Presentation: Waikato West Coast Overview

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Dune Restoration on the

Waikato West Coast

Presentation Overview:

1. The West Coast of the Waikato Region
2. The Waikato Beachcare Programme
4. Beachcare site case studies
5. Lessons learnt
6. Future opportunities

The West Coast of the Waikato Region

West Coast Waikato

Waikato Regional Council's West Coast Zone

- 150km of coastline
- Total catchment area: 425,265 ha
- Indigenous forest: 151,000 ha (36%)
- Pasture: 245,925 ha (58%)
- Exotic Forestry: 18,146ha (4.2%)
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West Coast Waikato

– *Dune ratings*

- "*The sand dune and beach vegetation inventory of NZ. North Island*" (Partridge 1992)
- Rating criteria:
  - Diversity – vegetation sequences
  - Natives – proportion of natives
  - Modification – Human/animal impacts
  - Weeds – invasion of weed invasion
- Highest in North Island
  - Spirits Bay (Northland) – 18 /20
- Highest in Waikato
  - Waikawau / Otama (Coromandel) – 16 /20
- Highest in West Coast Waikato
  - Port Waikato / Taharoa – 12 /20

Indigenous Vegetation Cover

- Active Dune-lands in the Waikato Region
  - 71% lost since 1950 (Hilton 2000)
  - Remainder highly modified

- Indigenous Vegetation - Waikato coastal zone
  - <2% remains from original extent (WRC)
  -

- Pohutukawa Forest – Waikato west coast
  - <1% remains approximately
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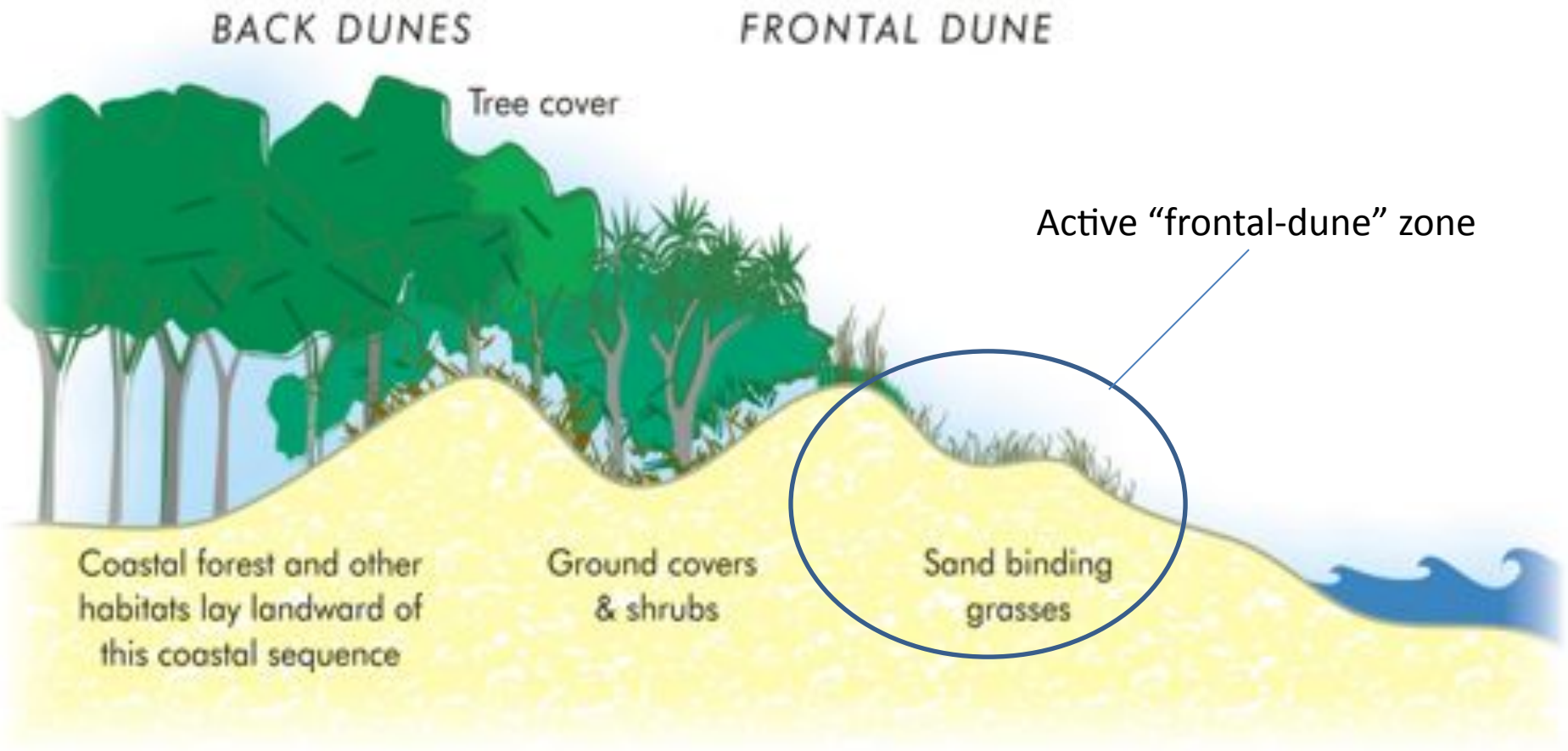
Natural Dune Vegetation Sequence



Foredune's - natural

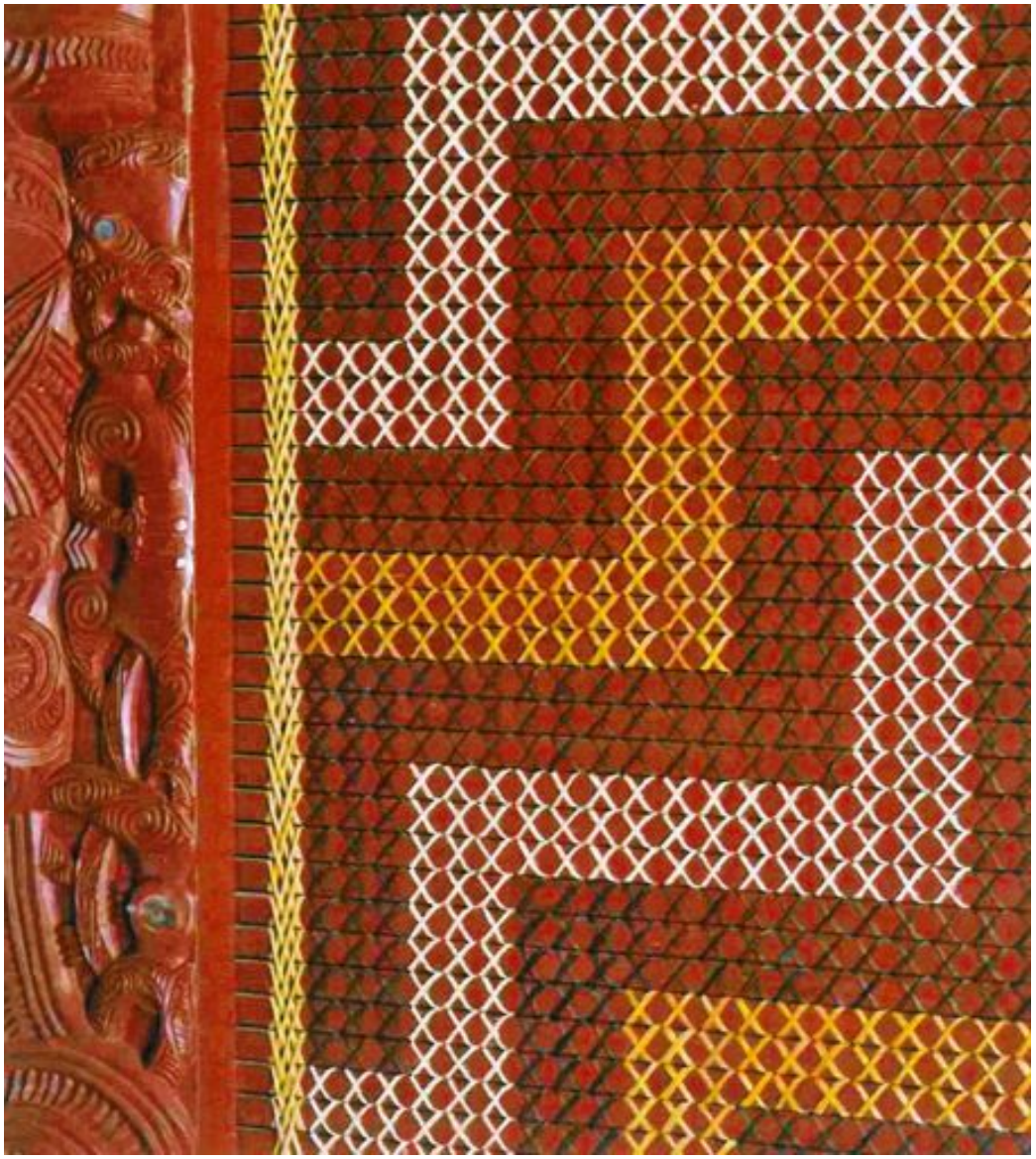
Toreparu Dune-land, Ruapuke
West Coast Waikato

Foredune's - modified

Restored Pingao population
Marokopa sand spit
West Coast Waikato

Pingao *(Ficinia spiralis)*

- Endemic coastal sedge
- “In decline” status



Katipo Spider

- Endemic coastal spider
- “Serious decline” status
- Threats:
  - Loss of habitat (loss of dune-lands)
  - Competition from ‘false’ katipo
  - Predation (wasps)

Severe Rabbit browsing on planted Pingao
Ocean Beach, Kawhia
West Coast Waikato

NZ Northern Dotterel

- “Critically threatened”
- Approx 1,700 birds left
- Breed on Coromandel (300 birds) and West Coast beach’s
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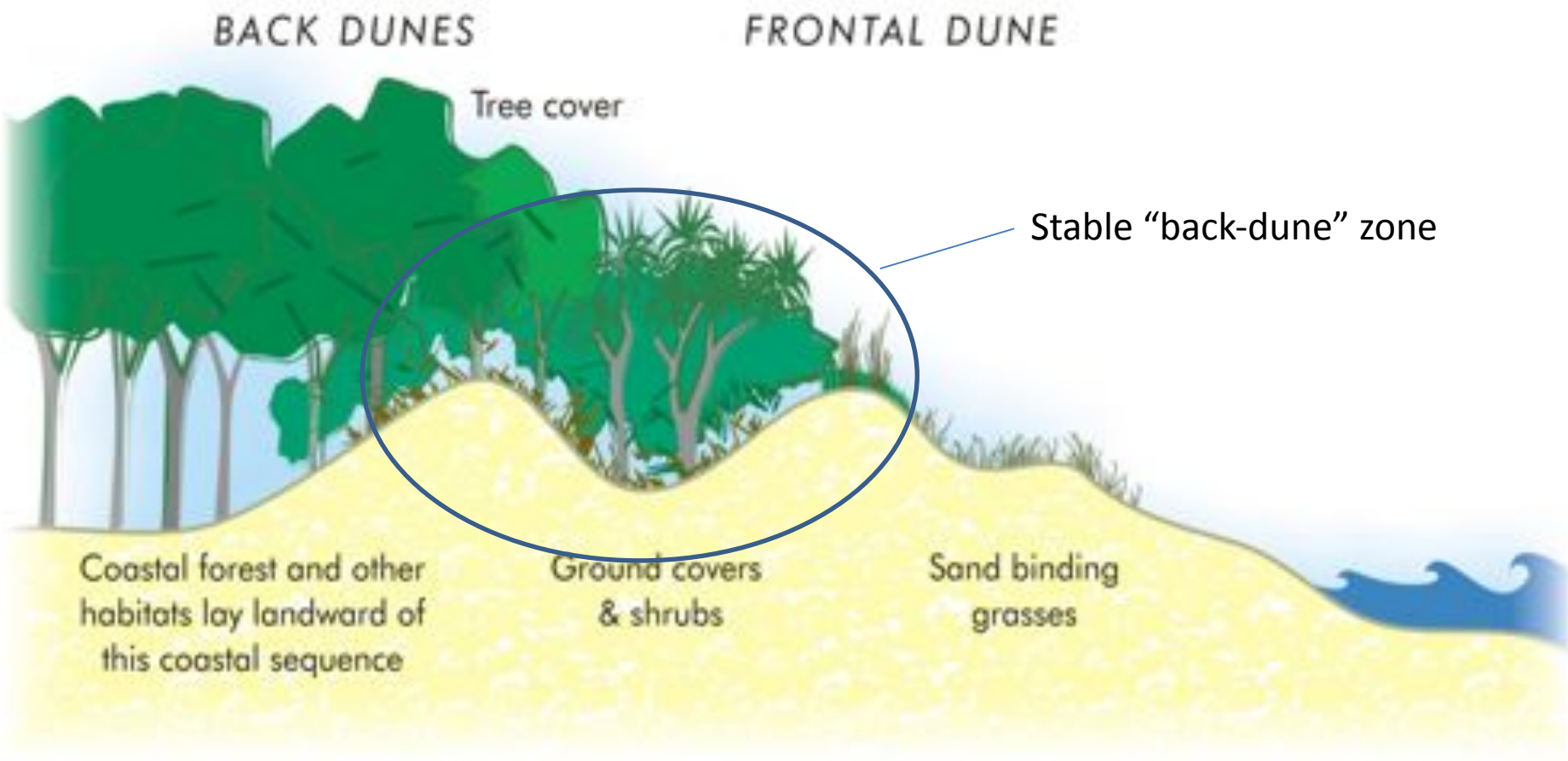
Natural Dune Vegetation Sequence



Back-dune zone

- **Important ground-cover species:**
  - **Pohuehue** *(Muehlenbeckia complexa)*
  - **Sand coprosma** (*Coprosma acerosa*)
- **Provides shelter and food for native skinks**
- **Important habitat for native copper butterfly**
- **Helps to suppress weed growth**

'Moko' skink eating a pohuehue fruit

Marokopa Sand Spit
West Coast Waikato

NZ's native copper butterfly only lay their eggs in Pohuehue

Toreparu duneland, Ruapuke
West Coast Waikato

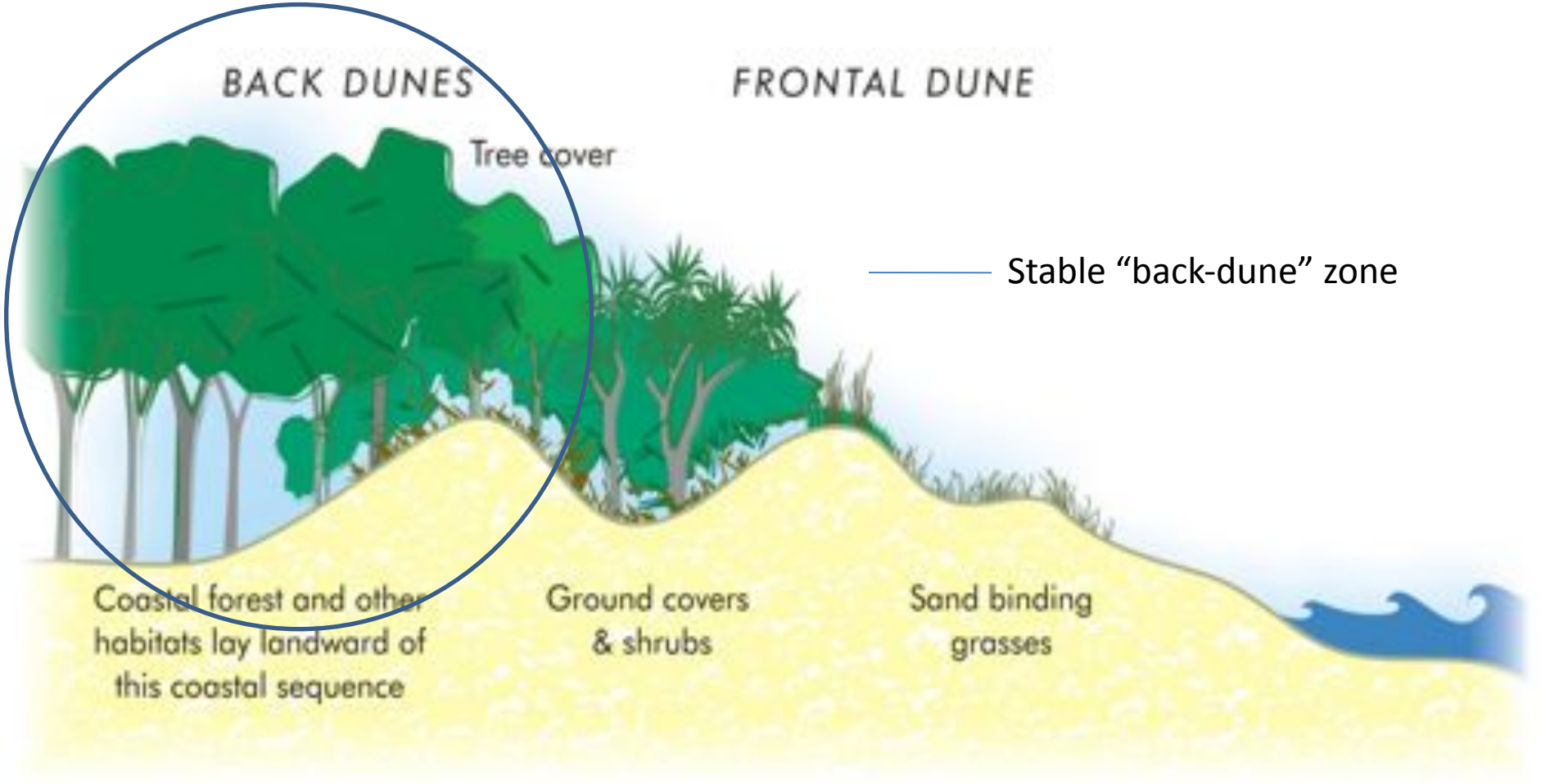
Pimelea villosa (syn. *P. arenaria*)

- Endemic species
- “At risk – in decline”
- Important food source for native moths

Ocean Beach, Kawhia
West Coast Waikato

Dune Forest / Coastal Lowland Forest

Natural Dune Vegetation Sequence




Aotea
West Coast Waikato

Aotea
West Coast Waikato


Aotea
West Coast Waikato

Aotea – Pukeatua remnant
West Coast Waikato


Ngaranui Beach back-dune, Raglan
West Coast Waikato


Ngaranui Beach back-dune, Raglan
West Coast Waikato

Muriwai
West Coast Auckland

Muriwai
West Coast Auckland

Waikato
REGIONAL COUNCIL
Te Kaunihera ā Rohe o Waikato

Dune threats - Afforestation

Tainui-Kawhia Incorporated Pine Forest
Ocean Beach, Kawhia
West Coast Waikato

Dune threats
- Exotic sand stabilisers

Marram grass

Pampas Grass

Dune threats
-Vehicle Damage

Dune threats
-Pest Animals

- **Rabbits / Hares**
  - Browse on palatable dune plants (i.e. pingao)
- **Possums**
  - Browse on coastal forest, eat native eggs/birds
- **Stoats / cats / hedgehogs**
  - Impact on biodiversity
  - Feed on native invertebrates, lizards, birds

These 7 endangered skinks were found in the stomach of 1 feral cat

Waikato Beachcare Programme

– what we've been doing…

Waikato Beachcare Programme - *Background*

- Consent condition for a Sand Mining operation on a Coromandel Beach (Whiritoa)
- Operation had led to severe coastal erosion and a increased risk to the community from coastal hazards
- WRC required the revegetation of the sand dunes as mitigation, involving community members seen as best long-term solution
- 1994 – meetings and first Beachcare group formed, first plantings
- Model also applied to Port Waikato in same year where foredune disturbance from vehicles was leading to large sand-drifts threatening homes

Waikato Beachcare Programme - *Background*

- Key people:
    - **Jim Dahm** – WRC Coastal Scientist
    - **Harley Spence** – WRC Student / Scientist
- Got buy-in from Council on issue of coastal hazard management
- Jim Dahm travelled to Australia to investigate their community based dune restoration model
- Main take-home point was that funding needing to be centralised and distributed to the groups, not a national contestable fund as they had – led to too much time being spent on chasing funds instead of planting

Beachcare - Objectives

Protect, and where required restore, dune-land ecosystems to:

1. Mitigate the impact of coastal hazards
2. Restore biodiversity values
3. Protect and restore cultural resources in partnerhsip with Iwi
4. Enhance the natural character of the Waikato coastline
5. Inform and engage coastal communities in coastal management

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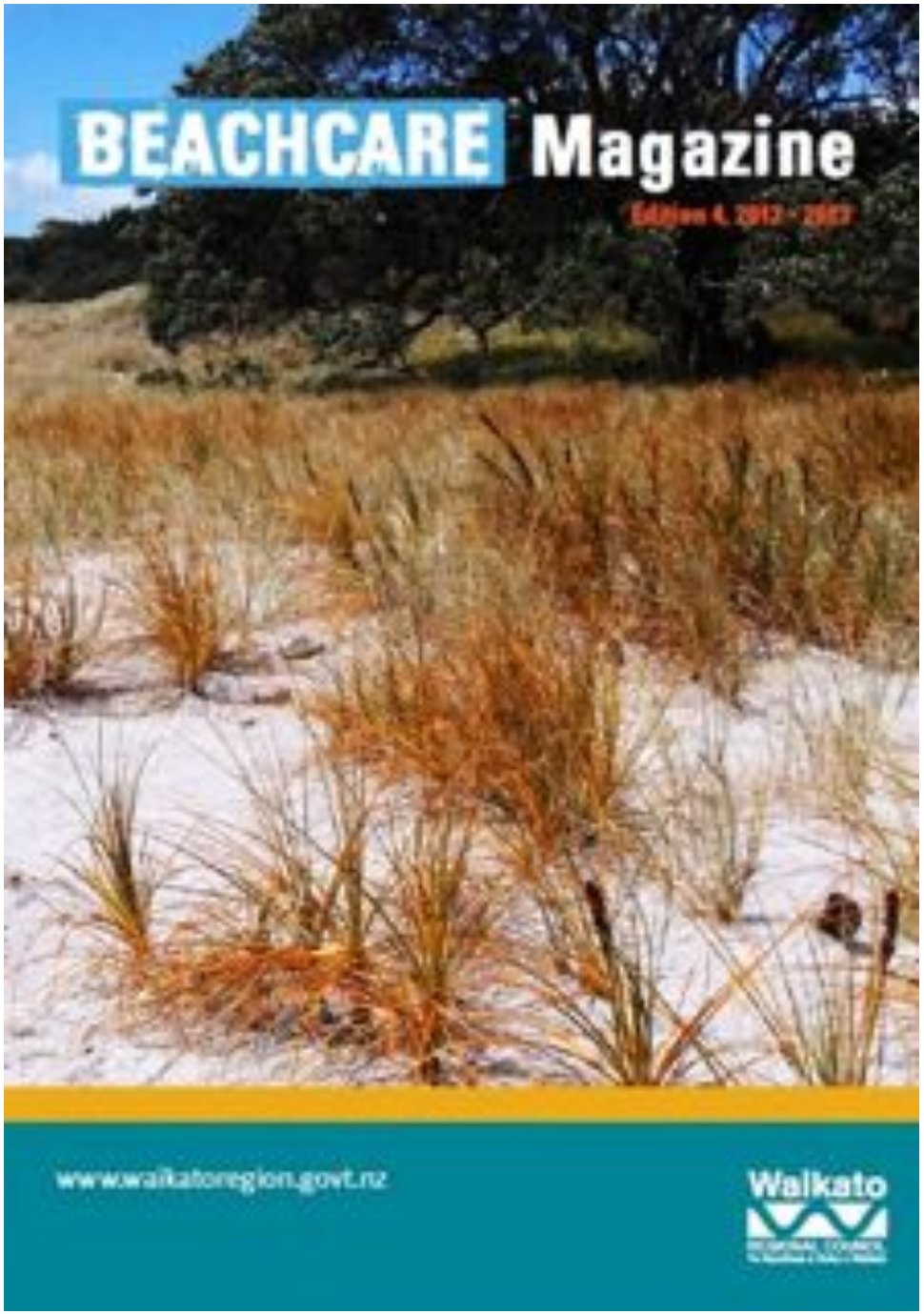
Beachcare Summary: 2012/2013

- 20 beaches
- 50,000+ native plants
- 31 community working bee's
- Over 1,200 volunteer labour hours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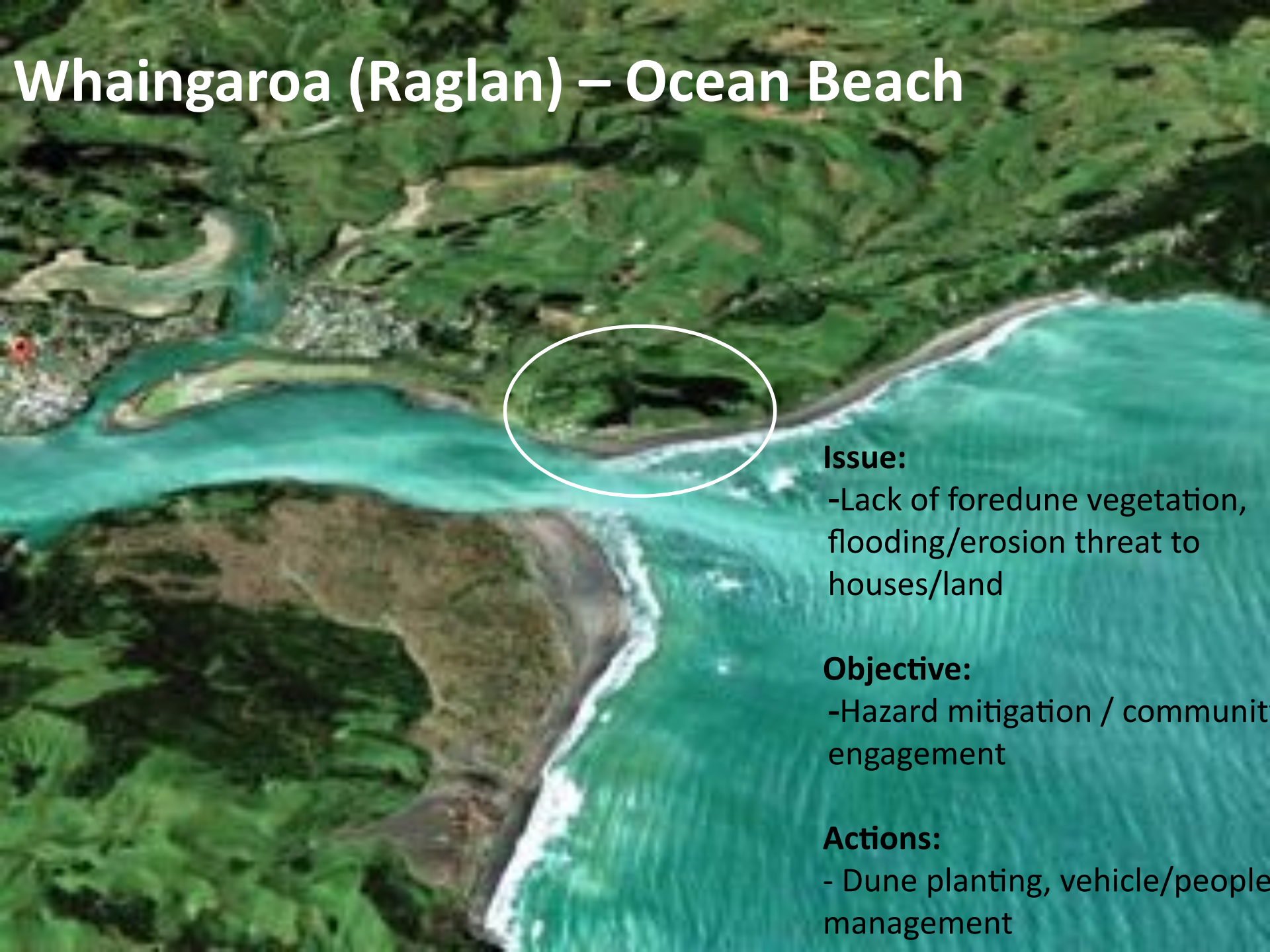
Case Studies: West Coast Beachcare Sites

Whaingaroa (Raglan) – Ocean Beach



Issue:

-Lack of foredune vegetation, flooding/erosion threat to houses/land

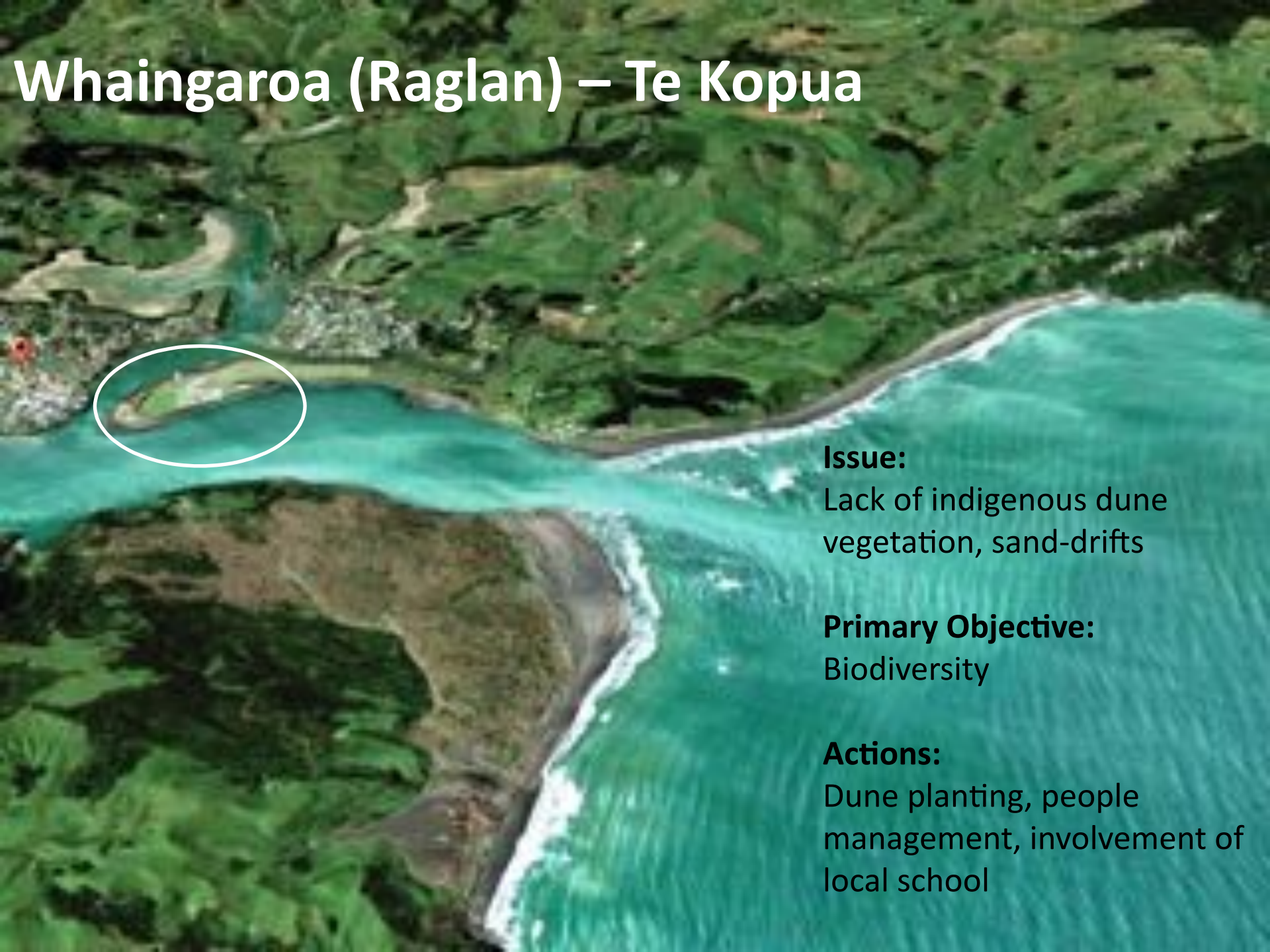
Objective:

-Hazard mitigation / communit engagement

Actions:

- Dune planting, vehicle/people management

Whaingaroa (Raglan) – Te Kopua



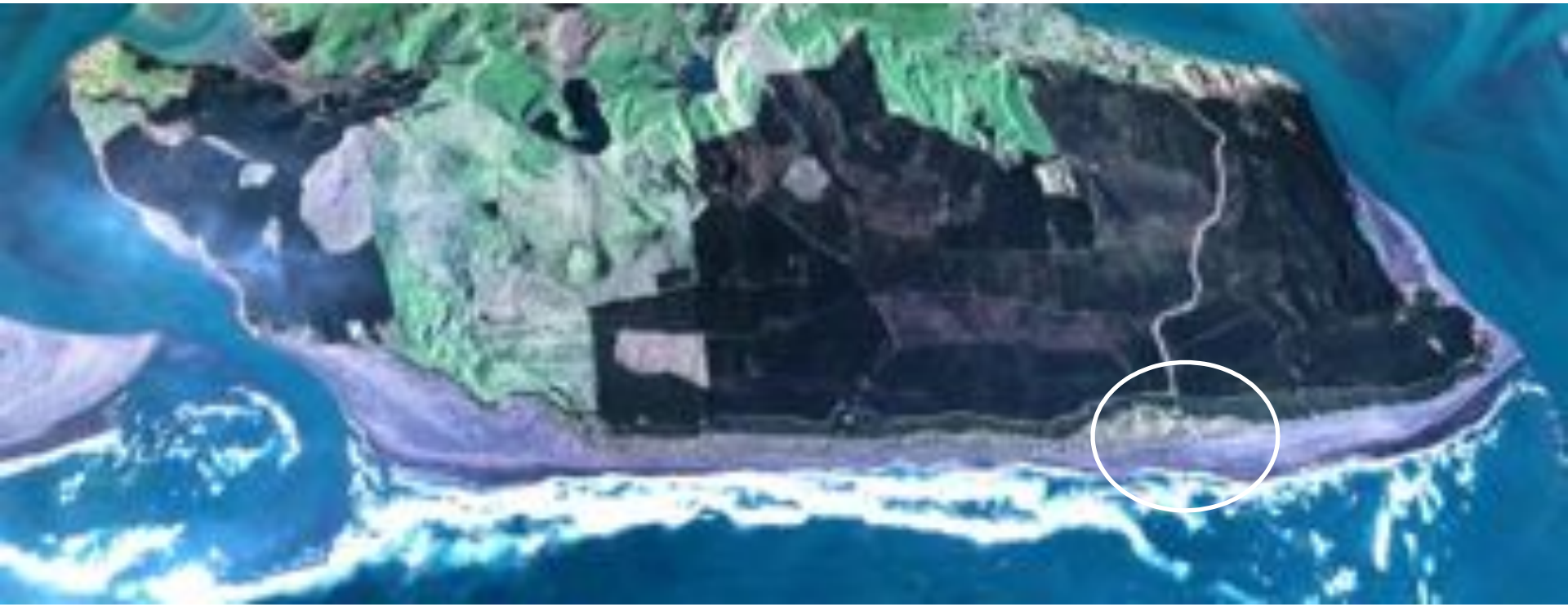
Issue:
Lack of indigenous dune vegetation, sand-drifts

Primary Objective:
Biodiversity

Actions:
Dune planting, people management, involvement of local school


KEEP OFF THE
DUNE PLANTS
PLEASE USE WALKWAYS

Kawhia – Te Puia Springs, Ocean Beach



Issues:

Stabilisation & Afforestation / invasion of exotic species, impact of vehicles

Primary Objectives:

Biodiversity / Cultural values

Actions:

Dune planting, Marae garden beds


Have you seen this weed on our road?
WARNING

The Port Waikato Beachcare story...

Phase 1 (mid-1990's)

- Blow-outs caused by vehicle damage
- Sand drift threat to homes
- Blow-out infill, dune planting, pedestrian/vehicle control

Phase 2 (Late 2000's)

- Dune erosion threatening surf life-saving tower / carpark
- Dune reshape and planting

Phase 3 (current)

- Protection and enhancement of biodiversity of sand spit dune-land
- Dotterel protection
- Pest animal control
- Restoration plantings

Port Waikato Beachcare – phase 2

Issues:

Modification of foredune

Primary Objective:

Hazard mitigation

Actions:

Dune reshape and planting


Sunse


Sunset Beach Li

Port Waikato Beachcare – phase 3

Issues:

Exotic plants, pest animals, vehicles

Primary Objective

Biodiversity

Actions:

Education, native plantings, pest animla trapping, dotterel protection

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Port Waikato

Scrub Fire
- catalyst for revival of Beachcare

- Sunday, February 3, 2013
- Ignited by spark from vehicle stuck in dunes
- 20ha of scrub burnt (mostly pampas grass)


Waikato River
Port Waikato


Port Waikato Rubbish

Lessons Learnt - Foredune restoration

- Planting strategies
  - Primary species initially to provide shelter, diversify years 2+
  - Planting strategies to take advantage of specific herbicides
- Dune Reshape's / dune re-creation
  - Highly modified sites– i.e. capping of dunes
  - Spray pest plants thoroughly before re-shaping
  - Mechanical removal of weeds / fill before planting (i.e. Raglan)
  - "Know your toe"
    - Use the existing/historic toe of your dune as your seaward boundary for your planting (i.e. Port Waikato example)
- Whole of dune approach
  - reduce weed re-invasion

Lessons being learnt – Back-dune restoration

- Release what's already there
  - Eg Releasing Pohuehue smothered by Kikuyu grass using grass specific herbicide (haloxyfop)
- What to plant and where
  - Reference ecosystems are important
  - Past vegetation reports
  - ID fauna habitat is to support, what are their needs
  - Use of existing exotic species as nurse crop
    - Eg Pampas in back-dunes as sh
- Dunes Trust Project
  - Output: Guidelines for community groups coming

Lessons Learnt - Demonstrate results

- Important for funding / continued support
- Base-line surveys before restoration
- Make a plan and monitor results against objectives
  - Helps to refine your methods –what is helping you to achieve your desired outcomes?
- Before and after photos
- Clarify roles and resourcing from the outset
  - Volunteers, Regional Council, District Councils, Iwi, DoC, etc
  -

From here...

- Dune Restoration to become more than just an activity undertaken by volunteer groups
  - Becomes a standard land-management practice
- Landscape scale opportunities
  - Farmland (sand drifts, shelter belts, riparian margins, bush blocks)
  - Forestry (shelter belts – exotic vs native)
  - Iwi owned land (cultural resources)
  - Tourism opportunities (restoration integrated with walkways/cycleways)
- Integration of community projects with productive / cultural / recreational landscape
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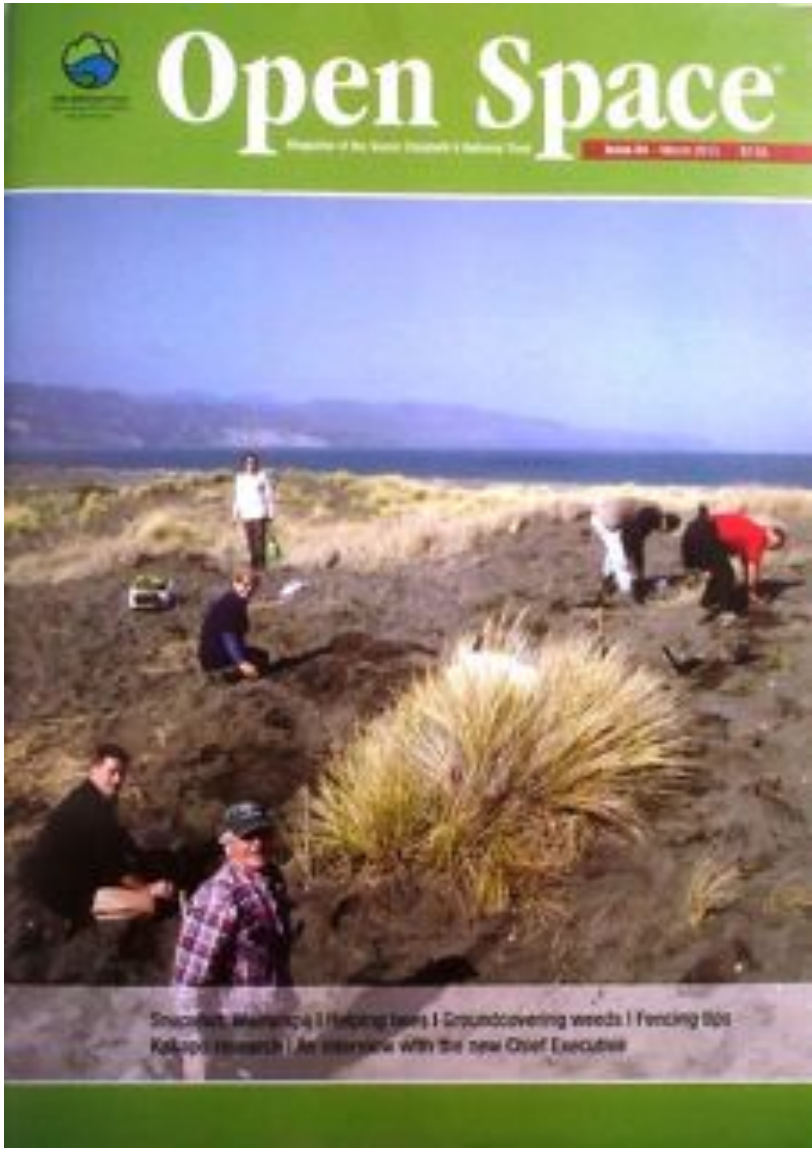
Partners

- Regional / District Councils
- Other restoration groups
- DoC's new strategy
  - Conservation issues, not just conservation land
  - New partnerships division
- Iwi
- QE2
- Private property owners



Summary

- Have learnt a lot about
  - Foredune restoration
  - Community based groups
- Are still learning about
  - Back-dune restoration
  - Biodiversity in dunes
- Many opportunities
  - Integrate with other restoration initiatives already occurring
  - New partnerships
  - Landscape scale restoration / connectivity
  -