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Restoration of the Port Waikato sand dunes: a community based rehabilitation project.

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Abstract

Sand dunes are a dynamic natural buffer between the land and marine environments and therefore an important component of New Zealand's coastal ecosystem. Dunes provide a unique habitat for endemic vegetation and fauna. Anthropogenic pressure on dunes has resulted in widespread damage throughout large areas of New Zealand.

Port Waikato is a small settlement located at the southern and landward end of a large sand spit extending across the mouth of the Waikato River. Public access to the ocean beach, particularly pedestrian and vehicle traffic, extensively destroyed the dune vegetation in this area. As a consequence, the sand dunes in this area were seriously damaged by wind erosion - with migrating sands causing problems for some of the landward properties.

After preliminary discussions with individuals and community groups, Environment Waikato and the Franklin District Council launched a community based partnership to address the problem. The Beach Care group, formed in Easter 1993, has attracted widespread community support. The group encompassed a wide range of community interests - including those actively involved in off-road vehicle activities, implicated in much of the severe dune damage.

However, there was also scepticism from within some elements of the community, who regarded the Beach Care approach as "soft" and naïve. Alternative "get tough" and regulatory/enforcement approaches were advocated by these sectors.

Despite the relatively untested and crude nature of the Beach Care partnership, it has proved to be a very useful forum - enabling the various community interests to improve communication, develop a common agreement in regard to management issues and objectives, and to work together to develop and implement management action.

As a consequence, within just four years, the Beach Care group has successfully repaired the severe fore-dune damage and re-established a good cover of native sand-binding dune grasses. Pedestrian and vehicle access problems have also been addressed - successfully protecting the restored dune while enhancing public access and amenity.

The experience and success of this community based, partnership approach has also encouraged the community, local iwi and various agencies to now attempt to use a similar partnership approach to address significant land degradation issues over the entire area of the 3km dynamic coastal spit.

This experience is similar to that emerging at a large number of sites around the globe and emphasizes the critical role community based, multi-stakeholder partnerships can play in effectively promoting sustainable management of coastal and marine ecosystems.

Introduction

Port Waikato is a small settlement located at the southern and landward end of a large sand spit extending across the mouth of the Waikato River (Figure 1). Public use of the ocean beach (Sunset Beach) is concentrated at the southern end of the spit where road access terminates at a large car park on a public reserve. Facilities in this area include a surf club, shop and public toilets. There is also nearshore coastal subdivision at this end of the beach.

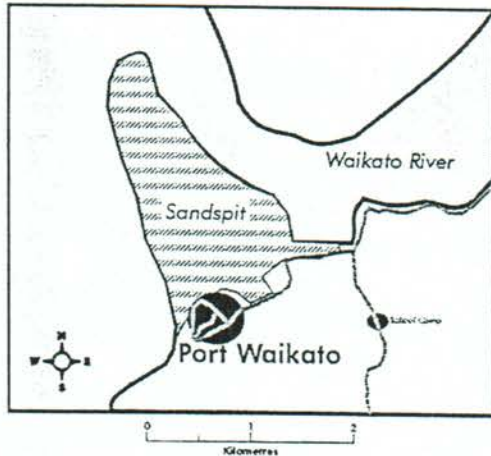


Figure 1: – Location of Port Waikato

As a consequence the coastal foredunes in this area are subject to heavy pedestrian and vehicle traffic. This places considerable pressure on the dunes and their fragile vegetation cover. By mid 1992, the destruction of sensitive native coastal vegetation had culminated in severe wind erosion damage to the dunes, with major gullies (blow-outs) having developed in the dune face and large sand sheets migrating inland towards adjacent coastal dwellings. The dunes in front of the car park had also been completely denuded of coastal vegetation, resulting in significant problems with wind blown sand on the car park area and associated remedial maintenance costs.

In response to community concerns, Franklin District Council staff initiated liaison with Environment Waikato and the Department of Conservation in June 1992 to discuss appropriate remedial action. These preliminary discussions and community consultation identified the desire to restore the dunes to their natural state - including the re-establishment of indigenous coastal vegetation, in preference to traditional methods of dune management using exotic species such as marram grass (*ammophila arenaria*) and ice plant (*carpobrotus edulis*). However, no previous experience existed to guide such an approach.

It was recognised at an early stage that the solution would require not only appropriate rehabilitation work, but also significant changes in the existing patterns of community and recreational use.

Community participation in the analysis of the problem and implementation of appropriate remedial action was considered to be the most effective means of promoting such user changes.

Initial discussions between key community members, local groups and iwi supported the idea of a Port Waikato Beach Care programme. The decision was made to

promote the idea further over a holiday weekend with presentations and a display that highlighted the Beach Care concept and possible steps to resolve the problems at Port Waikato. At the public meeting held on Easter Sunday 1993, attended by over 110 members of the public and agency staff, it was decided to adopt the Beach Care approach at Port Waikato. This was first time the approach had been adopted on the West Coast of New Zealand and, at the time, only the second such group in New Zealand (Dahm and Spence 1994).

Group Organisation

Over 100 members of the community joined the Beach Care group at the initial meeting and the community elected a widely representative steering committee to coordinate activities. Representatives from Franklin District Council and Environment Waikato committed to attend meetings and working bees.

The committee seeks ideas from the wider Beach Care membership and informs them by means of regular newsletters (e.g. Appendix 1). Beach Care members promote participation and understanding among the wider community through informal networking and promotional activities including articles in the local press.

Once plans have been widely discussed and agreed to, working bees are held to put the plans into action. At present, funding is provided by the statutory agencies, while the community undertakes the agreed works, a reflection of the Port Waikato Beach Care partnership (Dahm and Spence, 1997).

Port Waikato Beach Care Group: Goals and Objectives

At the initial meetings, the Beach Care group identified a number of goals and objectives.

The primary goals relate to:

- The restoration and enhancement of the dunes, including re-establishment of appropriate native coastal vegetation; and
- Facilitating community use and recreation, while avoiding adverse impacts on the dune. Emphasis is placed on information, consultation and participation rather than regulation and enforcement.

The Beach Care group objectives which relate to the above goals include:

- Protect and enhance the natural and amenity values of the dunes;
- Enhance the cultural values of the dune systems including restoration of the culturally significant endemic sand grass pingao (*Desmoschoenus spiralis*);
- Promote awareness, involvement, and responsibility for dune protection among the local community and all beach users;
- Restore and enhance the dunes as a protective buffer against natural hazards such as wind erosion, coastal erosion, and flooding;

- Develop simple and cost-effective techniques for dune repair and native revegetation on the exposed West Coast;
- A partnership approach between the statutory agencies and the community.

These goals and objectives relate closely to the resource management responsibilities and objectives identified in the statutory plans of the Franklin District Council and Environment Waikato.

Beach Care activities

The Beach Care group has used a series of activities to successfully stabilise the dunes and eliminate the threat of severe wind erosion, including:

- Reconstruction (using machinery) of the most badly damaged dunes and initial stabilisation of these works with sand fences;
- Installation of temporary fences, accessways and signage to guide pedestrians over the dunes with minimum disruption to dune vegetation. Temporary accessways have been well used by the public, enabling dune vegetation in adjacent areas to re-establish;
- Significant plantings of native sand binding grasses and ground covers (over 14000 to date) and fertilisation of existing sand grasses to help re-establish the vegetation cover on the damaged dunes;
- Research trials with the Forest Research Institute looking at the effectiveness of techniques for the re-establishment of native sand grasses on the dune face;
- Construction of a viewing platform that allows visitors to see the beach and sand-spit without damaging the dune vegetation;
- Ongoing promotion and education by beach care members of the aims and activities of the group amongst the local community and visitors.

Outcomes of the Port Waikato Beach Care Programme to Date.

• Partnership Approach

From the initial meeting, Beach Care has been supported well by the community with good attendance and active participation at regular committee meetings. Similarly, frequent working bees have been well supported. Council staff have attended all meetings and working bees, even though most meetings are held in evenings and most working bees on weekends.

The commitment by both the community and council staff demonstrates that the programme has developed and strengthened the partnership between the community and the management agencies.

Strong interagency co-operation between Franklin District Council and Environment Waikato has also been characteristic of the programme. Both agencies have committed staff time and financial resources to supporting and developing the Beach Care programme. This partnership has been supported and reinforced by politicians of both councils - exemplified by the attendance of councillors and community board members at Beach Care working bees, including both the Mayor of Franklin District Council and the Chairperson of Environment Waikato.

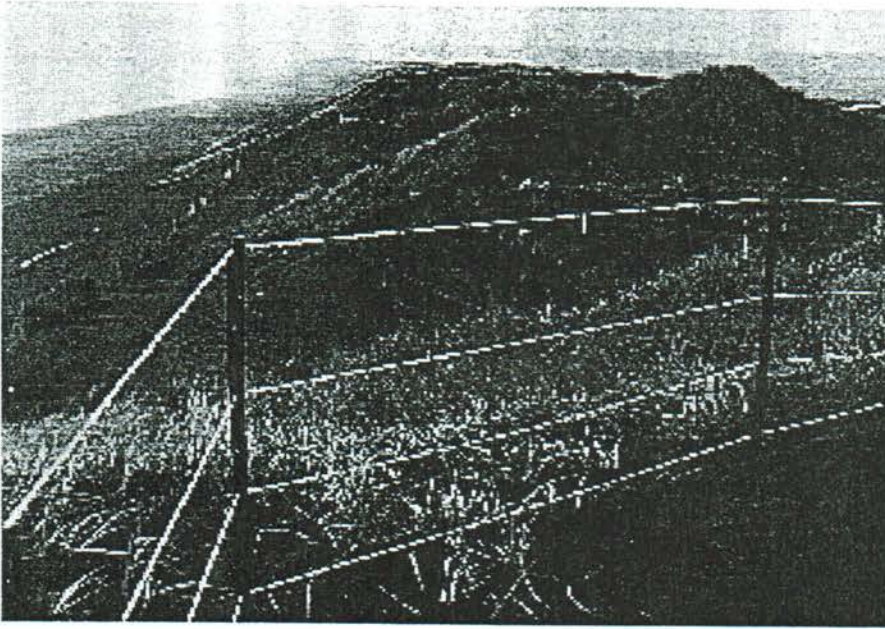
The partnership has expanded to incorporate other agencies. Most notably, the Indigenous Species Unit of New Zealand Forest Research Institute, has worked closely with the Beach Care group to develop and implement techniques for revegetation using native species. This included research trials at Port Waikato. The Department of Conservation has maintained contact with the group and supported its activities.

Increased liaison and co-operation has also been developed with local iwi groups. This includes the participation and support of the Huakina Development Trust, the environmental management arm of Tainui, in dune management activities.

• Dune Repair and Revegetation

Following the major earthworks which were required to repair the dune shape, the group has held a number of working bees to re-establish appropriate native vegetation. Activities have included planting of approximately 12-15,000 plants, including more than 10,000 pingao. Revegetation has also been promoted by fertilising and by access control measures. The combination of these techniques has been particularly effective, and the badly damaged dunes at the south end of the beach have been successfully reconstructed (Figure 2). In some areas over two metres of sand has accumulated, burying signs and temporary fences!

Group members have also developed a simple and low cost sand fence design using lightweight battens which has proved to be well suited to the harsh West Coast conditions. Over most of the site the dune profile is now recovering.



a)



b)

Figure 2: – Comparison of Sand-dune profile (from the same point) a) 1993; b) 1995

Community Awareness, Responsibility and Participation

Beach Care has stimulated considerable community interest and awareness. The group has continued to encourage wide community participation – today there are over 120 households on the mailing list. Since 1993 regular committee meetings have been held, 15 newsletters (e.g. Appendix 1) have been sent out and about the same number of working bees have been held. Working bees have typically involved at least 25 people and up to 70. Local iwi have also been involved in the dune works, both within the Beach Care group and independently.

The group's activities have also been reported in local and national press (e.g. Franklin County News, 1997, 1994). Members have ensured that the group activities and objectives have been promoted among local groups such as the surf club, the ratepayers association, and a local garden club. The management agencies have also promoted Beach Care activities in their corporate publications.

Local community members have demonstrated a commitment to monitoring and maintenance of the Beach Care works. This has included repair of fences and re-establishment of plants damaged by the elements. It is also notable that the works have suffered no significant vandalism, despite the high use and relatively secluded nature of the site. Further indicative of community support, has been the acceptance of access control measures installed by the group to protect the dunes and their vegetation. Therefore, the group has had some success in changing beach user attitudes and behaviour.


Group members have also developed an increasing self-reliance, demonstrated in a number of ways:

- Members have independently obtained information on dune management and revegetation, both from sources within New Zealand and overseas;
- A number of members have grown native coastal plants from seeds sourced locally;
- A viewing platform was designed and built by group members;
- Members have spoken to school groups and beach users about the Beach Care group activities and objectives;
- Members have travelled to dune management seminars (including one held in the Bay of Plenty, 2.5 hours away);
- Members have liaised with other Beach Care groups to share their experiences and learn from other groups.

Expansion of the Beach Care Programme at Port Waikato

The success of the Beach Care concept has given agencies, iwi, and community members involved the confidence to address the wider community concerns on the sand-spit. Off road vehicles and illegal rubbish dumping were two of the most pressing issues raised at a public meeting held at the end of 1997.

Port Waikato Beach Care Newsletter *No.10*



Hi everyone!!

Well a hot and busy summer has come and gone. A few of points about how our beach care area has coped over the last few months.

- The lookout has been a tremendous success. It has been well used over the summer providing visitors with spectacular views of the spit and protecting the fragile dune vegetation at the same time.
- The planted area in front of the Surf Club has been buffeted by a series of storms swells and as a consequence there is still quite a steep drop off in front of the pingao. But the pingao is looking great, there are a few spinifex plants which have seeded naturally amongst them and we have a functioning dune that we have re-created. CONGRATULATIONS EVERYONE!!
- The access points to the beach in front of the car park are going to need some thought this year. The temporary warratahs and yellow cord that we have used up until now have done a great job of protecting the developing dune but now we need to think of what we want there in the long term.
- Further up the beach (to the north) our plantings have also survived well although there are areas which still need our attention.
- There are some points along the beach which have been damaged by the summer traffic, pedestrian, horse, motorbikes and 4wds. Beach Care will continue work with the agencies (Environment Waikato, Franklin District Council and DoC) towards finding some appropriate long term solutions to this problem.
- More people are now on the Port Waikato Beach Care mailing list. Remember if you think of, or meet anyone, who wants to receive our newsletters so they can get involved in our planning, working bees etc just use the contact numbers or addresses at the end of this newsletter.

Really these all point to a great summer for Port Waikato Beach Care!

Autumn is upon us and that means PLANTING SEASON!!!!!!!!!!

The Beach Care committee met in March to have a think about what we need to do this year. There are two things to let you know about.

Firstly we NEED a few more people for our committee. The group itself is alive and well we know that just from the support we have for the working bees! Being on the committee is not arduous. We meet at the surf club only 3 or 4 times a year to discuss how things are going and what we need to do next. Its fun and worth while too because there's always a great supper afterwards (thanks Eva and others!!). Any one can be on the committee so if you could help us out then please give us a call or come along and talk to us at the working bee!

Next Working Bee

Saturday 11th of May 9.30AM

Activities include:

The first PINGAO planting for 1996;

maintenance work on some of the existing beach accesways.

You won't need any tools just bring the family!!

**THERE WILL BE FOOD AFTERWARDS INCLUDING CHOCOLATE
FISH!!!**

(That should bring even more people along!!)

SEE YOU THERE !!!!!!!

- We have enclosed notification of a training day being run by Environment Waikato for Care Groups on growing native plants. If you are interested then we encourage you to go along. It will be a really useful day - and its FREE!!!

In the mean time if you have anything you want to tell the group or committee just phone Environment Waikato TOLL FREE on 0800 800 401 or the committee's address is:

Port Waikato Beach Care Group Committee, C/- Greg Lowe, Franklin District Council, Private Bag, PUKEKOHE

THE BEACH CARE COMMITTEE.