Ministry for the Environment
Manatū Mō Te Taiao

Coast Care Bay of Plenty Dune Restoration

Case Study 01

adaptation

What is the Issue?

In the Bay of Plenty many more people are building along the coast, often in areas vulnerable to coastal hazards. Over the coming decades, climate change impacts have the potential to exacerbate hazard risk to such coastal communities. With rising sea levels, there will be more frequent and more serious flooding of low-lying coastal areas by extreme tides, storm surges and wave effects.

Coastal dunes offer a buffer against the many storms that visit our shores. However, coastal dunes are one of the most degraded natural ecosystems in New Zealand. Dune restoration is an increasingly critical task to reduce our vulnerability to sea-level rise.

Dune restoration is required when natural dune systems have been significantly modified or damaged by human activities.

Coast Care Bay of Plenty

Coast Care BOP is a community partnership programme coordinated by Environment Bay of Plenty with its four coastal city/district councils and the Department of Conservation. The Coast Care mission is "working together to care for our coast". Coast Care groups comprise residents and beach users who care about their coastal environment and want to actively participate in protecting and managing that environment.

The Coast Care Bay of Plenty programme aims to reduce erosion of sand dunes on the coastal reserve areas through restoration processes.

About dune restoration

The broad objectives of the Coast Care dune restoration programme are to design and implement appropriate dune restoration and management works, and promote a dune care ethic within the wider community through increased community awareness and participation leading to positive behaviour change.

Before dune restoration: Papamoa Beach June 1997.

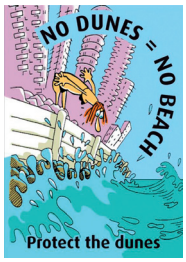
After dune restoration: The same location a day after the effects of 10 m waves generated by Cyclone Ivy.

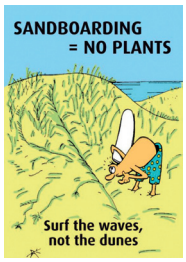
Dune management can reduce the effects of climate change through restoring and maintaining a protective natural dune buffer between coastal development and the sea. Restoration allows a good cover of native sand-binding vegetation to grow on the seaward face of the dune. The vegetation is critically important for ensuring the dunes are naturally built and repaired. Good vegetation cover also prevents wind erosion.

Bay of Plenty community takes action to restore the dunes

Community volunteers in the Bay of Plenty have planted nearly 300,000 native dune plants on the region's beaches, thus improving the resilience of those coastal systems to storms and erosion. In a typical year, volunteer members of the programme plant around 60,000 plants.

There are now 30 Coast Care groups in the Bay of Plenty working to replant functional native vegetation. The groups also erect fences to protect dune plants, put up signage, provide marked access ways and undertake earth works to re-shape the dunes They manage vehicle and pedestrian access, remove weeds, control pests, and improve monitoring and maintenance of the dunes.





Possibly the most important aspect of dune restoration in the long term is making information and educational material available to the community. This is because most dune damage requiring intervention usually arises from human activities. Therefore changes in the attitudes and behaviour of beach users are required for effective and sustainable dune restoration. Informed communities become the best allies of restored dunes.

Financially, dune restoration makes good sense when compared to other coastal management options. Even considering costs associated with education and promotion, dune management is far less costly than engineering options.

Seawalls and revetments require expensive maintenance or a full rebuild every 20-40 years. Also, these engineering options don't prevent the beach from eroding which results in reduced or destroyed public access, recreational use and natural character.

Conclusion

Partnership dune restoration programmes may be the most effective and affordable method of managing climate change impacts on the coast in the short to medium term at least. Community involvement, empowerment, understanding and respect are essential.

Links to further information:

- **About Coast Care Bay of Plenty:** www.ebop.govt.nz/Coast/Care/Coast-Care-Bay-of-Plenty.asp
- **Adapting to climate change:** www.mfe.govt.nz/issues/climate/adaptation/
- **Local Government New Zealand – Adapting to climate change workshops:** www.lgnz.co.nz/projects/ClimateChange/workshop.html
- **Climate change mitigation:** www.climatechange.govt.nz
- **Household sustainability:** www.sustainability.govt.nz/

Publications:

- **Community-based Dune Management for the Mitigation of Coastal Hazards and Climate Change Effects – A Guide for Local Authorities (2005):** www.envbop.govt.nz/media/pdf/Report_Coastalhazardsandclimate.pdf or contact Environment Bay of Plenty for a printed copy

See Ministry for the Environment publications:

- **Local Government Adaptation to Climate Change: Environment Bay of Plenty and Coastal Hazards, "Issues, Barriers and Solutions"**
- **Climate change effects and impacts assessment**
- **Climate Change and Coastal Hazards**
- **Preparing for and adapting to climate change. Look ahead to the future**

These are available on www.mfe.govt.nz/publications/climate/ and by emailing publications@mfe.govt.nz

Contacts:

Ministry for the Environment
Contact us for more information about climate change or new initiatives:

Phone: (04) 439 7400

Email: info@climatechange.govt.nz

Address: Ministry for the Environment, PO Box 10362, Wellington

Environment Bay of Plenty

Regional Coast Care Coordinator

0800 ENV BOP (368 267)

sustainability.govt.nz