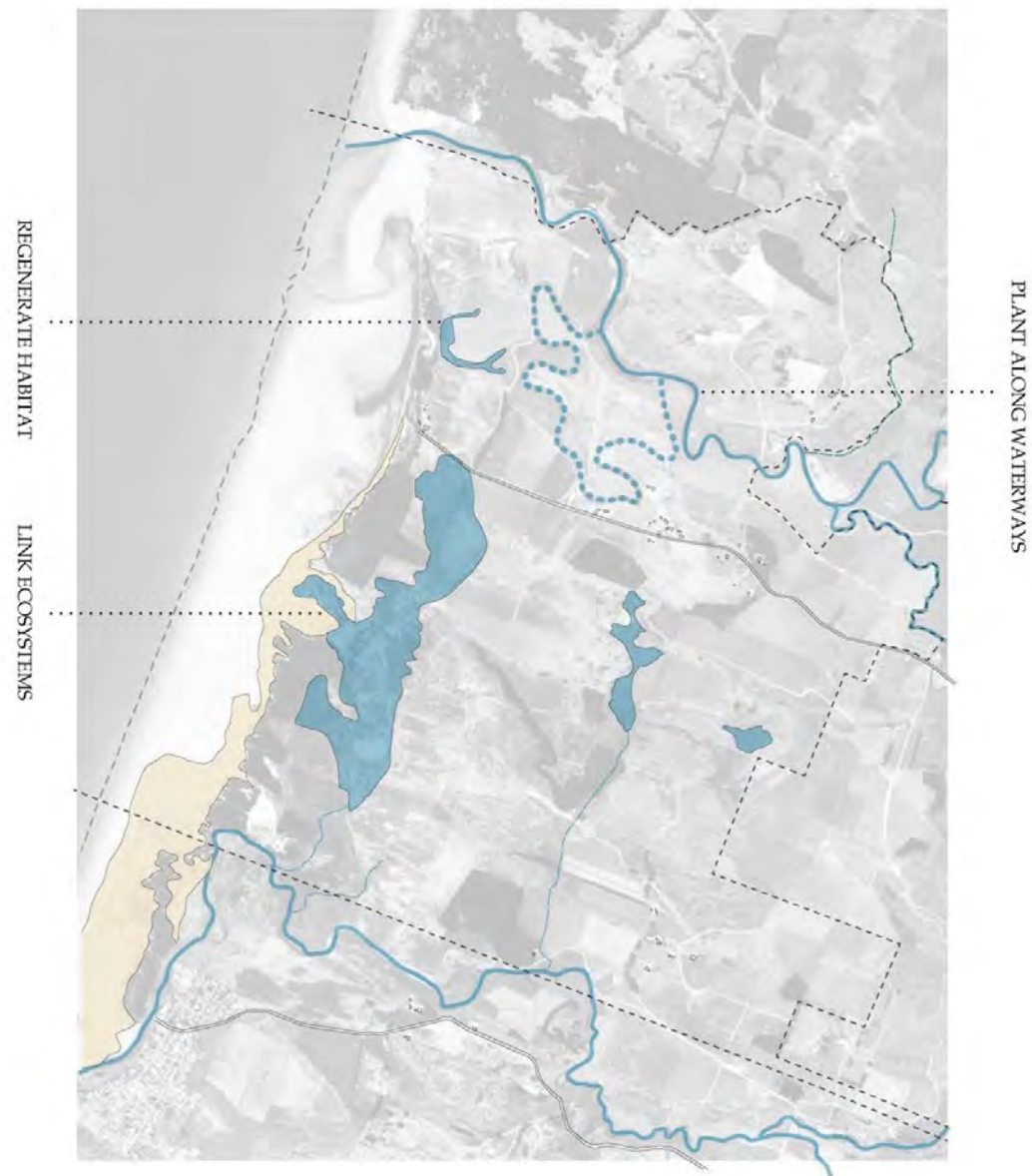
PROTECT

Figure 7.3 Protect Most Arable Land

Figure 7.3 shows the most arable land suggesting it might be protected with harakeke embankments along the river and by building up coastal dunes.

#### 4. Protect habitat and biodiversity

Restore existing and regenerate new habitats with links between ecosystems e.g. salty, brackish, freshwater wetlands; dune habitats, terrestrial vegetation)



SCALE: 1:25 000 @ A4

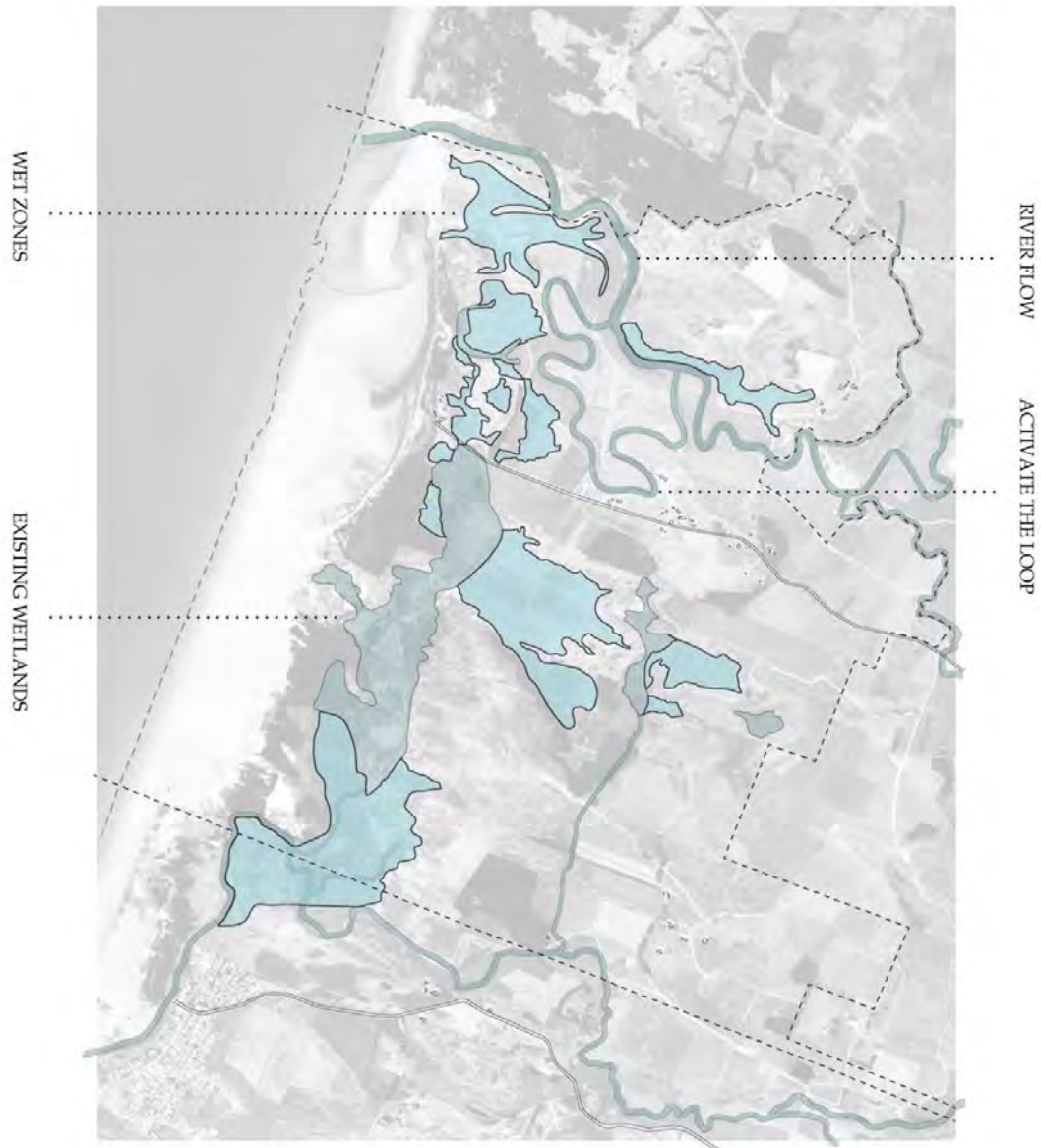
PROTECT

Figure 7.4 Protect Critical Habitat

Figure 7.4 shows the critical habitat and where it might be protected.

## 5. Make room for water

Anticipating areas for expansion of water will reduce ecological disturbance and protect arable land from inundation. Activating the loop will prevent erosion, slow the river down and improve hydrology.



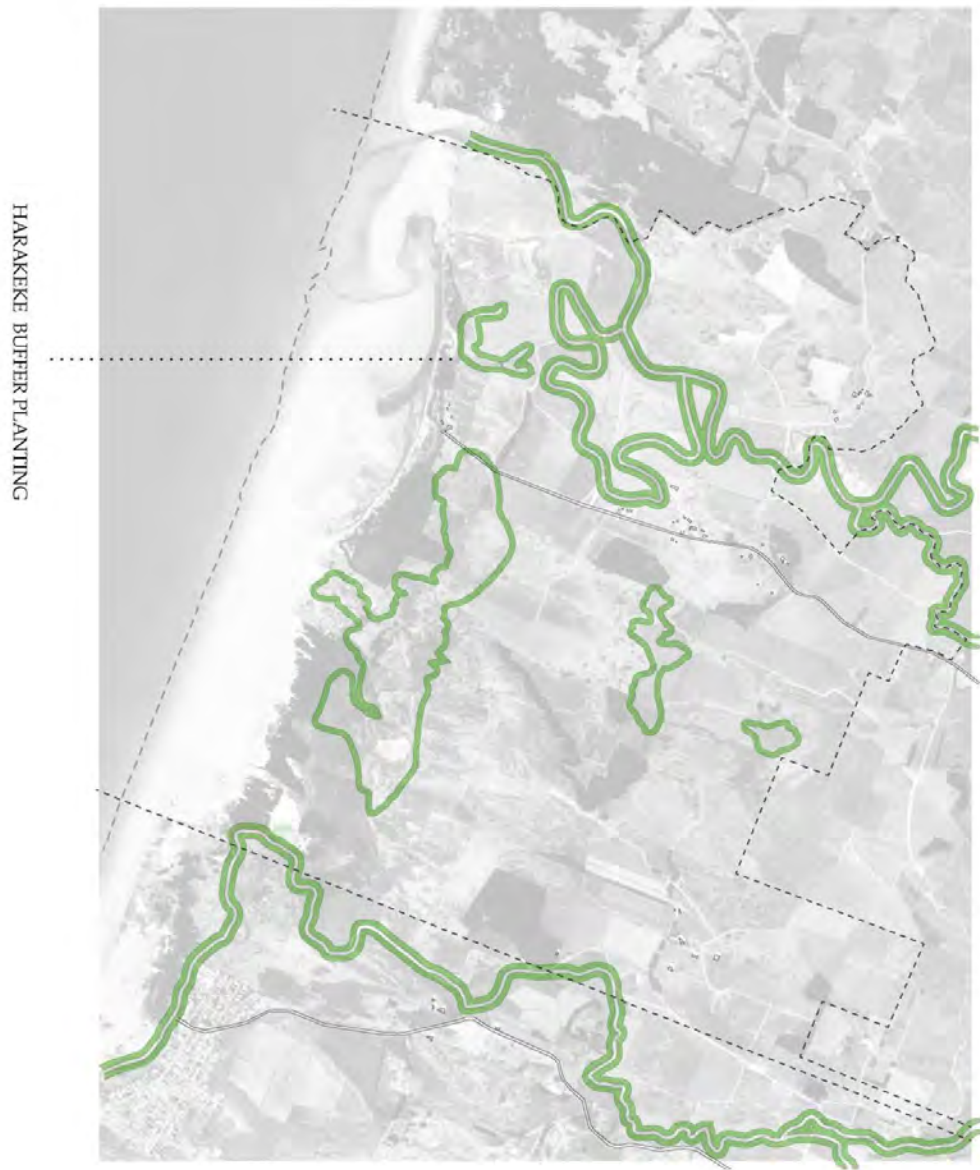
SCALE: 1:25 000 @ A4

ADAPT

Figure 7.5 Adapt – Make Room for Water

Figure 7.5 suggests that designating more low lying areas as permanent and ephemeral wetlands will

**6.Diversify farming practices : Harakeke**  
Harakeke farming on fertile flood prone land around water ways will reduce the need for flood protection while maintaining farm profitability



SCALE: 1:25 000 @ A4

ADAPT

not only protect habitat but also direct flood waters away from valuable farmland. It could also provide the basis for a diversification of farm practices to include aquaculture (see following).

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Figure 7.6      Adapt – Plant Harakeke

Figure 7.6 to Figure 7.9 depict the location of a range of possible appropriate farm practices that might supplement and ultimately replace dairying. Figure 7.6 depicts the location of potential harakeke planting, as one possible appropriate farm practice that might supplement and ultimately replace dairying.

Figure 7.7      Adapt – Plant Forests behind Dunes

## 6.Diversify farming practices : Forestry

Establishing forestry behind dunes will protect the farm from onshore winds and provide an alternative income



SCALE: 1:25 000 @ A4

ADAPT

Figure 7.7 identifies the location of potential new forestry as an alternative future farming land use.

## 6.Diversify farming practices : Manuka

Establishing manuka plantations on unproductive and erosion prone dune lands could provide an alternative income



SCALE: 1:25 000 @ A4

ADAPT

Figure 7.8 Adapt – Plant Manuka Plantations

Figure 7.8 identifies potential location of manuka forests as a potential future alternative land use.

## 6.Diversify farming practices : aquaculture

Increase fish populations for recreational or commercial fishing

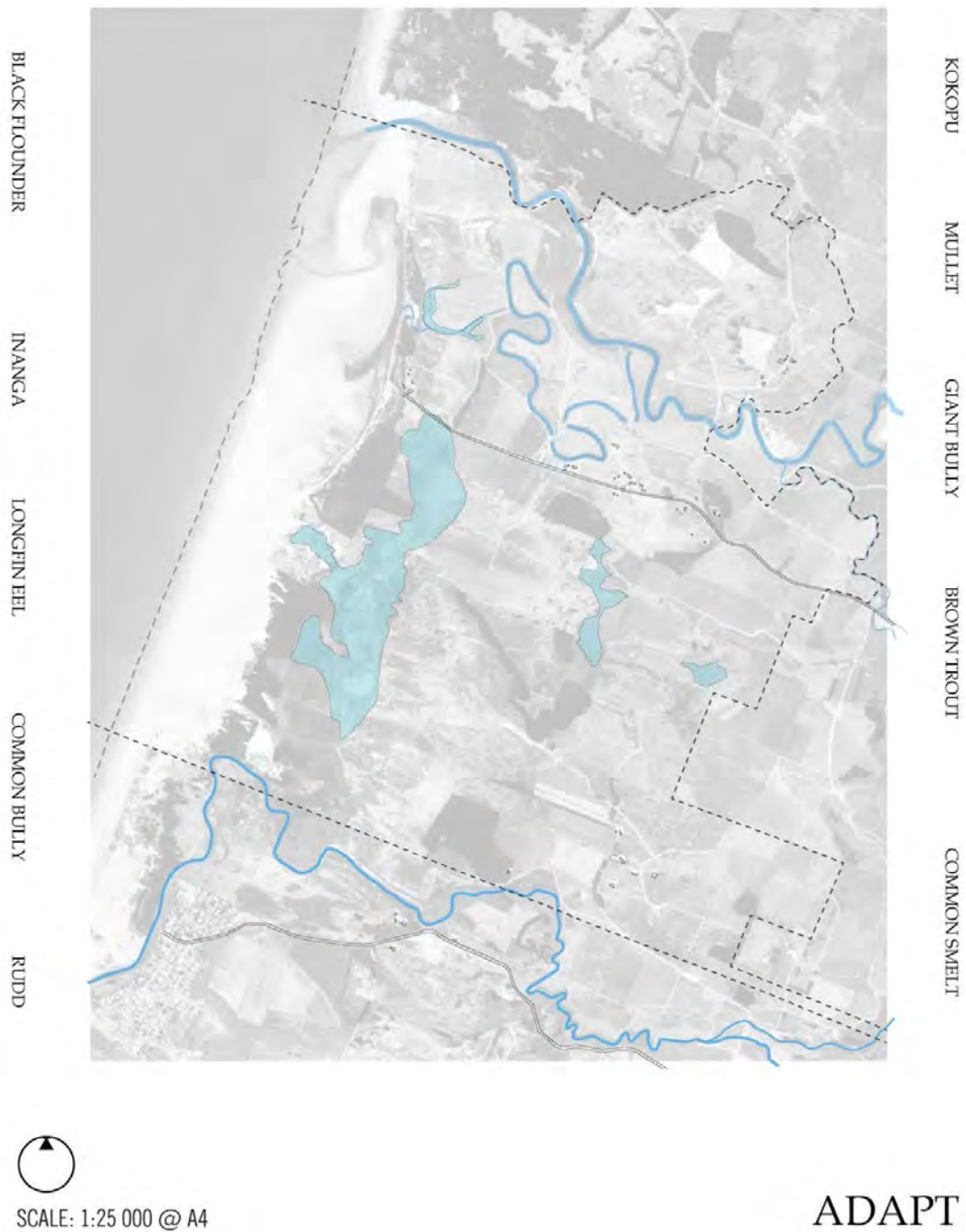
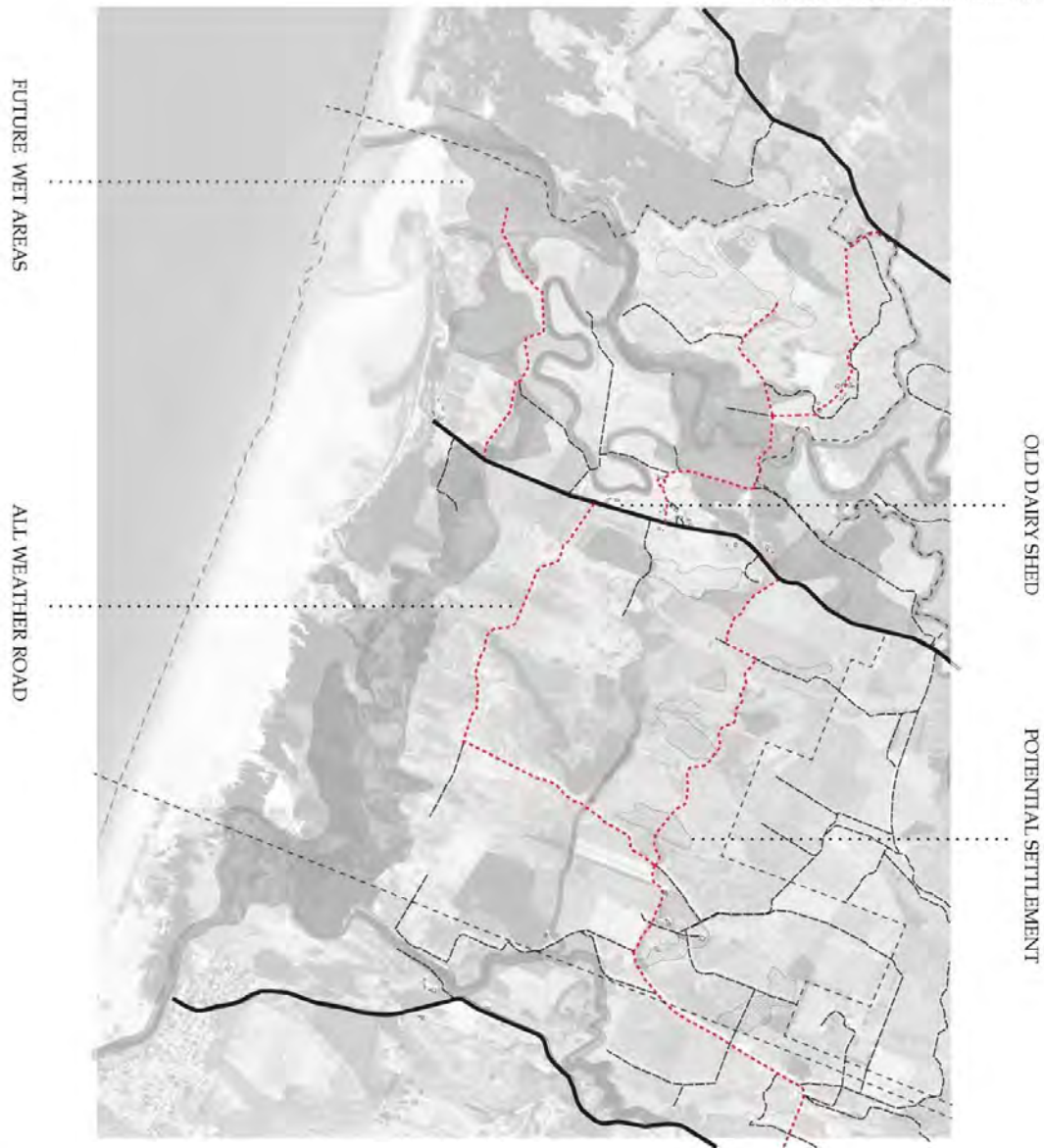


Figure 7.9 Adapt – Aquaculture

Figure 7.9 depicts aquaculture as an alternative future land use.

## 7. Develop adaptive infrastructure

Adapt existing farm buildings for an extra revenue stream and establish robust all weather connections to serve as the foundational infrastructure for all future development. Signal potential areas for settlement in the short term with cultural festivals and fundraisers.



SCALE: 1:25 000 @ A4

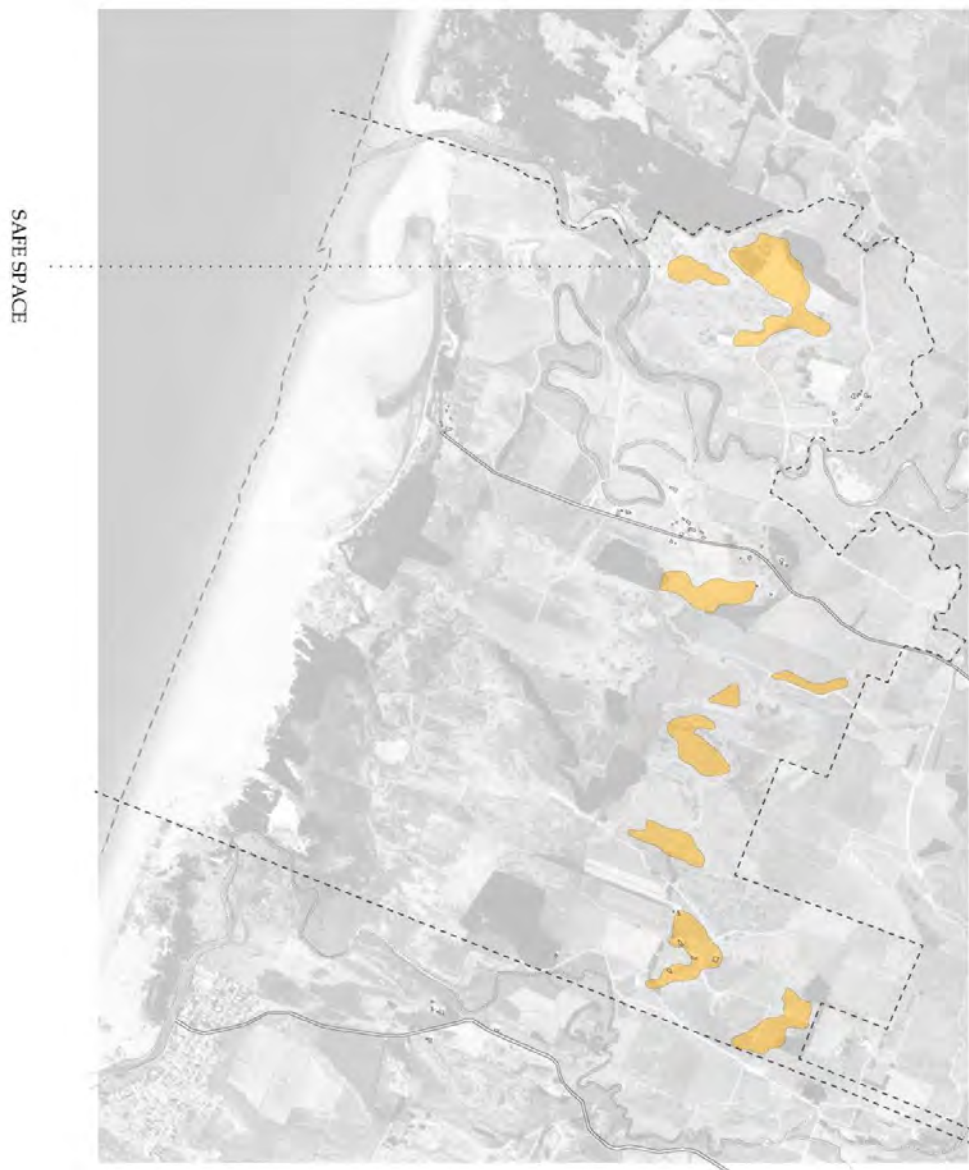
ADAPT

Figure 7.10 Adapt – Build Adaptive Infrastructure

Figure 7.10 suggests that identifying locations for, and then building, new all-weather roads that anticipate climate change can signal the need for long term adaptive strategies like shifting settlements to high ground, well before they need to happen.

## 8. Settle the high ground

Establish plans for existing whare and new papakainga to be resited on flat, unproductive, north facing high ground, above the 5m level



SCALE: 1:25 000 @ A4

RETREAT

Figure 7.11 Retreat – Settle the High Ground

Figure 7.11 suggests that identifying locations for and then building new all-weather roads that anticipate climate change can signal the need for long term adaptive strategies like shifting settlements to high ground, well before they need to happen.

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## Appendix C – Short Survey, Exhibition, Phase 2

### KO NGĀ MAHI INAIANEI HEI ORANGA MO RĀTOU APOPO

Thank you for attending the exhibition today. Your valuable feedback will help us plan future events.

**A. Please respond to the following statements by ticking (✓) the most appropriate box:**

	Strongly disagree	Moderately Disagree	Neither disagree nor agree	Moderately Agree	Strongly agree
1. This experience has made me want to find out more about the impacts of climate change					
2. The exhibition reflected our reality in a culturally appropriate way					
3. An exhibition is a good way to bring our community together to resolve common problems					
4. I feel more confident talking about climate change to my family and friends after this experience					
5. I now feel more confident that our community can do something together about climate change					
6. This experience made me want to get more involved in efforts to help my community be better prepared for climate change					

**B. Please respond to these questions in your own words:** (Use back of page if more space required)

1. What were the most memorable things in this exhibition for you?
2. What three words would you use to describe climate change?
3. How have your views about climate change changed (if at all) after experiencing this event?
4. If we were to do such an exhibition again, what would you suggest we do differently next time?
5. Where would you prefer displays from the exhibition to be kept in the future? **(Tick all that apply)**  
☐ marae      ☐ Dedicated website      ☐ Local council      ☐ Other (specify: \_\_\_\_\_)
6. My Gender: \_\_\_\_\_ 7. My Ethnicity: \_\_\_\_\_
8. My age:      ☐ 18 or below      ☐ 19-25      ☐ 26-35      ☐ 36-45      ☐ 46-55      ☐ 56-65      ☐ Over 65

## Appendix D: Planting plan and costs

Below are the details of the revegetation work that will be undertaken in the Lake Waiorongomai and Stream KNE site. Plant species to be used are listed and the table identifies numbers of plants that will be used and all costs associated with the planting programme.

### Planting plan for Lake Waiorongomai and Stream Key Native Ecosystem site<sup>359</sup>

Plants for the three planting areas will be chosen from the following species:

Area	Early successional species (PHASE 1 planting for Riparian Area and Dunes) NB: All wetlands planting in the Deep South project is moved into Phase 2.		Enrichment species (PHASE 2 for all areas, including wetlands)	
	Common name	Scientific name	Common name	Scientific name
Wetland Buffer (including dune slopes)	Ngaio Mānuka Kānuka Koromiko Mingimingi Toetoe Rautahi (cutty grass) Harakeke Taupata Māhoe Māpou Ti kōuka (cabbage tree) Whauwhaupaku (five-finger) Akiraho (Coastal tree daisy)	<i>Myoporum laetum</i> <i>Leptospermum scoparium</i> <i>Kunzea ericoides</i> <i>Hebe stricta</i> <i>Leucopogon fasciculatus</i> <i>Cortaderia toetoe</i> <i>Carex geminata</i> <i>Phormium tenax</i> <i>Coprosma repens</i> <i>Melicytus ramiflorus</i> <i>Myrsine australis</i> <i>Cordyline australis</i> <i>Pseudopanax arboreus</i> <i>Olearia solandri</i>	Kahikatea Pukatea Matai Akiraho (tree daisy) Nikau Kaikōmako Kohekohe Horoeka (lancewood) Porokaiwhiri (pigeonwood)	<i>Dacrycarpus dacrydioides</i> <i>Laurelia novae-zelandiae</i> <i>Prumnopitys taxifolia</i> <i>Olearia paniculata</i> <i>Rhopalostylus sapida</i> <i>Pennantia corymbosa</i> <i>Dysloxyum spectabile</i> <i>Pseudopanax crassifolius</i> <i>Hedycarya arborea</i>
Riparian Areas (this is for streams, rivers, drains)	Ti kōuka Toetoe upoko tangata (umbrella sedge) Harekeke Raurēkau (large leaf coprosma) Karamū Kōhūhū Māpou Akeake	<i>Cordyline australis</i> <i>Cyperus ustulatus</i> <i>Phormium tenax</i> <i>Coprosma grandiflora</i> <i>Coprosma lucida</i> <i>Coprosma rhamnoides</i> <i>Myrsine australis</i> <i>Dodonea viscosa</i> <i>Pseudopanax arboreus</i>	Kahikatea Nikau Pukatea Tōtara Kōwhai Kohekohe Kaikōmako Mānatu (ribbonwood)	<i>Dacrycarpus dacrydioides</i> <i>Rhopalostylus sapida</i> <i>Laurelia novae-zelandiae</i> <i>Podocarpus totara</i> <i>Pennantia corymbosa</i> <i>Dysloxyum specatbile</i> <i>Pennantia corymbosa</i> <i>Plagianthus regius</i> sub sp. <i>regius</i>

<sup>359</sup> Sourced from “Key Native Ecosystem Plan for Lake Waiorongomai and Stream 2015 – 2018, Greater Wellington Regional Council”, from Pages 16 to 18.

Area	Early successional species (PHASE 1 planting for Riparian Area and Dunes) NB: All wetlands planting in the Deep South project is moved into Phase 2.		Enrichment species (PHASE 2 for all areas, including wetlands)	
	Common name	Scientific name	Common name	Scientific name
	Horoeke Toetoe Pūkio Mānuka Ngaio Taupata Koromiko Kānuka Akiraho (tree daisy)	<i>Cortaderia toetoe</i> <i>Carex secta</i> <i>Leptospermum scoparium</i> <i>Myoporum laetum</i> <i>Coprosma repens</i> <i>Hebe stricta</i> <i>Kunzea ericoides</i> <i>Olearia paniculata</i>		
Sand dunes	Pīngao Spinifex Wiwī Tātarahake Autetaranga (sand pimelea)	<i>Ficinia spiralis</i> <i>Spinifex hirsutus</i> <i>Ficinia nodosa</i> <i>Olearia rani</i> var. <i>rani</i> <i>Pimelia</i> aff. <i>Arenaria</i>	Tauhinu Toetoe Taupata	<i>Ozothamnus leptophylla</i> <i>Cortaderia toetoe</i> <i>Coprosma repens</i>

Table 6: Planting cost for Area Lake Waorongomai

	2015/16		2016/17		2016/18	
	Number	Total (\$)	Number	Total (\$)	Number	Total (\$)
Plants	1000	4000	1000	4000	1000	4000
Other material costs for planting (stakes, guards, fertilizer tablets etc)						
Site preparation spray						
Planting labour						
Maintenance spray						
<b>Total</b>		4000		4000		4000

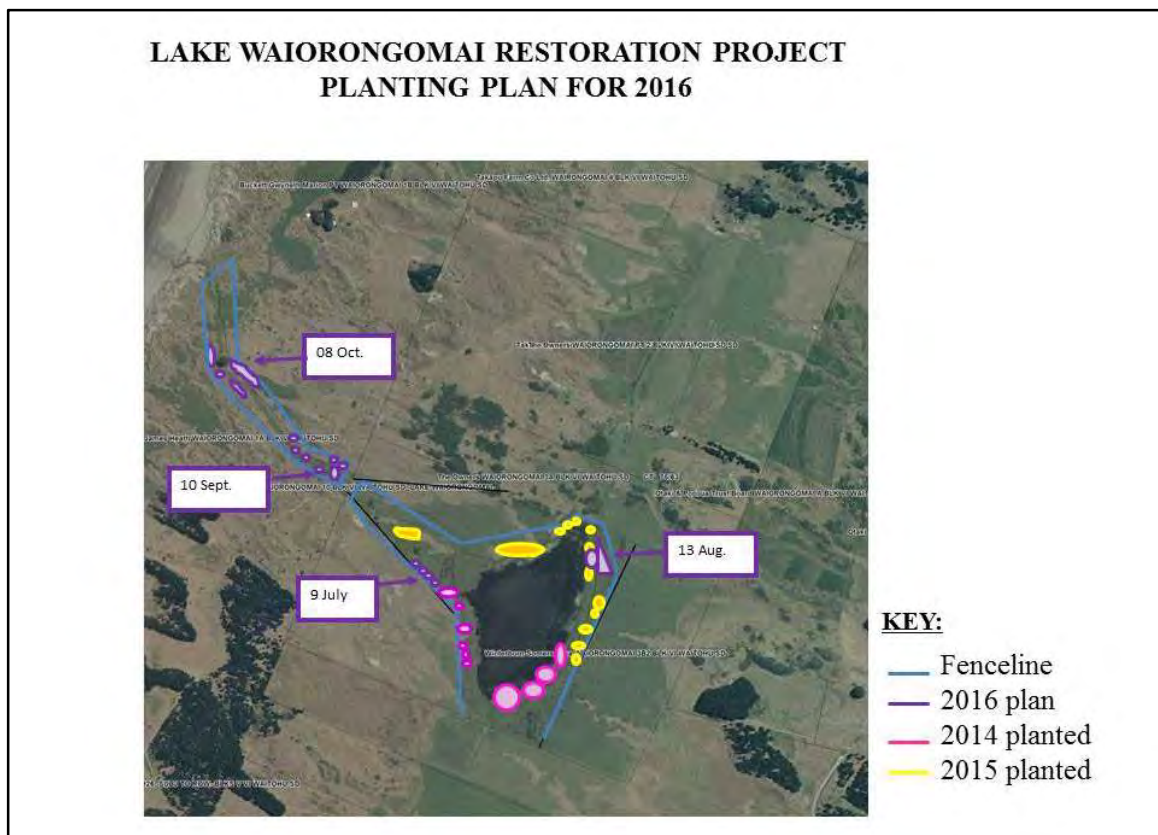
## Appendix E: Planting Day Plan

### The Mauri of Coastal Dune Lake Ecosystems: The case study of Lake Waiorongomai, Ōtaki, Aotearoa / New Zealand

**Source: Aroha Huia Christine Spinks, 2018, pages 338-340**

Restoration projects usually require native plants that are preferably eco-sourced. In the Lake Waiorongomai project native plants had to be ordered a year in advance from a reputable nursery. To purchase these plants, funding applications were made each year to the KCDC Heritage Fund. These applications required a Heritage Plan for Lake Waiorongomai. To achieve the LWRP Heritage Plan I extracted relevant parts from the GWRC Iwi Projects application. As a requirement of this fund a memorandum of understanding (MoU) was created around important factors such as: (i) only using local eco-sourced native plants from the Foxton ecological district; and (ii) retiring the agreed area.

Planting plans were created in discussion with KCDC Biodiversity Officer Rob Cross, who advised on appropriate local wetland and dune native tree species. Using the GWRC mapping program available online, Figure AE1 shows an example of a map-based planting plan that was created a year in advance to accommodate the lead time need to order native plants.



**Figure AE1** Planting plan for 2016 (Source: Aroha Spinks created 2 August 2015)

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One thousand native plants were ordered, with species determined by landscape location, and advice given by Rob. In the planting plan shown in Figure AE1, wetland species that are capable of spending long periods in winter with the roots waterlogged were ordered for August. Dune plant species that favour free-draining root conditions were ordered for July, September and October plantings. Plants were ordered from Kāpiti Nursery<sup>360</sup> and Taupo Nursery<sup>361</sup>. In my supportive role, it was important at the end of summer to check that additional planting gear such as protectors, stakes, mats and fertiliser tablets were well in stock (at least 1000 units).

Figure AE1 was used for whānau planting days in 2016. The spatial planting strategy provided the whānau with plenty of advance warning of potential dates they may wish to attend. Rupene Waaka took on the pivotal role of creating the invitations and started the circulation to whānau via emails. Donovan Joyce placed invitations on the MaiŌtaki facebook page and we also used ‘word of mouth’ by whānau members.

Below is a checklist created for the restoration project in preparation for whānau planting days (Table AE1). In advance of a planting day much preparatory work was needed such as: coordinating delivery of suitable plants for each location on the morning of the planting event; a four wheel drive vehicle with a tow bar and trailer; booking at least one back-up four wheel drive vehicle; informing the leasee/s in advance of planting days; and sending reminders to encourage whānau to attend.

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<sup>360</sup> Kapiti Nursery and Landscaping Ltd. ([www.kapitinursery.co.nz](http://www.kapitinursery.co.nz))

<sup>361</sup> [www.tauponativeplant.co.nz](http://www.tauponativeplant.co.nz)

**Table AE1** Whānau planting day checklist

Item	#	Tick ✓
Keys to gates	5	
Plant protectors <sup>362</sup>	250	Packs of 100 are \$72 (10 packs are \$66 per pack)
Warm woollen matts	200	100 in a pack = \$72 (400 x 200mm)
Fertiliser tablets	250	10kg (1000 tablets) costs \$98
Plastic Rubbish Bags	5	
Camera	1	
Pocket knife	1	
Shovel	5	
Gumboots	1 pair	
Jacket	1	
Gloves	10 pair	
First Aid Kit	Medium	
Mobile phone	1	
Drink bottle & water	1	
Lunch/Afternoon tea	1	
Tow rope	1	
Keys for padlocks on the boats	1-2	
Oars	2	
Life jackets	3	

<sup>362</sup> Note that these shaded items are an additional actual cost incurred, that is not costed in this study. Funding from Councils, DOC etc will often cover this cost. For Lake Waorongomai, assume that 1000 of each were required.

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## Appendix F: Final Whānau Wananga Agenda and TAP Planning Template

### Deep South Phase 2 Final Whānau Hui, Tukorehe Marae, 12 April 2019

Set up: 9am  
Team hui: 10am  
Whānau hui: 11am

#### Whānui hui:

1. Karakia and mihi  
(Rangimarkus Heke – Tukorehe Iwi Environmental Officer)
2. Overview of Project/Draft Final Report  
(Derrylea – 5-10mins)

#### Presentations to whānau:

3. Overview of the knowledge gathered about the 3 Adaptation options  
Includes: hīkoi to various sites and the data gathered for fisheries and papakāinga  
(Aroha & Moira – 15 minutes of slides and discussion)
4. Overview of climate change science for the rohe  
(Martin – 10 minutes of slides and discussion)
5. Land-use scenarios and final draft maps  
(Jane – 10 minutes of slides and discussion)
6. Economic analysis  
(Murray – 15 minutes of slides and discussion)

#### Transition Action Plan development and project finalisation:

7. Transition action plans wānanga  
In whānau group discussion tables with team members discuss the broad categories and aspirations for each block.  
Discussions about future actions for the rohe.  
(NB: this does not have to be included in the final report if whānau prefer not to publish the outcomes of these discussions)
8. Whānau representatives continue follow up and feedback  
Whānau block representatives leave with copies of final draft report, maps & brochures etc.  
Whānau representatives are aware of the date to provide whānau and/or trusts feedback and changes to Derrylea or Moira.  
Reach whānau agreement on the way the team will provide copies of the final printed report and transition action maps back to the whānau.  
Reach whānau agreement on the potential publishing of a journal article.
9. Karakia whakamutunga

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**Development of TAP - Questions to consider:**

- What are our values and aspirations for our land and whānau?
- What are the important cultural features of our land that we want to protect, utilize, expand?
- What other Mātauranga or resources do we have, that can guide us in adapting to climate change impacts in our rohe?
- What areas do we need help with, to make decisions – and where can we access that information?
- Do we have the ‘people power’ with the right knowledge and skills to make these changes? If not, how can we get them?
- What is the state of our current infrastructure, buildings etc, and how well will it cope with climate change impacts?
- How important is it to make money off our land? Debt levels?
- What economic or financial risks might we face as a result of impacts from climate change on our land? eg access to finance, insurance? Loss of current income? New costs incurred?
- Which sources of funding/support/new income should we pursue – eg support and korero with local/regional council; Trusts etc.

**Template for Ongoing Development of Transition Action Plans**

Tasks (What?) and Purpose for action (Why?)	Person responsible (Who?)	Completed by (When?)
<i>Phased Transition Action Plan</i>		
Which of the Phase 1 adaptations will we implement? How?  Do we need additional whānau/hapū support, funds, information, training etc to make this change? How will this be gained?		
Which of the Phase 2 adaptations will we implement? How will we know when to do it? How will we do it?  Do we need additional whānau/hapū support, funds, information, training etc to make this change? How?		
<i>People Power, Training, Networking, Supports (whānau/hapū/iwi, local, regional, national)</i>		
Which key people/networks do we need to implement these changes – now and in the future? How can we plan for this?		