

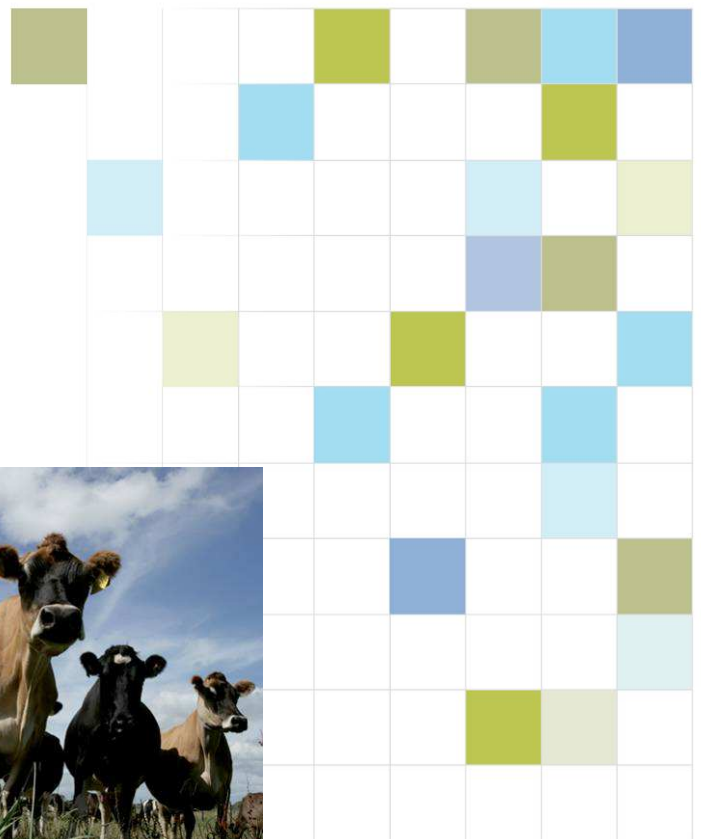
Te Awa O Waitao Restoration Project Social Survey 2007

Part A: Interview Data

February 2008



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Te Awa O Waitao Restoration Project Social Survey 2007: Part A Interview data

NIWA

February 2008

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Executive summary

Overall a shift in awareness of stream management issues has occurred within the Waitao Valley section of the catchment. This is probably a result of three key factors;

- Efforts of the Te Awa O Waitao Restoration Project Joint Steering committee,
- Collective submission in opposition to a proposed landfill site in the old pumice quarry
- Formation and activities of the Waitao-Kaiate Environment Group.

The social effects of the project from 2004 to 2007 are restricted to those participants with properties in the Waitao Valley. Changes in awareness and perception do not appear to extend to residents of Rocky Cutting Road or Kaitemako Road. Effects on Kaiwha Road residents cannot be determined through this series of interviews. Key changes include:

- 1) An increased awareness of the role of poor stream management practices in water quality degradation. In 2003, farm management and farm run-off was not linked by most participants to water quality; Tauranga Quarry was the perceived as the primary cause of problems within the river.
- 2) Increased knowledge of the impacts of land and stream management practices. However, overall knowledge is still patchy and generally lacks a integrated catchment management perspective.
- 3) A general acceptance of riparian planting as a mitigation measure to reduce impacts of landuse and land management practices and a clear will to take action around planting waterways.
- 4) Social capital has increased as a result of the increased interaction between local residents through the establishment of a local environmental group and shared opposition to the landfill resource consent application at the pumice quarry.

Recommendations;

To maintain:

- Interaction (between the Te Awa O Waitao Joint Steering Group and the Waitao-Kaiete Environment Group) alignment and co-ordination of goals will be important moving forward. The feeling of the community “*all pulling together*” is a significant achievement which needs to be maintained through information sharing, communication and co-ordination of the different groups.
- The highly informative learning oriented field days or community meetings to promote on-going learning about stream management practices and mitigation of environmental impacts on waterways. To date, events appear to have broadened peoples’ understanding of integrated catchment management issues. However, knowledge remains patchy leaving room for further events to both reinforce known concepts and present new ones. In addition, the social element of the events should be maintained to further boost social capital. A simple way to achieve this is to incorporate “social time” into the days, for example a BBQ or time for tea and coffee. In the past, learning events have proved more successful if they cater for children, either through learning with the adults or being entertained separately.
- Interest and enthusiasm by tackling the easy things first and undertaking riparian planting at highly visible locations. Groups can often be inspired by tackling the easy or highly visible issues first because they are buoyed by successes. This could take the form of planting in a highly visible spot which can be observed from the road. A success of this nature can be seen by everyone moving up along Waitao Road. In addition, a celebration and wide promotion of success within the group and to others is another important element of retaining interest and enthusiasm. Environment Bay of Plenty Coast Care groups do this very well perhaps some lessons could be drawn from here.
- The input of technical experts which remains essential to achieving good ecological outcomes. Contact between NIWA, Landcare Trust and EBoP and the local community has assisted the shift in awareness which has occurred within the Waitao Valley section of the catchment. More importantly, the

messages received from each organisation appear to align; advice does not seem to conflict. This is significant because conflicting advice frequently leads to community confusion and inaction.

To consider in the next few years:

- The intent to plant needs to move into actual planting within the Waitao Valley. This will require sustained input and assistance from all the key players. Farmers with difficult topography will need the continued support of EBoP - without this planting will not occur due to cost.
- A shift in awareness and intension to undertake riparian planting has only occurred in the Waitao Valley part of the catchment. This is mainly because of the localised impact on the community of Landfill resource consent application and the establishment of the Waitao-Kaiate Environment Group. Engagement with the remainder of the catchment will be required to fully meet the objectives of Te Awa O Waitao Restoration Project because of the potential impacts on water and habitat quality of these landowners. This could be explored in several ways. First, by using the local networks available through the Environment Group to bring more people in the project. Second, to explore contacts with other groups in the area, for example, the weed control group mentioned by one of the participants. Finally, by making an attempt to hold events in other parts of the catchment.
- Issues around plant species selection, weed management and planting approaches may still need addressing.
- Track progress around changes in awareness perception and knowledge in another three to four years to monitor the impact of the project on both thinking, knowledge and stream management practices within the Waitao Catchment

1. Introduction

Te Awa O Waitao restoration project was initiated in 2004, as a result of growing concerns by local Hapu around water and habitat quality issues in the Waitao Catchment. Of particular concern, were issues like increasing sedimentation, declining water and habitat quality, erosion, catchment deforestation, spread of pest plants, undervaluation of Maori knowledge, resources and rongoa, and dumping of rubbish. The catchment itself is approximately 3300 ha, beginning in the Otawa Ranges draining into the Tauranga Harbour and with a vegetative cover of approximately 41% native forest, 37% pasture, 10% pine plantation, and 8% scrub. Landuse is a mixture dry stock farms (beef, sheep and deer), lifestyle blocks and areas of Maori owned land around the bush head waters and the lowland areas. There are two Marae around the lowland sections of the stream and eight hapu have an interest in the area, particularly Nga Potiki, Ngati Pukenga and Ngati He.

The project is managed by a joint steering committee comprised of representatives from Nga Papaka Rangataua, NIWA, and New Zealand Landcare Trust. It aims to achieve several key interlinked goals within the Waitao stream and the wider catchment. First, to improve water and habitat quality in the stream and the Rangataua Bay branch of the Tauranga Harbour (south-eastern most end of the Tauranga Harbour, Welcome Bay, Tauranga). Second, to facilitate local community learning and action around stream restoration. Finally, work together to find ways to achieve this while merging Maori traditional knowledge with western science in a meaningful way.

It is clear, that these goals require a long term perspective coupled with regular checks on progress. This report seeks to provide a check on the changes in the catchment from a social perspective. In particular, to investigate if the restoration project has had any impact on community awareness, learning, or action, with regards to stream management issues between 2004 and the present. This will be achieved by;

- Revisiting the key findings from the 2004 interviews.
- Reviewing activities of the Te Awa O Waitao Restoration Project over the last few years with respect to community engagement
- Exploring the impacts of other key events within the community.

- Rerunning qualitative interviews with as many of the previous participants as practicable.

1.1 Social context in 2004.

In 2004, the project was in its early stages. Weed clearance had occurred on Maori owned land in the vicinity of Welcome Bay Road and water monitoring sites had been selected and on-going monitoring was established. Tom Cooper was installed as project Kaitaiki, his role involved conducting water quality work (using the NIWA SHMAK), interacting with local residents both Maori and non-Maori, and organising/supervising riparian restoration work carried out by volunteers and landowners.

A social survey was conducted in mid 2004, with 10 local non-Maori participants to gather information on the views and attitudes within the catchment in relation to the Waitao stream (and its tributaries) and Rangataua Bay as well as the factors influencing its health (Blackett, 2004). The key findings include;

In general, the stream is used for stock water supply, eeling and swimming, non-contact walking along the banks, camping and spotlighting for fish. Participants felt a connection with the stream through engaging in these activities.

Water quality perceptions were based primarily around water clarity (i.e., suspended solid content) and the numbers of fish, or koura, which were visible. Water quality was generally considered to be good in the upper catchment, while the lower reaches were considered poor; although few participants could articulate what characteristics they felt illustrated poor water quality. In general, water quality was not perceived to have changed during the time of residence. A perception of poor water quality didn't appear to stop recreational use of the waterway.

Many of the participants had a patchy understanding of integrated catchments management processes and generally a limited sense of the impacts of their practices on water and habitat quality in both the stream and the harbour. The local gravel quarry and un-sealed roads were considered to be a key water quality issue. As with stream water quality, participants expressed perceptions of harbour water quality

based around visual cues (i.e., water clarity) and evidence of the number of fish caught or sighted, either by themselves or others. Many felt the harbour was in “an okay” condition, concerns were around sedimentation, sea lettuce, and mangrove expansion. Local problems for the harbour were considered to be an increase in subdivisions, sewage discharges, septic tanks, and fertiliser from orchards. Nutrients leaching into the waterways from farming practices were not considered a problem.

Overall, participants could not pinpoint what, if any, actions to take on their own properties because of the mixed messages over water quality their assessment methods were creating. More specifically, if cloudy water (high suspended solids load) meant poor water quality then something should be done, however, if there were plenty of fish (a perceived indicator of good water quality) this confounded the need to act. Coupled with an unclear understanding of what practices impacted water quality few participants were sure of what to actually do, or how to do it.

Most of the participants who travelled across the Waitao River bridge on Welcome Bay Road were aware that something was going on, and had heard rumours of a restoration project. Weed clearing on the land around the bridge was very visible and well received. However, the restoration project was new to those who did not use the bridge very often or had no contacts within the Waitao Valley area.

Lifestyle block owners were keen on planting stream margins, although there were varying ideas and concerns over how this could be achieved. A couple of the larger properties already had a fenced riparian margin due to steep stream bank topography.

Farmers were happy to fence the main channel, but potential issues were found around what they perceived as drains, or what to do with small tributaries. Some local farmers faced considerable expense as larger farms tend to be located in the upper catchment and thus, contained numerous small tributaries. Those stocking deer, face additional costs due to the nature of the fences required to control the animals. Overall, participants were interested in riparian planting and optimistic about the future of the restoration project

When the last series of interviews were conducted the pumice quarry was for sale and not operating. Stormwater run off was held on site due to the absence of a discharge consent.

The Tauranga Quarry manager was happy to work with the Te Awa O Waitao Joint Steering Group (JSG), provided it had the support of Environment Bay of Plenty (EBoP). This quarry was perceived by local residents to have a significant impact on local water quality. A view keenly felt and contested by the local manager.

The majority of participants did not know their neighbours very well. Non-Maori residents of the Waitao Catchment were effectively split into approximately 3 separate communities based on geography; Kaitemako Road residents, Waitao Road residents and possibly a third split between Waitao Road and Rocky Cutting Road. There was limited interaction between these groups and no sense of community within the whole catchment area.

1.2 Te Awa O Waitao Restoration Project Activities between 2004 and October 2007

Te Awa O Waitao restoration project has been active over the last three years through collecting biophysical data (water habitat and quality data and aquatic species composition), active restoration of stream margins on Maori owned land, and engaging with the local community through informal contacts, and three catchment field days (Source: Cooper et al. 2007; Rowe et al. 2006; Cooper et al. 2006a; Cooper et al. 2006b).

1.2.1 Biophysical data collection

A better understanding of water and habitat quality has emerged through monthly monitoring at 13 sites across the catchment. To date, monitoring showed water clarity decreased down the catchment as the percentage of pasture increased. Stream temperatures were found to rise above those which could affect sensitive stream invertebrates over the summer period.

Fish surveys have revealed diverse and rich native fish fauna, including several Toanga species.

Levels of E. coli were found to be above guidelines for contact recreation at all but two of the study sites which were in the native forested upper catchment streams. This includes the base of the Kaiate Falls which is an important recreation site, both locally and regionally. Study sites in areas of pasture had the highest E. coli concentrations.

1.2.2 Action on Maori Land

Over the last three years weeds have been cleared from Maori owned blocks which cover much of the area between Welcome Bay Road and the harbour. Fences have been erected along the stream margins and native riparian vegetation has been planted on eight blocks, which span from the river mouth to around 1.5km inland. Future plantings are planned.

A traditional knowledge report is being completed.

A collection of photos from 27 locations around the catchment has been established to monitor visual landscape change over the course of the project. Photos are taken quarterly.

1.2.3 Local community engagement

The JSG has used newsletters, community field days and personal contact to engage the local community in the restoration project. A key aim is to keep locals informed over progress and developments, but primarily to keep them involved, interested and to promote action on individual properties.

Newsletters are produced several times a year and distributed to the wider community. Three newsletters have been produced to date and distributed to all households within the Waitao Catchment and other interested stakeholders.

E-letters covering details of the Joint Steering Committee meetings were sent out to interested parties from 2005 onwards.

Two community landowner meetings and a field day were held in 2006/2007 to introduce locals to the restoration project, environmental monitoring data feedback and

discuss local water and habitat quality issues. The field day involved an electric fishing demonstration and issues around riparian planting on private property. Each event was well attended.

1.3 Other key changes within the catchment

The pumice quarry has been sold and the new owner has applied for a resource consent to establish a landfill for local building demolition waste. As a result, an immediate neighbour organised a public meeting to oppose the application and begin the co-ordination of submissions in opposition. Once composed, a joint submission was taken from door to door for signing along the length of the Waitao Valley part of the catchment. However, it was not taken along Rocky Cutting Road, Kaitemako Road or

Kaiwha Road. The status of the application was unknown at the time this report was written.

In early 2007, an Environmental Group formed within the Waitao Valley section of the catchment. Named the Waitao-Kaiate Environment Group, it is run by a local residents committee assisted by New Zealand Landcare Trust. More importantly, the group aims to work in partnership with Te Awa O Waitao JSG to further shared goals around environmental improvement, community resources and relationship building with local authorities. To this end, the environment group has formed five sub-committees; Quarry/landfill, Kaiate Falls, Plant/re-vegetation, History collation and Land work/riparian. A representative from the JSG participates in the Waitao-Kaiate Environment Group meetings.

2. Method

The objective of this work was to establish if any change in views, awareness or knowledge of local stream management issues had occurred within the non-Maori community over the last three years. Moreover, it aimed to detect if any potential changes were linked with activities of the Te Awa O Waitao Restoration project and its Joint Steering Committee. Although direct cause and effect links are very difficult to uncover in social research, because of an inability to manipulate situations in a controlled environment, some indirect inferences may be made. The objective was achieved in two ways

First, as many participants of the 2004 interviews as possible were re-contacted in order to establish if any aspect of their views, awareness or knowledge of local stream management issues had changed. Similar interview processes and protocols were applied for this round of interviews as applied in 2004. However, a few changes within the catchments (i.e., sale of the Pumice Quarry) and unavailability of some participants reduced the number of interviewees from ten to eight. The new owners of the Pumice Quarry were not included in this study because of the political nature of the on-going debate around the current resource consent application. In addition, the participant representing the gravel quarry off Kaitemako Road changed from the local Quarry Manager to their Quarry Management Consultant. Participants were interviewed using a semi-structured technique which revolved around a base set of questions listed in Appendix 1. Questions were not necessarily confined to those listed, nor were they approached in a set order as they were asked where appropriate. It is important to note, that participants were specifically asked if they felt their position, or that of their neighbours, had shifted over the last three years.

A mix of landowners participated (1 lifestyle block owner, 3 farms (sheep and deer), 3 lifestyle blocks with leased land and 1 Quarry Management Consultant) from a wide geographic distribution within the catchment.

The recruitment process involved establishing initial contact via a letter (Appendix 2) which was followed up by a phone call asking if they wished to participate in this round of interviews. Prior to the interview all participants were provided with a participant information sheet (Appendix 3) which detailed the objectives of the project and their rights as participants. Each person was asked to sign a consent form (Appendix 4) to indicate their willingness to be interviewed. Notes were taken at each interview and immediately transcribed. These notes are held at a secure location at AgResearch and NIWA and the full contents are confidential to Dr Paula Blackett (as interviewer) and Dr John Quinn (as current project manager) and any future project manager as appropriate. One exception to this process was the interview with the Quarry Consultant Manger for the Gravel Quarry, there was no contact prior to the interview which was conducted by phone.

Second, a door to door survey of all residents of the Waitao River catchment was undertaken with the assistance of the Waitao-Kaiate Environment Group. The survey (Appendix 5) was designed to canvas useful data from all residents around their involvement with the Restoration Project and the Waitao-Kaiate Environment Group to date, their perceptions of the various activities, and their understanding of water

quality issues in the Waitao Stream and wider Tauranga Harbour. A comprehensive data set of this nature will provide a useful benchmark for shifting views within the catchment over time. Although this data is not presented in this report the similarities between the interviews and the wider catchment survey will be discussed. A report around the survey results will be forthcoming.

3. Results and Discussion

3.1 Key observations: Interviews

A number of key themes can be drawn from the interview data. These will be reported and discussed around general topic headings.

3.1.1 Changes in awareness of stream management issues

It is clear that there is an increasing awareness and interest around stream management issues from residents of the Waitao Valley area (Waitao Road, Garret Road etc). Participants from this area have illustrated a shift in position and knowledge since the last interviews in 2004. They expressed a greater understanding of the rationale for riparian planting as a management tool for improving water and habitat quality. There was more awareness that their on-land activities might impact on the stream and increased criticism for others who they perceive as affecting water quality. In effect, *“people are talking about the stream and more careful about what is going onthey are starting to look after things ”*. Furthermore, there appears to be more interest in the stream now that locals are aware of the diversity of fish life.

Riparian planting appears to be accepted by several of the participants as a way to stabilise the stream banks and reduce the impacts of floods. This is a change in view from the last round of interviews where the same participants expressed concerns the plants would be just washed away or compound flooding issues. However, there was a qualifier around requiring the right sort of plants, willow species were recognised to be a problem for stream flow.

One of the farmers had experienced a very noticeable shift in perception and attitude towards stream management issues and now *“wants to do his bit”*. He felt *“its better to be up with the game than behind it if I act now then I won't be told what to do later”*. As a result the participant is a member of one of the Environment Group Committees. In addition, a plan is being developed in conjunction with EBoP to fence

and plant the property. A portion of this will be funded by EBoP which is very important to the farmer because of the potential costs incurred due to large number of tributaries and steep terrain on the property. If this subsidy were not available, planting and fencing would be considerably less likely to occur. The participant appreciated the one on one time and advice provided by both EBoP and NZ Landcare trust staff.

Two of the participants with large blocks of land were aware of the benefits riparian planting and general preservation of remnant forest had on both the ability to further sub-divide their land (EBoP regulations) and the value of the resulting lifestyle blocks. One participant believed the future of the area was as lifestyle blocks, thus anything which improved aesthetics improved land value.

Overall, participants from the Waitao Valley felt their awareness of stream management issues had increased as had that of their neighbours. This shift is probably related to several factors;

- Exposure to the Te Awa Restoration Project newsletters, community meetings, field day and contact with JSG members. Events held within the Waitao Valley which makes attendance easier for those who live either on Waitao Road, Kaiate Falls Road or Garrett Road.
- Local residents have a common interest in opposing the landfill resource consent application for the old pumice quarry. The public meeting was well attended (estimated by several participants at around 50-70 people) and provided many with “*a chance to meet their neighbours*”.
- The establishment of a local environment group which was driven by the previous two points.
- Willingness of New Zealand Landcare Trust and Environment BOP staff to discuss concerns and options directly with individual landowners.

However, this shift does not extend to participants outside of the Waitao Valley (i.e., Rocky Cutting road, Katimako Road). It cannot be confirmed for Kaiwha road from this series of interviews. Participants outside the Waitao Valley had not shifted their views between the 2004 and 2007 surveys.

This division is probably related to both the establishment of an Environmental group and the common interest in opposing the landfill consent application. Both of which have brought people from the Waitao Valley area together.

Tauranga Quarry (off Kaitemako) road was not mentioned as a source of suspended material to the Waitao catchment. In the previous round of interviews, several participants felt the quarry was a key contributor, however, now the key sources of suspended sediment are thought to be associated with local farm management practices and gravel road run off. This may be due to changes made at the Quarry or due to learning associated with the Te Awa O Waitao restoration project. Tauranga Quarry has undertaken a number of activities to prevent stormwater run off from the quarry entering the stream and has planted the stream margins guided by a landscape architects plan. However, they appear to be driven by resource consent compliance rather than altruistic concerns about the stream health. This has not really changed since the last interviews however, the participant representing Tauranga Quarry was considerably more confident that the quarry activities were not impacting water quality that during previous the interview.

3.1.2 Changes in perceived environmental issues

Perhaps the biggest change is a shift from blaming Tauranga Quarry for the state of the river to looking harder at land and stream management practices within the catchment. In 2003, few participants considered farm run off to be a problem for the regions water ways or harbour. This has completely shifted so that most participants accept and are prepared to mitigate the effect of farm run-off on local waterways.

For participants in the upper catchment, the potential water quality impact of run-off from unsealed road has not been resolved. This was described as a concern in 2003 and remained an issue during this series of interviews. One participant in particular owns a pond which has been affected by silt from road run-off for a considerable period of time. As a result the value of the pond has been affected.

Issues around groundwater availability for domestic water supply and the quality of surface water takes for stock water have emerged between 2003 and the current interviews for the Waitao Valley. Three of the participants commented on a lowering water table which they believed was related the higher number of domestic supply

draw downs. This was expressed in two ways, first participants knew other residents with shallow bores which had dried up over summer for the first time. Second, one farmer commented that the stream headwaters had lower flows due to what he believed to be increased local abstraction of both ground and surface water. In addition, participants were well aware that activities on properties higher in the catchment were affecting the quality of water available to stock lower in the catchment. One of the farmers in the upper catchment, believed that the downstream effects of farming practices on water quality had to be considered because it was the *“reasonable thing to do”* and *“you have to look at it from their perspective and think about how things affect others”*

New knowledge of water quality within the catchment could have potentially triggered concerns over how good the stream water was for stock water. Although there is no real way to determine if this is true, it is important to note that stock water quality was not mentioned as a concern the previous series of interviews. It is entirely possible that as local residents learn more about stream management and water quality that more issues will emerge.

3.1.3 Changes in the physical landscape

Participants did not report any substantial changes in the catchment landscape, however, there were a few comments around the increasing number of properties in the area. For example, *“There are more houses now ... more lights in the Valley at night”* or *“There is more traffic along the road (Waitao Road)”*. These are fairly common comments from the residents of a rural community within easy commuting distance of a city (Blackett 2006).

No changes were reported in the physical appearance of the landscape, or the water quality in the Waitao Stream and its numerous tributaries. One participant stated that *“The river isn’t any clearer”*.

3.1.4 Changes in landuse

None of the participants had altered their landuse or land management practices between the 2003 and 2007 interviews. Although, some pine trees had been felled in a wetland area adjacent to the Waitao Stream. This area had been converted to pasture.

The quarry at the top of the catchment is still operating, although they have made some significant changes to their stormwater and stream management practices. In

contrast the old pumice quarry is in the same state (unused) as it was during the last round of interviews.

3.1.5 Changes in social capital

Social Capital is described by (Fien & Skoien, 2002) as “*the ties between and process that make resources and opportunities available to those within a social network*”. The important elements are the inter-personal relationships (and sense of community and shared values) formed and the resources which become available through forming a social network. Communities or groups may have varying levels of social capital which can be built up as they work together and individuals become more connected. In 2003, levels of social capital within the Waitao catchment were very low; participants did not know their neighbours particularly well and there was a limited sense of community.

Residents of the Waitao catchment remain separated into at least three, potentially four, distinct communities; Waitao Valley (Waitao Road, Garrets Road), Kaitemako Road, and Rocky Cutting Road). This was highlighted in 2004, and has not changed but for the identification of another possible group around Kaiwha Road. The existence of a fourth group can unfortunately not be substantiated in this series of interviews. People within these geographical areas interact from time to time at various social events, but tend not to mix across the boundaries. In the Waitao catchment, boundaries are related to the road on which a person lives. There will of course be some exceptions to this generalisation, particularly where people from different roads share common property boundaries.

In the Waitao Valley, the interviews provided evidence of growing social capital attributable to a combination of Te Awa O Waitao Restoration Project, the Environmental Group, and opposition to the landfill consent application. Te Awa O Waitao Restoration Project has contributed through community days and events and the project Kaitiaki moving through the catchment interacting with landowners. More importantly, the project was a key factor in the establishment of the local environment group. Furthermore, the landfill consent application has provided locals with an additional reason to meet and discuss common interests and to organise themselves as a community to oppose an ‘undesirable’ change to the area. They have learnt “*there is more power in having a group of people to support you when going to Council ... there is more leverage on issues*”. Since its inception in early 2007, the Waitao-

Kaiate Environment Group has organised several meetings, formed numerous sub-committees to act on local issues and held 'riparian plant potting days'. Key group members are active within the community furthering group goals.

All these factors have increased the interactions between residents along the Waitao Valley and have boosted social capital. In 2004, few participants had much to do with anyone other than their immediate neighbours, this has changed. One participant commented that "*We have never had groups like this before I love the approach, its like a community get together. The meetings get results and people help*".

Another participant discussed the benefits of the group in terms of being able to borrow things from other locals - "*we borrowed an (item) from a neighbour, without the Environment Group this would never have happened*". In other words, group membership has allowed the participant to draw on a pool of resources held by others, which they did not previously have knowledge of, or access, to.

There is evidence of skill sharing within the community through the environment group. One person has skills around native seed collection, germination and riparian planting which have been shared with others. These skills are employed to advise and assist others plant their own stream margins. At present they are being applied to start up and run a local native plant nursery to provide plants for future riparian planting initiatives on properties within the catchment. A nursery of this nature really enhances community capacity to undertake local action.

Interaction and goal alignment between Te Awa O Waitao JSG, Waitao- Kaiate Environment Group, and the Regional Council is important as there is a feeling *that "everyone is working together in the same direction for the good of the area the local Maori are in too, so we are all pulling together"*. This is quite different to the situation in 2004 where there was only a limited knowledge of other groups and no common purpose. Maintenance of a common purpose through on-going meaningful interaction will be crucial to future successes.

It is important to note that all the participants within the Waitao Valley had had contact with representatives of the Te Awa O Waitao JSG, NIWA, New Zealand Landcare Trust and EBoP. These interactions were useful and helpful in solving individual

issues and problems and were viewed positively. This personal contact and knowledge transfer is extremely important in building social capital and fostering learning within the community. In one case, the participant's wife was involved with the group *"only one of us needs to be involved I am an interested spectator she keeps me informed"*. This situation still allows the participant access to the social networks and learning without personal effort.

Outside of the Waitao Valley, there has been little measurable change in social capital. Kaitemako Road residents still have some level of interaction through local social events. It is important to note that participants outside of the Waitao Valley feel excluded from the Local Environment Group and to some extent the Restoration Project. One interviewee would be interested in participating, the other felt it was largely irrelevant at this time. However, one of the participants indicated that there may be a Weed Control Community Group in the mid section of Kaitemako Road. This group could be contacted in the future to explore the possibility of shared interests. It is possible that some members of this group may own properties within the Waitao Catchment.

3.1.5.1 Learning and capacity building

In addition to the developing higher levels of social capital, the Waitao Valley community is learning more about stream ecology and management. Support from New Zealand Landcare Trust (through Robyn Skelton) and Environment Bay of Plenty and co-ordination with Restoration Group has been essential in assisting community learning and building capacity.

The community events, particularly the field day which demonstrated electric fishing, were remembered and enjoyed by the majority of participants. They were surprised by the numbers and diversity of fish species present *"It was surprising how many fish where there it illustrated in general the water quality at different places (along the stream length)"*. It is clear that a community event of this nature has an impact on those who attended. They are far more aware of what lives in the stream and potentially less likely to do anything which would harm the inhabitants.

By establishing an Environment Group, locals have taken on several new challenges and further developed their own learning and capacity. Through establishing a native plant nursery, various members of the community have acquired new skills (plant

propagation) as well as created a community resource. In addition, the Waitao-Kaiate Environment Group has recently obtained a small amount of funding to finance some of their activities (a notice board and some administration costs). Confidence in the preparation of funding bids is a particularly useful skill and potentially the one of the traits of a successful group. This is principally because they are able to attract resources to fund their activities and goals.

The landfill resource consent application tested Waitao Valley residents' ability and capacity to mobilise, as a community, in opposition. This has built confidence in their capacity to act together to achieve shared goals.

Environmental knowledge remains patchy, but participants living in the Waitao Valley illustrated a slightly more comprehensive picture of the environmental impacts of land and stream management practices than during the last interviews. Previous assessments of water and habitat quality were based around water clarity and presence of fish with uncertainty over the impact of various land and stream management practices. However, some participants have developed a clearer understanding, and the more they learn the more they discover further levels of complexity in ecological systems.

It is not uncommon for people to develop 'rules of thumb' when where judgements are required. Several participants seem to be searching for a new set of rules to apply since learning of other important considerations regarding water quality (i.e., nutrients or bacteria). This means that reiteration of the relationships between land and stream management, and water and habitat quality, will be important as people seek to consolidate their own understanding.

Participants outside of the Waitao Valley did not illustrate any changes in learning or capacity building, probably because they are not part of the Environment Group. They were not affected by the proposed landfill consent application, nor had they participated in the days organised by the JSG. However, one participant expressed a desire to be involved and currently felt excluded from the local activities.

3.1.6 Action

To date, riparian planting has occurred on Maori land at the bottom of the catchment and on one other property. The rest remains as a plan or intension to plant. However participants within the Waitao Valley felt empowered to take some action through their association with the Waitao-Kaiate Environment Group. Action may take quite different forms on different properties, but it appears that the Environment Group plans are to work collectively and assist individual property owners where possible. Plants will be supplied through the nursery operated by Environment Group members. Large land owners are being encouraged to work with EBoP to secure financial and practical advice and support.

From a theoretical perspective, the Waitao Valley participants are in a very good position to take action because they have access to a wide range of resources including, funding, technical knowledge and support, practical assistance and inspiration. Walton, (2003) believes these are an essential element of successful action. Links between the Waitao-Kaiate Environment Group, Te Awa O Waitao JSG, NIWA, NZ Landcare Trust, and the local Regional Council provide a number of these key inputs. In addition, the community itself has access to a number of useful skills, time and enthusiasm to tackle the issues.

There has been no action, or any apparent intension to take any action outside the Waitao Valley. However, having said this, two of the land owners already have most of the stream in bush at the moment anyway.

A number of issues appear to be still debated among participants, particularly around selection of plant species for riparian buffers, planting methodology and weed control issues.

There is still some discussion around why natives are always used to plant riparian margins. As with the previous set of interviews, one participant questioned the use of solely native plant species to plant stream margins “ *Why always natives? Exotics are pretty as well*”. It is clear, that this issue has not been completely resolved.

Another participant suggested that the stream banks were contoured prior to planting to help with flooding issues. Again, this idea appeared in the first series of interviews and is clearly favoured by the participant for his property.

One of the farmers was concerned that poorly maintained riparian strips allowed weeds to flourish. He was concerned that local residents may lose interest after the planting was complete and thus result in plantings overgrown by blackberry, gorse or barberry. Weed management for this participant was extremely important for the long term success of both the Te Awa O Waitao Restoration Project and the aspirations of the Environmental Group. As for the previous issues this view point has been expressed in the previous series of interviews.

3.1.7 Catchment vision

Participants were asked to comment on their future vision for the stream and the catchment as a whole. Views did vary somewhat but participants didn't object to a riparian strip the length of the stream as it would be *"very nice to look at"*. However two participants thought it would be nice to have a few breaks in the vegetation so the stream could be seen and accessed.

The prospect of riparian planting along the river does not appear contentious among any of the participants. This is a change from 2003, when those with larger properties expressed some concerns around the cost and practical feasibility of planting the Waitao Stream and its various tributaries.

3.2 Summary

The social impacts of the project from 2004 to 2007 are restricted to those participants with properties in the Waitao Valley. Changes in awareness and perception do not appear to extend to residents of Rocky Cutting Road or Kaitemako Road. Effects on Kaiwha Road residents cannot be determined through this series of interviews.

Key changes include:

1. An increased awareness of the role of poor stream management practices in water quality degradation. In 2003, farm management and farm run-off was not linked by most participants to water quality. Tauranga Quarry was perceived as the primary cause of problems within the river.

2. Increased knowledge of the impacts of land and stream management practices. However, overall knowledge is still patchy and generally lacks an integrated catchment management perspective.
3. A general acceptance of riparian planting as a mitigation measure to reduce impacts of land use and land management practices and a clear will to take action around planting waterways.
4. Social capital has increased as a result of the increased interaction between local residents through the establishment of a local environmental group and shared opposition to the landfill resource consent application at the pumice quarry.

Although there have been some key shifts in perceptions and attitudes within the Waitao Valley portion of the catchments, these cannot be attributed directly to the activities of the Restoration project. A number of other events have made a significant contribution primarily the formation of the Waitao-Kaiate Environment Group and the landfill application at the old pumice quarry site. A combination of these three factors and the strong interconnectedness of key members of the different groups involved has probably driven the observed shifts.

4. Comparison of the interview data and the survey data

The survey canvassed views from 43 respondents mainly in the Waitao Valley section of the catchment. Participants tended to be long term residents with lifestyle properties who were generally supportive of stream management and restoration goals.

Survey data supports several observations from the interviews;

- Importance of social activities in a community project of this nature.
- Predominance of visual assessment methods to evaluate water quality, in particular, water clarity, bank appearance and visibility of aquatic life.
- High level of local concern over security issues at Kaiate Falls.
- Opposition to the proposed landfill consent application.
- Aesthetic and use (recreation, stock and emergency domestic water use) value of the Waitao Stream and its tributaries.
- Te Awa O Waitao and Waitao-Kaiate Environment Group events have been informative, promoting learning and enhancing social networks.

- The existence of distinct communities within the Waitao catchment which have limited interaction.
- The need to include people from beyond the Waitao Valley portion of the catchment.

It is interesting that there was little agreement over local water quality, although it was probably related to the respondent's location within the catchment.

5. Recommendations

Overall a shift in awareness has occurred within the Waitao Valley section of the catchment. However, the remainder of the catchment appears unchanged and not influenced by the events and activities of the last few years. There are a number of recommendations for the next few years of the project;

To maintain:

- Continued interaction, alignment and co-ordination of goals between the Te Awa O Waitao JSG and the Waitao-Kaiete Environment Group will be important moving forward. The feeling of the community "*all pulling together*" is a significant achievement which needs to be maintained through information sharing, communication and co-ordination of the different groups.
- The highly informative learning oriented field days or community meetings to promote on-going educational opportunities about stream management practices and mitigation of environmental impacts on waterways. To date, events appear to have broadened peoples' understanding of integrated catchment management issues. However, knowledge remains patchy leaving room for further events to both reinforce known concepts and present new ones. In addition, the social element of the events should be maintained to further boost social capital. A simple way to achieve this is to incorporate "social time" into the days, for example a BBQ or time for tea and coffee. In the past, learning events have proved more successful if they cater for children, either through learning with the adults or being entertained separately.

- Interest and enthusiasm by tackling the easy things first and undertaking riparian planting at highly visible locations. Groups can often be inspired by tackling the easy or highly visible issues first because they are buoyed by successes. This could take the form of planting in a highly visible spot which can be observed from the road. A success of this nature can be seen by everyone moving up along Waitao road. In addition, a celebration and wide promotion of success within the group and to others is another important element of retaining interest and enthusiasm. EBoP Coast Care groups do this very well perhaps some lessons could be drawn from here.
- The input of technical experts which remains essential to achieving good ecological outcomes. Contact between NIWA, Landcare Trust and EBoP and the local community has assisted the shift in awareness which has occurred within the Waitao Valley section of the catchment. More importantly, the messages received from each organisation appear to align, advice does not seem to conflict. This is significant because conflicting advice frequently leads to community confusion and inaction.

To consider in the next few years:

- The intent to plant needs to move into actual planting within the Waitao Valley. This will require sustained input and assistance from all the key players. Farmers with difficult topography will need the continued support of EBoP - without this planting will not occur due to cost.
- A shift in awareness and intension to undertake riparian planting has only occurred in the Waitao Valley part of the catchment. This is mainly because of the existence of the Environment Group and the proximity to, and social capital increases associated with, the Landfill resource consent application. Engagement with the remainder of the catchment will be required to fully meet the objectives of Te Awa O Waitao Restoration project because of the potential impacts on water and habitat quality of these landowners. This could be explored in several ways; First by using the local networks available through the Environment Group to bring more people in the project. Second, to explore contacts with other groups in the area, for example the weed control

group mentioned by one of the participants. Finally by making an attempt to hold events in other parts of the catchment.

- Issues around plant species selection, weed management and planting approaches may still need addressing.
- Track progress around changes in awareness perception and knowledge in another three to four years to monitor the impact of the project on both thinking, knowledge and stream management practices within the Waitao catchment

6. Conclusions

Overall, environmental awareness of issues associated with riparian planting and stream management issues has increased since the last series of interviews in 2004. In addition, social capital has increased between residents of the Waitao Valley portion of the catchment. However, this effect is restricted to the Waitao Valley area and is likely to be related to three key factors;

- Efforts of the Te Awa O Waitao Restoration Project Joint Steering committee,
- Collective submission in opposition to a proposed landfill site in the old pumice quarry
- Formation and activities of the Waitao-Kaiate Environment Group.

Increased levels of community awareness have not progressed towards riparian planting at this stage, but the intent and resources are clearly present.

7. Acknowledgements

Thank you to all the participants who took the time to participate in this research.

Mike Meijer for checking participants contact details.

Sue Peoples for proofing the document.

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Appendix One: Interview Questions

Introductory Blurb: Last time we talked (Oct 2004) about all sorts of things regarding the stream and the harbour. This interview is really to see how things have changed 3 years on..

Catchment

Has the area changed any over the last 3 years

(i.e., Population/ landscape)

Has any thing changed on your property in the last three years?

(i.e., land use or land area?)

Stream

Do you use the Stream for anything?

What do you value about the stream?

What sort of condition do you think the stream is in? How do you assess that?

Has your view changed over the last few years?

What has changed it?

What do you think the main environmental issues are with the stream?

Do you think this has changed over the last few years?

Have you been watching the stream restoration in the lower catchment?

What do you think? – have your views shifted at all?

Have you had any thoughts about having a go on your land?

Harbour

Do you use the Tahuna/estuary and/or Tauranga harbour in Rangataua Bay or elsewhere?

What sort of condition do you think they are in? How do you assess that?

What do you base this view on?

What do you think are environmental issues in the harbour? Has your view changed?
How and why?

Involvement and contact

Have you had anything to do with the Waitao Restoration project? Or Local Environment Group? Field days? Meetings etc?

- Read any of the newsletters?. heard about it via word of mouth?
- Do you feel included? Do you want to feel included or be involved? (*if no what are the main barriers for you?*)

Have you had any other contact with either Landcare, Tom Cooper (Te Awa O Waitao project team), NIWA or (Mike Meijer) Environment Group. Through any other things?

Do you think restoration or environ group is having any effect on the catchment – physically or the people?

Do you think locals have different feeling from 3 years ago about riparian planting

Have you noticed further changes around stream management

Do you think any of your views have changed – *even slightly?*

Have you taken any action on your property – are you planning something

Do you feel the Councils are more supportive of planting now than they where 3 years ago?

What do you think might happen to with the stream and its management in the future

What would you like to see happen?

Appendix 2: Initial Letter posted to potential participants

(Sent on AgResearch letterhead)

To XX Household

As you will no doubt remember, in 2003 Nga Papaka Incorporated, New Zealand Land Care Trust and NIWA began a restoration project to improve the health of the Waitao stream and its catchment.. The aim of this project is to work together over a number of years to restore the Waitao stream by combining western science, traditional Maori knowledge and community action. As part of the early stages of this project you participated in an interview which asked a number of questions around your views on stream and harbour management. We are now running a follow up set of interviews with the same group to established what, for you, has changed in the intervening years.

Once again you are invited to participate in our research and we would appreciate any assistance you can offer. Last time your input was very valuable for the project and we would like you to participate further, but you are under no obligation at all to be interviewed. Interviews would take about half an hour to an hour and a half and would take place at a time and place convenient to you. The information collected will be incorporated in various publications and used to help with the restoration of the Waitao catchment. All information you provide in an interview is confidential and your name will not be used.

Thank you very much for your time and help in making this study possible. This letter will be followed up with a phone call in the next couple of days, in the meantime, if you have any queries or wish to know more please contact Paula at:

Paula Blackett
AgResearch
Ruakura Research Centre
Private Bag 3123
Hamilton
(07) 8385585
[Paula.Blackett@agresearch](mailto:Paula.Blackett@agresearch.co.nz) .co.nz

Appendix 3: Participant information sheet

(Presented on AgResearch letterhead)

Title: Te Awa O Waitao project

To: Interview Participants

As you will no doubt remember, in 2003 Nga Papaka Incorporated, New Zealand Land Care Trust and NIWA began a restoration project to improve the health of the Waitao stream and its catchment.. The aim of this project is to work together over a number of years to restore the Waitao stream by combining western science, traditional Maori knowledge and community action. As part of the early stages of this project you participated in an interview which asked a number of questions around your views on stream and harbour management. We are now running a follow up set of interviews with the same group to established what, for you, has changed in the intervening years.

Once again you are invited to participate in our research and we would appreciate any assistance you can offer. We would like you to participate in our study, but you are under no obligation at all to be interviewed. Interviews would take about half an hour to an hour and a half and would take place at a time and place convenient to you. We would prefer to audio tape the interview but this would only be done with your consent and could be turned off at any time. You can withdraw information any time up to December 2007. The information collected will be incorporated in various publications and used to help with the restoration of the Waitao catchment. All information you provide in an interview is confidential and your name will not be used.

Thank you very much for your time and help in making this study possible. If you have any queries or wish to know more please feel free to contact Paula using the details below.

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Appendix 4: Consent form

(Presented on AgResearch letterhead)

Title: Te Awa O Waitao project

Researcher: Paula Blackett

I have been given and have understood an explanation of this research project. I have had an opportunity to ask questions and have them answered.

I understand that I may withdraw any information traceable to me at any time up to December 2007 without giving a reason.

I understand the information I provide is confidential and will be used in various publications and used to help with the restoration of the Waitao catchment.

- I agree to take part in this research.
- I agree/do not agree that the interview will be audio taped

Signed:

Name:
(please print clearly)

Date:

Appendix 5: Door to Door Survey

Interviewer _____

Date _____

Waitao Catchment Survey 2007

General demographics

Address : (This will be confidential)

No. people living in the household? _____

How many are children ? _____

Question 1: How long have you lived at your current address?

Do you own or rent?

Question 2: How big is your property in hectares/acres?

_____ hectares OR _____ acres

Question 3: How would you describe your property – lifestyle block farm etc. (*circle*)

Lifestyle block

Farm

House lot

Other: (i.e., business?)

Question 4: What is the main activity on the property? (*circle*)

Lifestyle block

Horticulture

Dry stock: sheep/ beef

deer

Other (i.e., residential, other business, other livestock mix)

Stream

Question 5:

Part A: Do you have waterways on or bordering onto your property – streams or drains, ponds/wetlands -see map (*circle*)

Streams *Drains Ponds/Wetlands* *None*

Waitao

Arateka

Otawera

Kaiate

Unnamed tributary

Part B: How do you manage the stream margins?
(*i.e., are they fenced and/or planted with shrubs/trees etc?*)

Question 6:

Part A: Do you (or your family) use the stream or drains? What for?
(*i.e., open-access stock water, reticulated stock water, domestic drinking water, non-drinking domestic water (e.g., for washing /toilets), farm or garden irrigation, land drainage, flood protection, recreation, swimming, fishing /kai .. mainly aesthetics*)

Part B: Do you value the stream? What do you value about it?

Question 7: What sort of condition do you think it is in? (*circle*)

Very good

Good

Ok

Poor

Very Poor

Question 8: Do you think the condition of the stream has changed in the last few years? How?

Question 9: On what criteria do you base your assessment of water quality and general stream environmental health?

Question 10: Are there environmental issues or impacts associated with the stream in this area?
(*if say landfill consent application note down but ask for another*)

Question 11: What do you think needs to be done to address these?
(if around landfill consent application note down ask for other comments)

Question 12:

Part A Have you seen the stream side weed removal, fencing and native revegetation planting undertaken in the lower part of the Waitao stream? (*circle*)

Yes

No

Part B (If yes) What do you think of it?

Question 13:

Part A Do you use the Kaiate falls park?

Yes

No

If yes...For what?

Part B Do you value the park? What about it do you value?

Part C What would you like to see happen at the falls reserve in the future?

Harbour

Question 14:

Part A: Do you use the Tauranga Harbour/Rangataua Harbour/Welcome Bay?

Yes

No

If yes....For what?

Part B: What is it about the harbour that you most value?

Question 15: What do you think are the environmental issues associated with the harbour?

Question 16: What do you think causes these?

Question 17: How could these problems be addressed?

Involvement with stream restoration/management

Question 18: Are you or your family involved in any of the activities of the Te Awa O Waitao Restoration Project, Waitao-Kaiate Environmental Group, Environment Bay of Plenty Environmental Programme, or other land/environment management groups?

Te Awa O Waitao Restoration Project	Yes	No
Project Waitao-Kaiate Environmental Group	Yes	No
EBOP Environmental Programme	Yes	No
Other Groups (name)	Yes	No

IF YES

What was your involvement?

Was it worthwhile?

If improvements could be made to the activities these groups run, what would they be?

Was getting involved useful to learn more about reducing the environmental impacts on:

the stream Yes

No

the harbour Yes

No

Or learning about local land management practices? Yes No

Have you made any changes as a result of what you learnt?

IF NO

Have you heard about any of the activities? (*seen the newsletters?*)

Yes

No

Do you think you may attend in the future?

Yes

No

Do you think the group's activities are worthwhile?

Yes

No

Any particular reason for this?

Question 19: Have you met either Tom Cooper, Mike Meijer, Robyn Skelton from NZ Landcare Trust or anyone from NIWA or EBOP?

Mike

Yes

No

NIWA

Yes

No

Robyn

Yes

No

Tom

Yes

No

EBOP

Yes

No

If Yes

What it was to do with?

Have you got anything out of these meetings (*if so what might they be*)

Question 20: Have you seen any of the newsletters that either group has produced?

Yes

No

Question 21: Do you think of yourself as a member of the Waitao-Kaiate Environmental Group now, or in the future?

Now

Yes

No

In the future

Yes

No

If No

Is there any particular reason for this?

Question 23: Are you involved with any other local community groups

(list)

or attend other community events?

In summary

Question 24: Do you have any thoughts on what the stream and its margins should be like in the future? *(or the area in general)*

Any further comments?

If you like we can take your details and put you on the contact list for the Waitao-Kaiate Environmental Group?

Name _____

Address _____

Phone no. _____

e-mail _____