

5d A photo montage of human impact

Exploring positive and negative impacts on dune systems

Objectives for today

- Today we will look at
 - Some of the positive and negative impacts of human activity on dune systems

Working together to care for our coast – Kia ngatahi te tiaki takutai

Pest animals

- Pest animals include those introduced to New Zealand by humans.
- Image shows heavy grazing by rabbits at Pāpāmoa.
- Plants suffering this level of damage will often die.
- This is especially so with pīngao and sand coprosma, leading to removal of these species and a change in the dune environment.

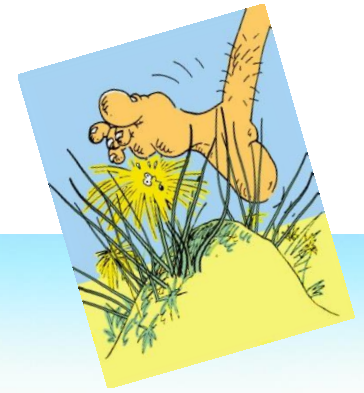


1

Working together to care for our coast – Kia ngatahi te tiaki takutai

Feet

2



3

Images show the destruction of dunes that happens where people use informal access ways rather than provided paths.

Working together to care for our coast - Kia ngatahi te tiaki takutai

Feet

4

Image shows person using informal access way rather than provided path.



Feet



Image shows the effect of people walking on and killing dune plants to avoid walking on hot sand during hot weather.

Working together to care for our coast - Kia ngatahi te tiaki takutai



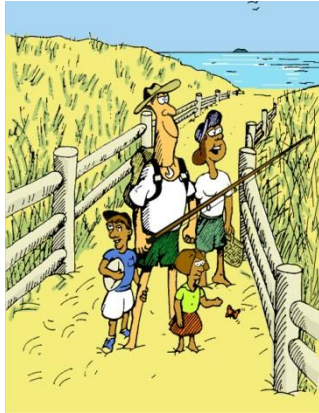
6

Fences

- Image shows fencing at Mount Maunganui – the friendly approach.
- Fences are designed to encourage people to stick to pathways.

Working together to care for our coast – Kia ngatahi te tiaki takutai

Fences



- Pāpāmoa Domain July 1998.
- Fences are designed to encourage people to stick to pathways.

Working together to care for our coast - Kia ngatahi te tiaki takutai

Re-shaping

Image shows dune erosion protection by reshaping, and subsequent re-planting and fencing.



8

Working together to care for our coast – Kia ngatahi te tiaki takutai

Rock walls

9



Picture illustrates early responses to erosion problems at Waihī Beach

Working together to care for our coast – Kia ngatahi te tiaki takutai

Rock walls



Image illustrates the loss of beach that can occur through erosion protection mechanisms using hard structures. This would cost \$3 million per kilometre to rebuild.

Working together to care for our coast - Kia ngatahi te tiaki takutai

Sand boarding

11



Working together to care for our coast – Kia ngatahi te tiaki takutai

Sand extraction



12

Sand mining

Working together to care for our coast – Kia ngatahi te tiaki takutai

Sand extraction

13



Sand mining

Working together to care for our coast – Kia ngatahi te tiaki takutai

Sewerage and stormwater outlets

Image shows wind and sea eroded barren foredunes due to stormwater pipe and access tracks.

14



Sewerage and stormwater outlets

Image shows wind and sea eroded barren foredune due to stormwater pipe and access tracks.



Working together to care for our coast – Kia ngatahi te tiaki takutai

Sewerage and stormwater outlets

Image shows wind and sea eroded barren foredune due to stormwater pipe and access tracks.

16



Signs

17

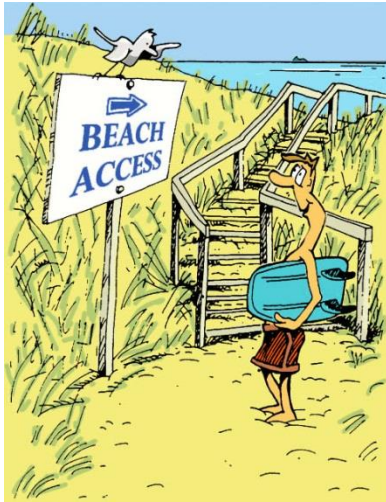


- Image shows a three year old Coast Care project sign.
- Signs encourage people to stick to the correct access ways.
- (The great accumulation of sand and sand blasted sign show the hostile nature of the environment.)

Working together to care for our coast - Kia ngatahi te tiaki takutai

Signs

18

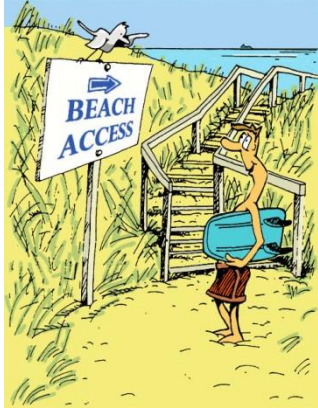


Coast Care signs encourage people to stick to the correct access ways.

Working together to care for our coast - Kia ngatahi te tiaki takutai

Signs

19



Beach access markers encourage people to stick to the correct access ways.

Working together to care for our coast – Kia ngatahi te tiaki takutai

Signs



Signs encourage people to stick to the correct access ways.

Working together to care for our coast – Kia ngatahi te tiaki takutai

Dune removal



Yala Safari Beach Resort, Sri Lanka.

Photo courtesy of Dr James Goff, NIWA.

The storm/tsunami protection function of natural dunes is a critical consideration.

The dune seaward of the resort (background) was bulldozed to improve ocean views. The resort was destroyed on Boxing Day 2004 with the loss of 150 lives, only 3 survived.

In contrast, the foreground dune with Tsunami deposited dinghy was NOT overtopped.

Vehicles

Dune crest lowered by wind erosion after plants were destroyed by vehicles.



23

Working together to care for our coast – Kia ngatahi te tiaki takutai

Vehicles

Images show the effect of vehicles driving on the dunes.

25

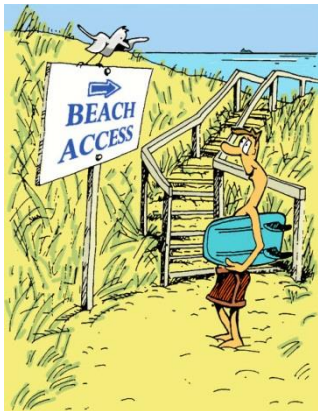


26

Working together to care for our coast – Kia ngatahi te tiaki takutai

Walkways

Creation of beach access tracks that are formalised and planted.



28

Working together to care for our coast – Kia ngatahi te tiaki takutai

Weeds

Introduced plants or weeds can dominate natural areas and change their character.

- This also changes the habitat for native animals, and can remove vital resources.



29

Working together to care for our coast – Kia ngatahi te tiaki takutai

Weeds

Human introduced plants or weeds can have a smothering effect on native functional foredune plants – such as this shining buckthorn seed supply.

30



Working together to care for our coast – Kia ngatahi te tiaki takutai

Weeds

Garden refuse (lawn clippings) dumped in dunes can result in introduction and establishment of weeds that can displace native dune plants.



Working together to care for our coast – Kia ngatahi te tiaki takutai

Re-vegetation of dunes (Coast Care)

Image shows planting of native dunes can re-vegetate dunes with native sand binding plants.



Working together to care for our coast – Kia ngatahi te tiaki takutai

Re-vegetation of dunes (Coast Care)



36

- Revegetation of dunes using kowhangatara or spinifex planted by Coast Care.
- Picture shows the runners – rapidly colonising bare sand in excess of 5 m growth per year.

Working together to care for our coast – Kia ngatahi te tiaki takutai



For more information contact:

Bay of Plenty Regional Council

- 5 Quay Street, Whakatāne
- 1125 Arawa Street, Rotorua
- 6 Rata Street, Mount Maunganui

Post: P O Box 364, Whakatāne

Phone: 0800 884 880

Fax: 0800 884 882

Pollution Hotline: 0800 884 883

Email: info@boprc.govt.nz

Website: www.boprc.govt.nz

Working together to care for our coast – Kia ngatahi te tiaki takutai



Bay of Plenty Regional Council in partnership with Tauranga City Council; Whakatane, Western Bay of Plenty, and Opotiki District Councils; and the Department of Conservation.