

A photograph of a person wearing a white hat and light-colored clothing, sitting on a large piece of driftwood on a sandy beach. The foreground is filled with tall, golden-brown dune grasses. The ocean with white-capped waves is visible in the background under a clear sky.

Introducing the Dune Restoration Trust of New Zealand

The Dune Restoration Trust of New Zealand (Dunes Trust) is a non-profit charitable trust developed to increase understanding of the importance of sand dunes and their native plants and animals. Specifically, the Trust's aim is to support and encourage the development of cost-effective practical methods for coastal communities and managing agencies to restore natural dune form and function focussing on the use of native plants.

The "Coastal Squeeze"

Coastal dune systems and their vegetation is a complex, dynamic and fragile buffer between the land and the sea. There is a need to balance this vital but fragile ecosystem with our increasing desire to use our beaches and sand dunes for cultural, aesthetic and recreational purposes.

Of particular concern in most regions is the intensification of the development of coastal margin from the landward side as well as the effects of coastal erosion from the seaward side - the "coastal squeeze". Add to this the expected impacts of climate change including increased frequency and intensity of storms and a rise in sea level – all of which will affect our coastal zone.





Networking

Following on from over a decade of work as its predecessor, the Coastal Dune Vegetation Network (CDVN), the Dunes Trust has continued to work over the last five years in partnership with a wide range of stakeholders including Coast Care groups, iwi, coastal landowners and managing authorities

in the area of coastal dune restoration management. Through a shared vision and collaboration, the Trust continues to support research and technology transfer throughout New Zealand to restore one of our most heavily used and fragile natural habitats.

PURPOSE of the TRUST

Mission Statement

The Dunes Trust's mission statement is:

"To see the majority of New Zealand dunes restored and sustainably managed using indigenous species by 2050"

Charitable Purpose and Aims of the Trust

As stated in section 4.1 of the Trust Deed, the Charitable Purpose of the Dunes Trust is:

- a) To provide a **network/forum for the free exchange of information** on sustainable management of coastal dune ecosystems with emphasis on the use of native dune vegetation to restore natural character, form and function;
- b) To facilitate high quality **research on sustainable management options** for coastal dune ecosystems, following the guidance provided by financial members of the trust;
- c) Provide **support and information to landowners** and persons and organisations for the protection and enhancement of coastal dune ecosystems, including provision of research results and best sustainable management practices;
- d) **Promote public awareness and education** concerning proven methods for protection, restoration, conservation and sustainable management of coastal dune ecosystems;
- e) To assist, establish and promote the research or promotion of, and to subscribe to or become a member of, or associate or amalgamate with any such association whose objectives are complementary to those of the Trust; and
- f) To do all such things as in the opinion of the Trustees may be incidental or conducive to the attainment of the purposes or activities of the Trust.





COMMUNITY-BASED APPROACH

The Dunes Trust aims to raise awareness of coastal dune issues amongst the general public and coastal communities. Empowering local coastal communities, including collaborating management agencies, with an understanding of the natural form and function of their beaches and dunes systems, the current state of their coastal habitats, and practical options for restoration and management, is likely to lead to greater 'ownership' of local issues and to determining practical and sustainable solutions.

The Dunes Trust has developed this community-based approach for several reasons:

- Community-based approaches to dune restoration and management have significant advantages over traditional approaches in which local government has taken the prime responsibility for designing and implementing dune restoration programmes;
- Most dune damage arises from human activities and changes in awareness and behaviour are generally required for sustainable dune restoration. Investigations indicate that community-based dune management programmes are very effective in raising community awareness and changing attitudes and behaviour;
- Community-based partnerships can also empower local community and relevant stakeholder groups to have a more meaningful role in the management of beaches and coasts;
- Community-based partnerships also have a proven ability to achieve significant dune management outcomes. Most existing groups have also exhibited long-term commitment and maintain some form of ongoing monitoring and maintenance of dune condition;
- Community-based dune management is also very cost-effective relative to traditional engineering structures and has significant advantages in terms of natural and human use values;
- The success of the groups to date suggests that community-based approaches have considerable potential in promoting increased awareness of coastal hazards and climate change and assisting in the development of more resilient coastal communities.





STRUCTURE OF THE DUNES TRUST

Membership

Membership of the Dunes Trust currently exceeds 300 community groups, iwi, regional and district councils, consultants, native plant nurseries, educational institutes, and coastal landowners. Most regional councils with significant coastal dunes are members along with the Department of Conservation and sand dune forest owners. The success of the network has also led to it being used as a model for setting up other multi-stakeholder networks. With many members representing organisations and local community groups, especially Coast Care, the information disseminated on the Dunes Trust activities reaches a wide audience.

Board of trustees

There are 12 trustees on the Dune Restoration Trust of New Zealand board. Trustees are from throughout New Zealand and represent a wide range of backgrounds and active experience in the restoration and management of coastal sand dunes. This includes representatives from coastal managing agencies such as regional and district councils, coastal landowners, research institutes, native plant nurseries, community-based Coast Care groups, and environmental consultants.

Funding and administration

Funding is required for three purposes:

1. Provide for the operation of the Trust;
2. Fund the research activities undertaken or sponsored by the Trust; and
3. Provide for the dissemination of information through, bulletins, workshops and conferences.

Funds are raised through membership donations to provide for a modest administration budget for the Trust. A part-time coordinator is employed to assist the executive team (Chair, Secretary, Treasurer) with administration. Limited sponsorship has been successful in recent years with promotion of the Trust's aims and progress to attract greater sponsorship.

Some councils are "research partners" and contribute to the research programme with direct and in-kind funding. Research partners assist in setting future research priorities for the Trust. This funding has been used to provide partial funding for monitoring of existing Dunes Trust trials and to support specific projects focussing on technology transfer to coastal communities and associated managing agencies.





ACTIVITIES - Research

A core component of the Dunes Trust's objectives is to coordinate and support research on behalf of the research partners. This involves commissioning and facilitating dune research projects throughout New Zealand.

Dunes Trust trials are established with the active involvement of local communities, landowners and managing agencies aimed at developing practical cost-effective techniques and options for dune rehabilitation, with emphasis on native species. The aim is to ensure that wherever possible, *best-practice methods based on scientific principles are adopted* in restoration of dunes that improve the degree of restoration success rather than a reliance on anecdotal information and untested procedures.

Research outputs over the last 15 years from the Dunes Trust, and its predecessor the Coastal Dune Vegetation Network, include collaborative trials focusing on foredunes throughout the country (refer Research Milestones, next page), and publication of scientific and technical outputs on dune restoration and management. Publications include the highly popular bulletin series:

1. Pingao on coastal sand dunes: guidelines for seed collection, propagation and establishment (CDVN Technical Bulletin No. 1).
2. Spinifex on coastal sand dunes: guidelines for seed collection, propagation and establishment (CDVN Technical Bulletin No. 2).
3. Sand tussock on coastal sand dunes: guidelines for seed collection, propagation and establishment (CDVN Technical Bulletin No. 3).
4. Coastal sand dunes: form and function (CDVN Technical Bulletin No. 4).
5. Marram grass: friend or foe (CDVN Technical Bulletin No. 5).
6. Measuring success (CDVN Technical Bulletin No. 6).





RESEARCH MILESTONES

Some of the highlights of trials by the Dunes Trust that have influenced large-scale coastal restoration programmes by local authorities and community-based groups nationwide include:

MANAGEMENT ISSUE AND DUNES TRUST RESEARCH	COMMUNITY UPTAKE AND IMPLEMENTATION	
	<p>Developing practical low-cost methods for large-scale propagation and establishment of key native sand binding plants, especially spinifex and pingao/pikao</p>	<p>Hundreds of thousands of sandbinders now raised in community-based and commercial nurseries annually for foredune planting nationwide</p>
	<p>Boosting growth of newly-planted sand binders on foredunes by testing a range of slow-release fertilisers applied at planting</p>	<p>All Coast Care plantings incorporate slow-release fertiliser with sand binders during planting – gives a 10-fold increase in biomass for as little as 10 cents/plant</p>
	<p>Determining the use of fertilisers for boosting growth of planted native foredune vegetation and enhancing existing degraded foredune cover</p>	<p>Large scale applications of low-rates of fast-release fertiliser on foredunes now carried out by Coast Care groups to improve vigour when required</p>
	<p>In collaboration with Maori, developing techniques for sustainable harvesting of pingao to provide fibre for cultural weaving purposes</p>	<p>Weavers have adopted sustainable harvesting practices for pingao fibre – iwi are involved in restoring foredunes to ensure pingao is available for weaving</p>
	<p>Develop methods for re-establishment of the key native sand binder spinifex to the Canterbury region where it became locally extinct in the 1940s</p>	<p>Spinifex successfully re-introduced to Canterbury where thousands of seedlings are currently being raised and planted by community groups at several beaches</p>
	<p>Review of rabbit and hare control methods to determine practical options for use on sand dunes including high-use recreational beaches</p>	<p>Information widely disseminated on effective practical control methods with large-scale control programmes introduced to most regions</p>
	<p>Establishment of the first documented mechanical reshaping trial at Oakura Beach, Taranaki, of a degraded foredune and planting with native sand binders</p>	<p>Reshaping has been adopted for restoring severely degraded foredunes now in many regions throughout the country to restore natural dune form and function</p>



ACTIVITIES - Information transfer

Involvement of end users at all stages ensures rapid transfer of research results to those involved at all levels of dune restoration and in forms that can be utilised by Coast Care and other interest groups. Wherever possible, the Trust provides a forum for the free exchange of information on sustainable management of dune ecosystems with emphasis on the use of vegetation to restore natural character, form and function. With the involvement of a wide range of end users, practitioners and researchers, the network also assists with the identification, prioritisation, implementation and dissemination of research results throughout New Zealand.



Technology transfer and promotion of good-practice dune restoration and management is achieved through a range of outputs and activities including:

- Distributing a Dunes Trust Newsletter twice per year;
- Organising a coastal restoration conference in a different coastal location each year;
- Running field-based workshops with coastal communities;
- Contributing speakers to community Coast Care networking days;
- Co-supervising tertiary students involved in coastal dune projects;
- Publishing articles on dune restoration and management; and
- Servicing requests for information on dune restoration and management from members, stakeholders and the general public.





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Sustainable Management Fund

The Ministry for the Environment does not necessarily endorse or support the content of the publication in any way.

2011 ISSN 2230-6919
Printed by Scion Digital Print Centre, Rotorua

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