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Not Just Trees in the Ground:

The Social and Economic Benefits of Community-led Conservation Projects

Dianne Buchan Corydon Consultants Ltd



Yellow-eyed penguin on the move



Anita and Margaret tending plants at the nursery



Team work



Agnieszka spots signs of Kiwi



Restoring Bexley wetlands



Sand dunes, Great Barrier Island



Ralph with felled pines, Kaitake Beach



This way to the nursery...



Riparian planting makes a world of difference



The weed clearing team, Governor's Bay



Kauri 2000



Kereru spotting at the Kereru Awhina project



Kids volunteering to plant seedlings



In the thick of it at Kaitake reserve



Tamairiki volunteers at the plant nursery

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The Social and Economic Benefits of Community-led Conservation Projects

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Executive summary

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1

The aim of this research is to document and analyse the social and economic benefits of three community-led environmental restoration projects, all of which have received a portion of their funding from the Habitat Protection Fund (HPF).

Community ecological restoration groups are generally focused on the environmental benefits which their communities experience as a result of their initiatives. However experience indicates that unexpected and significant social and economic benefits may also be achieved as a result of ecological restoration projects. WWF-New Zealand considered that documenting these non-environmental benefits could encourage many more communities to engage in environmental restoration projects and funding agencies, organisations and commercial companies to recognise a much wider range of potential benefits from supporting community-based ecological restoration projects.

Three projects, partly funded through the Habitat Protection Fund were selected for in-depth outcomes evaluations – the Whaingaroa Harbour Care project in Raglan, Te Rangitahi o te Whenua Trust in Torere and the Yellow-Eyed Penguin Trust in Dunedin. This information has been supplemented by findings from other New Zealand-based research into the wider benefits that have accrued from other environmental restoration projects.

None of the three projects had mechanisms in place to measure the environmental outcomes from these projects, let alone the social and economic outcomes.



Benefits identified in the three case-studies and endorsed in the review of previous research in this area included:

- social and psychological benefits for volunteers
- increased social capital through the strengthening of connections between community groups, business interests, and local and central government, as well as the development of leadership, organisational skills and confidence
- personal development and increased quality of life through the learning of new skills and the opening up of recreational and socialising opportunities
- raised awareness of the natural environment enriching people's life and work experience
- reduced pest damage for commercial growers (including forestry companies) as well as domestic gardeners
- increased viability of Māori traditional medication through the protection and propagation of rongoa plants
- support for the regeneration of Māori culture through the production of plants used in traditional craft making including flax for weaving
- the generation of new income-earning employment opportunities, opportunities for work experience and development of employment skills
- economic benefits for local businesses through increased customer numbers and the creation of new business opportunities.

Benefits for socially dysfunctional youth and the agencies charged with their care were particularly evident in all three case studies. All three, to a greater or lesser extent, were providing a vehicle for addressing social dysfunction in youth - helping to

bring about behaviour change, improved attitudes, and increased social wellbeing for youth through engagement with the natural environment.

Two provided clear evidence that becoming involved in environmental restoration can increase farmers' quality of life and work environment, providing greater job satisfaction and an increased sense of wellbeing through working more in harmony with nature.

The report notes that most of the information on the benefits generated by the three projects is qualitative rather than quantitative. None of the three projects had mechanisms in place to measure the environmental outcomes from these projects, let alone the social and economic outcomes. To ensure that all benefits (and adverse effects) are explicitly identified, monitoring mechanisms need to be integrated into project design at the outset.

This report focuses on the social and economic benefits generated by environmental projects. Environmental restoration projects can also generate adverse effects such as increased traffic generation on local roads leading to the project area and constraints on the activities of adjacent landowners and existing resource users. However, the report concludes that compared to the benefits generated, these effects are usually of a minor nature and can often be mitigated or even avoided by proper impact assessment and planning as part of project design.

The report notes that, if the potential social and economic benefits from environmental restoration projects are recognised more overtly, and specifically provided for in the design, funding mechanisms and project implementation, benefits to the individuals involved and to the communities in which these projects are located are likely to be increased.

Introduction

Community ecological restoration groups are generally focused on the environmental benefits which their communities experience as a result of their initiatives.

However experience indicates that unexpected and significant social and economic benefits may also be achieved as a result of ecological restoration projects.

It appears that while some project evaluations have noted wider benefits, no in-depth research into the social and economic benefits of community ecological restoration projects has been carried out in New Zealand to date. WWF-New Zealand considered that if such a study were carried out it could encourage many more communities to engage in environmental restoration projects and funding agencies, organisations and commercial companies to recognise a much wider range of potential benefits from supporting community-based ecological restoration projects. To that end WWF-New Zealand commissioned this research.

The aim of this research is to document and analyse the social and economic benefits of three community-led environmental restoration projects, all of which have received a portion of their funding from the Habitat Protection Fund (HPF). The HPF is a contestable fund managed by WWF-New Zealand in partnership with The Tindall Foundation. The purpose is to demonstrate the range of non-environmental benefits that can be generated by environmental restoration projects. To increase the robustness and applicability of the findings, the case-studies have been placed within a wider context by drawing on the findings of other relevant research. Rather than being an assessment of the effectiveness and outcomes of the funding provided by the HPF, the focus is on the type and scale of benefits that can be generated by environmental restoration activities per se.



This report has been compiled through the following process:

- documents concerning the operations, objectives and outcomes of the three projects selected as case-studies were reviewed. These documents were either provided by WWF-New Zealand or by the projects concerned during the field visits
- reports which included references to the social and economic benefits of other environmental initiatives in New Zealand were reviewed
- field visits of two or three days' duration were undertaken to each of the three projects. During these visits project staff and volunteers as well as individuals and organisations associated with the project concerned were interviewed
- follow up telephone interviews were conducted to clarify issues or fill information gaps that emerged during the report writing
- each project manager was sent a draft of the section pertaining to their project to check for accuracy prior to compiling the complete report
- a draft of the whole report was sent to each of the three projects and to WWF-New Zealand for comment prior to finalisation.

Most of the information on the benefits generated by the three projects is qualitative rather than quantitative. None of the three projects had monitoring mechanisms in place to monitor and measure environmental outcomes, let alone social and economic outcomes from their projects.¹ The nature and extent of the benefits identified in this report have been deduced from information obtained from a variety of sources: from project personnel, project reports and other documents produced by the projects, correspondence from organisations and individuals associated with

a particular project which verified specific outcomes, and interviews with individuals and organisations in a position to comment on the benefits generated by a particular project.

It is intended that the report will be used to:

- provide information to stakeholders about the social and economic benefits to communities that can result from community conservation projects
- encourage communities to develop community conservation projects
- help communities identify likely direct and indirect social and economic benefits that can accrue from environmental restoration activities
- encourage landowners, businesses, local governments and other stakeholders to support projects because of the wider benefits that such projects can bring.

¹ The need for improved outcomes monitoring has been identified by WWF-New Zealand and resulted in the commissioning of a manual for environmental projects on how to measure the benefits of their projects. WWF-New Zealand should consider making future funding dependent on having monitoring mechanisms in place to measure progress in achieving at least the key objectives of the projects the organisation funds.

WWF-New Zealand and the Habitat Protection Fund

WWF-New Zealand was established in 1975 as a charitable trust. It is the New Zealand arm of WWF, one of the world's largest and most experienced independent conservation organisations, with almost 5 million supporters and a global network active in over 90 countries.

WWF's mission is to stop the degradation of the planet's natural environment and build a future in which humans live in harmony with nature by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- promoting the reduction of pollution and wasteful consumption.

WWF-New Zealand manages the Habitat Protection Fund on behalf of The Tindall Foundation. This fund is the mainstay of WWF's community support work in New Zealand. It provides funding for local environmental groups working to protect areas of high conservation significance in their community. The fund is mainly aimed at biodiversity gains linked with community benefits. Community benefits are an integral part of the assessment criteria.

Typical expenses covered by the grants include assistance with labour costs; pest eradication and associated expenses; plant propagation and associated expenses; and equipment and materials necessary to ensure the success of a conservation project. Grants for the cost of labour are usually restricted to the wages for supervisors of groups of volunteers as this is seen to greatly enhance the effectiveness of the volunteer effort. Alternatively, it may be the wages of those carrying out a specialised task that cannot be undertaken by volunteers, for example weed eradication on cliff edges or marine surveys. The funding of salaries and wages sets the

HPF apart from many other sources of funding for community environmental restoration projects and, in two of the three projects investigated for this research, that funding has proved crucial to success.

The HPF typically provides funding of between \$2,000 and \$20,000 to projects that meet its criteria. Since 1999 over \$1,300,000 has been disbursed by the HPF on behalf of The Tindall Foundation. About 45 per cent of these projects are Māori-based, and involve local iwi and hapu. On an annual basis it is estimated all these projects contribute more than 500,000 volunteer hours to conservation (WWF-New Zealand website, www.wwf.org.nz – January, 2007).

As noted above, this evaluation is not concerned with the outcomes achieved through HPF sponsorship but rather the range of non-environmental outcomes that can be achieved through environmental restoration projects in general. Three projects which have in part been funded through the HPF have been selected for in-depth outcomes evaluations. Other information on the wider benefits that can accrue from environmental restoration projects has been gathered from reports on other projects undertaken in New Zealand and is summarised in the following section.

Findings from the literature review

This report has been commissioned by WWF-New Zealand to address a gap in the current literature on the social and economic benefits resulting from community-led environmental projects.



² It should be noted that the literature also noted disadvantages such as more restricted access, impairment of views from unrestricted tree growth or predator fences, restrictions on access (e.g. hunters due to 1080 applications) or trail-bike riders and increased traffic on local roads where the project generates public interest. This evaluation is however, only concerned with benefits.

Most evaluations of outcomes of environmental initiatives focus on the extent to which the environmental objectives have been realised with only passing reference, lacking in detail, made to socio-economic benefits. What literature was identified tended to be focused on the Third World and other countries with under-developed rural economies. Many of these studies, reports and discussion papers focused on the benefits of eco-tourism opportunities which had resulted from a particular environmental restoration project. These findings have limited relevance to the New Zealand experience. Where the socio-economic baseline is very low, social, and particularly economic benefits are more easily generated. In such communities any small increase in the local economy tends to generate a disproportionate improvement in the economic and social wellbeing of the local people.

To supplement the New Zealand literature on the wider benefits of environmental restoration projects it was considered more appropriate to refer to a more comparable economy and society such as Australia. However while the Australian literature included many references to the environmental benefits of environmental projects (especially the achievements of Landcare), no references of significance were found on the wider benefits of such projects.

The literature review includes therefore only the New Zealand experience. Most of the initiatives which have documented social and economic benefits have been government-led conservation initiatives which are on a much larger scale than the average community-led initiative. Nevertheless some have been included in this section because, while the benefits of a national park can be expected to be much more widespread and of a greater scale than benefits from a local community initiative, the type or nature of the effects accruing from these large environmental restoration initiatives can, to some extent, be expected to be mirrored in smaller-scale community-led initiatives.²

Karori Wildlife Sanctuary

The Karori Wildlife Sanctuary is a mainland island located in Wellington city and managed by a community trust. This project has involved the establishment of a predator-proof fence around a former water supply reserve, elimination of animal pests, habitat restoration and re-introduction of a number of threatened species. The project employs a core of administrative and operational staff together with several hundred volunteers. Social and economic benefits identified from this project (Cosslett et al, 2004) included:

- the creation of 12 jobs (11 full-time and 1 part-time) as well as casual summer employment at the sanctuary itself
- a neighbour setting up a bed-and-breakfast business using the sanctuary in its promotional material
- an increased demand for overnight accommodation in the city as a result of night tours to view kiwi at the sanctuary
- increased access to the valley for the less physically able due to improved vehicle access and the creation of walking tracks
- a significant reduction of the possum population and improved weed control which has benefited owners of neighbouring gardens
- increased opportunities for locals to widen and strengthen their social networks and increase their sense of achievement by becoming involved in the extensive volunteer programme.

Whirinaki Forest Park

Whirinaki Forest Park was established in the mid-1980s to protect native forest previously administered for timber production by the New Zealand Forest Service. It adjoins Te Urewera National Park. Both parks are located in an area of high unemployment and a high proportion of the local population are Māori, of the Tuhoe tribe. There is also a large number of Māori from other tribes who came to the area to work in the commercial forests. The restructuring and privatisation of these forests in the 1980s led to large-scale unemployment and decline in the wellbeing of the people living in the forestry villages of Murupara, Kaingaroa and Minginui. The social and economic benefits resulting from the establishment of the park are summarised by Cosslett et al (2004) as:

- short-term job opportunities have been created for locals in an area where such opportunities were severely limited
- a significant improvement in the viability of some local businesses (e.g. passenger transport services)
- a small improvement in the viability of local retail businesses as a result of visitors, overseas volunteers and Department of Conservation (DOC) staff living locally
- an increase in the number of tourist-based services – especially in Murupara (kayaking, art and craft etc)
- development of opportunities for local businesses (especially visitor accommodation) by using their proximity to the park in their promotional material
- improved recreational access as a result of track construction and maintenance
- volunteers from overseas staying in the area have increased the exposure of local residents



to outside influences and ideas and created international networks for locals

- greater protection of Rongoa (medicinal plants) and plants used for nutritional purposes
- reduction in pest problems experienced by local residents, especially those involved in the horticultural industry.

Goat Island Marine Reserve, Leigh

Goat Island Marine Reserve was established in 1975 – the first marine reserve in New Zealand. Activities permitted within the reserve include anchoring boats, swimming, snorkelling and scuba diving. Fishing is prohibited. Connected to the reserve is a public walkway along the coastline. Provision has been made for parking a limited number of cars; toilets and changing rooms are provided on-site. The reserve is located one and a half hour's drive from Auckland city which has contributed greatly to the high visitor numbers experienced by the reserve.

Leigh is a small town predominantly servicing the surrounding rural area. Increasingly, as a result of the marine reserve and associated recreational opportunities, it has become a holiday centre. There is now a range of accommodation available in the Leigh area, from hotels to backpacker accommodation and camping grounds, as well as some cafes, restaurants and basic shopping facilities.

The social and economic benefits of the marine reserve identified by Cosslett et al (2004) include:

- an increase in employment and income with the establishment of new retail and service outlets both in Leigh and Warkworth in response to the increase in visitor numbers, in part generated by the reserve

- an increase in the variety of retail and services outlets, especially in neighbouring Warkworth

- existing retailers have experienced improved profitability – some are now selling products directly related to the reserve
- awareness of the area at a national level has increased as a result of the promotion of the reserve and this has contributed to a growing influx of visitors which helps ensure the viability of local services

- while restrictions on fishing were initially resented by some local recreational fishers these are now largely supported because of the increase in number and size of fish being caught around the parameters of the reserve and because of the beneficial spin-offs the reserve has created for the local community as a whole
- a sense of pride in the reserve has developed among the local community as their awareness of its achievements and appreciation of the value of conservation increases both locally and nationally.

Greater Wellington Regional Council Take Care Community Environmental Care Programme

Greater Wellington Regional Council has been running its community environmental care programme, Take Care, since 1999. Over that time a total of 38 groups have received funding and other support from the council. This has ranged from short-term funding for projects such as publications and monitoring, to multi-year funding for larger scale restorations. Other support has been provided in the form of staff assistance with the administration of projects, technical advice and operations and provision of 'how-to' guides and other written information.

In 2004 an evaluation (Rush and Buchan) was undertaken to assess whether the council had achieved its desired outcomes for Take Care. Twenty-seven of the projects funded through the programme were involved in the evaluation. As part of that evaluation, the respondents were asked what they had gained from being involved in the programme.

Ninety-three per cent of the respondents said they had gained new skills and knowledge. In addition to increased knowledge of the environment and conservation, they had increased their knowledge of local government, their organisational abilities and their people skills.

Partnership in Wellington's Regional Parks

A review of the involvement of community and interest groups in environmental restoration activities in Wellington's regional parks (Buchan, 2001) found that the benefits gained by volunteers included:

- a sense of achievement / pride to see the project's aims realised
- pride in creating an asset for others and for future generations
- mental stimulation
- chance to learn new skills and increase knowledge and experience
- increased respect from others (the council, other organisations and users of the reserve) as a result of what has been achieved
- increased self-confidence and leadership
- companionship (with other volunteers) and a sense of group identity.

Survey of HPF-sponsored project groups

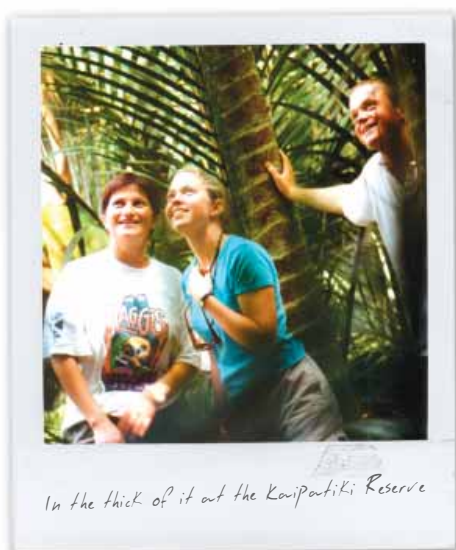
A survey of 41 groups funded by the HPF was undertaken by PA Handford & Associates in 2005. While the aim of the survey was to gather information to assist in the development of a monitoring programme for HPF projects, the responses also provided some information on the social and economic benefits of these projects. Benefits identified across the 41 projects included:

- the generation of extra paid employment: 25 people (subsidised and unsubsidised) were employed for more than 120 hours per month with a further 24 employed between 60 and 120 hours per month. Of the 57 people employed on a contract-basis for some hours every month, 18 of these were employed more than 60 hours each month with a further 12 employed between 10 and 60 hours per month. In all, 145 people had gained some paid employment each month through these 41 projects
- Between them the projects employed about 1,700 volunteers. While most of these were for a few hours a month, 40 gave more than 60 hours per month to their project
- Twenty-four of the respondents identified benefits for businesses from their projects. The most common benefit was their demand for supplies and services from the local community. This included building materials, fencing and pest-control contractors. Increased opportunities for tourism businesses were also noted by six of the projects.

Half of the groups said the HPF/WWF-New Zealand funding had provided the group with credibility and that the funds had helped them leverage funding from other sources.

The projects investigated

For the purposes of this evaluation, three environmental restoration projects were selected for an in-depth analysis of their social and economic benefits.



The projects were selected using the following criteria:

- have received some funding from the HPF
- include both North and South Island representation
- together provide a variety of environments and objectives
- include both pakeha and iwi-driven projects
- have a sufficient track record to be able to identify outcomes.

The three projects selected in accordance with these criteria were:

- Whaingaroa Harbour Care in Raglan
- Te Rangatahi o te Whenua Trust in Torere, Eastern Bay of Plenty
- Yellow-Eyed Penguin Trust in Dunedin

The case-study research was to investigate two specific aspects of each of these projects:

- the social and economic benefits accruing as a consequence of these projects
- the significance of the HPF funding and what difference, if any, this funding made for these projects.

The balance of this report seeks to address these questions in relations to the three projects selected.

Whaingaroa Harbour Care (WHC)

Context

Whaingaroa Harbour Care (WHC) is a contributor to the Whaingaroa Catchment Management Project, described as the first formal attempt in New Zealand to establish community-based, integrated environmental management on a catchment scale. It was established to restore the Whaingaroa harbour, located to the west of Hamilton, to a healthy state for fishing and recreation.

The Whaingaroa catchment is a heavily modified catchment comprising rolling to steep, unstable land which drains into the harbour. Large quantities of silt flow into the harbour from deforested and erosion-prone headwaters.

The harbour is prized by the local community for fishing and recreation. On the harbour's edge is the popular holiday resort of Raglan. The village has a permanent population of 2,640 (Population Census, 2006) which in summer can swell to 14,000. More than 200,000 day visitors are recorded annually (Raglan Tourist and Information Centre).

The harbour is a significant base for commercial and recreational fishing. Historically it has supported significant stocks of crayfish, scallops, cockles, snapper, flounder, mullet and rig (lemonfish).

During the early 1990s long-term residents of Whaingaroa noted there had been a decline in clarity of both stream and harbour waters in recent decades, especially in heavy rain. Sediment from the land was being deposited on harbour flats that were once clean sand. Fish stocks had declined markedly – snapper catches were the lowest in the North Island (MfE, 2001), and there was a marked decline in shellfish, flounder, crabs and seagrass.

After rain harbour waters were brown for several days and high bacterial levels meant that shellfish were unsafe to eat. Surfers reported suffering septic ulcers, an indicator of poor water quality. The once clear flowing streams which typically had an abundance of koura (freshwater crayfish) and whitebait, had become turbid and dominated by sediment-tolerant species such as eels.

The harbour has a 220 kilometres coastline bordered in large part by intensive farming. The high bacterial concentrations in the upper harbour, particularly after heavy rain, were attributed to faeces washed down in surface runoff from pastures and from livestock with direct access to the harbour edge as well as streams, wetlands and seepage areas (MfE, 2001).

Project objectives and activities

The Whaingaroa Harbour Care project was established in 1995. It focuses on activities to improve the harbour's water quality and ecology. This is achieved primarily by fencing off and re-establishing native plants along the margins of the harbour and tributary streams, restoring wetland systems and encouraging farmers to fence and plant their riparian strips, and retire and plant the slopes and gullies on their properties that are susceptible to erosion. Their success depends on gaining support from landowners, local councils and government agencies.

In 2000, WHC launched a five-year strategic plan which laid out the overall approach to integrated catchment management, set priorities for riparian management and identified indicators for environmental improvement. The plan stipulated that WHC would only work with farmers who were willing to participate and take on riparian management responsibilities.



In 2001, a management strategy for the catchment and harbour was completed by local consultants with support from Environment Waikato (the Waikato Regional Council) and finalised in 2002 after local community input.

The Waikato District Council and the Wainui Recreation Reserve's management committee agreed that the reserve (a farm park of some 129 hectares) could be used as a model for sustainable farming practices. Indigenous habitats in the reserve had been interrupted by pastoral land use. These habitats have been restored by WHC volunteers using plants partly paid for by the council. The margins of the Wainui Stream have been fenced and planted. Despite retiring and planting gullies, wet areas and steep parts of the farm (approximately one third of the area), the farm now runs double the number of cattle on the flatter, less erosion-prone land thus demonstrating that environmental protection and farm profitability are not mutually exclusive.

Whaingaroa Harbour Care started planting at the visible lower catchment to stimulate public education. While recognising that sediment generation rates are higher in the hill country and therefore the greatest gains in sediment arrest could be made initially in the hills, WHC felt the hill country management was beyond the resources of WHC. On the other hand riparian plantings at the bottom of the catchment are visible and so would be more influential in generating public support for the project and encouraging changes in land management practices. Planting riparian areas at the bottom of the catchment proved effective in trapping sediment from throughout the whole catchment.

To date, between 250 and 350 kilometres of stream and harbour edges have been fenced and riparian areas planted. Environment Waikato

provides funding for fencing materials with landowners paying for fence construction.

In 1997, at the site of the now closed Raglan refuse landfill, 1000 cubic metres of soil was lost from a slip and washed into the Wainui estuary killing most invertebrates (WHC, 1999). After the landfill was closed and capped, WHC grassed the bare earth. In addition they planted a section of the valley downstream of the disused refuse landfill to form a constructed wetland. Monitoring by district council consultants above and below the wetland indicates high removal rates for contaminants such as heavy metals.

Over 800,000 native plants have been propagated at the WHC plant nursery established on the Wainui Reserve owned by the district council. Government and WWF-New Zealand subsidised community wage-workers and volunteers undertake this work. Throughout its ten year existence, WHC volunteers, subsidised workers and farmers have planted over 800,000 plants (trees, shrubs and grasses) in priority areas. The nursery has the capacity to produce 80,000 – 100,000 plants each year, the majority of which are planted by WHC employees.

In the Waitetuna sub-catchment of Whaingaroa, farmers have planted the unstable areas. In Waingaro, a northern sub-catchment of Whaingaroa, whole farms have been planted in trees as the economics of dry stock have changed.

In response to submissions from WHC and others, the regional coastal plan now requires fencing of riparian areas to exclude stock and farmers adjacent to the harbour are required to fence off the harbour edge in order to keep cattle above mean High Water Spring Tide levels.

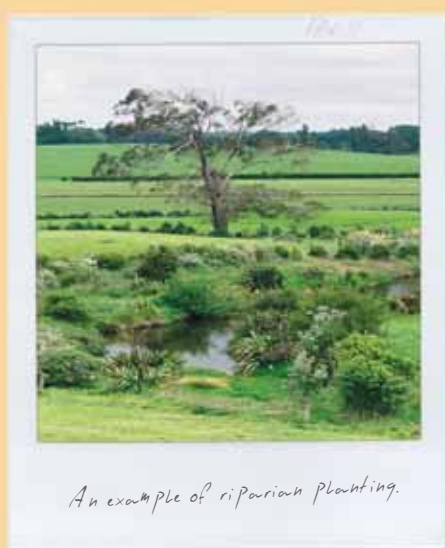
In 2002, Whaingaroa Harbour Care received a Green Ribbon Award from the Ministry for the Environment (MfE) for its large-scale riparian management projects.

Socio-economic benefits

Economic, social and psychological benefits for farming, for local businesses, and for the wider community through increased employment, education and training opportunities were identified. The project has also helped to build pride of place, community cohesions and social capital in the Raglan community. Each of these benefits is described in this section.

Economic benefits for farming operations

For farmers, providing stock with clean water and fencing off access to streams, ponds and wetlands has improved stock health and productivity.



Outcomes reported by farmers include a 20 per cent improvement in milk production and greatly increased stocking rates and profits for sheep and beef farmers (WWFa).

According to the annual report to WHC's AGM in 2003, participating farmers reported the following gains from the actions recommended by the WHC project:

- reduced stock losses in wet areas
- reduced vet bills as a result of improved stock health
- reduced drain digging costs
- reduced costs of weed control in riparian areas
- reduced fertilizer costs as a result of retiring unproductive land
- increased land values
- enhanced pasture quality.

One farmer interviewed for this report estimated the cost savings from riparian planting on his farm were in the vicinity of \$39,800. Even deducting the costs of the planting (which he estimated at about \$15,000 a year for an eight-year period), he was sure that the environmental initiatives he had taken as a result of the WHC project's inspiration and assistance would deliver net economic benefits:

"I had already fenced off my waterways but hadn't planted. I saw a TV programme on the Whaingaroa Harbour Care project and went to find out what they were doing. I saw seven to eight year old plantings and from an aesthetic point of view I didn't need convincing. But the planting cleans the run-off and keeps the water cool."

"I save on chemicals by letting the plants grow along the creeks and drains. I don't have to mechanically clean drains. I estimate I save \$1,500 - \$2,000 a year from not having to use chemicals and not having to clean drains.

"I don't lose cows in the drains any more – one cow costs about \$1,100 and the milk would be worth about \$1,300 a year and in the past I would lose one or two cows a year in this way.

"Since I got involved with the project I have spent 1 to 1.5 per cent of my gross income each year on riparian management (about \$15,000 a year). I have about 8 kilometres of drains on my farm. The most important thing is not to try to solve the problem in one year. Once I had started I found it wasn't as hard as I expected.

"The planting really improves the aesthetics of the farm so I'm looking to recoup that with increased capital value."

Another farmer had put in 14 kilometres of fencing along waterways and fenced off 9 hectares of wetlands. He thought these measures well worth while with savings on costs of fertilizer and drain clearing as well as improved aesthetics and animal wellbeing:

"When there is a big rainfall event, the water coming down the river will be brown but the water coming through the wetlands on the farm is clean even though it is running at the same speed. The planting keeps the silt on the farm so the nutrient loss is reduced. Planting trees along waterways inhibits weed growth so I don't have to spend so much time clearing. I estimate I save \$2,000 on digger time each year. I'm also saving money now that I've stopped trying to drain the wetlands.

For the price of a cow (\$1,100 plus \$1,300 for the milk) a farmer can put in 2 kilometres of fencing. This alone justifies the cost."

Social and psychological benefits for farmers

The farmers interviewed found several ways to describe the social and psychological benefits they received from adopting the practices being promoted by the WHC project. The following quotes illustrate the variety of experience:

"I get a real buzz from doing the planting. Not everything has to be returned in dollar value."

"As a result of the planting and other things I was given a farming award. That gave me a profile so anyone looking for a job recognises us as a pro-active farm. That attracts good workers and they stay. The profile also means that within the industry I get to meet a lot of people from different countries. Their information helps us with business decisions. For example, last week our farm hosted an executive team from a Danish dairy company. They came to our farm because of our pro-active approach."

"I am much more at peace and feel closer to the land. We are farming in harmony with nature instead of fighting it. It's a much easier way to live and more rewarding. This is not only good stewardship; the farm is more aesthetically pleasing. It is like working in a park. The trees provide shade and shelter for the animals, whether or not there is a market benefit in having animals that are happier, it's a humane thing to do. Visitors to this country notice animals without shelter, streams that are dirty. I'm glad I'm contributing to a better image."

One farmer, noting how he and other farmers had benefited from adopting the practices being promoted by WHC and more recently adopted as a requirement in the Waikato District Plan, thought that more could be achieved if the benefits of environmental restoration for farm management were more widely promoted:

"Farmers feel threatened by the imposition of new rules and pressure from environmental groups – it's just another b... thing to deal with. The benefits that farmers gain from better environmental practices needs to be marketed by the authorities. It's not all cost."

Benefits for local businesses

Local businesses had benefited through the improved environmental quality of the harbour which had either acted as a catalyst for them in the establishment of the business or provided a quality which they could exploit for marketing purposes. One local kayak operator said:

"I wouldn't say our business has resulted from the project but we wouldn't be here if the harbour had been in the state it used to be. I can't imagine that people would be interested in going on a kayak tour. I don't think I would have been interested in starting such a business here either."

"We see our business as being a conduit for environmental awareness about Raglan to the outside world. Through our sea-kayaking business we work with schools to teach practical skills, leadership, respect for the environment and create a passion for the outdoors. We take the kids out in the kayaks and wait for them to get that wow moment, it always comes."



"We teach them to love the environment, if they don't love it, they won't look after it. We started with three schools and this year we will have 15 schools visiting. Each school brings between 30 and 90 kids so that's about 600 - 900 student customers over the coming year."

"On top of the school visits we get around 2,000 corporate customers in a season and about 100 tourists and families. Most of our customers are from the Waikato but we get visits from other local authorities wanting to have a look around the harbour. We talk to them about the importance of fencing off waterways and the damage that cattle can do. People remark on the quality of the water and locals often comment that they get more fish now. Most of the locals are aware of the Harbour Care project but I'd say 90 per cent of the Raglan people had never been out on the harbour until we started our business. The only people who went out before were fishermen."

A local motel operator commented:

“We market our motel as a sanctuary – peaceful, a get-away from the urban environment. As part of that we like to encourage people to leave their cars behind and walk along the beach into the town-centre. We couldn’t have done this ten years ago. Then the beach was covered in a metre of mud. I also like to take people out on the harbour in kayaks so they can experience how beautiful it is.”

One farmer observed that there had been an increase in the number of tourist operators and motels in Raglan in recent years. He was sure that a proportion of that would be attributable to the clean harbour – especially those who were using the harbour as a draw card. (There are three motels, one hotel, three backpacker accommodations and a camping ground in or near Raglan. All use the harbour as part of their promotion.)

Flax has been the basis for much of the riparian plantings. This has hugely increased the availability of good quality flax in the catchment which has spawned a flax-product industry. The industry began with a flax weaving course which ran for three years. Some local people are now producing flax products which are sold through local businesses.

Benefits of a more healthy fishery

In 1991, there were warning signs up not to swim in parts of the harbour and not to take shellfish. A MAF survey undertaken in 1990 found that on average, recreational fishers were taking one fish every 18 hours. Surveys in 2006 showed that the situation had improved to an average of one catch every two hours (WWF-New Zealand). NIWA is currently undertaking research on the

health of the fishery which is indicating a huge increase in the number of snapper. The district council has undertaken a major upgrade of its sewage treatment facilities in this area including the filtering of wastewater through a wetland system prior to discharging to the harbour. This will have been a major contributor to improvements in the harbour’s water quality but the work of WHC has also been acknowledged as contributing to this outcome (MfE, 2001).

The whitebait population has increased dramatically. According to the owner of the whitebait aquaculture enterprise at Waitetuna, this is partly due to the reduction of silt in some streams as a result of riparian planting. However, much of the increase can be attributed to the releasing of whitebait by his company into the harbour (between 90 million and 120 million each year) and benign weather patterns at crucial periods in the year. Young whitebait are extremely vulnerable to silt. Given the nature of the soils and the susceptibility of the region to torrential downpours, the owner of the Waitetuna aquaculture enterprise considered that the effects of riparian planting on the level of run-off into streams was limited in storm events – not enough to save the whitebait. At the same time, the aquaculturalist acknowledged the effectiveness of WHC in cleaning up the harbour foreshore. As someone who lives on the estuary where it flows into the harbour, he noted *“a huge shift from silt to shingle on the beach as a result of the work Harbour Care is doing”*.

The local fishery which in 1990 supported three commercial fishermen now supports eight (project report to AGM 2003). The additional commercial fishing activity represents additional employment opportunities, increased income for the area and more fish available for local shops and restaurants.

However, a healthier fishery where fish are easier to catch and shellfish larger and more plentiful also has social and cultural benefits. People (both locals and holiday makers) are now able to harvest seafood for themselves and for community and cultural events.



"There's a lot more pipis and they are a bigger size since the Harbour Care project cleaned the place up. And the scallops are coming back too."

Employment and training

For the majority of its 12 years of existence the project itself has employed five permanent workers as well as a fluctuating number of temporary workers subsidised by Work and Income employment schemes. The number of permanent workers has now been reduced to 2.5. Over the past 12 years the project secretary/treasurer estimates that the project has provided work and training opportunities for over 70 people through its nursery and tree-planting operations.

In a letter to the WWF-New Zealand in December 2001, the secretary of WHC noted that over a one-year period, workers had received, or were about to receive training in:

- plant propagation
- seed collecting
- native plant identification
- weed and pest control
- storm water management
- fencing
- rehabilitation of whitebait spawning areas
- construction of fish passes in culverts
- deckhand skills (while transporting plants across the harbour)
- health and safety practices.

During their first six-months of employment, these employees had also received chainsaw certificates and first aid certificates.

For this research project, two full-time workers engaged in the nursery were interviewed to find out what benefits other than paid employment they had received from working for the project. One was on the unemployment benefit and was sent to work for WHC three days a week. He hadn't heard about the project prior to this:

"I came down with two other guys and there were eight or ten other people working in the nursery. I wasn't interested in the environment before but now I know about eco-sourcing and I've learned how to grow trees from seed. I believe that all the people who worked here before took something away with them – they all would have a better plant knowledge and more environmental awareness."

The other worker was interested in the environment before he started at WHC because he was a surfer and he had found that when he got cut while he was surfing he "would fester up and get sea ulcers

because of the pollution in the water". About three years ago he realised that he didn't need to medicate his cuts any more. He is currently engaged in planting out a wastewater treatment system aimed at further reducing pollutants in the wastewater still discharged into the harbour by the council on the outgoing tide. Because of his surfing interests he gets a particular sense of satisfaction from his work:

"I love this work. I feel good when I hear people talking about the impact of the work we are doing. I love talking to people about the harbour, getting them to plant a few trees and showing them how to propagate. We get lots of groups and schools through here. The Hokianga Harbour Care group came here to learn how to do this work and they have been going two years now. They still keep in touch. Yesterday we had a group from New Hampshire in the States."

Fencing contractors have had increased work with one farmer alone employing a contractor to fence 26 kilometres of harbour edge (WWF-New Zealand).

Through its flax planting, the project has created employment opportunities for local flax weavers who sell their products through the local shops.

The number of eco-tourism operators has also increased and while it is difficult to attribute this entirely to the cleaning up of the harbour, to paraphrase the manager of Raglan Kayak, it is unlikely that such businesses would be interested in setting up in Raglan or that people would be interested in taking an eco-tour if the harbour had been in the state it used to be.

Raglan Kayak employs two people full-time and three casuals when there are big groups.

WHC now runs a business called farmSMART which provides plants and riparian management services to farmers outside the harbour catchment area.



Profits from this business are used to support WHC activities. Income is increasing steadily. In 2004 the profit was \$33,486 – three times that of the previous year and in 2006 the profit increased to \$35,357.

Community cohesion and social capital

The project has served to raise environmental awareness among a large proportion of the local population and provide many with a sense of achievement and pride. For several hundred people this has been demonstrated in the thousands of hours they have volunteered for the project. Others have recognised the work of the project through some aspect of their business. Others show their pride by just talking to others about the improved quality of the harbour environment and the fishery.

The project has given a huge sense of achievement and personal satisfaction to the many employees and volunteers who have contributed over the last ten years. Fiona Edwards, WHC Project Secretary and Treasurer noted:

“We planted 6,000 trees in our first year and thought we were the bee’s knees. Then we realised how many would be required to address the problem. We realised we couldn’t do it just with volunteers so we started employing fulltime workers. Now we plant 80,000 to 100,000 a year.”

The project has brought into the environmental movement a completely different mix of people than those normally associated with environmental organisations, regional council partnership groups or the Landcare movement. People at all levels of the community have contributed and benefited from the project. According to the project secretary, some have been serious criminals:

“Some of the 70-odd people we have employed on subsidised work schemes have had a criminal record. Some have been long-term unemployed. The people sent to us from the Corrections Department cost the project a lot. We had to have extra supervision and a lot of gear was lost, broken or stolen. But we gave them life-skills and a work ethic and taught them self-reliance. Some went on to get unsubsidised jobs in town. We gave them pride of place – they see the trees they helped to plant and they are very protective of them. They don’t do wheelies in the planted areas any more. We took them fishing, camping in the bush, white-water rafting to teach them the importance of looking after the environment. A few years after we got underway the police gave the project an award for the contribution it had made to reducing the crime-rate in the area.”

Increased environmental skills and awareness in the wider community

The project is one of the most publicised environmental projects in the country. As a consequence of its high profile and its success in achieving high environmental goals, it has attracted interest throughout New Zealand and even in some other countries and international forums. As such, it has become a model for environmental teaching. In addition to the numerous schools and environmental groups who come to Raglan and to the project in particular to learn about environmental restoration, the project has had an impact on environmental awareness in other ways.

According to the project managers, as a result of the project there is now a high level of awareness among local people of the impact of sediment and storm water discharge on the environmental quality of the harbour and its fish stocks. There is also an increase in awareness of the effects of urban runoff on water quality both among local people as well as staff employed by the district council.

The local school is in the process of adapting its environment course to use one of the local farms operating according to WHC principles, as a demonstration model and an opportunity for practical experience. The school will donate the plants and the students will plant them. In the process they will learn about the importance of wetlands and riparian protection.

The skills and knowledge of the WHC members are now in demand for other restoration projects in the area and around the country. One example is the revegetation of the Kaniwhaniwha Stream on the northern slopes of Mt Pirongia. This stream connects to the Waipa River. Thousands of people



visit the Kaniwhaniwha Stream annually to enjoy a variety of recreational activities including walking tramping, swimming, picnicking and trout fishing. The area is also used for camping including school groups. Water quality monitoring undertaken by Environment Waikato shows there are high levels of nitrogen and phosphorus present and the stream is mostly unsatisfactory for swimming therefore posing a public health risk. The WHC has been asked by DOC and the community of Te Pahu to assist them with restoring the vegetation along the stream. Once the stream pollution has been contained, recreational and outdoor educational activities associated with the stream can be expected to increase and it is intended that the stream will become a show-case of riparian management for farmers in the whole catchment (WHC Annual Report 2005).

Importance of HPF/ WWF-New Zealand Funding

Although the funds from HPF/WWF-New Zealand comprise a small percentage of WHC's total funding package (less than 10%³) because of its flexibility and the kudos it brings, this funding has been very important to the organisation.

The HPF/WWF-New Zealand funding allowed the project to employ staff. As the project developed the enormity of the task ahead became clear and the instigators realised that they could not do the work required using volunteers alone. They also realised that to be successful and have credibility in the eyes of the council, local farmers and others organisations they needed to influence, the project needed to be managed in a professional manner. This meant paying reasonable wages for those doing the planting and employing a paid manager.

The HPF/WWF-New Zealand funds were used to top-up the wages paid by Taskforce Green and later, the Community Employment Organisation Scheme. According to WHC Secretary, Fiona Edwards, there were very few agencies that allowed funds for salaries. The HPF/WWF-New Zealand funding proved crucial in 2001 when delays in the processing of approvals for Work and Income funding left the organisation dependent on the district council and HPF/WWF-New Zealand to bankroll wages and salaries.

Another advantage of the HPF/WWF-New Zealand funding was the kudos or credibility it brought to the project with organisations like the district council and other funding agencies and community groups. This helped to attract additional funding and other forms of support. However, according to Fred Litchwark, WHC Project Operations Manager, the association with WWF-New Zealand also made the organisation a target for commercial fishermen and developers who regarded WWF-New Zealand as an organisation opposed to their operations.

HPF/WWF-New Zealand was important to the organisation not just because of the funding it provided but because of the moral support that came with being a WWF-supported project. WWF-New Zealand had the influence needed to get action when project management was unable to. For example, at one stage WWF-New Zealand took issue with the Ministry of Fisheries for supporting the level of catch which commercial fishing operations were taking from the harbour. WHC had been unable to have any influence on that issue prior to that happening.

³ The major funder is the Environment Waikato, followed by Waikato District Council, Work and Income and the WEL Energy Trust.

Te Rangatahi o te Whenua Trust

Context

Te Rangatahi o te Whenua Trust was formed as a charitable trust in 2002.

It is based in Torere, a community of about 200 people north-east of Opotiki on the East Coast. This is an area of high unemployment and a high Māori population. The land on which the Trust is located is predominantly in native bush but the surrounding land is multiple-owned Māori land. The adjoining block is administered by a Māori Incorporation and has been leased to Carter Holt Harvey (now Taumata Plantations owned by Hancock) for commercial forestry and planted in pinus radiata.

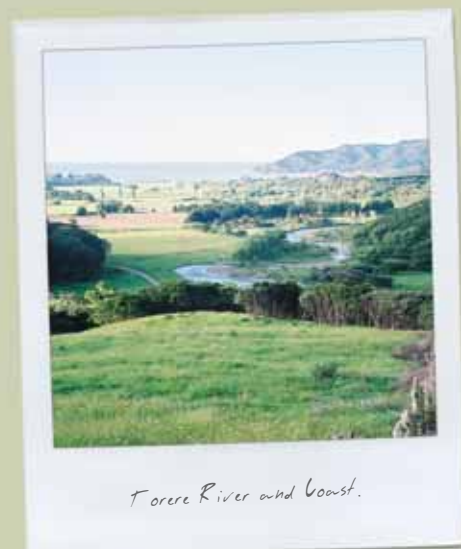
On the land owned by the Trust, a native plant nursery has been established and accommodation, wananga facilities and a possum processing facility have been constructed. There are also a number of walking tracks with labelled trees and several small-scale restoration projects. These facilities form the Aranui Ecological Research Centre and are available to the community, members of the scientific community and school groups for environmental education and research. The headquarters for the trust are also located here in the home of the Trust's Advisory Trustee, Garry Watson.

In 2004 the Trust received a Community Environmental Award from ENVBOP and a Green Ribbon Award from the Ministry for the Environment.

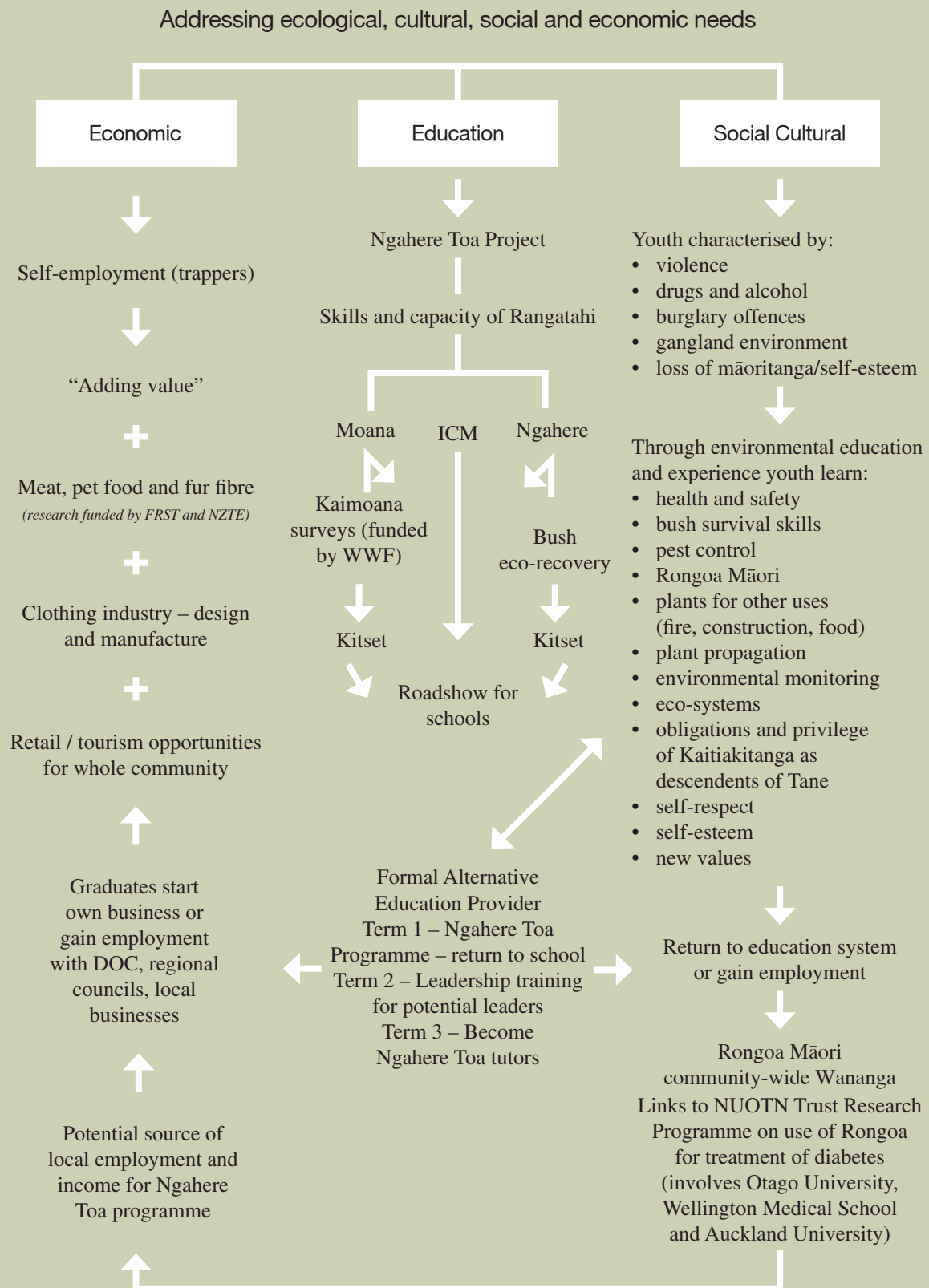
Project objectives and activities

The Te Rangatahi o te Whenua Trust is involved in a wide range of activities which together aim to enhance ecological, social and economic outcomes through environmental education, restoration and protection. A key driver is to protect the interests of the youth and their traditional taonga, empowering them to take control of their resources and their destiny. Within all the projects it undertakes, the Trust seeks to create training, employment, social and economic development opportunities.

The activities undertaken by the trust and the relationship between them and the between them and environmental restoration is illustrated in the following diagram. Some of the activities shown in the model are still at a developmental or conceptual stage and so have yet to produce outcomes. Further investigations may reveal that some of these are unachievable for one reason or another and will therefore not proceed. However, the diagram illustrates the scope of the vision held by the Trust on how social and economic benefits from environmental restoration projects might be realised.



Te Rangatahi o te Whenua Development Model



The initiatives that the Trust has implemented to date include a general environmental education programme; an alternative education programme for difficult youth that is based on understanding and restoring native bush (Ngahere Toa); a programme of pest eradication and bush regeneration; a range of other environmental restoration projects; and a kaimoana survey undertaken to inform the development of a conservation and management plan for the coastal area around Torere. Each is described below.

General environmental education

The Trust believes there is a need for a greater level of knowledge and understanding about the natural ecology and cultural and ecological values as a cornerstone to the achievement of ecological sustainability. The Trust runs programmes to up-skill local people in their understanding of the local ecology and practical ways in which they can enhance and protect the natural biodiversity within their rohe. Instruction on plant propagation is provided to the local community and the Trust is currently working with the local kura (school) in Torere to establish a shade house on the school grounds where children can learn to grow plants to be used for environmental restoration projects.

From the knowledge gained through undertaking surveys of kaimoana in Torere (funded by HPF/ WWF-New Zealand) the Trust has developed a resource kit (funded by the Sustainable Management Fund). This kit is designed to assist in understanding the threats to local marine environments and to gain skills in protecting its biodiversity. The kit is for use in schools and by iwi groups and community organisations. The kit is presented through a roadshow format and to date has been presented to about 20 organisations and schools.

Ngahere Toa: eight-week alternative education programme

This programme aims to use the environment to heal youth who have been rejected from mainstream schooling. Through this programme, based on understanding the natural environment and their links and responsibilities towards it, the students learn standard subjects such as creative writing, maths, biology, social studies as well as a wide range of life skills. The programme has a particular focus on pest control – particularly possums. Possum eradication is used as the basis for much of the teaching and for generating future self-employment opportunities.

The programme teaches plant identification, plant names and the role that each plant plays within the environment including how they heal the land when slips and other adverse effects are evident and how they can be used for medicinal purposes. Participants are trained in the preparation of Rongoa Māori (Māori medicinal plants), traditional survival skills such as fire-lighting, building shelter, identifying food and water sources, the recognition of bird calls, weather prediction and signs within the bush of environmental change.

Participants in the education programme have continued to engage in ongoing ecological restoration after leaving the programme.

The programme began as a three-day programme and has now been expanded into an eight-week course. Otumoetai College in Tauranga agreed to pilot the programme. It was evaluated by the college after the third term and is now included in the college’s formal alternative education programmes. The programme is now being offered to schools other than Otumoetai College.

Schools currently considering adopting the full eight-week programme include Northland College in Kaikohe, Te Aute College in Hawkes Bay, and South Westland College. To meet the demand for teachers, Te Rangatahi o te Whenua Trust's Advisory Trustee, Garry Watson, is planning to run a Train the Trainers course during 2007 and is currently developing criteria and standards for trainers and provisions for quarterly audits.

Pest eradication and bush regeneration

The programmes and projects run by the Trust have been responsible for the extermination of thousands of possums. The Trust estimates that over the past three years, 24,000 possums have been removed from the local area as well as hundreds of pigs and goats. This has led to a resurgence in bird populations particularly weka, kaka and kereru, significant regeneration of the native canopy and a reduction in land subsidence with associated improvements in water quality within the catchment.

Environmental restoration

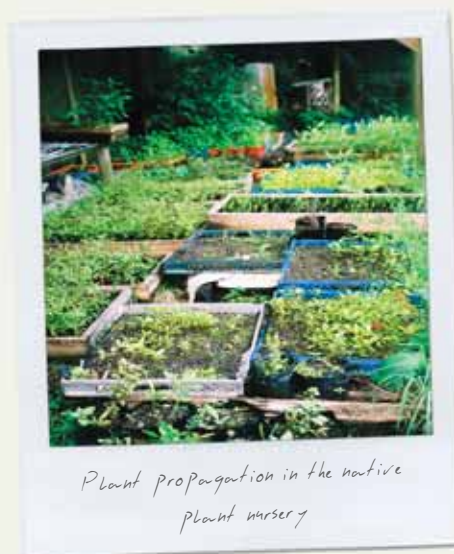
Restoration work has been undertaken in a range of habitats on the land owned by the Trust at Torere. One has focused on the restoration of the key tree species which support the reintroduction of native birds, particularly weka and kereru, into the ngahere. This work covers an area of about 4.5 hectares.

Another project has focused on the protection and restoration of the Owainene Urupa (a traditional urupa which dates back to pre-European times). More recently the Trust has begun working on the restoration of the wetland and gully systems on its land. This has included the restoration of a small area of harakeke – for local weavers

and for ecological purposes, as well as native trees used for traditional purposes such as dyeing, as a resource for the community.

The Trust has established a small nursery on their Torere property in which a cross-section of dominant or emergent species such as puriri, miro, tanekaha and kahikatea are being raised for environmental restoration work. These trees will be required for ongoing seed generation for the Trust and for the wider community. The Trust estimates that in 2006, 5,000 seeds and seedlings were propagated and re-potted predominantly by local tamariki.

The Trust has also produced a plan for protection and restoration of the riparian strip along the Torere river. Plants for improving water quality, habitat areas and for riverbank stability are being propagated in the nursery. The Trust has conducted a water quality survey and collated data on the impacts of human activity on the river with the assistance of the MAF Sustainable Farming Fund. This information was used for the development of the restoration plan.



Kaimoana surveys

Kaimoana surveys of the marine area around the Torere coast have been undertaken with funding support from HPF/WWF-New Zealand. These surveys are intended to inform the development of a conservation and management plan for the marine environment of the Ngaitai rohe.

The initial surveys were completed in April 2004 and have been repeated on an annual basis. They included observations of current harvesting activities, a dive survey of the marine environment in Torere, and a species assessment. The surveys were designed, implemented and the results documented by rangatahi with assistance from marine scientists based in NIWA and the University of Waikato. They were undertaken in response to a continuing decline in the level of kaimoana and evidence of excessive over-harvesting by both locals and holiday makers. A comprehensive database on the kaimoana resources was developed prior to the summer period to enable the survey team to assess rates of depletion of key species over the summer period.

The experience and skills developed as a result of these surveys have been incorporated into an educational kitset to help others undertake similar work.

Socio-economic benefits

The non-environmental benefits generated from the work of the Trust include employment creation and skills development, new business development, youth development and crime prevention, savings for the Ministry of Education, increased environmental skills and awareness in the wider community, and potential economic, social and cultural benefits from a restored fisheries, forest and wetland.

Employment creation and skills development

Training is an integral part of the Trust’s environmental activities. For example, the fencing of the urupa, which included a wetland and dry ridge system, provided participants with diverse fencing skills. Participants in the Ngahere Toa education programme receive instruction in how to establish permanent trap and bait stations and the importance of ongoing maintenance, as well as the processing of possum skin and fur for sale. The advisory trustee estimates that about 20 graduates of the Ngahere Toa Programme are now self-employed trapping possums and selling their fur and in some cases, their carcasses.

Approximately five permanent full-time jobs have been created directly on Trust work. Further self-employment outcomes achieved as a result of the Trust’s training activities are described in the next pages.



Economic benefits from business development

The Trust has been actively engaged in creating income generating opportunities based on possums. Financial reward is regarded as necessary to motivate enough people to undertake this work. Information on the numbers of trappers gaining a living from this activity and the number of possums being harvested has been provided by the Advisory Trustee, Garry Watson. Information on prices has been verified by people working in the industry.

Twenty people are now engaged in possum-fur plucking as a direct result of the Trust's work. Possum fur currently sells for about \$75 a kilo and it takes about 18 possums to produce 1 kilo. Garry Watson estimates that each of these people would be putting out 100 traps each for 200 days of the year and could expect a strike rate of up to 35 per cent. Based on these figures it is estimated that these 20 trappers take out and pluck 106,000 possums per year producing a total of 5,889 kilos of fur which would sell for a total of \$441,667.

There is limited opportunity for selling possum carcasses for meat processing. The only local processing plant is in Whakatane. Six graduates of the Trust's courses are selling carcasses to this factory. Garry Watson estimated that each of these trappers would be able to take out 35 kilos of meat every day for the 200 days they are trapping. This represents 42,000 kilo of meat which currently sells at \$1 a kilo for pet food.

As noted in the diagram of the Trust's development model, these jobs and income represent only the first tier of the economic benefit the Trust aims to foster from possum recovery. Added value from parchment and fabric production, if successful, will bring further benefits.

Other income-generating activities currently being investigated by the Trust include:

- the development of a process for creating a textile from pure possum fur. This research is being conducted in Christchurch funded by a grant from the Foundation for Research Science & Technology (FRST). Once on the market, demand for possum fur is expected to rise significantly with a consequent increase in the price returned to the hunter
- processing of possum skins for parchment using a low-tech process with natural ingredients. Trialling has been completed with a trial skin being sold for US\$18. The Trust is currently investigating marketing options
- the Trust is also involved in investigations into the use of a native plant product for the treatment of diabetes. It is intended that any income derived from this research will be invested in Māori health research and programmes.

Economic benefits for New Zealand education system

Providing alternative education programmes to students evicted from the mainstream school system costs the Ministry of Education \$11,100 per student per year (Ministry of Education, personal communication). The Trust last year took 12 school students through the Ngahere Toa Programme. Those that have not gone on to self-employment have returned to a mainstream school. The programme has been funded largely by the Trust with the initial pilot programme funded by a grant from HPF/WWF-New Zealand. Gross savings to date for the Ministry of Education would appear to be in excess of \$133,000.

Youth development and crime prevention

From the testimonies of those who have participated in the Ngahere Toa courses it is clear that the course has provided social, psychological and educational benefits to these youth. The participants are all young people whose behaviour had been such that they were on final warnings regarding possible suspension from their school or had been removed to alternative education (off-site schooling) until something could be worked out. Drug and alcohol abuse and involvement with the police due to petty criminal activity were common factors.

As a result of their participation in the programme they have learned much about the natural environment and how to care for it and they have also acquired:

- vocational education and training including possum-skin processing and carving
- a wide range of practical skills
- self-awareness, self-reliance, self-respect and self-control
- knowledge about the use of Māori medicine
- social networks and regard for others
- increased confidence and self-esteem
- a sense of pride and ownership of the work being undertaken to restore the environment
- improved attitudes and values.

In correspondence provided by the school dated 1.11.06, the deputy principal of Otumoetai College described the effectiveness of the programme thus:

“...the students are predominantly Māori, with a lack of academic progress, poor attendance, behaviour problems and poor school retention

rates. While the number of students [that have been through the course to date] may not be large, the consequences of educational failure for the students themselves and society in general are potentially huge. ... The Ngahere Toa coordinators have developed a rapport with students which has allowed them to identify in-depth, social and psychological needs within the students which staff were not able to fully identify or adequately address within the school environment. This is having a positive effect for students personally, and as they return to the school environment.

“The Ngahere Toa Programme has provided an important alternative for disaffected youth. It has provided exceptional results in students within a few weeks, where other alternatives had been tried and failed. The programme has provided a platform to address educational, social and psychological needs of students, by providing an intensive, culturally and ecologically based development programme to address their individual needs and requirements. We are pleased to have established a relationship with the Nga Uri o te Ngahere Trust, and that the Ngahere Toa Programme is available for our most at risk students.”

The resource teacher of learning and behaviour at Otumoetai College verified the positive effects the programme is having on students in a report. A copy was provided for this research:

“The structure of the programme was to provide a unique experience based in the bush, following Māori values, tikanga and culture, re-socialisation, while incorporating learning around the forest environment and preservation of the delicate ecology of the forest.



...following each camp an immediate 'at the gate' review takes place with [programme coordinators] and [senior school staff]. This enables [the school] to follow up on immediate issues back at school or home. Changes noted by John Miles included: the development of leadership qualities, greater self-confidence and self-esteem leading to improved self-worth and behaviour, improved school attendance rates, planning around career options."

The teacher in charge of the Ngahere Toa Programme at Northland College in Kaikohe described the effect of the programme introduction on the local students:

"It puts a positive focus on Māori culture – something that is really needed up here – and raises their mana. I have noticed a big difference already in the class. The programme reacquaints the kids with traditional Māori values – they are really hungry for it."

During the field work I was not able to meet with any of the youth who had been through the Ngahere Toa Programme however, examples of the effect of the programme on four of the participants has been gleaned from Advisory Trustee Garry Watson, correspondence from staff of Otumoetai College and from a video about the programme where participants spoke of their experiences.

Participant one: The student had attended 20 different schools in his 14 years. He started at Otumoetai College in 2006 and soon became disruptive and his class work seriously declined. He was stood down for assault of another student and when he failed to return to school for a meeting with the principal the decision was made to shift him to alternative education which he failed to attend. He was sent on the Ngahere Toa

programme and after two terms the following outcomes were noted by the college's resource teacher of learning and behaviour. The student:

- had not missed a day from school
- his self view had changed to positive
- his confidence had grown
- he accepted responsibilities
- he had stopped smoking.

This student has now become a leader within the Ngahere Toa Programme.

Participant two: *"[Being on the programme] helped me with how to resolve conflict at school, how to help others what to do when I feel lost. Ngahere Toa gives me belief – self-belief."*

- Extract from video recording.

Participant three: *"[The Programme] helped me to develop positive leadership – I was always seen as a leader but I wasn't taking people in the right direction. Spending time in the ngahere gives me time to think and suss things out."*

- Extract from video recording.

Participant four: *"The programme taught me that the bush is here to protect me – providing shelter, food, medicine and clothing."*

- Extract from video recording.

Increased environmental skills and awareness in the wider community

- according to Advisory Trustee Garry Watson, about 220 students have attended the Ngahere Toa one-day programme and the resource kit and roadshow has invigorated the environment programmes in the schools concerned
- workshops on Rongoa Māori and plant propagation have been held for the local community
- the Trust has presented the findings from the kaimoana surveys to three regional forums of customary fisheries representatives which together cover the whole of the Bay of Plenty, all of the western seaboard of Tainui from Manukau Harbour to north Taranaki, and the rohe of Ngati Kahungunu from Mahia Peninsula south. Following these presentations, kaitiaki groups are now contacting the Trust asking for assistance in working in partnership with them to develop similar models in their rohe (Tangi Te Hanoa: Stage 2; pg.12-13)
- the Trust facilitated a visit by rangatahi from Ngaitai to Goat Island Marine Reserve, Leigh, to show them the benefits to be gained from a healthy marine environment including employment and business opportunities. (Refer to Leigh case-study in the literature search Section 4)
- the urupa restoration programme gave participants more understanding and insight into traditional values as well as revitalising their understanding of the importance of the native vegetation and its local significance
- the wetland restoration has given the project participants an understanding of the role and importance of wetlands in the eco-system

- the Trust is now conducting consultation hui and running one- and two-day training programmes for primary schools, community groups and hapu within the Bay of Plenty / Coromandel region including Raglan and Kawhia to share their knowledge and to help support other ecological programmes.



Taimoriki volunteers at the plant nursery.

Benefits of a restored fishery

The situation which led to the initiation of the kaimoana survey work was described by the Trust as follows:

“The opportunity for Ngaitai to provide paua, kina and crayfish at hakiri for manuhere or visitors coming to marae is already all but extinct, and the same can be said for tuna (freshwater eels).”

- Tangi Te Hanoa Stage 2, Update Report to WWF-New Zealand p.10.

The survey helped to raise awareness of the state of the fishery and the factors contributing to it. The impending Marine Conservation and Management Plan for the area around Torere is intended to lead to better control over the harvesting of fish and shellfish in the area and a subsequent increase in the availability of kaimoana. If this eventuates, a healthier fishery where large fish are easier to catch and shellfish are larger and more plentiful will bring significant social and cultural benefits. Seafood will once again provide a major food source to supplement the budgets of local households, holiday makers will once again have the opportunity to experience the thrill of catching a fish or gathering healthy shellfish and, more significantly, seafood will become a mainstay at community and cultural events. This will lead to the re-establishment of local mana through the ability of the Ngaitai people to provide adequately for manuhiri who visit the marae.

If the marine environment is able to recover sufficiently from its current over-exploitation it may also be able to support some commercial fishing activity which could provide additional employment opportunities and increased income for the local area. Eco-cultural tourism experiences based on a healthy marine ecology potentially provide additional social and economic benefits.

Importance of HPF/ WWF-New Zealand funding

Unlike the other two projects studied for this research, the funding provided by HPF/WWF-New Zealand forms a substantial part of the income for Te Rangatahi o te Whenua Trust. In the early years HPF/WWF-New Zealand was the Trust's only source of outside funding covering between 40 per cent to 50 per cent of the total

project costs with the balance being met by the Trust itself. Now the Trust obtains funding from a wide variety of organisations, depending on the activity it is engaged in. Sources include Lotteries, WINZ and Te Puni Kokiri. In addition, substantial in-kind support is provided through donated staff time and other resources from a range of organisations including Landcare Trust, Waikato University, NIWA and (formerly) Carter-Holt Harvey Forests.

As with the other projects, the flexibility in the way the HPF/WWF-New Zealand funding can be applied has been very important to the organisation. It enabled the development of the Ngahere Toa alternative education programme as well as the development of specialist education materials including the education kit sets. These materials have subsequently attracted funding from other agencies such as the Ministry for Environment.

Another benefit gained from the HPF/WWF funding was the kudos and credibility it brought to the Trust with organisations like NIWA and Carter Holt Harvey as well as some in the local community, especially the school. This credibility helped to attract additional funding from other sources as well as in-kind support particularly from research organisations.

According to the Advisory Trustee, Garry Watson, the significance of the HPF/WWF-New Zealand funding was not so much in the dollar value but in what it represents:

“Recognition that rangatahi could set up and manage a kaupapa rangatahi programme [by youth for youth]. No other funders would go near it. WWF believed in the kids. The funding enabled the education programme to be developed and the teachers to be paid. The significance of the grant was out of proportion to the amount.”

Yellow-Eyed Penguin Trust

Context

The yellow-eyed penguin is believed by many scientists to be the most ancient living species of penguin. It is the only species of its genus and it is unique to New Zealand (Tisdell, 1988, pg 13-14). Research undertaken by Darby in 1987 concluded that there was a high risk that the breeding population would be eliminated from the New Zealand mainland, leaving breeding colonies only on Stewart Island and the sub-Antarctic islands of Auckland and Campbell. The penguin is now recognised as a threatened species by The World Conservation Union (Yellow-Eyed Penguin Trust News, November 2006). The dramatic fall in yellow-eyed penguin numbers noted in the 1980s was attributed to the loss of coastal habitat and the increase in predator numbers.



The Yellow-Eyed Penguin Trust (YEPT) was established in 1987. It is a charitable trust administered by a board of 11 trustees. It was formed by a local Otago Peninsula conservation group and now manages land and yellow-eyed penguin interests in the whole of the South Island.

The Trust has been recognised nationally and internationally for its work in coastal habitat restoration and management. In 2003 it won the Coastal Dune Vegetation Network's prize for dune restoration work.

Project objectives and activities

The Trust's principal purpose is the restoration and enhancement of yellow-eyed penguin habitats along the entire eastern coastline of the South Island and Stewart Island to increase the number of yellow-eyed penguins to a self-sustaining level within their natural coastal eco-system. This involves the Trust in a comprehensive coastal conservation programme that includes habitat restoration, predator control, research projects, native plant production and education programmes. While the yellow-eyed penguin is the focus of the Trust's work, its efforts also benefit other native species of animals as well as plants. The specific activities undertaken by the Trust are land management and restoration, running a plant nursery and providing a public education service.

Land management and environmental restoration

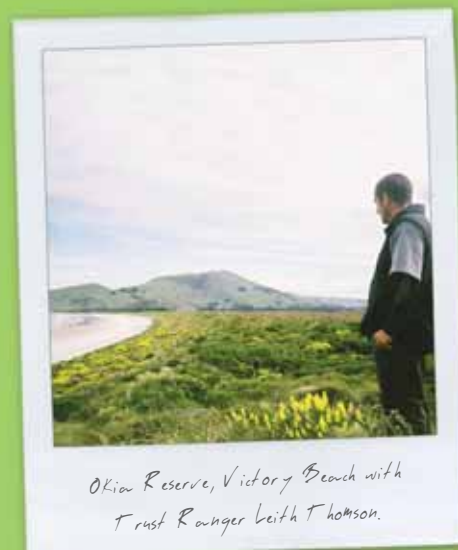
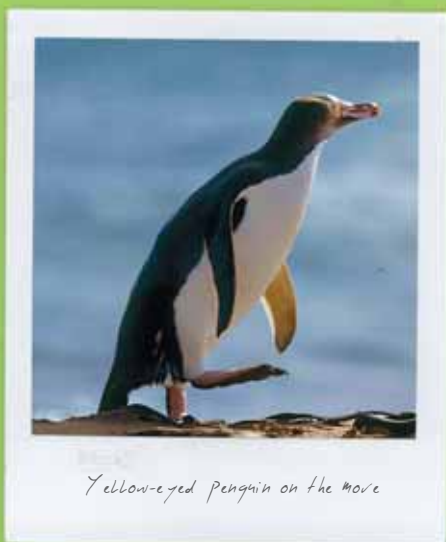
The Trust owns, manages or advises on the management of several thousand hectares of coastal Otago and Southland. Five reserve areas are either owned or managed by the Trust – one in East Otago and four on the Otago Peninsula. Each has its own committee structure and detailed management plan. In addition, the Trust provides support and advice to other yellow-eyed penguin protection areas from Banks Peninsula to Stewart Island.

Land management involves the fencing and replanting of breeding areas and trapping to reduce predator numbers (particularly stoats and ferrets). The Trust runs two or three public planting days a year and these attract between 10 and 40 volunteers each time.

Plant nursery and plant production

The Trust manages a plant nursery which, in 2006, produced 12,000 native trees and shrubs – more than double the number produced in earlier years. Plants from eco-sourced seeds relevant to each area of protection are produced. Funding from HPF/WWF-New Zealand enabled the shade-house to be expanded and new benches constructed to facilitate increased plant production.

Because the nursery is now generating more plants than it can plant and maintain, some plants are either given or sold at cost price to other organisations and community groups including Dunedin City Council, local schools and other environmental groups such as The Piako Recovery Group, Karitane Rivercare, Te Rauone beach stabilisation and the Oamaru Blue Penguin Colony.



Public education

The Trust has a membership of about 1,800 and produces a bi-annual newsletter and maintains a website. Through these media, the Trust communicates information about yellow-eyed penguins, their vulnerability and the need to protect them and other related environmental issues.

The Trust provides educational kits to schools and supports local schools in environmental project work and their outdoor education curriculum.

The Trust facilitates workshops on predator control and has produced a guide on trapping mustelids which is available from the office or from the Trust's website.

Through the plant nursery and planting days, large numbers of individuals and organisations learn how to grow native plants, including plants which are rare locally and nationally and which are important to New Zealand's natural biodiversity.



Yellow-Eyed Penguin Trust AGM 2006.

Employment creation and skills development

Volunteers for the Trust are given opportunities to develop skills in:

- habitat and eco-restoration
- tree planting
- plant production and maintenance
- pest eradication (both animals and plants)
- newsletter production
- leadership / administration
- advocacy
- communication and life-skills.

The nursery provides a facility for work experience. Every year for the past 10 years, this has included Taskforce Green-funded people as well as Conservation Corps employees from the Department of Conservation (DOC). Approach, a programme to give unemployed older workers new skills, uses the nursery to teach propagation skills and these people also assist with planting out.

In 2006 the Trust had eleven paid employees (seven employed full-time) plus some short-term contract workers. The estimated total earnings from the full-time and part-time employment directly associated with the Trust's operations is \$220,000 per annum. (Executive Officer, YEPT.)

Youth development

Being involved in the work of the Trust has benefited a significant number of youth – socially and psychologically and has increased their skills for future employment.

The Malcam Trust for youth at risk and the Helping Hands outreach rehabilitation scheme for youth with drug and alcohol problems both send their students to the nursery for work experience and personal development. Over the past four years the Malcam Trust has sent over a hundred youth and Helping Hands five youth.

A supervisor for the Malcam Trust described the YEPT project as “brilliant for the students”:

“It gives them a chance to get into the outdoors – into an environment they often haven’t had much to do with before. They get to learn about the importance of not dropping cigarette butts and other rubbish around – hopefully that means they will stop their mates from doing that. They learn about the penguins and native plants and why trapping is necessary. By getting involved in these environmental projects they get to understand there is a bigger world out there and they have a responsibility towards it; that they have a right to live in a quality environment and a right to stand up and defend it. Being involved in this sort of work also means the kids get positive feedback from the community and that too is very beneficial for them.”

– Malcam Charitable Trust supervisor.

Queens High School has a youth enhancement programme aimed at building confidence. Last year they sent one of these students to help in the nursery.

Of the ten core volunteers in the plant nursery, half are retired teachers. The nursery managers have observed that because of their training and interest, these volunteers are able to relate particularly well to the youth who come to the nursery for work experience. They are able to recognise youth in trouble who need time and they are prepared to give them the time they need:

“In the nursery, people are working side-by-side – they aren’t eyeballing each other so it’s less threatening for the young people and they are more likely to open up.”

– Nursery manager.

Several of the youth who have helped out at the nursery for work experience have gone on to full-time paid employment. At least one has used the experience gained through the project to get a job – in this case, in a commercial nursery.

“X had been in prison for young offenders for three months after which he was sent to the Mirror Trust as an alternative to prison. As part of that programme he attended the nursery one day a week for six months. While he was working with us he applied for a job at a local nursery. We gave him a reference without hesitation – he was a hard worker and a nice kid. He got the job.”

– Nursery manager.

The Trust’s executive officer noted in her 2006 report to WWF-New Zealand that individuals who work in the nursery under the Conservation Corps programme return to work on a voluntary basis outside their course time. One such person had initiated a re-vegetation project on a coastal spit to restrict access of 4WD damaging the dune system. The Trust assisted with expertise and plants.

Economic benefits for the tourist industry

The yellow-eyed penguin has now become a symbol for Dunedin’s promotion focus as the “Wildlife Capital” of New Zealand. The yellow-eyed penguin image is used by many Dunedin-based commercial companies and organisations (including the city’s information centre and airport) for promotional purposes. The Trust has played a significant part in that promotion through its sponsorship deal with Mainland Products Ltd. Mainland Cheese advertisements included a commitment to provide funding to the Trust “to help save the penguins” when cheese and butter was purchased.

In 1988, an Australian economist (Professor Clem Tisdell) estimated that tourism based on the yellow-eyed penguin could generate at least \$1 million in net annual income through demands for goods and services in the Dunedin area (Tisdell, p15). From information obtained from three of the larger tourist operators whose business is based largely on the yellow-eyed penguin experience, this estimate has now been exceeded.

There are at least five tourism operators who base their business on the penguins – three bus companies (which include other wildlife attractions such as sea-lions and albatross in their itinerary) and three which specialise in providing yellow-eyed penguin viewing sites. It is estimated that the gross income for the three viewing site operations alone is in the vicinity of \$1.5 – \$2 million⁴.

One tourist operator considered that the penguins could be adequately protected by the habitat protection and facilities provided by private tourist operations and farmers who were prepared to participate into the penguin habitat protection work. The other tourist operators didn’t agree

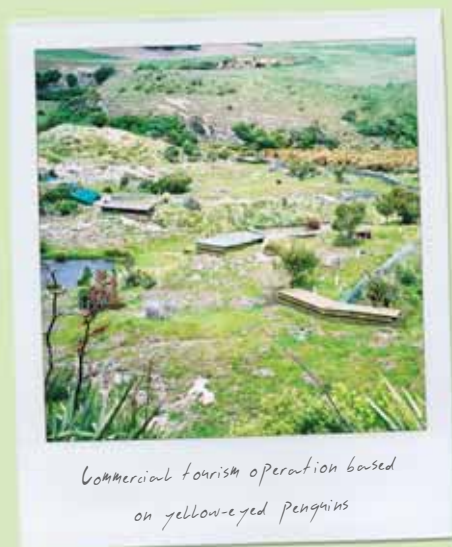


and neither did the DOC staff interviewed. These people all thought the dispersed sites that the Trust owns or manages together with the public education role undertaken by the Trust were essential to the penguin protection strategy and failure was not an option – for both conservation and economic reasons. As the DOC Otago community relations manager noted, there is a lot riding on the success of the penguin protection strategy:

“Dunedin Tourism has chosen to market itself as ‘The Wildlife Capital’. The title relies on albatross, penguins and sea lions. These are what give credibility to the brand. If the habitat deteriorated to the extent there was a decline in the penguin population, Dunedin would have a brand problem.”

– DOC community relations manager.

⁴ Calculated by multiplying the number of visitors by the adult entrance fee.



Economic benefits for the Department Of Conservation (DOC)

The Trust is generating cost savings for the Department of Conservation through volunteer input to site rehabilitation and maintenance, and through the provision of plants to DOC. The value of these savings cannot be calculated however because according to the DOC managers interviewed, if the Trust was not doing this work, it is unlikely DOC would pick it up. This is because DOC has higher priorities than the yellow-eyed penguin which has been allocated only a third-level ranking on its seven-tier system of vulnerability (Yellow-Eyed Penguin Trust News, November 2006).

However, the local DOC managers are very supportive of the work the Trust and others⁵ are doing to restore the penguin habitat and think the implications of this work ceasing would cause considerable difficulties for DOC for three reasons:

- 1) DOC would be left with additional land areas to manage
- 2) interest in the penguins is high and this has generated community expectations which DOC would be unable to meet
- 3) not only are the groups involved able to contribute a significant amount of person hours to this work, they are also able to access funding that isn't available to DOC (e.g. sponsorship from Vodafone, Mainland Products Ltd, Dunedin City Council and others) to pay for the work.

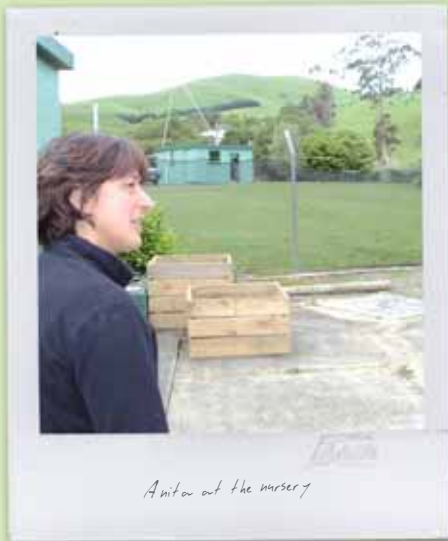
Having community groups involved in penguin habitat restoration work is therefore very important to DOC – it lets the staff focus on other conservation issues and it attracts additional funding and volunteers to the conservation cause thus enabling public conservation expectations to be met without taxing DOC's own resources.

“The Trust is certainly adding value – they are doing a lot and doing it faster than the Department would have been able to achieve.”

– DOC manager, Dunedin.

Another way that the Trust can be seen to generate benefits for DOC is in the plants it donates to it for coastal environment restoration. In 2006 the Trust gave DOC over 1,000 plants. These would normally cost \$4 - \$5 each from a commercial nursery. However the DOC managers interviewed thought this could not be counted as a saving because if DOC had to pay for the plants the planting would not necessarily be done.

⁵ Forest and Bird, a Landcare Group and several eco-tourism operators are also contributing time and resources to the restoration of penguin habitat.



Community cohesion and social capital

Nursery volunteers were interviewed at a planting day during the field visit for this research. They were asked what they got out of helping out at the nursery. Their ages ranged from a youth currently under the care of the Malcam Trust right through to a man in his 80s. While most were New Zealanders, others were from Brazil, Japan and Australia.

Their responses demonstrate the role that this facility plays as a generator of social capital and personal satisfaction:

- *“Lots of interaction and laughs.”*
- *“I learn English and Portuguese.”*
– migrant from South America
- *“I meet people from other countries and learn about their countries and how they do things.”*
- *“Good company – everyone is happy.”*
- *“I never laugh so much as when I come here.”*
- *“This is my information source about New Zealand.”*
– recent migrant from Australia
- *“This provides a substitute for the social networks I use to get from work.”*
- *“Nothing will stop me coming here on Wednesdays. I work by myself all week – coming here gives me company. Otherwise I wouldn’t meet other people.”*

- *“I get a huge sense of fulfilment and achievement watching the plants grow.”*
- *“I’m studying environmental policy in Japan so this gives me practical experience.”*
- *“I’ve had a long involvement in conservation-related activities. I used to be a wildlife ranger. I retired 19 years ago and came back to the Peninsula. They put me in charge of the nursery and I’ve really enjoyed it. It has kept me in touch with the people I used to work with. They still ring me to find out how to contact various individuals.”*
- *“What do I get out of it? Contact with gorgeous girls!”*

One DOC manager interviewed provided his observations of the social role the nursery fulfils:

“I see the Trust as a key mover and shaker in the area of social capital. As a gathering place, the nursery has become a place for people to develop skills, be empowered and give something back to the community. Similarly with the volunteers that do the planting. For funding applications the Trust has to state the number of volunteer hours people have contributed. I know that everyone is always surprised at how much time is donated over a year.”

– DOC manager.

The nursery not only helps to fulfil the social and psychological needs of the volunteers. It also provides a satisfying work environment for the staff as demonstrated in this quote from one of the nursery managers.

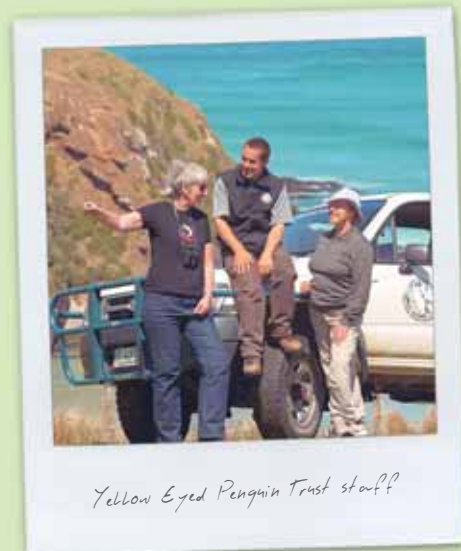
“It’s the most rewarding work I have ever done. To collect the seed, plant the seed and then plant it out and watch it grow – well how great is that? Working with volunteers – they have become like family. They come in all weathers; we celebrate birthdays and other significant events in their lives. We have learned a lot from the troubled youth who come here. We have kids ourselves so it has helped us to be more empathetic. When we have a win with them it’s hugely satisfying. It’s helped me to realise there’s good in every young person. I’m a lot more tolerant of all young people now.”

– Nursery manager.

Increased environmental skills and awareness in the wider community

The Trust provides information and educational opportunities to over 20 community groups each year. Trust staff give talks to schools, the local polytechnic and to a range of community organisations e.g. Rotary, Probus and groups of tourists. Several schools have integrated the yellow-eyed penguins into their teaching programme. Examples include:

- Pinehill School pupils attended a planting day and beach clean up organised by the Trust. Subsequently they have put together a website on endangered species
- Portobello school, which has about 80 pupils, has undertaken a yellow-eyed penguin project. As part of that they visited several of the Trust’s reserves, helped build nesting boxes and carried out some planting



Yellow Eyed Penguin Trust staff

- Macandrew Bay School has developed its own haka about killing stoats and ferrets and cats to protect the penguins.

And as one trustee observed: *“The planting days are a way of transferring stewardship to the next generation.”*

In working with farmers the Trust is raising awareness among the rural community not only of the penguins but also about conservation in general. In that process they have enriched farmers’ land-management experience and given them a sense of pride about having penguins on or near their land as the following quotes testify:

“The Trust bought the land next to my farm. I helped them with planning and constructing the fence lines and also with installing a water scheme for the property. Before I knew it, I was involved in researching the nest sites and doing penguin counts. I got to understand a lot more about penguins. Being involved with the Trust has heightened my awareness of conservation values. I have a stand of bush on my farm which I have put into a QEII. I wouldn’t have thought of doing that before I got involved with the Trust.”

– Local farmer.

“As a farmer, I didn’t take much notice of the penguins – they were just there and always had been. But now, when I see the excitement of people who come to visit them, that has a huge effect on us. When tourists find them so fascinating, we realised there was something special about them and so we started to take more notice. Now I’m doing counts and observations for the Trust. This has raised my awareness of how special the penguins are. Watching juveniles on the beach when there’s a few of them – well, their behaviour is absolutely fascinating! Since getting involved in the Trust I have volunteered for counts on Stewart Island and other parts. My son does trapping of ferrets and stoats and gets paid by the Trust for that.”

– Farmer and tourist operator.

The Trust has run several team-building days for local businesses where the business concerned provides the people power to assist with habitat work and through that the employees get a day working together in the outdoors and learn about environmental conservation in general and about the yellow-eyed penguin in particular.

“This has given business people a greater understanding of the wildlife on their back doorstep, what our conservation measures are, and in one instance it looks like it will lead to a sponsorship arrangement which is under negotiation. The team-building for the companies has been hugely successful, as many of the employees have never done anything like this before and prior to the day are a bit unsure of being out of the office and getting dirt under their nails, but by home time are completely committed to both our cause and the beauty of the penguins and their plight.”

– Yellow-Eyed Penguin Trust executive officer.

Importance of HPF/WWF-New Zealand funding

As with the Whaingaroa Harbour Care project the funds from HPF/WWF-New Zealand comprise a small percentage of the Yellow-Eyed Penguin Trust’s total funding package (less than 10% ⁶) but as with the other two projects, the significance of the funding is disproportionate to the amount because of the credibility and profile it has given the project in the eyes of the community and other funders.

Specific advantages noted by the executive officer included the fact that the money was able to be spent on salaries. This enabled supervision to be provided so that the project could be opened up to participation by the public. Salaried, permanent nursery managers also meant that many more plants could be grown in the nursery and planted out than would otherwise have been the case.

⁶ The current operation is being funded by many different individuals and organisations. Chief amongst them are Mainland Products Ltd and the Biodiversity Fund and bequests. In the past the Trust has received funding from the Pacific Development and Conservation Trust, the Community Trust of Southland, the Shrimpton Animal Trust, Vodafone New Zealand Foundation, Dunedin City Council, the Trust Charitable Foundation, Bendigo Valley Foundation as well as HPF/WWF-New Zealand.

Grants from HPF/WWF-New Zealand have been used to upgrade the nursery facilities. The Trust was keen to expand its nursery facilities to enable it to meet the demand for plant production and for hosting groups wanting to learn about plant propagation and the yellow-eyed penguin. Applications to other potential funding sources to upgrade the nursery had, at the time, proven unsuccessful. The upgrade involved the construction of more planting benches, building a new tunnel house and substantial improvements to the shade-house itself including the provision of on-site electricity and hot water. These improvements have enabled many more volunteers to be accommodated on planting days, thereby facilitating the production of much greater numbers of plants. It has also enabled the nursery to host visits from whole school classes or, in the case of country schools, to host the whole school. Without HPF/WWF-New Zealand's allocation, the environmental and social benefits accruing from the work of the Trust would have been significantly less than they are today.



Anita and Margaret tending plants at the nursery



Kids volunteering to plant seedlings



Yellow-eyed penguin on the move

Conclusion

Environmental restoration can bring benefits to individuals, communities, social agencies, commercial operations and government departments. While the economic benefits cannot in most cases be quantified, the information in this report shows that the income generated and the costs saved can be significant. The information also shows that social benefits from environmental restoration can be life-changing and widespread.

The literature search endorsed some of the benefits identified in the three case-studies. These included:

- social and psychological benefits for volunteers including companionship, sense of achievement, self-esteem, richer life experience, new skills
- increased social capital through the strengthening of community networks between community groups, business interests, local and central government, as well as the development of leadership, organisational skills and confidence
- personal development and increased quality of life through the learning of new skills and the opening up of recreational and socialising opportunities
- raised awareness of the natural environment thus enriching people's life and work experience
- reduced pest damage for commercial growers (including forestry companies) as well as domestic gardeners
- increased viability of Māori traditional medication through the protection and propagation of Rongoa plants
- support for the regeneration of Māori culture through the production of plants used in traditional craft making including flax for weaving
- the generation of new income-earning employment opportunities, opportunities for work experience and development of employment skills
- economic benefits for local businesses through increased customer numbers (from visitors to the project) or through the creation of new business opportunities.



Benefits for socially dysfunctional youth and the agencies charged with their care were particularly evident in the three case studies and two demonstrated particular benefits for farmers in the form of increased quality of life.

All three projects, to a greater or lesser extent were proving a vehicle for addressing social dysfunction in youth – helping to bring about behaviour change, improved attitudes, and increased social wellbeing for youth through engagement with the natural environment. This was particularly so with the work of Te Rangitahi o te Whenua Trust but the other two initiatives were also fulfilling this function by accepting youth referrals in their plant nurseries and on planting days.

Two projects provided clear evidence that becoming involved in environmental restoration can increase quality of life and work environment for farmers, providing greater job satisfaction and an increased sense of wellbeing through working more in harmony with nature. This benefit was particularly evident with the Whaingaroa Harbour Care project but was also an outcome of the activities undertaken by the Yellow-Eyed Penguin Trust.

As noted in the introduction, most of the information on the benefits generated by the three projects is qualitative rather than quantitative. None of the three projects had monitoring mechanisms in place to measure environmental outcomes, let alone social and economic outcomes from their projects. The need for monitoring mechanisms to be in place from the outset to enable the identification and measuring of outcomes has been noted by Handford (2005) Cosslett (2004) and Buchan (2001). This is essential if the social and economic benefits of these projects are to be explicitly acknowledged and any adverse effects addressed.

It is important to note that this report focuses on the social and economic benefits generated by environmental projects. These projects can also generate adverse effects as noted by Cosslett et al (2004). Such effects include increased traffic generation on local roads leading to the project area, constraints on the activities of adjacent landowners and existing resource users, and increased incidents of trespass onto neighbouring properties by people visiting the project site. However, compared to the benefits generated, these effects are usually of a minor nature and can often be mitigated or even avoided by proper impact assessment and planning as part of project design.

The assessment of the three projects has identified that significant social and economic benefits can be generated by community-led environmental restoration projects. If the potential for such benefits is recognised more overtly, and specifically provided for in project design, funding mechanisms and implementation, the social and economic benefits to the individuals involved and to the communities in which the environmental restoration projects are located are likely to be increased.

References

- Buchan, Dianne; Partnership in Wellington's Regional Parks; Fostering volunteerism in management and operations; August 2001, report prepared for Greater Wellington Regional Council
- Cosslett, Chris; Buchan, Dianne; and Smith, Joanna (2004); Assessing the social effects of conservation on neighbouring communities: Guidelines for Department of Conservation staff; Department of Conservation Technical Series 29; DOC Science Publishing, Wellington
- Darby, J.T. (1987); Aspects of the Conservation of the Yellow-Eyed Penguin, Habitat Rehabilitation and Planting Strategies; Otago Museum, Dunedin
- Handford, P. A. 2005; Habitat Protection Fund: Survey of Project Groups; report prepared for WWF
- Ministry for Environment 2001, Whaingaroa Harbour Care: Community initiative to restore a harbour and fishery; <http://www.mfe.govt.nz>
- Rush, Michelle and Buchan, Dianne (November, 2005), Take Care Programme Evaluation, report prepared for Greater Wellington Regional Council
- Te Rangatahi o te Whenua Trust; report to shareholders of Torere 64 land block, 2006
- Te Rangatahi o te Whenua Trust (February 2005); Tangi Te Hanoa Stage 2: Update report to WWF-New Zealand
- Te Rangatahi o te Whenua Trust (undated); Ngahere Toa, Oteora: An eight week alternative education programme.
- Tisdell, Clem (August 1988) Economic Potential of Wildlife on the Otago Peninsula, Especially the Yellow-Eyed Penguin, for Tourism; Economics Discussion Paper no. 8818; University of Otago
- Van Roon, Marjorie and Knight, Stephen (2004); Ecological Context of Development: New Zealand Perspectives; Oxford University Press
- Whainagaroa Harbour Care, reports to AGM 2003, 2004
- Whainagaroa Harbour Care Five Year Strategic Plan 2000-2005
- WWF-New Zealand; Habitat Protection Fund, Community Conservation 2000-2004: Stories from New Zealand; (undated)

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