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J. Dahm
Eco Beach Care
Programme.



NZILA  Coastline '94

Foreword

NZILA annual conferences over recent years have fallen into a comfortable and manageable pattern of high-profile, upmarket events in major centres alternating with low-key, down-home affairs in more out-of-the-way places. After 1993's well-subscribed conference in Wellington focused on the Resource Management Act and entitled '*An Opportunity for Landscape: Designing and Managing for Sustainability*', the specific coastal focus and provincial location of the '*Coastline '94*' conference in Whakatane were entirely appropriate.

The '94 conference at the same time advanced the Institute's development of a bicultural kawa, first given emphasis at Te Aute in 1987. Most delegates stayed at the local marae and slept in the warm embrace of the ancestor Wairaka. The daughter of Toroa, captain of the great Mataatua canoe, Wairaka is revered in Ngati Awa tradition for saving the canoe as it began to drift back out to the open sea while the men were ashore, by announcing as she took up a paddle "*Kia whakatane au i ahau*" - "I will play a man's part". With both the marae and the formal conference venue overlooking the Mataatua landing site and guided on a hikoi around local sites by Ngati Awa kaumatua Kei Merito, delegates could not fail to perceive the significance of history in defining the character of the contemporary landscape.

Presentations from key speakers including geomorphologist Jim Dahm, marine reservist Dr Bill Ballantine, marine zoologist Professor John Morton and planner Dennis Nugent provided wide-ranging coverage of coastal dynamics and processes, current status of marine protected areas, a historical perspective on coastal planning and the future shape of coastal policy respectively. It was the organisers' intention to give these topics tangible form by grounding the conference firmly in a local landscape context through careful selection of both the conference venue and associated field trips. Feedback from delegates indicates that this intention was largely realised.

'*Coastline '94*' was strongly supported by a range of sponsors. The integration of a major sponsored field trip to Rotorua by Monier and brief presentations by sponsors during the formal proceedings were features new to NZILA conference programming and a demonstration of our maturing relationship with industry.

In the end though, it was the sheer enjoyment of the place, the marae hospitality, and each other's company for which '*Coastline '94*' will be best remembered. The New Zealand Institute of Landscape Architects retains a sense of unity and purpose which is the envy of the members of other disciplines who have occasion to join us from time to time. Intending to stay only for the first day of the conference, Jim Dahm from Environment Waikato was one of the last to leave, commenting as he did how much he had enjoyed his time with us. "*You're like one big, happy family*", he said. An enviable attribute for any professional body in the 1990s - let's work to keep it that way.

Environment Waikato's Beach Care Programme

by Jim Dahm, Coastal Scientist, Environment Waikato, Hamilton at the NZILA Coastline '94 Conference Thursday, 10 February 1994

1 Introduction

The beach care programme, introduced by Environment Waikato, aims to increase effective community participation in coastal management in the Waikato region - by encouraging communities to accept responsibility for coastal management issues and empowering them to participate effectively in achieving integrated and sustainable coastal management.

The programme, still at an early stage of development, was initiated as part of work being undertaken along the eastern Coromandel coast to improve the management of coastal erosion hazard. This paper examines the initial development of the programme and progress to date.

2 Background

2.1 The Issue of Coastal Erosion on the Eastern Coromandel Beaches

The ocean beaches of the eastern Coromandel have outstanding natural and amenity values. These values and the proximity of the beaches to major population centres have, together with roading improvements, resulted in extensive subdivision of the beaches since the early 1960's. Much of this development has occurred in nearshore areas potentially vulnerable to coastal hazards, particularly coastal erosion. Some serious erosion problems have already been experienced, particularly at Cooks and Buffalo beaches in Mercury Bay. Moreover, the natural and amenity values of the beaches have often been compromised by the measures, particularly shoreline armouring using rock, taken to 'manage' these problems. There is potential for such erosion problems and the attendant management conflicts to become significantly worse in the future, particularly with ongoing pressure for intensification of shoreline development in nearshore areas and with the potential impacts of predicted global warming.

2.2 Legislative Framework

The Resource Management Act 1991 (RMA) is the primary act governing hazard management in New Zealand. Section 30(1)(d)(v) of the Act requires that regional councils, in respect of the area below mean high water spring (MHWS), control 'any actual or potential effects of the use, development, or protection of land, including the avoidance or mitigation of natural hazards'. Unless defined otherwise in the Regional Policy Statement, regional councils also retain primary responsibility for the management of natural hazards above MHWS (refer RMA Amendment Act 1993 s62(1)(ha)). However, as district councils have primary responsibility for the

management of development in those areas above MHWS, where the primary impacts of natural hazards occur, integrated management between regional and district councils is clearly important to effective hazard management.

The purpose of the Act is to promote the sustainable management of natural and physical resources. The Act also identifies, as key principles, various '*matters of National Importance*' which those exercising functions under the Act '*shall recognise and provide for*' (under-lining is author's emphasis). These include the preservation of the natural character of the coastal environment and its protection from inappropriate subdivision, use and development. As coastal management has to be undertaken in a manner that is not inconsistent with the purpose and principles of the Act, the aspirations enshrined in the purpose and principles have significant, and as yet little understood, implications for coastal management - including the management of coastal erosion.

As has been emphasized by innumerable commentators, sustainable management of natural and physical resources is ultimately a challenge to the way we live and requires fundamental changes in human understanding, aspirations and behaviour - at individual, local, national and global levels. As such, it is not something that can be achieved by local and/or central government agencies operating in isolation from the wider community. For this and other reasons, the RMA places emphasis on the participation of iwi and the wider community in coastal, and other, resources management. [As an aside in this respect, I believe the NZILA and its members have the potential to make a very significant contribution to coastal management, should you choose to become more involved. This is particularly so with regard to definition and management of the issue of preservation of the natural character of the coastline - an issue of fundamental importance which, in my view, is still very inadequately addressed in day to day coastal decision making].

3 Coastal Hazard Management and Beach Care Programme

In an attempt to improve the management of coastal erosion hazard along the Coromandel east coast, Environment Waikato initiated a coastal hazard management programme in 1991 to provide an improved assessment of coastal erosion risk and, in co-ordination with district councils and the wider community, to develop and implement appropriate management strategies to avoid or mitigate this risk. This work emphasizes a pro-active approach to hazard management, the use of environmentally appropriate measures to manage erosion problems, a coordinated approach with district councils and the encouragement of iwi and community participation. Initial work focused on a pilot study at Whiritoa Beach.

4 Whiritoa Beach Pilot Study

4.1 Background

Whiritoa, located towards the southern end of the eastern Coromandel (Figure 1), is an embayed beach about 1400 metres long. The beach is typical of the eastern Coromandel in possessing outstanding natural and amenity values and having been extensively subdivided since the early 1960's. Sand has also been extracted from the beach for commercial use since at least 1947 - with the present operation (which has

existing use rights) located on Maori owned land with riparian title at the southern end of the beach. Since the early stages of coastal subdivision, there has been extensive lobbying against the sand extraction by various elements of the local community, primarily concerned (ostensibly) with the potential impact of the extraction on coastal erosion hazard. The controversy, which involved little to no useful attempt at constructive dialogue with the Maori land owners, resulted in deep community divisions. In addition, the issue of coastal erosion hazard itself became 'lost', with instead the sand extraction becoming the focus of attention (and in many minds the 'cause' of any coastal erosion problems at the beach). Though the impact, or potential impact, of the sand extraction had been the subject of a number of investigations since the late 1970's, the outcomes were generally regarded as inconclusive by the various statutory agencies and no action had been taken.

In 1991, Environment Waikato initiated investigations to assess potential coastal erosion risk and the role of various human activities, including the sand extraction.

The pilot study was undertaken in two stages - the first involving technical investigations to assess coastal hazard risk and the second, working with the Hauraki District Council and the community to develop and implement a strategy which would enable effective management of hazard risk.

The findings of the investigation (summarised in Appendix A) identified a number of human activities as having contributed to the potential erosion problems at Whiritoa - including coastal subdivision, sand extraction, historical land use practices, present day vehicle and pedestrian traffic over the frontal dune and, potentially, global warming impacts. In simple terms, the investigation essentially implicated all past and present users of Whiritoa Beach in the problem (and, through potential global warming impacts, people who have not even been to New Zealand, let alone Whiritoa Beach!). This conclusion, with parallels in most resource management issues, emphasizes the complexity and inter-related nature of environmental problems and the fundamental challenge of sustainability to the way we live. The conclusion also contrasted significantly with the single issue perspective of some in the local community who had tended to focus exclusively on the sand extraction.

4.2 Adoption of the Care Approach

The findings of the technical investigations (Appendix A) highlighted the need to:

- (a) Develop and implement action to protect limited beach and dune reserves, which form a natural buffer between the sea and coastal development, including:
 - a comprehensive dune management strategy; and,
 - cessation of the sand extraction; and,
- (b) Limit further development in the area of potential hazard risk.

Both Environment Waikato and the Hauraki District Council adopted a management strategy focused on these objectives.

It was recognised that these actions would require significant changes in the attitudes and practices of virtually all beach users and also had the potential to impact significantly on the interests of some groups in the local and wider community. As such, it was important to provide opportunity for the community and affected parties to participate effectively in the decision making process. Moreover, there was some question as to whether the councils could achieve the management objectives in an efficient or effective manner working in isolation from the community or through the use of traditional approaches such as regulation, enforcement and/or works programmes.

Therefore, it was decided to attempt to develop and implement the appropriate action using the 'Care approach'. The essential characteristic of this approach is that the community (or relevant parties within it) are encouraged to accept responsibility for environmental management issues (i.e. to take 'ownership' of the issues), including development and implementation of appropriate management action. The role of the statutory agencies becomes less focused on that of a decision maker 'imposing' decisions on the local community, and more focused on empowering or facilitating the community as the decision maker.

Progress to date in the application of this approach to the dune management and sand extraction objectives is summarised below. Work on the coastal subdivision issues has yet to commence.

4.3 Dune Management

As the development and implementation of a comprehensive dune management programme (including management of beach access; revegetation with appropriate native coastal species; dune reconstruction as required; and appropriate changes in beach user behaviour) has implications for all beach users, successful use of the Care approach depended critically on involving a wide cross-section of the community. This was also important in avoiding 'capture' of the process by any particular interest or lobby group.

After various discussions with individuals and community groups, to gauge their support for a Care approach, it was decided to pursue the formation of a 'Beach Care' group at Whiritoa - modelled on the 'Dune Care groups of New South Wales. The term 'Beach Care' was adopted in preference to 'Dune Care' as it was hoped that the group may develop into a useful forum for community participation in a range of other local coastal management issues.

Various activities were undertaken to encourage community participation, including wide advertising (including meetings with community groups, a mail out to all ratepayers, press releases and local posters), preparation and distribution of an information pamphlet (Appendix B), and holding the launch of the group on site during the peak Christmas holiday period when large numbers of the community were likely to be present (70-80% of properties are holiday homes). The launch was preceded by a large display with staff available to answer questions.

The Beach Care launch attracted considerable interest from the local community, the meeting over-filling the surf club venue, and strong community support was obtained - with over 100 individuals joining over the 2 days of the launch. (It was decided to have membership free to encourage participation). The meeting also elected a co-ordinating committee and went to considerable effort to ensure representation of the various different interest groups in the community (e.g. residents; absentee owners; local iwi; front and back-beach property owners; different recreational and user groups).

The co-ordinating committee develops ideas for various elements of the dune management programme (including an overall strategy and priorities), which are then circulated to members for their comments by means of regular newsletters. Once a plan of action is determined and materials funding obtained, working bees are held by the group to implement the action. To date, both district and regional council staff have also attended committee meetings - to facilitate liaison with statutory agencies and to provide support as required. However, council staff are not office holders on the committee and strive to restrict their decision making role in favour of a facilitation role. The councils also provide office support (e.g. assisting in preparation and distribution of newsletters) and the group (like any community group) can apply to the councils for funds during the annual planning cycle.

The approach has proved very effective in obtaining community participation and there has been eight committee meetings, seven newsletters (with good feed-back - e.g. 17 submissions on access-way plan) and six working bees (with numbers of participants ranging from 25-80). Many of those attending committee meetings and working bees often travel to Whiritoa from Auckland or the Waikato particularly to participate and include a good cross-section of ages, residents and absentee owners.

To date, the group has made considerable progress on the development and implementation of a dune management plan, including:

- Development of an access-way plan and obtaining materials funding (over 3 years) for this programme from the Hauraki District Council (the group presented their proposal to the council);
- Installation of 6 of the planned 11 walkways, including 3 vehicle accessways, and associated post and rail fencing (see figures 2 and 3) and (friendly!) signage;
- Extensive activities related to the establishment of appropriate native coastal plantings, including research trials at the beach in co-operation with the Forest Research Institute (e.g. Figure 4), considerable advance with removal of large areas of exotic invasive species (Figure 5), commencement of plantings of appropriate native coastal species (including pingao, an important and endemic sand binding species, on the dune face and various ground cover and shrub species in back-dune areas) (Figure 6), seed collection (particularly of the native sand binder spinifex - the predominant sand binding grass at Whiritoa) and commencement of fertilisation of native sand grasses on the face of the dunes to help encourage vitality and cover of these species (see figure 4b).

Activities in planning at present include the remaining five access-ways, extensive further plantings, continued work on removal of exotic invasive plants, reconstruction of damaged dunes and landscaping work on a central user reserve area. Many of these activities relate not only to protecting the sand reserves but also to enhancing the natural and amenity values of the dunes and beach. Thus, while the work was initiated on the basis of the need to protect the dune reserves for effective pro-active management of coastal erosion, other issues such as the protection and enhancement of both amenity and ecological values are increasingly being integrated into the programme.

The activities of the group, which have given a high profile to the dunes and their importance, are also proving a very effective tool in education and effecting behavioral change. (For example, people are far more inclined to respect works undertaken by their neighbours than a 'council' facility!). The group has also served to improve relationships within the community (as has resolution of the sand extraction issue - see below) and between the community and the relevant councils.

Therefore, to date, the Care approach has proved effective and enabled good progress towards the development and implementation of a comprehensive dune management programme.

4.4 Cessation of Sand Extraction

While the technical investigations highlighted sound environmental reasons for closure of the operations, there were also complex social, cultural and economic considerations involved - relating largely to the interests of the Maori land owners. These included not only the impact of the loss of income from the operations but also the desire of the land owners to exercise decision making control or stewardship over their own land.

Therefore, the most appropriate means for resolution of the issue was for the land owners to take 'ownership' of the issue and resolve it. The approach adopted to facilitate this outcome was largely dialogue - initially with one or two trustees, but ultimately several wider meetings involving members of the relevant whanau (and, occasionally elders and advisors of the land owners from the relevant hapu - Ngati Hako - and other sources). The meetings focused on discussing the relevant technical issues (fundamental to understanding the need for closure of the operations) and the various environmental, social, economic and cultural issues that had to be taken into account in effecting closure of the sand extraction.

There were a number of major obstacles for the parties to overcome in resolving the issue - including the legacy of hurt felt by the Maori community after 18 years of lobbying against them with little to no attempt at constructive dialogue (the owners, quite properly, were at all times emphatic that they would base their decision on what they accepted as the facts of the situation and would in no way be influenced by lobbyists in the local community), the complexity of the technical arguments underlying the reasons for closure, and the large number of people that had to be involved in the decision making process. The matter was also considerably complicated by elements in the local community lobbying widely (including the

Ombudsman - twice, unsuccessfully on both occasions) in an attempt to force the relevant statutory agency to take enforcement action to achieve closure.

Therefore the process was time consuming, as these difficulties and others were worked through. However, the process was also amicable and the degree of trust established between the parties saw the dialogue persevered with - despite pressures on both parties to take a hard line.

Once there was general agreement on the relevant issues, the land owners effectively took over the issue and involvement of Council staff diminished (largely limited to periodic contact to keep in touch with progress of the situation - which was being coordinated by a senior trustee). After further discussions, largely among themselves, the land owners suggested a phase out of the sand extraction over three years - though the total volume to be removed over this period was only marginally in excess of the maximum annual rate of extraction permitted by the trust. This solution met the environmental objectives, while also providing opportunity for the landowners to establish a camping ground as an alternative source of earning.

In presenting the agreement at a formal meeting of the Waikato Regional Council, the land owners thanked the two councils for the technical investigations and other advice - referring to this as a 'koha' that had assisted them in exercising stewardship of their land. This emphasized that, despite the difficulty of the issues and decisions they had to face, the land owners had felt that the respective councils had acted to empower, rather than direct, their solutions. The Council stood and clapped as the land owners left the meeting, in recognition of the contribution the land owners had made to the future of Whiritoa Beach, at considerable cost to themselves.

The outcome protected and enhanced the mana of the land owners in the local community and also strengthened the relationship between the Maori land owners and the relevant councils. Staff from both councils are now frequently involved in working through issues with the land owners.

The process also stimulated interest in environmental issues among the land owners and they have initiated work with both councils and the Department of Conservation to develop a management plan for an outstanding coastal wetland on their land. The land owners are also active in the Beach Care group and have plans to plant a coastal dune urupa on their land in appropriate native coastal shrubs and trees.

5 Prospects for Future of Beach Care

The outcomes arising from use of the Care approach in coastal management at Whiritoa have far exceeded the initial expectations of the councils involved and suggest that the approach has significant potential in coastal management - provided that the relevant statutory agencies are prepared to put appropriate time and energy into facilitating community participation.

Therefore, following the initial success of the Whiritoa pilot study, use of the Care approach in coastal management has been expanded in the Waikato region. There are now Care groups working on dune management at 6 sites, with a further group in an early stage of development. The Care approach is also being used at a further 3 sites to address the management of local coastal erosion problems and has also been adopted for dune management at 3 sites in the Bay of Plenty region.

While most existing Care groups have grown out of the Council's coastal hazard management programme, the focus on dune management is likely to lead to increasing involvement with other issues - including issues relevant to the expertise and experience of NZILA and its members such as the protection and enhancement of ecological and amenity values and natural character.

For instance, Beach Care groups in the Waikato Region place considerable emphasis on the use of native coastal vegetation for dune revegetation and many are already addressing the re-establishment of secondary and tertiary species in appropriate back dune locations (either by planting or simply encouraging natural succession).

This work has considerable potential for enhancing values of New Zealand beaches. For instance, such revegetation has the potential for very significant improvements to the natural (e.g. ecological and habitat) values of New Zealand's beaches - most of which are relatively barren of native shrubs and trees, having been stripped of their original coastal vegetation sequences by land use practices accompanying early human (Polynesian and European) settlement. Amenity values of beaches can also be very considerably enhanced by native shrubs and trees. (For instance, there is already increasing public demand for re-establishment of native coastal trees and shrubs on back-beach amenity areas, as concerns with sun exposure led to demand for more back beach shade). Similarly, widespread re-establishment of native coastal shrubs and trees has the potential to significantly enhance the natural character of many developed beaches by screening or partially screening nearshore coastal subdivision.

In the past there have been significant obstacles to the progress of such work on New Zealand beaches. In particular, those with an interest in beach-front coastal subdivision have tended to wish to maintain the barren nature of New Zealand beaches - to protect coastal views and property valuations. Such interests have been extraordinarily influential and have tended to (almost universally) prevail in the management of New Zealand's beaches, resulting in only sparse plantings of coastal trees and shrubs - often with a heavy emphasis on a narrow range of exotic species (particularly Norfolk pines and Phoenix palms) which provide less interruption to views.

While such conflicts of interest have been difficult for statutory agencies to resolve using traditional instruments, they would appear to be well suited for resolution by use of the Care approach (i.e. where the community can work out a more appropriate balance of the various interests among themselves). There is also very considerable potential for groups like NZILA to also play a significant role in promoting and informing community participation in such issues.

6 Summary

Although still in early stages of development, progress to date suggests that the Beach Care approach offers significant potential as a tool for both effective community participation and effective coastal management. In promoting community responsibility for local resource management issues, the Care approach appears to be particularly effective in promoting the attitudinal and behavioural changes essential to sustainable management of the coast and also in the development of more positive and cost-effective partnerships between statutory agencies and their 'client' communities. Experience to date also suggests the approach may have advantages over traditional planning instruments in addressing and resolving long-standing controversies and/or difficult coastal management issues involving significant conflicts of interest.

However, a major requirement for the success of the Care approach is the willingness of statutory agencies to move from their traditional emphasis on a decision making role to place increasing emphasis on empowering effective public participation and decision making. The process can also be very demanding, at least initially, in terms of staff time - a limited resource in most councils. As such the approach represents a challenge to statutory agencies as well as to communities. It is therefore important that the approach is integrated into council work programmes in a way that does not 'blunt' this challenge.

There is also significant potential for groups like NZILA to play a useful role in informing and empowering community participation in coastal management - particularly in core coastal management issues such as preservation of natural character and the protection and enhancement of natural and amenity values.

APPENDIX A

Findings of Investigations and Implications for Management

Investigations undertaken to assess the issue of coastal hazard risk and management implications concluded that:

- (a) The sand reserves of Whiritoa Beach are a finite and non-renewable resource, being primarily derived from sources that are no longer supplying sand to the beach;
- (b) There is potential for coastal erosion to impact up to 55 metres landward of the toe of the frontal dune over the next 50-100 years;
- (c) A number of human activities have aggravated or contributed to the potential coastal hazard problems at Whiritoa - including coastal subdivision, sand extraction, historical land use practices, present day vehicle and pedestrian traffic over the frontal dune and, potentially, global warming impacts.
- (d) In the event of serious erosion occurring, there would be no cheap or easy management options and therefore, effective pro-active action should be taken to minimise the risk of serious erosion problems in the future.
- (e) In particular, action was required to protect and enhance the existing beach and dune reserves, which form a natural buffer between the coastal subdivision and the sea - with this action to include cessation of sand extraction and the development and implementation of a comprehensive dune management programme.
- (f) Action to minimise further development in the area of potential hazard risk was also identified as an option to mitigate losses in the future event of serious erosion.

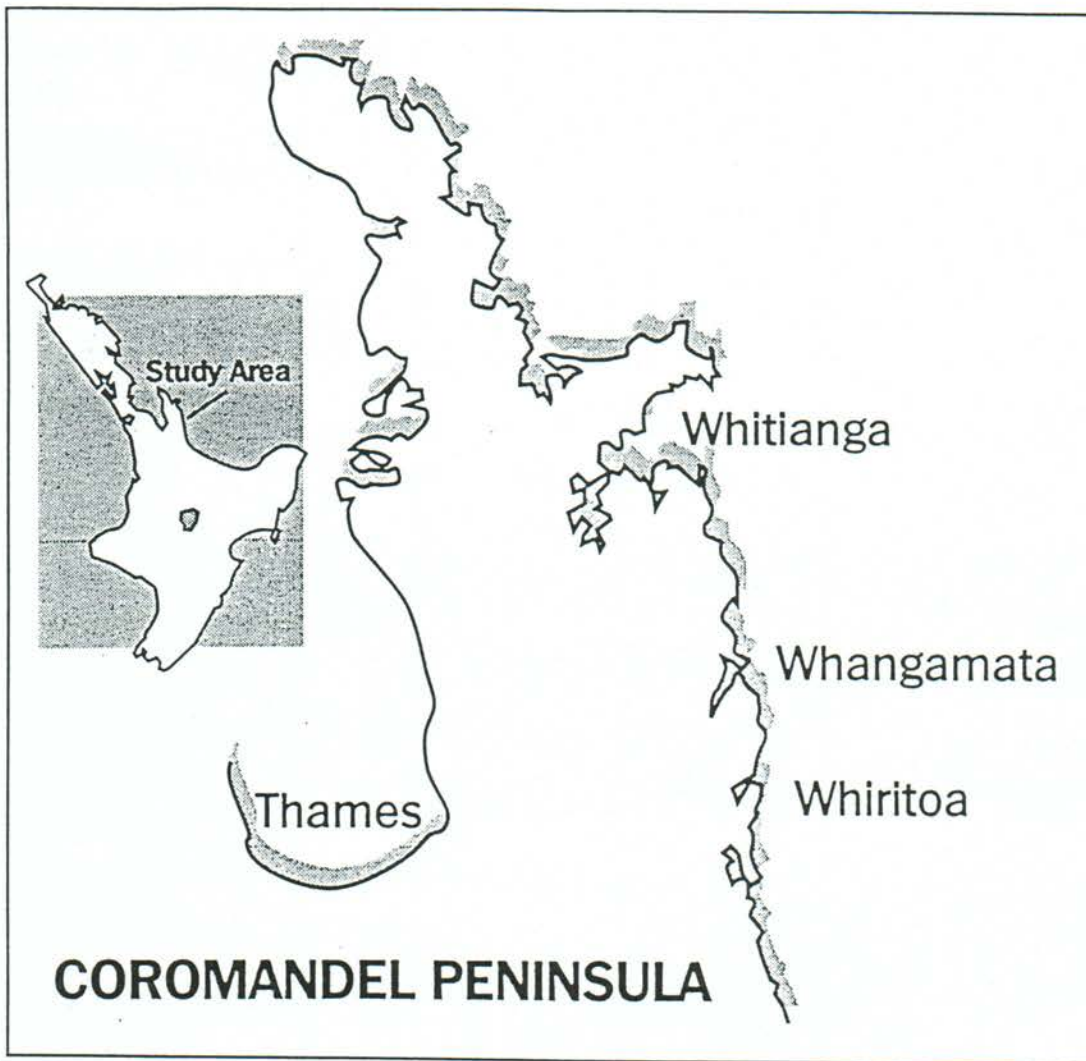


Figure 1
Location of Whiritoa Beach



Figure 2a
Beach Care group members assembling a board and chain pedestrian walkway.



Figure 2b
Completed walkway and associated post and rail fencing.



Figure 3a
Beach Care Group members gathered for a photo opportunity after constructing a vehicle board and chain access-way for surf club boat launching.



Figure 3b
'Testing' the newly constructed vehicle access-way.



Figure 4a
Sparse cover of native sand binding grasses (spinifex and sand convolvulus) on the dune face on a section of the dune that was not fertilised.



Figure 4b
Adjacent plot showing dense cover of spinifex and sand convolvulus resulting after application of a fertiliser treatment (at the rate of 100 kg/N/ha/year).



Figure 5a

Dense cover of the acacia sophorae (an Australian coastal species) at the northern end of Whiritoa Beach. This species formed a dense monoculture over a large area after being planted about ten years ago.



Figure 5b

Beach Care Group members removing acacia sophorae prior to planting with appropriate native coastal vegetation.



Figure 6a

Planting of the endemic sand biding grass, pingao, on a dune face after removal of acacia sophorae.



Figure 6b

Planting of native coastal shrubs (in this case coastal fivefinger) and trees on a back dune area cleared of acacia sophorae.