ENVIRONMENTAL EDUCATION IN NEW ZEALAND SCHOOLS: RESEARCH INTO CURRENT PRACTICE AND FUTURE POSSIBILITIES

Volume 4: Case studies of environmental education practice in eight schools and kura kaupapa Māori
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ACKNOWLEDGMENTS

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Introduction

Research into environmental education in New Zealand schools

In 1998, the Ministry for the Environment developed a national strategy for environmental education entitled *Learning to care for our environment: Me ako ki te tiaki taiao* (Ministry for the Environment, 1998). The key priority for schools outlined in this strategy was to incorporate the aims of environmental education across the school curriculum. In 1999, the Ministry of Education published *Guidelines for environmental education in New Zealand schools* (Ministry of Education, 1999). This document links with *Learning to care for our environment* and shows how environmental education is a theme in all seven learning areas of the New Zealand Curriculum Framework. The *Guidelines* promote a curriculum integrated approach to environmental education. However, there is no mandatory requirement for schools to teach environmental education. Although the extent of environmental education within the individual school curriculum is determined by the school and its Board of Trustees, the *Guidelines* are intended to assist teachers and schools to plan and provide education in, about, and for the environment.

To date, the Ministry of Education has funded three specific programmes to support the *Guidelines*. The first two of these were *Environmental Education Professional Development* (Christchurch College of Education) and *Professional Development for Sustainable Organic School Gardens* (Massey University and the Soil and Health Association of New Zealand). Funding for both these programmes ended in June 2003. In 2002-2003, the Ministry-funded Environmental Education Advisors programme began. This programme funds seventeen regional environmental education advisors, whose role is to support schools and kura in their region to incorporate environmental education into the curriculum. The Christchurch College of Education was contracted to coordinate the programme.

The Ministry of Education is now seeking information about the impact of environmental education in New Zealand schools, particularly with respect to the *Guidelines* and its related supporting initiatives. In July 2002, the Ministry of Education commissioned the New Zealand Council for Educational Research and the University of Waikato to research the implementation and impact of environmental education in New Zealand schools. The research was made up of three key components.

**Component one:** A review of national and international research literature on successful practices in environmental education.

**Component two:** A survey of approximately 400 schools/kura engaged in environmental education practice.

**Component three:** Eight case studies of environmental education in selected New Zealand schools.

This document reports on the third component of the research, the eight case studies. Separate documents report the results of the other two components: the literature review (Volume 2:...
Purpose of the case studies

The literature review (Bolstad and Baker, 2004) found that there is currently very little published research on environmental education practice in New Zealand schools. The purpose of the case studies was to seek examples of “good practice” in environmental education in a range of New Zealand schools. The case studies sought to investigate the specific characteristics of environmental education practice in selected schools, and to identify the potential benefits for student learning created as a result of these practices. The case studies complement the other two components of the research through their rich, contextualised descriptions of actual environmental education practice in selected New Zealand schools.

Specific research questions for the case studies included:

- What are the key characteristics of environmental education practice in these New Zealand schools/kura?
- To what extent do these practices generally follow the planning process identified in the Guidelines for environmental education in New Zealand schools?
- What kind of student learning opportunities in environmental education occur as a result of the implementation processes undertaken by these schools/kura?
- What kind of relationships exist between different environmental education services and programmes for schools, and what are the potential benefits of these relationships for student learning?
- What are the characteristics of the delivery of environmental education in these schools that support/do not support the goals of environmental education?

These questions are a subset of the overall research questions for the Environmental education in New Zealand Schools research. For a complete list of the research questions, and a summary of the overall research findings, see Bolstad, Cowie, and Eames (2004)
THE CASE STUDY SCHOOLS

Selection of the schools

The eight case study schools/kura were selected to illustrate different examples of environmental education practice, in different school types, with different kinds of students. The Ministry of Education specified that the case study schools must include at least one primary school, at least one secondary school, at least one school that has participated in the Ministry of Education environmental education professional development programme, at least one kura kaupapa Māori, and at least one school with a high proportion of Māori students in mainstream. We selected case study schools to include a mixture of school types, including rural and urban schools, high and low decile schools, small schools and large schools, schools with a high proportion of Māori students, and/or schools with a diverse cultural mix of students. The eight case study schools include:

- two full primary schools;
- one kura kaupapa Māori;
- one intermediate school;
- two composite (area) schools; and
- two secondary schools;

The eight case study schools are geographically spread across five regions: Northland, Waikato, Bay of Plenty, Wellington, and Canterbury.

We used several methods to identify potential case study schools. Many were identified through environmental education networks with whom we made contact during the research. This included tertiary educators or regional council staff working in environmental education, and teachers who were active in New Zealand environmental education networks. Others were identified during the survey or literature review components of the research. Potential schools were contacted by phone call, letter, or email, and asked whether they wished to be involved in the research. Follow-up phone calls helped the researchers to determine whether the schools would be suitable for case study. All schools approached by the research team agreed to participate in the research.

Table 1 shows summary details of the eight case study schools. Schools were offered the choice of having a pseudonym, or having their real name used in the research. Some of the schools chose to use their real names, and some chose to use pseudonyms.
<table>
<thead>
<tr>
<th>School</th>
<th>Type</th>
<th>Roll size</th>
<th>Decile</th>
<th>Student ethnicity</th>
<th>Location</th>
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</thead>
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<tr>
<td>Otari School</td>
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<td>147</td>
<td>7</td>
<td>NZ European/Pākehā 40%</td>
<td>Suburban</td>
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<td></td>
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<td></td>
<td>Māori 47%</td>
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<td>Pacific 7%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Other 6%</td>
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<tr>
<td>Snapper Point School*</td>
<td>Full Primary</td>
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<td>6</td>
<td>NZ European/Pākehā 64%</td>
<td>Rural</td>
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<td></td>
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<td></td>
<td>Māori 32%</td>
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<td></td>
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<td></td>
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<td>Other 4%</td>
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<td>Kamo Intermediate</td>
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<td>NZ European/Pākehā 66%</td>
<td>Suburban</td>
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<td></td>
<td></td>
<td></td>
<td>Māori 31%</td>
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<td>Pacific 0%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Other 2%</td>
<td></td>
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<tr>
<td>Papatūānuku School*</td>
<td>Composite</td>
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<td>NZ European/Pākehā 40%</td>
<td>Rural</td>
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<td></td>
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<td></td>
<td>Māori 59%</td>
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<td>Pacific 0%</td>
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<td></td>
<td></td>
<td></td>
<td>Other 1%</td>
<td></td>
</tr>
<tr>
<td>Flaxwater School*</td>
<td>Composite</td>
<td>534</td>
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<td>NZ European/Pākehā 45%</td>
<td>Rural</td>
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<td>Māori 51%</td>
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<td></td>
<td></td>
<td></td>
<td>Other 2%</td>
<td></td>
</tr>
<tr>
<td>Kura kaupapa “A”</td>
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<td>102</td>
<td>1</td>
<td>Māori 100%</td>
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<td>994</td>
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<td>Suburban</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Māori 4%</td>
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<td></td>
<td>Pacific 1%</td>
<td></td>
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<td></td>
</tr>
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<td>Riverview School*</td>
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<td>Semi-rural</td>
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<td>Māori 1%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Asian 3%</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Foreign fee-paying 9%</td>
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</tr>
</tbody>
</table>

* Pseudonym
Developing the case study methodology

The case study methodology was developed collaboratively by members of the research team. While the case study methodology was being developed, the research team was also working on the literature review and survey components of the research. These phases of the research proved valuable in informing our plans for the case studies. Our extensive reading of New Zealand and international literature on environmental education practice in schools showed that there are some serious gaps in the existing research knowledge base. For example, there is very little research documenting actual school-based environmental education practice, and even less research on the impacts or perceptions of these practices for students. There is little research on the role, if any, that the Guidelines for environmental education in New Zealand schools play in planning or delivery of environmental education. Finally, there is virtually no published research on environmental education in relation to Māori knowledge and values, or in relation to Māori students.

The background picture of environmental education in New Zealand we developed prior to the case studies was not restricted to the published knowledge base. In the early stages of developing the literature review and survey, we consulted with a wide range of New Zealand environmental education stakeholders, including tertiary-based environmental educators, local and regional government staff involved in environmental education, and graduate and post-graduate students currently involved in environmental education research in New Zealand. This was done through a number of face-to-face meetings, and frequent use of telephone and email. We also convened two focus groups. The first focus group was held in Wellington on 20 August 2002. The focus group included representatives from tertiary institutions, local and regional government agencies, NGOs involved in environmental education, and NZEI. A second focus group was held at the University of Waikato on 24 August. Participants included teachers from ten Waikato primary and secondary schools. The two focus groups identified similar key issues for the research. In particular, the focus groups identified a need to elicit information on teacher practice and student learning “for” the environment.

Our case study methodology was also influenced by the non-mandatory status of environmental education in the New Zealand Curriculum Framework. Because it is essentially the schools’ own choice to teach environmental education, we felt it was crucial that the case studies investigate not only which schools were doing environmental education and how they were doing it, but also why environmental education happened in those schools, and what circumstances contributed to its development and sustainability. Scott and Reid (1998) criticise the UK School Curriculum and Assessment Authority for omitting this sort of information in case studies of UK schools involved in environmental education published in the UK environmental education guideline for schools, Teaching Environmental Matters through the National Curriculum (SCAA, 1996).

Whilst these case studies provide examples of what is going on and who is involved, it is far from clear why it all works so well. There are few, if any, indicators of how success is engendered and, in terms of supporting change by providing insights into how good practice is achieved, it is very limited. (Scott and Reid, 1998, p. 221)

Scott and Reid suggest that schools would find the case studies in Teaching Environmental Matters difficult to use, because they contain no detail about why environmental education is
successful in each school. For example, who were the significant change agents? What did they do to effect change? Why did it work? What special circumstances applied? What were the problems and constraints? How were these resolved? What cultural factors were present to support the development of environmental education in the school? New Zealand research on school change (Mitchell, Cameron, and Wylie, 2002) similarly identifies the need for case studies to look beneath the surface to look at how various factors contribute to change processes within the unique cultural context of each school.

**Data collection**

The aim of the data collection was to gather sufficient information about the school, from different perspectives of those in different roles, to provide a description of the school’s environmental education practices, what underpins them, how (and why) environmental education occurs in that school, and what sort of barriers or challenges teachers or students have encountered as a result of their involvement in environmental education. Our aim was to provide an account of each school’s individual approach to environmental education as well as to draw out common themes and patterns.

A researcher from the New Zealand Council for Educational Research or Waikato University spent approximately two to three days in each school collecting data for the case studies. Data was collected from a range of sources. These included:

- school documents (for example, the school’s charter; policy, planning, and curriculum documents; teaching plans; meeting notes; media clippings; and examples of students’ work;)
- interviews with key staff who could provide insight into the school’s environmental education;
- in some cases, interviews with other people who are involved in the school’s environmental education (for example, former principals/teachers, regional council staff, school groundspeople, or local environmental education facilitators);
- interviews with students (through informal classroom interviews, or focus group interviews); and
- classroom/school grounds visits (for example, to observe episodes of environmental education practice and/or the results of school environmental education practice in terms of school grounds development or student work).

Interview participants were given a letter explaining the research, and signed a consent form. Interviews were tape-recorded but not fully transcribed. A digital camera was used in some schools to document examples of environmental education in and around the school. The researchers sent each school a copy of their case study for comment or feedback, prior to the inclusion of the case study in this report.
THEMES AND ISSUES FROM THE EIGHT SCHOOLS AND KURA

Before turning to the individual school case studies, this section draws out some of the common themes and issues arising across the eight case studies. Four main areas are described:

- factors contributing to the initiation of environmental education in the case study schools;
- common features of the school contexts;
- characteristics of environmental education practice in the case study schools; and
- challenges and issues arising for the schools.

Factors contributing to the initiation of environmental education in the case study schools

Personal passions and professional development in environmental education

In all the schools, there was at least one person on staff who had a personal interest or passion for environmental education. In most cases, two or three people (teachers and/or a principal) were the main initial force for developing environmental education in the school. At least one of these people (usually the designated environmental education co-ordinator) had participated in the Ministry of Education’s environmental education Guidelines professional development training. In some cases, teachers found out about the professional development through existing personal networks and connections with the local environmental education community of interest, or through school advisers or tertiary environmental educators. In other cases, teachers stumbled across the professional development through good luck or good timing, but recognised an opportunity to link the environmental education professional development with what they were already doing (or trying to do) in their school. One school had no involvement with the Ministry of Education environmental education professional development. In two schools, at the time of the case study, the lead environmental education teacher was on study leave to deepen their knowledge and qualifications in environmental education.

Role of the Guidelines and involvement in formalised environmental education programmes

The lead environmental education teacher(s) in each school endorsed the Guidelines, and used these as the basis for planning and implementing the school’s environmental education. In at least two cases, the lead environmental education teacher had not known the Guidelines existed until they encountered them outside the school. In most cases the lead environmental education teacher had tried to educate other staff, for example, by distributing copies of the Guidelines to all staff or all heads of department, or leading whole staff meetings about environmental education. Staff who had not participated in environmental education professional development often recognised the Guidelines, but were not directly familiar with their contents. Some teachers were aware of the three key dimensions (education in, about, and for the environment) or other aspects of
environmental education outlined in the *Guidelines*, because the environmental education co-
or-ordinator had taken staff through these.

Six of the case study schools were environmental education professional development “Pilot
schools”, and two were, or were about to become “Enviroschools”. Although lead environmental
education teachers in the case study schools often said environmental education had been part of
their own teaching for a long time, environmental education had only become significant in most
of the schools during the last two or three years. Staff in the case study schools described the
opportunity to be part of a formalised environmental education programme as a significant source
of motivation and inspiration to formalise the school’s commitment to environmental education.

**The local context and environment**

The local environment was a significant trigger for environmental education in most of the
schools. Many of the schools saw environmental education as an opportunity to promote students’
sense of connection and responsibility for the local surrounding environment. At least two schools
were engaged in the care and protection of an existing stand of native bush on the school site, and
several schools were replanting native trees and plants on the school grounds. Two schools were
next door to coastal or estuarine environments. Maintaining or enhancing the school grounds,
planting and caring for gardens, and litter and waste management, were important issues for
several schools. The cultural and historical significance of the local environment was also
important to several of the schools, particularly those that placed a high value on including Māori
knowledge and values in the school culture.

**Common features of the school contexts**

**Vision, leadership, and triggers for school change**

The principal’s role appeared crucial for the development of environmental education in several
schools. Interestingly, at least four of the eight schools had undergone a change of principal in the
last five years. In at least two schools, a previous principal had been a key player in instigating the
school’s environmental education, and the new principal was committed to sustaining
environmental education in the school. In other cases, principals lent active or passive support to
whichever staff were the key players in environmental education in the school.

In addition to changes of principal, several schools had undergone a significant school culture
change in the last five years. The scale and depth of change varied, from whole schools re-
examining their core values, and making many changes to policy and practice, to the gradual
broadening in the kinds of learning experiences available to students. Some of the triggers for
change included: the sense that the school needed to change to better meet the needs of students,
or the local community; the retirement of long-serving teaching staff and the subsequent
appointment of new staff; and a zoning change, leading to a more diverse student demographic.
The relationship between environmental education and these wider school changes differed across
schools. In some cases, the development of environmental education was a fundamental
component of the school’s culture shift/reorientation. In other cases, the changing culture of the
school created a fertile bed in which environmental education could begin to flourish. In at least
one school, a significant culture change was occurring over the top of an existing commitment to environmental education. Although this school’s commitment to environmental education remained, the culture change (a reorientation to bring the school into a closer relationship with local iwi) meant that environmental education sometimes had to compete with other priorities in terms of staff time and energy.

**School values, culture, and philosophy**

Most staff and students in the case study schools spoke highly of the culture of their school. A common feature across many of the schools was that values were an explicit part of the school’s language and practice. The specific culture and values differed across the schools: Māori values underpinned the culture of the kura kaupapa Māori; Christian values underpinned another school’s culture; Montessori philosophy contributed to the values and culture of yet another school. Being rural was a significant aspect of three schools’ cultures.

At least two schools (a primary school and a kura kaupapa Māori) were part of formalised “values education” networks, and had committed to school-wide professional development in values education. The values and culture of the schools were often visible during the case study visits, for example, in the interactions between principals, teachers, other staff, and students; or in visual displays on the walls of classrooms, staffrooms, or assembly halls. In many schools there was a strong consistency of perspectives between principals, teachers, students, and others associated with the school. In general, it was easier to identify shared views, perspectives, and practices in the primary/intermediate schools and the kura kaupapa Māori, than in the secondary and composite schools.

**Values towards the environment**

Many of the schools described themselves as “environmental” schools. In some cases the schools had some kind of written vision statement which identified “the environment” or “care for the environment” as a key pillar or core value of the school. Care and respect for the environment was often seen as fitting naturally alongside the schools’ emphasis on students’ care and respect for themselves, and care and respect for other people. Maintaining a safe social and emotional environment for students was clearly important in most of the schools.

**The role of Māori knowledge and values**

Obviously, Māori knowledge and values wholly underpinned the culture of the kura kaupapa Māori. However, Māori knowledge and values also had an intentional and visible role in the culture of four of the seven mainstream schools. Each of the four schools had between 30 and 55 percent Māori students, and two schools also had rumaki (Māori immersion classes) within the school. The status of Māori knowledge and values in one school had gone from slight, to prominent, in just the last 18 months. Some of the ways that Māori knowledge and values were integrated into various schools’ cultures included:

- using Māori words and names throughout the school;
- adopting Māori customs for welcoming visitors, blessing new spaces, or meeting with the community;
• compulsory learning of te reo Māori for staff and students;
• timetabling kapa haka or waiata practice into the school week;
• whānau (mixed age) groupings in classes;
• negotiating a special protocol for local kaumātua and kuia to come into the school; and
• considering the current and historical significance of the school’s local environment for local iwi and hapu.

The other three mainstream schools did not identify Māori knowledge and values as a major focus across the school, although it was said to feature in some subjects/classrooms, or cultural activities in the school. One school had approximately 30 percent Māori students. Two schools had fewer than 5 percent Māori students. Some staff from each of these schools regretted the school’s lack of emphasis on Māori knowledge and values, and in some cases indicated that the school was beginning to place a higher priority in this area.

**Proactive approaches to staff professional development**

There was a strong emphasis on whole staff professional development in three or more of the schools, where the focus of professional development was explicitly on teaching and learning. Some of the schools had regular whole staff professional development meetings to talk about teaching and learning practice. One secondary school was about to establish a staff teaching and learning group which would meet regularly to discuss such issues. One intermediate school’s principal had a philosophy of encouraging teachers’ “passions”, and supporting their professional development in whichever areas were of interest to them.

**Student leadership and responsibility**

While principals and staff at most schools talked about the importance of student leadership and responsibility, the degree to which this was manifested in practice varied across schools. At several schools, there was a clear and consistent commitment to student leadership and encouraging students to take responsibility for their own learning and behaviour. One intermediate school principal aimed to develop a “school of leaders”, and felt that every person in the school, from students to teachers, should have a say in deciding what and how things happened in the school. Teachers in another primary school took pride in the level of trust and responsibility given to students. Other ways that student leadership and responsibility were manifested in the schools included: students being encouraged to give speeches and presentations to audiences outside the school (for example, students and teachers from other schools, or regional councils); and classroom “values contracts”, devised by teachers and students as a set of rules and principles for acceptable behaviours.
Characteristics of environmental education practice in the case study schools

Focusing on the school environment

All but one of the schools initiated their environmental education with a strong focus on the school grounds and school environment. As already noted, most of the schools had direct access to local natural environments such as native bush, beaches, and estuaries, and used these as environmental learning contexts. Most schools engaged in some form of gardening and associated activities (worm farming, composting, organic methods), particularly with primary and intermediate-aged students. Native plants and trees were commonly used. In at least three schools, primary students had planted and nurtured their “own” native plant in a school re-landscaping exercise. Primary teachers often talked about gardening and planting activities as a way of establishing children’s sense of connection and care for the environment. Several schools were interested in Māori medicinal use of plants and trees.

Litter management, recycling, school grounds improvement, and waste reduction also figured prominently in most of the schools. For some schools, controlling litter was a constant battle, which did not seem to change despite the school’s environmental education activities. However, at least one school had little or no problem controlling litter. Some schools were moving towards “zero waste”, and had established “radical” measures to reduce and recycle as much school waste as possible. One school had made an arrangement with the local shop to have a “plastic free” day once a week, where students did not bring any plastic food wrappings into the school grounds.

Snowballing and layering of environmental education activity

One or two classrooms, taught by the lead environmental education teacher(s), formed the epicentre for environmental education in most of the schools. Often, environmental education began to “snowball” across the school and into other classrooms. This could occur through environmental education teachers sharing unit plans and resources with other teachers, or through the initiation of school-wide practices like recycling and composting. In the primary and intermediate schools, there was often a layering of environmental education activities. For example, a few classrooms might be engaged in extensive environmental education projects and activities. Students from other classrooms might be involved through extra-curricular activities (a gardening club, a student environmental committee, or “intensive” programmes). The whole school might be involved in recycling, composting, gardening, etc. The proportion of staff and students actively involved in environmental education in each school, at any given time, varied. At some of the primary schools, the kura kaupapa Māori, and one composite school, there were efforts to make environmental education a whole school movement. At one secondary school, environmental education comprised one specialist environmental education NCEA subject. At another secondary school, environmental education was mainly taught within individual subjects such as science, biology, geography, and outdoor education, and was only just beginning to be viewed as an explicitly integrating strand across curriculum areas.
Curriculum integration and curriculum planning for environmental education

It was normal practice in the primary and intermediate schools to teach an integrated curriculum. Environmental education was usually infused into plans for teaching and assessing the mandated curriculum learning areas, and the essential skills.

Although environmental education was not subject to the same assessment requirements as other learning areas, some primary and intermediate schools used curriculum planning templates which featured explicit environmental education learning goals. In one school where environmental education was mainly practised in two or three out of twenty classrooms, environmental education teachers had given their unit plans and resources to other teachers in their school to use. Environmental education was most often linked to science, social studies, technology, and health, but also featured in English, mathematics, and the arts. One secondary school taught environmental education as a subject in its own right, primarily integrating science/biology and social studies/geography concepts and assessment standards. An area school had successfully integrated environmental education across the primary school but had found it more difficult to do so in the secondary school. In both secondary schools, lead environmental education teachers saw environmental education as an opportunity to increase the amount of curriculum integration in the school.

Usually, the environmental education co-ordinator took responsibility for building environmental education into curriculum planning at classroom level, syndicate level, or school-wide level. At one primary school, the entire year’s teaching was built around a theme (water) which lent itself to a whole year environmental education focus. The kura kaupapa Māori planned to build its curriculum around a major environmental education project the following year.

Commitment to large-scale environmental action projects

Environmental education involved a large-scale action project in many of the schools. These projects were unusual compared with normal teaching and learning practice in terms of the time and energy required to carry them out. One primary school built an entire year’s teaching around the theme of “water”, and every class in the school worked on a major project about improving the health of a local stream over several terms. Two or three classes at an intermediate school undertook a major project to plan, design, and construct an “Island of Life” (a stand of native plants to attract birds and insects) in the school grounds. The kura kaupapa Māori chose to focus their environmental education on the care and protection of a local island. To this end, staff, their families, and the school prefects planned to camp on the island the week before school started, and once school began every student in the school would have the experience of living on the island. At one secondary school, students were going to plan and carry out their own action project over a term or more.

In several schools, whole class projects involved students (guided and supported by teachers) identifying an environmental issue, making decisions, liaising with sponsors, community agencies, or the media, and executing actions identified as necessary for reaching their environmental goals. However, student-led projects sometimes encountered difficulties. In one composite school, a student-led environmental education project to enhance the school grounds ran into difficulties when other members of the school community overrode the decisions and actions of the students and teachers involved. In another secondary school, teachers and students
both commented that students did not normally have the opportunity to have input into how their classroom teaching and learning should happen, and that the environmental education class was unusual in this respect.

**Support within the school and school community**

The overall level of support for environmental education from other staff within the school varied between schools. In some schools, all or most staff, even those not centrally involved in environmental education, were said to support environmental education in the school. In other schools, staff who were not leaders in environmental education were more disinterested, apathetic, or suspicious of environmental education. In some schools, the caretaker’s support was an important enabling factor.

There was a range of levels of support and involvement from the school community. At one school, students’ end-of-year performance was built around their environmental education project, and through their performance they shared their experience with their parents and family.

**Support from local environmental education people or agencies, and the media**

Regional councils supported environmental education projects, either through the involvement of regional council staff, or through financial sponsorship, in at least three case study schools. Several schools actively sought out sponsorship and media coverage of their environmental education activities from the local community.

A high point for two schools was the opportunity to send a small group of students to international environmental education conferences, to talk about their school’s environmental education activities.

**Formalising environmental education into school policy and planning**

Several of the case study schools were on the verge of formalising their commitment to environmental education into school policy and/or charter documents. Lead environmental education teachers were often concerned that environmental education was dependent on their continued involvement, and were keen to see environmental education more deeply embedded in the school’s planning and practice. At one composite school, the former environmental education co-ordinator (primary school) stepped back so that a secondary teacher could take on this role and bring environmental education further into the secondary school. At an intermediate school, the role of environmental education co-ordinator had been held by a succession of three teachers, each of whom felt that environmental education was now firmly embedded into the school.

**Challenges and issues arising for the schools**

The main issues and challenges for the schools were:

- dependence on key people;
- the amount of time and energy required to sustain environmental education projects;
• getting other staff and/or Board of Trustees “on board”; and
• having sufficient resources/units/ideas for environmental education teaching and learning.
OTARI SCHOOL

Otari school profile

<table>
<thead>
<tr>
<th>School type</th>
<th>Full Primary</th>
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<tbody>
<tr>
<td>Roll size</td>
<td>147</td>
</tr>
<tr>
<td>Decile rating</td>
<td>4¹</td>
</tr>
<tr>
<td>Locality</td>
<td>Suburban</td>
</tr>
<tr>
<td>Student ethnicity</td>
<td>NZ European/Pākehā - 40%</td>
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<tr>
<td></td>
<td>Māori - 47%</td>
</tr>
<tr>
<td></td>
<td>Pacific - 7%</td>
</tr>
<tr>
<td></td>
<td>Other - 6%</td>
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Teaching staff 6 full-time, 2 part-time, teaching principal

Background

School context

Otari school is situated in a mixed-income suburban community. The area near the school encompasses both middle and high-income homes, and low-income homes in a council housing neighbourhood.

A number of special features contribute to the school’s character. First, it is a small school, with only six classes. Second, it is located next to an area of council-managed bush reserve. The reserve is dedicated to the preservation and study of New Zealand's native plant life. Third, the school is organised into three teaching “strands”: a “mainstream” strand, a Montessori strand, and a Māori immersion strand (see table 2). Each strand has two mixed-age classes. The age ranges in the classrooms can alter from year to year depending on the mix of students. Immersion students can go from the junior class to the middle/senior class. At the time of the case study, there was one Montessori middle class, and one mainstream senior class. Both these classes include a mixture of students from the mainstream and Montessori strands.

¹ The school was recategorised as Decile 7 at the end of 2002.
Table 2

Division of classes at Otari school at the time of the case study

<table>
<thead>
<tr>
<th>Mainstream</th>
<th>Montessori</th>
<th>Māori immersion</th>
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<tbody>
<tr>
<td>Junior (Years 1–4)</td>
<td>Junior (Years 1–4)</td>
<td>Junior (Years 1–3)</td>
</tr>
<tr>
<td>Middle (Years 5–7)</td>
<td>Middle/Senior (Years 4–8)</td>
<td></td>
</tr>
<tr>
<td>Senior (Years 7–8)</td>
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</tr>
</tbody>
</table>

The school draws many of its students from the local area, but its special character, particularly its Montessori and immersion strands, also attract families from other parts of the city. Other primary schools in the suburbs immediately adjoining the school include: two decile 10 full primary schools; a decile 10 contributing primary school; and a decile 9 integrated (Catholic) full primary school. While Otari School has 47 percent Māori students, none of these other schools have more than 10 percent Māori students.

Environmental education at Otari School

A senior teacher is the school’s official environmental education co-ordinator. This teacher has been responsible for developing and co-ordinating most of the school’s environmental education activities. The school’s current environmental education activities include a weekly “gardening club” (see next page). Two children from every class in the school spend one afternoon a week working in the school’s garden nursery with the environmental education co-ordinator. Two new children from each class are chosen for this club each term, with the aim that every child in the school will have participated in this at least once during their time at the school. The school has established compost bins and a worm bin, and foodscraps are collected from the classrooms and added to these on a regular basis. The whole school also uses paper recycling bins. In addition to the gardening and recycling initiatives, the school has also integrated environmental education into classroom curriculum teaching and learning. The most significant example of this occurred in 2001, when the whole school engaged in a project related to the health and preservation of a local stream (described in more detail later in this case study).
Case study methods

Prior to visiting the school, the immediate former principal and an environmental education facilitator from the local regional council were interviewed. Both had been involved in the school’s environmental education programmes in the previous year. Four current staff were formally interviewed during the case study site visits: the principal; the environmental education co-ordinator; and two classroom teachers. Teacher A taught Year 5–7 students in the Montessori strand. Teacher B taught Year 1–4 students in the “mainstream” strand. The environmental education co-ordinator and principal taught a Year 7–8 class in the “mainstream” strand.

A range of school documents was also reviewed. These included the school’s charter, strategic plans, policies, and information about the school’s teaching and learning approaches. Copies of school-wide and syndicate level curriculum planning were also collected, as well as artefacts, documents, and some examples of student work from environmental education activities the previous year.

Ten students from two classes (Years 5/6 and Years 7/8) were interviewed in groups of 3 or 4. The students were chosen by the environmental education co-ordinator because they had participated in specific environmental education activities in the school in the last two years. A researcher also observed the school’s weekly “gardening club” in action during one afternoon at the school.
The school culture

The current principal described the overarching culture of the school as one which “values the whole child”. Staff also felt that the school had a reputation for being caring and inclusive and, with its small size, was particularly attractive to parents of children with special learning needs. The principal and teachers also felt the school valued and celebrated diversity, and emphasised respect and honouring of individuals. One teacher said she valued the independence that the school gave to children, and the fact that children were trusted to do things like going to work in the library without supervision.

We want to create an environment where students are empowered rather than led all the time. Those are our main goals. I think we structure our lessons around those sorts of things. (Teacher A)

The school had undergone some significant culture changes during the last decade. In the late 1980s/early 1990s the roll had declined to approximately 40 students. The roll began to increase following the establishment of the Montessori and Māori immersion units in 1992. When the immediate former principal came into the school in 1994, there were approximately 70 students, predominantly young children, with little mixing between the three strands. Several initiatives were introduced to increase interaction across the strands, for example, school-wide sports and other shared activities.

In 1995, the school involved the parent community in revising the school’s charter. The former principal described this as a “fantastic process”, involving huge meetings of parents coming together to establish, with the school, what they valued about the school. Through this process the school and parents agreed that they valued the school for such things as the special character of the strands, the school’s small size, the school’s bicultural mix, the school’s respectful atmosphere, and the bush environment next door. The 2-page charter document guided the school for the next five years, and was revised in 1999.

Values

The school’s four core values, which all the staff referred to during the interviews, are:

- self acceptance and self respect;
- respect and concern for others and their rights;
- social responsibility; and
- environmental responsibility.

The four values had been developed through consultation with the school community. The school’s interest in identifying and defining its core values came partly as a result of its involvement in the “Living Values” programme. In 2000, an action plan was developed to begin to integrate these values more deeply into policy and practice in the school over the next few years.

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2 An international initiative for values education. The former principal initiated the school’s involvement in this programme.
years. In the first year, the emphasis was on implementing, reviewing, or enhancing specific programmes and policies, including: the “virtues” programme; philosophy for children; the school gardening club/kaitiakitanga; and the establishment of peer mediation. In 2000, the whole staff participated in the “Infolink: information skills” unit of the Information Studies and Teacher Librarianship course from Auckland College of Education. The model that underpins Infolink is “Action Learning”. This concept provides a framework for students to develop independent, self-reflective information skills, monitor themselves, and work with others. It was a beginning of a move to upskill students in taking responsibility for their own learning.

During 2000 and 2001, staff also attended workshops on Bloom’s Taxonomy of Thinking, “multiple intelligences” and Glasser. In 2001 the focus was on identifying ways to enhance or improve teaching and learning practices, to more closely reflect the school’s four values.

Staff felt the school’s values and culture were reflected in the interactions between teachers, between students, between teachers and students, and in the school’s relationship with parents in the community. These values were also reflected in classroom teaching and learning. For example, as part of the “virtues” programme, a new virtue (for example, “generosity”), is introduced fortnightly to students across the school. The virtues programme was used as a resource to teach the language associated with the way people behave. Students and teachers discuss what the virtue means, and scenarios in which the virtue might be applied in terms of the four core values (i.e., respect for self, respect for others, respect for the environment, and social responsibility). Parents are made aware of the current virtue through school newsletters.

The development of environmental education in the school

The school’s involvement in environmental education had initially evolved from the immediate past principal’s vision for the school. Environmental education began to develop when the school was undergoing many changes in the mid-1990s. A primary concern for the principal at that time was to ensure that the school met the needs of students from local families, particularly local Māori families. Compared to middle-class families in the area, or families from outside the area who sent children to the school for its special character attributes, local families had maintained a continuous presence at the school.

Early on I had a commitment to making the school work for Māori. If it didn’t work for Montessori or urban Māori, they have choices. Local people do not have that choice. Therefore it was important that it worked for them, and would make a difference for them. (Former principal)

The former principal felt that making greater use of the bush environment was important for local students. There had been incidences of vandalism in the reserve, and some local children seemed to have little sense of connection or responsibility for the bush environment. Making the bush a more integral part of the school’s activities was seen as a way of re-establishing this connection.

The school’s environmental education was also stimulated by a physical need to redevelop/re-landscape its grounds. The release of the film *The Secret Garden* (1993) provided inspiration for the principal’s Year 5–8 class to dig a garden in the corner of the school field as part of a technology unit. One teacher (now the environmental education co-ordinator) had a strong passion for gardening, and was asked by the principal to establish and run a school gardening club for
The kids started to have a garden in the lump of clay. Then we started to think why don’t we have something proper? (Environmental education co-ordinator)

The next step was to have a small nursery built for the gardening club (see p.16). The environmental education co-ordinator described the subsequent development of the school’s environmental education activities in terms of an ongoing process of developing initiatives, reflecting on them, and responding with the logical “next step”. For example, compost bins were built in the nursery, so the school developed a system for collecting food scraps throughout the school to add to the compost. This stimulated the establishment of paper recycling in all classrooms.

Teachers described many other examples of environmental education activities that children in the school had been involved in. For example, through the gardening club, the use of the neighbouring bush reserve, and the school re-landscaping, a strong focus on native plants developed throughout the school. During the school re-landscaping, each student planted and cared for their own native plant in the school gardens. In another learning activity, children in the environmental education co-ordinator’s senior class researched and developed resources about the native plants in Otari Bush. The teacher developed a brochure to send to other schools inviting them to come and be guided through the bush by her students:

Select a track, and they will guide your students to the plants that they have researched and developed their own resource material to…. They can also introduce your students to other facets of our school’s environmental education programme, like our nursery, worm farm and composting (“Want a guide to Otari Bush?”— pamphlet developed to send to schools).

The role of Māori knowledge and values in the school culture

The former principal felt that the school was committed to being bicultural, and that acceptance of this was quite strong, though not universal, in the school community. The current principal felt it was hard to tease out what were uniquely Māori influences in the school’s culture, versus parts of the school’s culture which also happened to reflect Māori values, for example, having whanau/mixed-age groupings in each class, which was also a part of Montessori teaching philosophy. Although no staff from the immersion strand were interviewed, other staff thought that Māori knowledge and values were reflected in the school culture in a number of ways, for example:

- all the classrooms were named after native trees and birds (Māori names);
- the way the school welcomed visitors (e.g., with Pōwhiri), or managed certain events (e.g., dedication/blessing of new buildings);
- the teaching of te reo Māori in the Montessori and mainstream strands, and an emphasis on staff and students learning how to pronounce Māori words correctly;
- the whole school coming together for kapa haka and waiata;
- not wearing shoes in the classroom; and
that it was very normal for children outside the immersion classes to hear Māori spoken in school.

Teachers in the mainstream and Montessori strands also said that immersion teachers shared Māori knowledge and values during syndicate curriculum planning across the strands.

**Views about education**

All teachers interviewed thought that establishing a lifelong love of learning was a critical purpose of education. The teachers also felt that it was important for children to learn about who they are, what their own strengths and weaknesses were, and to develop critical thinking that built on their own self-esteem and sense of identity. Teachers thought that the most important things for students to learn at school were:

- literacy and numeracy;
- values, and why they stand by their values;
- that learning is a lifelong process;
- recognising and building on their own strengths and weaknesses;
- peace, maintaining relationships, and valuing difference and diversity;
- developing questioning, critical thinking, and problem solving skills; and
- recognising that knowledge is integrated, and not comprised of separate subjects.

The teachers felt their beliefs about education had been shaped by teaching experience, by their personal and professional backgrounds, and by professional development they had participated in over several years:

…[professional development] about teaching methods, teaching styles, reflective teaching. Challenging us to think beyond the square. It’s been an ongoing thing. Our values are developed and reflected on constantly.

(environmental education co-ordinator)

There was an emphasis on whole school professional development in the school, for example, for the “virtues” programme. Different staff had also participated in professional development as co-ordinators of specific curriculum areas such as technology and health/hauora. The environmental education co-ordinator was the only staff member to have participated in environmental education professional development.

**Environmental education at Otari School**

**The policy status of environmental education in the school**

Although the school does not have an official policy on environmental education (as it does, for example, for education outside the classroom), the environmental education co-ordinator
described environmental education as “interwoven” throughout the school’s charter and strategic plan. One of the seven aims and objectives in Otari’s 1999 school charter is “Environment”:

We want to foster an appreciation of the natural environment, in particular that surrounding Otari school. We do this by:

- Becoming familiar with the environment, and using it wherever possible in children’s learning;
- Encouraging individual and community responsibility for the environment, and an awareness of conservation issues;
- Promoting the use of Otari-Wilton’s bush in the school’s programme (Otari school charter 1999).

The curriculum status of environmental education in the school

Environmental education features in the school’s long-term and annual curriculum plans. In 2001, the (then) principal introduced a new method for developing four year-long term curriculum plans. In the plan, the school’s teaching programme each year is linked to one of the four “elements”: Water, Earth, Air, and Fire. The “four elements” plan draws strongly on the achievement aims of Science in the New Zealand Curriculum. The former principal felt that science was an important starting point for developing an understanding of the world, in order to develop an understanding of “cause-and-effect” and other kinds of relationships.

The plan requires science to be taught in at least 3 of the 4 terms, but allows for it to be taught within the context of other curriculum areas, including environmental education. In particular, the plan states that the “Living World” strand of Science in the New Zealand Curriculum is closely linked to the environmental education programme.

Using the year’s theme (e.g., “Water”), the syndicate leaders plan an overall programme for the four terms each year, with different curriculum areas being a “major” or a “minor” focus for the whole school each term. At the next level of planning, the junior and senior syndicates each plan their teaching, using a curriculum integration approach on a template based around Bloom’s taxonomy (see Figures 2-4 on pp.31-33). Teacher A commented that in planning for the curriculum there were so many areas they were “required” to do that environmental education was something that had to be intentionally woven in during planning.

Every year we have to do this many science, this many social studies, etc. So [in our planning] we have to look at it like, if we are doing science, how can we use environmental education?…. I think [environmental education and the learning areas of the NZCF] relate very well. They constantly complement one another. The difference here is that children know they are doing environmental education. (Teacher A)

She felt that the school did environmental education mainly because it was part of the school’s values base, and that if this was not the case, environmental education probably would not happen. Teachers A and B said environmental education was planned “right through” the curriculum areas, particularly science, social studies, and health and physical education.
The stream project

The school’s most significant whole school environmental education project had occurred the previous year, when “water” had been the whole year theme. There had also been a focus on embedding the concept of “cause and effect” into the year’s teaching plans. The school decided it would focus on a project based around the health of a local stream. This project enabled the school to pilot test an environmental education programme recently developed for schools by the Wellington Regional Council. The programme focused on awareness and protection of local waterways, and included material resources, as well as support from council staff. This relationship with the regional council stemmed from personal networks created during the environmental education co-ordinator’s facilitation training.3

For the environmental education co-ordinator, the stream project was a significant progression in the integration of environmental education into classroom teaching and learning.

For the environmental education co-ordinator, the stream project was a significant progression in the integration of environmental education into classroom teaching and learning.

This whole theme last year with the stream, my theme was to change practice and behaviours in a deeper way. That’s harder to do. You can set up compost bins in each classroom, but in terms of changing… you can raise awareness and change some people’s behaviour, but some people’s behaviour is more entrenched and it is harder to do. (environmental education co-ordinator)

The stream project began when Wellington Regional Council staff were brought in to work with students in a science unit on “stream life”. The regional council staff took students on a bus/tramping trip, so that students could follow the length of the stream from its origin, to the place where it was culverted under an old dump site, to the place where it ran through Otari Bush, and finally to the place where it let out into the harbour. Senior students learned how to do water testing, while junior students looked at what kinds of animals live in a healthy or an unhealthy stream. Two of the student focus groups spoke at length about the stream project the previous year, and what this had involved.

Last year we saved Kaiwharawhara stream. Well, we tried to help it. (Year 5/6 student)

The students remembered going with staff from the regional council to see a “healthy” stream, where they had used tools to look at water quality and identify the critters living in the water. When they went to do the same with their local stream, they found the water in their local stream was worse.

Some critters are picky, they only go in clean water. In that stream we only found the ones that didn’t mind. It wasn’t very clean. (Year 5/6 student)

The students also recalled that the stream contained too much algae, which stopped animals from growing because it blocked out the sunlight and gathered up all the nutrients.

[The health of the stream] was quite a lot worse. So we came up with all these ideas about what to do about it (Year 7/8 student)

3 Through the Ministry of Education environmental education professional development programme, facilitated by the Christchurch College of Education.
Next, the classes engaged in a technology unit which involved working together as a school to find out what was making the stream unhealthy, and what could be done to stop this from happening. Students said they had produced a video, leaflets, posters, and designs for fridge magnets to alert the community to the kinds of household activities which were damaging the local stream. Some of the students had been part of a group that went and presented their work to the regional council. With the help of the Wellington Regional Council, the Wellington City Council, and an advertising agency, the school was given a grant of three thousand dollars to have the fridge magnets commercially produced and distributed.

The junior syndicate focused on the portion of the stream that ran through Otari Bush. The students designed posters to tell people to take their rubbish with them, and not to pollute the stream. With the help of staff from the bush reserve, the children selected the best designs and these were made into signposts to put in the picnic area of the bush.

The entire school’s end-of-year production was based on the story of the local stream. Each class took a portion of the stream and developed a performance piece around it. One junior class began with the “big bang”, the creation of the earth, and the emergence of the water cycle. Subsequent classes enacted short scenes that looked at how consumerist habits led to the creation of waste, which eventually ended up at the rubbish dump, and how leachate and other waste got into the stream. The immersion classes performed stories about the native bush and animals in the reserves which the stream flowed through. Another class did a dance about the stream flowing into the harbour, and how it created an environment for new life and recreation. The senior immersion class performed a story about five friends who went fishing out on the ocean, but disturbed the children of Tangaroa because they did not take heed of the proper tikanga.

The stream project in the context of regular teaching and learning

Teachers felt that the stream project had been unusual to the extent that such a large proportion of the year had been spent on it. It was the biggest example of a project in which children were making many of the decisions.

It was one of the few areas where we used just about all of the curriculum areas…[for example] the drama that came out of it… It was fantastic. …in a project like that, to get the depth of understanding and exploration…(Teacher A)

Teacher B, who was in charge of the technology curriculum in the school, said the stream project was the first time she had done truly thematic integration. She felt the project had been more successful than past technology projects because it had started from a “real need”.

Students thought the project had been “quite fun”, and said it was “kind of different” to other things they had done at school.

It’s like hands on stuff, going around, testing the water, stuff like that. (Year 7/8 student)

We do a lot of ‘strange’ projects but we’ve never really done anything like it, we have done things hands on things…but not anything very similar [to the stream project].(Year 7/8 student)
Students said the stream project was different because they had come up with a lot of ideas themselves. The amount of school time spent on a single project was also unusual. Normally they might have a theme for a term, but in this case they had had the same theme for a whole year.

And another thing was that the whole school was involved. Usually it’s just one class, or the older three strands or the younger three strands, we don’t usually mix. (Year 7/8 student)

Students felt they had learned from the stream project.

It taught us a lot about the pollution around here. (Year 7/8 student)

They also felt they had learned about the importance of keeping chemicals, detergents, or rubbish from getting into storm drains. One Year 7/8 student said that it was important to make sure that other people were aware of these things.

That was the point of our project, with the fridge magnets. (Year 7/8 student)

**Environmental education goals for students**

In terms of the physical environment, the teachers hoped that environmental education in the school would give students a respect and appreciation of the environment, and would empower them to take action “for” the environment.

[in the stream project] They learned the power that people can have when they work collectively together on a local issue. That’s what is so important, not just the knowledge. It is the process they go through and how they can use that when they grow up. To care and talk about and be involved in environment issues. (Current principal)

The teachers felt that much of the stream project had been student-driven but also acknowledged that a lot of adult input had been required from parents, teachers, and council staff.

Two teachers discussed developing students’ understanding of sustainability through environmental education.

How much we take out/put in. Recycling, saving energy, water. Giving them the sense that things are limited, how can we share, and so on. (Teacher A)

The environmental education co-ordinator pointed out how this occurred on a local scale, through the collection of foodscraps for composting.

The really good part is when kids are turning the compost bins, they see the full cycle. They see foodscraps, they see lovely worms through it. Look this is what it has turned into. They see the cycle of things, then they put it on to feed the plants. (Environmental education co-ordinator)
Resources and support

Role of the Guidelines for Environmental Education in New Zealand Schools

The environmental education co-ordinator said there were copies of the Guidelines in the school, and that she had taken staff through some parts of it, but not recently. She thought that other staff might not be familiar with the document. What she took from the Guidelines was an emphasis on action “for” the environment. She felt that this was reflected in the way teachers collectively planned their environmental education teaching, whether teachers were explicitly aware of this link to the Guidelines or not.

Teacher B had not seen the Guidelines. However, she did describe environmental education in the school as “ideally” being learning “in” the environment, “about” the environment, and “for” the environment. Teacher A had looked at the Guidelines but not used them for planning.

Because I don’t know how to quite use it in my planning…. You know some books you sometimes get workshopped with, and you can see rather than picking it up and saying 'Oh, I can do this', I’ve never done it like that. Which would be a great way [to use it], if we spent time on it. (Teacher A)

This teacher felt that the document would be more useful if it had ideas in terms of topics and activities, rather than organising links to curriculum achievement objectives by strand and level (e.g., appendix two of the Guidelines). Both teachers regularly used the Hillary Commission’s Kiwi Outdoors resource. Both teachers felt this was an excellent resource, which gave ideas and lesson plans for using the outdoor environment particularly for health and PE, but also for social studies and science topics. Teacher A also said she used a lot of New Zealand-produced science resources, and thought that the immersion strand had some excellent science and art resources. Both these teachers thought it would be good to have more resources that gave ideas for environmental education topics and how these could be adapted into integrated classroom programmes.

Involvement with people/agencies from outside the school

The teachers felt positive about the involvement of the regional council in the previous year’s stream project. The environmental education co-ordinator felt that this had allowed the school to bring in expertise and resources, and was also important:

…for the children to develop the knowledge that there are people out there who are responsible for looking after the environment. We can think locally but [they also need to know] there are wider things happening out there. (Environmental education co-ordinator)

Another teacher thought a highlight of the children’s involvement with the council had been learning how to do things like phoning and faxing. She felt a highlight for students had been presenting the results of their study to the regional council.

It was so amazing for the kids to think that their proposal was taken on board and listened to by adults. What they got out of it was that they can make a
difference if something needs to be done. It is the same thing with the hauora team. They are still a bit suspicious: Can we really change things in the school? But they are going to give it a go. (Teacher A)

The only limitations teachers could think of in the use of outside people/agencies were primarily safety issues, or not knowing who was “out there” to contact for resources or support in a specific area.

**Outcomes and impacts of environmental education at Otari School**

The environmental education co-ordinator felt that environmental education had a close relationship to the school’s values and philosophies about education.

It’s integral I think. It’s all about what we value, the environment is part of what we value. The whole environment. And because of the way we do interdisciplinary planning, curriculum integration, that [environmental education] is woven in in many ways in the curriculum and across the school. (Environmental education co-ordinator)

Students had a range of views about why they did environmental education at their school. One said that it was because their teacher liked gardening. Some students thought the gardening club was useful preparation and would help them if they wanted to help with gardening at home or have their own garden. Several students referred to the bush around their school as an important reason for doing environmental education at Otari School.

Because we’re surrounded by heaps of bush, it would have been appropriate to learn about our environment… not just ‘don’t litter’ and ‘look after it’ but know about the trees and stuff. (Year 7/8 student)

Students talked a lot about what they thought people could learn to do for the environment, like stopping littering, preventing rubbish and run-off from going into streams, recycling foodscraps to feed worms and put on the garden, and cutting down on the amount of waste going into landfill. The students suggested that, if other schools were also to adopt these practices, it would have a lot more impact on the New Zealand environment.

Otherwise our small patch of land will be the only stuff affected… if all the schools in New Zealand did it then all those places would be clean. (Year 5/6 student)

Teachers described the following as positive outcomes of environmental education:

Because it’s holistic, it’s given a common thread, a common purpose across the school. (Environmental education co-ordinator)

Awareness on the part of students, staff, and the community (parents). Parents know what is going on in the school in terms of classwork, and the gardening club. (Teacher)
As a teacher it is very satisfying to know that students take away important things for their life – what it means to care for the environment, what it means to care for each other. (Teacher B)

**Relationship to other activities in the school**

Teacher A was responsible for co-ordinating the school’s hauora team. The hauora team was part of the school’s commitment to being a Health Promoting School. This involved training a group of Year 7 and 8 students to represent the other students in the school, and to work with a larger group comprised of a BOT representative, a teacher, the principal, a parent, and a member of the health department. The group’s role is to carry out projects to improve the physical, emotional, psychological, and spiritual health of the school and its students, based on needs identified by the students and other members of the school community. Teacher A thought that there was a lot of overlap between the hauora approach and environmental education. She thought of the “environment” as including physical, social, and emotional environments. The environmental education co-ordinator also felt there was an overlap between environmental education and the hauora initiative.

> When I did environmental education facilitation [Christchurch College of Education professional development], learning about the Guidelines, the ultimate thing to do was to take action for the environment. Now with the Health Promoting Schools thing I see the environment as a ‘total’ environment…the health/Hauora of the whole school. The emotional health, the psychological health, as well as the physical health. Acknowledging it in a very holistic way.
> (Environmental education co-ordinator)

The environmental education co-ordinator hoped that in the long term, environmental education would help the children move from awareness to taking action. However, all the teachers acknowledged that it was difficult to be certain about the impacts or long-term impacts of environmental education on students. Their impressions about the impacts of the stream project and the gardening initiatives came largely from anecdotal observations, classroom discussions and drawings, and informal feedback from students or their parents. For example, teachers used the bush reserve regularly for different learning activities, and said that on these occasions students would point out native trees and plants or draw the teachers’ attention to pieces of litter in the stream. However, all teachers also noted with irony that there was an ongoing problem with litter in the school grounds.

The students were asked what they thought they would do if they moved to a new area and discovered that they were living near a polluted stream. The students thought it would be more challenging to take action as a single individual.

> With one person it’s a bit harder, than if you’ve got a whole school. (Year 7/8 student)

> …and if you had a group of friends you might want to do something. And we got funding, sponsorship from the regional council to make fridge magnets. We

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4 Health Promoting Schools is an initiative of the World Health Organisation.
got $3000 to make the fridge magnets. So you would need money if you wanted to do a project like ours. Or you could just make posters and stick them up if you were in a small area. (Year 7/8 student)

When asked who they would approach for help in such a case, one group of students said they would go to their teacher, or find some sort of council or “environmental place”. A student from another class said that there actually had been a stream near her house which had been polluted and had “smelled like petrol”. She and her family rang up the regional council about it—something she said she wouldn’t have thought of doing if she had not been doing the stream work at school.

Even if I didn’t know what to do I wouldn’t have thought of ringing the regional council because I didn’t actually know such a thing existed. (Year 5/6 student)

Without the school we wouldn’t have been able to do all that stuff. (Year 5/6 student)

Challenges and sustainability issues

Teachers and the principal felt that challenges for environmental education in the school included:

- “walking the walk”, not just “talking the talk”: that is, managing the school in a way that met the school’s needs but was not inconsistent with good environmental practice;
- time constraints and the demand to cover all the curriculum learning areas;
- having the appropriate knowledge and skills to teach environmental education;
- managing and maintaining environmental education projects; and
- one person (the environmental education co-ordinator) carrying most of the responsibility for environmental education within the school.

All staff thought it was important to have someone with a curriculum responsibility for environmental education within the school. The personal dedication and environmental education strengths of the current environmental education co-ordinator were noted as a vital component of the school’s current success in environmental education. Other teachers expected that if the current environmental education co-ordinator was to leave, someone else would be appointed to take on this portfolio. Ideally, the environmental education co-ordinator hoped to help children themselves take on responsibility for things like the garden nursery, so that they could pass their knowledge and skills on to other children.

The future of environmental education in the school

Ideally, teachers said they would like to see a more formalised place for environmental education in their curriculum planning and teaching within the school, and more opportunities to do integrated topics where they could spend time on one theme and give it fuller, deeper coverage.

I’d like it to have a structure, so that when we are doing our long-term plan we can actually see under all the curriculum areas, we also have environmental
education … and we can show the links in a more formal way, rather than an informal way like we’re doing. What I think would be great about that is we can revisit them, and see how that has been, so 2 years down the track we can come back to that and see… how much further can we take it, if we did it across the school as we do with the other subjects. (Teacher A)

One teacher said it would be helpful to have more professional development or opportunities to see ideas for topics, units, or activities she could do in the classroom. In the long term, the environmental education co-ordinator hoped for greater sharing of the responsibility for environmental education among staff, and also thought it would be wonderful to have an environmental education assistant to work with children and to do some of the grounds maintenance “donkeywork”.

Someone with a love of the environment who can pass it on [to children]. That would be their role - as a classroom teacher I don’t have the time to do that for all the children in the school. (Environmental education co-ordinator)

Note: Figures 2-4 on the following pages show the curriculum planning templates that were used at Otari school for terms 1, 3, and 4 in 2001.
Term 1: “Where does it come from? Where does it go?” (Water)

Essential skills
Communication, Co-operation, Physical, Information

SYNTHESIS

Devise a filtering device

Children will recall reasons why we need to drink water and why hygiene is important

Tikanga Māori

Make a comparison of the Māori view of awa and blood in our bodies

ANALYSIS

Children will recall the terms evaporation, condensation, precipitation and transpiration

Division of bush into habitats and show what lives there

Explain the different forms water takes in the environment

APPLICATION

Draw a chart to monitor water usage over a day, week. The chart needs to indicate when amounts increase

Draw and label the water cycle

Research influence of advertising and decide whether school should sell fizzy or fruit juices

Make a model of a watershed to show how water flows

KNOWLEDGE

Children will recall the various groups who use the bush. Explain why they are important to them and list what risks to the bush

Construct a poster that explains why the bush is an important place to us

Term 1 syndicate curriculum plan (Template devised by Brett Clark)
Term 3 syndicate curriculum plan (Template devised by Brett Clark)

**Knowledge**
- Describe why chosen materials and resources are suitable for the plan.
- Describe the management of water and practices for conserving our waterways.
- Explain consequences of deterioration of health of local stream.
- Cause/effects
- Interpret appropriateness for desired audience.
- From different perspectives.

**Comprehension**
- Relate how movement and temperature affect a stream’s health.
- Illustrate how waste is disposed of.
- Examine how our local stream reflects past, present and future visions of the local people.

**Analysis**
- Investigate effects of rubbish dumps and possibilities of recycling, its positive and negative effects.

**Application**
- Set up how they will evaluate their product, (over what time frame?)

**Synthesis**
- Design and implement a plan of action, using suitable means of communication.

**Evaluation**
- Justify involvement in a local environmental project.

**Essential skills**
- “Where would we be without it?” (Water)

Figure 3
Term 4:
“Coming together”

Essential skills
Communication, Co-operation,
Physical,
Information

Constructing item for
concert

Describe healthy practices
Interpreting characters/scenarios

Plan a personal
fitness programme
Suggest improvements
for waste disposal
Create, compose and present
concert item

Describe how the health of the local stream
contributes to our well-being

Assess personal
responsibility taken in
making safe choices

Examine personal routines we have now
Explain body requirements: food,
routines, exercise

Evaluate fitness
programme

Evaluate fitness
programme

Figure 4
Syndicate curriculum plan (Template devised by Brett Clark)
SNAPPER POINT SCHOOL 5

School profile

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Background

School context

Snapper Point School is situated in a small settlement on the coast. It is squeezed between a main road and the sea. The beach is considered part of the school playground. The school is within walking distance of extensive native bush and a reasonable-sized stream. The nearest large town is 20 minutes’ drive away. The school has been on the site for a hundred years.

The school draws students from a diverse community. It has recently been moved from decile 4 to decile 6, and within the school community there is a wide range of socio-economic background. According to the principal, the school roll includes students ranging from children of wealthy foreign investors who run their businesses from home, to people who are opting for a different lifestyle. Many parents enthusiastically support the school’s environmental focus as it fits in well with their own reasons for living in the area. Some of this translates into active support of programmes. There are some students who travel to the school from outside the area because of the school’s focus on the environment. The local Māori community actively support the school.

Environmental education at Snapper Point School

At Snapper Point School an environmental “flavour” suffuses almost every aspect of school life. Classrooms are named after trees and whanau (house) groupings are based on environmental names, i.e., Papatūānuku, Tāne Mahuta, Tangaroa, and Ranginui.

Environmental things are embraced all the time as part of our language and what we believe and what we do. (Principal)

5 Pseudonym.
The school engages in a number of school-wide environmental activities. Many of the school’s environmental education activities are seen as ongoing rather than based around specific short-term projects. This is deliberate and intended to increase the sustainability of the activities. For example, the school is working towards a zero waste approach to managing its rubbish, and has a compost system and a worm farm. A trailer has been donated to the school for recycling inorganic waste. The school is also involved in the GLOBE project.

The beach plays a major role in the philosophy of looking after the environment. Students are regularly involved in cleaning up the beach, collecting resources from it and using it as a space for learning and play. About eight years ago, the school developed a Marine Education Centre. The centre is housed in a separate building on site. The intention was to provide a place where other schools and community groups could come and make use of the local environment and supporting resources developed by the school.

The school is currently involved as a pilot school in the Ministry of Education environmental education professional development programme.

**Case study methods**

An initial interview with the principal was followed by a guided tour of the school looking particularly at aspects related to environmental education and meeting staff. Interviews were then carried out with two of the staff individually and with two students together. Relevant documents were looked at and copied where appropriate.

**Participants**

The principal took up the position 18 months ago. She has a keen interest in the environment and in outdoor activities and takes an active role in promoting environmental education in the school. In her previous position as principal of a small rural school she took part in the Ministry of Education environmental education professional development programme. One of the teachers (Teacher B) interviewed has taught in the school for eight years and has been responsible for the Marine Education Centre at the school. The other teacher (Teacher A) is in his third year at the school. He is currently the school’s environmental education co-ordinator. The two students interviewed are in Year 6 and Year 8. One is the school’s Environment Officer. Both are "Globeteers".

**The school culture**

The school has a strongly student-centred focus. It emphasises building a positive climate for learning both inside and outside the classroom. Students are encouraged and challenged to achieve in a safe and enjoyable environment. Working together is encouraged. Considerable importance is placed on including the community, particularly parents, in the running of the school. Values education forms an important part of the ethos of the school. There is a strong emphasis on integrated teaching.
A theme of awareness and respect for the environment underpins much of how the school operates. In part this grows out of an appreciation of the unique and valuable opportunities the local environment provides. The students and staff recently developed a school statement about the environment.

Snapper Point School,

An “Environmentally Friendly” School.

Where we learn, respect and enjoy the world around us.

Caring and Sharing

The emphasis on caring for the environment is evident in the day-to-day running of the school, for example, in the language used around the school, and the school’s approach to recycling rubbish. Staff are encouraged to make use of the local environment in their teaching wherever possible and several do.

The role of Māori knowledge and values

Māori language, particularly names, is used in a variety of contexts within the school which brings a familiarity through everyday use for the students.

In environmental education, as in other areas, the incorporation of Māori knowledge and values is left up to the teacher. The most common approaches involve the use of Māori language, discussion about how Māori did things traditionally, and exploring how they respected and interacted with the environment. There are no specific requirements for the inclusion of Māori knowledge and values. Currently the school is trying to identify and collect relevant local stories that could support classroom programmes.

The Māori community has expressed its view that the environment is very important to them so the school philosophy sits quite comfortably with their views.

The role of the community

The community is very supportive of the strong environmental thrust of the school. Some of this translates into active involvement in fundraising and other activities. The school similarly tries to help with community initiatives. During the study a number of members of the community were in the school, both visiting and in specific support roles. This appeared to be quite common.

The school board is very supportive. The parents and community have been kept informed about what is being done to develop environmental education in the school over the last eighteen months and this has been well received.
Environmental education at Snapper Point School

The origins and development of environmental education in the school

Those interviewed all said that Snapper Point School has had a long involvement in environmental education through the use of the local environment.

We’ve always done it in the sense that we use what is around us, we’ve done rock pool studies. What has changed is that now we bring it into social studies, language, maths. (Teacher B)

The most important initiative in the recent past has been the development of the Marine Education Centre. There have been a number of other environmental projects initiated by interested staff but most have not been sustained.

The current principal saw the Ministry of Education environmental education professional development programme as an amazing opportunity for Snapper Point School with its unique setting. An application was made and they were accepted as a pilot school in 2002. Since then the school has taken the environment to heart. Rooms are named after trees and no longer given numbers. Children identify with their tree and there is a range of ways in which this is extended, for example, through tree planting and specific activities when in the bush on field trips.

Management structures to support environmental education

Snapper Point has a fairly flat management structure. There are specified positions in environmental education but no administrative structures (for example, budgets) specifically dedicated to environmental education.

The principal is actively involved in the leadership of environmental education although this is mainly informal and arises out of personal interest rather than specific responsibility. Teacher A is the environmental education lead person, and has responsibility for environmental education in the senior school. Teacher B is the Marine Education Centre co-ordinator and looks after environmental education in the junior school.

The principal is passionate about the environment both for recreation and as important for community well being. As a result she is a strong driving force for environmental education and encourages the inclusion of environmental education in all aspects of school life and encourages teachers to be involved in environmental education.

Both teachers interviewed saw the role of the principal as important.

The principal sets the tone for the school. (Teacher A and Teacher B)

One teacher commented on how previous principals have supported environmental education in different ways depending on their own strengths and interests. For example, the principal eight years ago had the vision for the Marine Centre and got it built. It remained a focus for about five years until the change of principal.
Staff meetings were seen as important potential forums for discussing issues but were seen to be more about clarifying details related to specific curriculum plans and goals rather than professional development and sharing of ideas that work.

The policy status of environmental education in the school

The school has nearly completed a draft implementation plan for environmental education. The plan has been developed by the staff, after a considerable amount of discussion, through the school’s involvement as a pilot school on the Ministry of Education environmental education professional development programme.

The school’s principal has a philosophy that policy documents should reflect practice and should not be written to drive practice.

> A lot of people are really passionate about the environment here and we want it to be a passionate positive thing. Forcing it into something doesn’t actually work. You need to actually build it up around you as part of your whole culture. (Principal)

> It is in most of our language and most of the things we do but it’s not ... we haven’t got six pages worth of heavy written up policy that doesn’t mean anything to anyone, to be honest. (Principal)

There are links with other policy areas such as behaviour management which encourage respect for others, property, and the environment. For example:

> …if we have a right to enjoy the beach then we also have a right to let others enjoy it also. (Principal)

The curriculum status of environmental education in the school

Environmental education has no specific status within the curriculum but because of the strong environmental focus adopted by the school, it is seen as being widely incorporated into the curriculum anyway. All staff use long-term and unit planning sheets that include a box for writing links to environmental education (and a box for writing links to ICT). In planning environmental education, the learning objectives are not specified as environmental education objectives but as learning objectives from other curriculum areas.

> Environmental education is meshed into the existing programmes and environmental outcomes in existing curriculum documents are recognised and used. (Principal)

One teacher said that environmental education is at the heart of everything he does; it runs right through the curriculum.

The school’s curriculum programme runs on a two-year cycle. The first term of each year has a focus on the environment. Term 1 of the first year is based around the theme “Our Place” and the following year is based on “The Ocean”. The themes have foci that relate to the environment in a number of ways and so encourage teachers’ involvement in environmental education. Other term
themes can also be linked to the environment. The school runs a series of electives, some of which have an environmental theme (for example, fishing).

The local environment is seen as a great resource, especially the beach which provides resources for activities like sketching objects, studying organisms that live on the beach, and looking at rubbish. Teachers are encouraged to take children out into the local environment.

**Involvement in environmental education professional development**

Recent staff meetings have focused specifically on professional development in environmental education. This was seen as helpful in getting staff on board with some of the projects like the worm farm and the zero waste idea. It also enabled people to see how easy it is to implement environmental education in a location like Snapper Point. It helped bring staff together although it was noted that several teachers still had some way to go.

Some may think they are doing it but really they only scratch the surface – the ‘for, in and about’, they just wouldn’t look at it that deeply. (Teacher A)

The support of the environmental education professional development facilitator was seen as highly beneficial. Being part of the Ministry of Education environmental education professional development programme was seen as positive by those interviewed, particularly through the developing of a common language by talking about environmental education and bouncing ideas off one another.

**Intended learning in environmental education**

When asked about the intended learning for students in environmental education, all those interviewed, both staff and students, talked about it in general terms. Much of what was said related to values and awareness. Some examples include:

Look after it as a taonga for future generations. (Principal)

Children tend to spend their time in front of TV and computers so they forget to smell the grass and look at the trees … I guess if there’s anything that you want [students] to get out of environmental education, it’s to get them to go outside and turn over that rock and ask … ‘Why is that crab under that rock there?’ (Teacher B)

We have a part to play, not just be passive and just put our rubbish in the bin, we can create projects to get out and do things to improve the environment … the capability of knowing that they can make a difference. (Teacher A)

When asked about how they keep track of students’ learning in environmental education, all said that they hadn’t really considered it in any detail but that they probably should. They found the idea difficult.

…[environmental education is] embedded in what we’re doing but I don’t think we’re actually assessing anything. (Teacher B)
Teacher A monitored the students’ environmental education learning in terms of their enthusiasm. Children seemed to be more excited about the environment and older kids were often seen helping the younger ones. However, Teacher A said he would like to see “a little bit tighter” monitoring of students’ environmental education learning, for two reasons: so that he could justify what was being learnt; and to provide a useful focus for staff development in the future. This view was echoed by Teacher B. The box in the planning sheet was seen as useful but it appears that what does (or should) go into it may not be well understood by teachers. Being specific about learning outcomes was definitely seen as difficult.

**Specific environmental education practice(s) at Snapper Point School**

**Marine Education Centre**

The Marine Education Centre is a dedicated building incorporating a storage shed and a small teaching room. It has a collection of kayaks and other resources that are used by the school and from time to time by other schools. The centre was built in the 1980s after considerable community fundraising and support. There is a vision for the centre to be a community resource and to be used by other visiting schools. However, this has proved difficult without the appointment of a person to administer the centre. Few staff currently use it. There are plans for it to be redeveloped and possibly resited.

> It’s tucked away out the back and tends to get stuff stored in it. (Teacher B)

**Zero waste approach to managing rubbish**

The school has adopted a zero waste policy which has stimulated the development of a number of ongoing activities. The first of these was the development of composting, followed by a worm farm. Both of these occurred under the guidance of a keen teacher. They have also looked at getting a shredder but are not sure what to do with the shredded paper as their current market, the local pet shop, can only take a limited amount. There is no specific connection between this and the zero waste strategy supported nationally although many of the ideas appear to be similar.

**Involvement in specific events**

The school takes part from time to time in national events and uses them to provide an environmental focus for teaching and learning. Key events recently include Arbour Day, Seaweek, and Clean Up New Zealand.

**Arbour Day**

The school has had a long involvement with Arbour Day, but one specific tree planting unit is worth mentioning. The school wanted to plant pohutukawas to support Project Crimson, but Transit New Zealand was less than encouraging because of the nearby state highway, so the children contacted the Department of Conservation (DOC) for help. DOC found that a local prison had 60 root-bound trees that they didn’t want. These were sent to the school. Each student adopted a tree for a couple of weeks, keeping it by their desk and carrying it around school, even to assembly. The class discussed where they could plant their trees. They advertised locally and
found someone who had a lifestyle block and wanted some planting done along a driveway. The owner provided morning tea and the students planted their trees there. They have since been back to see how their trees are faring. The unit went so well that the teacher wanted to make it an annual event.

The students described this unit particularly when talking about what they remembered as environmental education.

GLOBE Project

The school is involved in monitoring the atmosphere and also weekly sea monitoring and river monitoring as part of the nationally co-ordinated and resourced GLOBE Project. A team of senior students called the “Globeteers” runs the programme. It is extended beyond simply monitoring to looking at what the data mean in terms of changes in the local environment.

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The two students interviewed gave lengthy and enthusiastic descriptions of what they did and said that they found learning how to handle the equipment correctly and work with the data was valuable for them. They are quite familiar with GLOBE and how it is connected around the world and with how the measurements are done. They noted how they had to use mathematics in order to deal with the data they collect.

No ongoing links have been established with other GLOBE schools at this stage although there has been brief communication with two overseas schools.

Badges

The school has badges of office for students showing leadership in looking after the environment, including one for an environmental officer. This was started to help raise the self-esteem of students and raise the profile of environmental education. The student environmental officer often
talked at assembly about environmental issues. There is an environmental award presented at prize giving.

The principal wanted to link up with the Auckland Regional Council environmental awards for schools at some time in the future.

**Biological monitoring**

Some classes had been involved in counting the cockle and pipi beds. This was apparently rather unsuccessful (as very few were found) but the idea of tracking populations was still seen as potentially worthwhile in the future, perhaps of other organisms. Monitoring of fish stocks was also a possibility.

One of the senior classes was involved in looking at changes in the coastline through a series of digital photos taken weekly which show the effects of environmental disturbance on the local coast.

**Outdoor education**

There is a regular school camp for Year 6–8 students in the Ureweras. This involves students in a whole range of environmentally focused activities based around the rivers and the bush. This is seen as beneficial as the environment is quite different from the local bush which is also well used. It builds on a bush camp for Year 5 students that uses a local camp.

**Sea secrets**

This is run by an enthusiastic teacher as a lunchtime club for interested children of any age. They do a whole range of activities linked to the sea and the beach including beach cleanups, collecting interesting things washed up, and monitoring changes in the coastline.

**Role of the Guidelines for environmental education in New Zealand schools**

All staff interviewed showed a clear recognition of the general thrust of the *Guidelines*. The staff have spent quite a lot of time working with the *Guidelines* as a result of being involved in the contract. The *Guidelines* were used in developing the draft implementation plan. There was a feeling that people were fairly comfortable with the "in" and "about" but not with the "for".

…we do a lot of in and about; doing ‘for’ is much, much harder. (Principal)

The *Guidelines* were not used at all for specific teaching planning, though most teachers try to use the language of the document. Unlike the learning objectives in other curriculum documents which were seen as setting specific requirements, Teacher B said the *Guidelines* tends to “give a pat on the back” by providing a framework within which to recognise the environmental education in existing practice rather to drive environmental education.
Involvement with people and agencies from outside the school

A number of organisations have helped with specific projects although few have an active ongoing relationship with the school. Close links have been established with the Department of Conservation through a staff member’s husband, and Department of Conservation staff have come in often to talk about specific issues and provide a lot of resources. The council also provides a source of resources and is quite supportive. Project Crimson has been helpful. MAF helped with a unit on Kai Moana, providing resources and information. The Regional Council was very helpful until a key contact there left. Some local businesses have also been very supportive with funding and making their facilities and expertise available to the school. A local Coast Protection Society funded the Zero Waste project undertaken by the school, specifically to buy the trailer for recycling.

Challenges and sustainability issues

The future of environmental education in the school

The principal and teachers A and B hoped to see environmental education embedded more fully and integrated more effectively in the coming years:

…[with] children all very much aware of it as an integral part of what school is about and what is being done in various activities/projects. (Principal)

Teacher A felt it was also important to ensure environmental education was explicitly written into teaching plans. Teacher B and the principal also wanted to see the Marine Education Centre fully functional so that it could be used by Snapper Point and other schools. Having such a facility was seen as a drawcard for the school and the area.

People from around the world would come to visit having heard about what was going on … schools would be booking to come and use the facilities for a variety of studies and outdoor activities. (Teacher A)

The principal and both teachers acknowledged that environmental education was dependent on the input of key people. If the key players moved away from the school, it was felt that there would be a change (or a decrease) in the school’s involvement in environmental education.

Staff

A number of constraints that work against effective implementation of environmental education were mentioned. Many of these related to the views and attitudes of other staff members.

Getting everyone on board is the biggest hurdle. Especially with primary teachers, there is the feeling that its just another learning area to try to fit in and they are already struggling to cope with what they have got. (Teacher B)

Teacher B in particular felt that it was frustrating when staff as a whole agreed to do things like the worm farm and the compost but then left it up to one teacher to make it happen. Teacher B also noted that people who are passionate about the environment sometimes find it difficult to
work together towards a common goal. Working with a team with different agendas sometimes meant people pulling in different directions. It was suggested that this might be a characteristic of people working in environmental education where people tend to have quite strong views. The importance of discussion in establishing a culture and common understandings was noted.

...some people still roll their eyes and say 'Here we go again.' (Teacher B)

One teacher noted that she had become frustrated in her position over time. There was an indication that maybe enthusiasm wanes in a co-ordinator’s role after five or six years, particularly when the role involves enthusing others. It was noted that it is very difficult to do both a co-ordinator’s role and full-time teaching. Provision of support appeared to be particularly important.

**Time and resources**

Time to work with the ideas and develop effective programmes was seen as important, particularly with the workload teachers currently have.

...there’s not always the time to do the detailed stuff. (Principal)

Lack of resources and not really knowing the quality of resources was also mentioned. One teacher talked about how lots of resources are being pushed on schools without much in the way of guidance or indications of quality.

**Use of the environment**

At times the environment itself can provide challenges for environmental education at Snapper Point School. For example, a current teaching unit on fishing:

...[is] not highly successful at the moment, because of recent floods. All the debris has cost us a fortune because all the hooks get all caught and snagged. So the environment plays a part in how we do things. (Principal)

Some of the school’s activities "in" the environment, for example, kayaking, have had to be carefully organised because of Health and Safety requirements,. This has placed some limitations on what can be offered to outside groups, including schools.
KAMO INTERMEDIATE SCHOOL

School profile

School type Intermediate
Roll size 635
Decile rating 5
Locality Suburban
Student ethnicity NZ European/Pākehā - 66%
Māori - 31%
Pacific - 0%
Other - 2%

Staffing full-time, part-time

Background

School context

Kamo Intermediate School is situated in a suburban community in a small city. The school has five syndicates of four classrooms each, and a sixth specialist syndicate for technology and other specialist subjects. The twenty regular syndicate classes each contain a mixture of Year 7 and 8 students, and students generally have the same teacher for both years. The school has a particular focus on adventure-based learning, and camps and fieldtrips are a regular part of the school year.

Environmental education at Kamo Intermediate

The school engages in various activities that are seen to be linked to environmental education, including school camps and trips, individual classroom units on environmental topics such as recycling or marine reserves, and special 3-day “intensives” such as “Envirokids”. Only three or four teachers and their classes have undertaken large-scale environmental education projects. These recent environmental education projects have won several environmental curriculum awards from Northland Regional Council, and gained a profile in both the local and national media. In 2001, the school became an environmental education pilot school through the Ministry of Education Guidelines for environmental education professional development programme. One teacher who was instrumental in establishing the school’s environmental education left teaching in 2001 to become a self-employed environmental educator, working primarily under contract to the regional council. She and another regional council staff member have continued to support the school’s environmental education projects.
Methodology

The principal and four teaching staff were interviewed. Teacher B was the environmental education curriculum co-ordinator in 2002, and Teacher C is the current environmental education co-ordinator. Teachers D and E have been involved in environmental education projects with their classes. Teacher F has taught some specific topics in environmental education but has not been involved in the school’s main environmental education projects. The two regional council staff were also interviewed, including Teacher A, the school’s original environmental education co-ordinator.

Ten students from three classes were interviewed in groups of three or four. Two students gave the researcher a tour of the school grounds to show and explain the results of the school’s environmental education projects. A variety of school documents was also collected.

The school culture

The school’s mission statement is:

• To provide the type of environment within which the children will develop to their best advantage.
• An environment that is stable and predictable, and supplies numerous opportunities for personal achievement.
• Affectionate personal relationships.
• Guidance without domination.
• Learning tasks that provide learning and satisfaction without frustration.

Relationships, leadership, and values are a clear component of the school’s culture and practice.

Relationships

The development of positive relationships is strongly emphasised throughout the school culture and is particularly important in the principal’s view.

That has a high priority in this school… unless relationships are sorted, and children learn to socialise and interact with the wider community, it doesn’t matter how well they can read and write and do maths, it’s not going to help them at the end of the day. (Principal)

Other staff reported that these positive relationships were realised throughout the school.

Supportive interaction at all levels in the school… from the caretaker, to the teachers, to the office staff, to the principal, anyone can ask any of those people for help….everyone is valued. (Teacher C)
Leadership

The principal reported that it was his personal aim to encourage and foster leadership at all levels in the school.

One big aim that I have is for the school to be a school of leaders…so that everyone has a say and a choice about what they do in this school. I’m talking about everyone, from the students…[to the] teachers… (Principal)

The principal’s leadership style was to “encourage teachers to do their thing” and to be supportive when teachers had an interest or enthusiasm in a particular area.

I think principals need to have faith that teachers know what they are doing and let teachers who have an excitement or an enthusiasm for something, go for it and not feel restricted by what may be curriculum policies, or something else happening in the school. (Principal)

Values

Several staff described the intermediate school age as a critical time for establishing children’s values, self-knowledge, and confidence.

The value base we have is to be accepting, supportive, and not to put people down. (Principal)

Instilling values of personal, social, and moral responsibility were also seen as important.

Dealing with these pre-pubescent teenagers, who are right at the cutting edge of beginning to make their own decisions, and then being responsible for those decisions. A lot of my work is about challenging them to think about their behaviour and make the correct choices. I do lots and lots of work on personal, social, and moral education. And it’s not called that, it just happens all the time, interwoven with the different disciplines. (Teacher B)

The school culture reflected in day-to-day life

The school’s culture is reflected in the day-to-day life of the school in a number of ways, in terms of both staff management and professional development, and the type of environment and experiences the school aims to provide for students.

The principal’s directive to teachers is that the first 21 school days of the year should be devoted not to curriculum coverage, but to the establishment of strong relationships within and among members of their classes. Full staff meetings concentrate not on curriculum issues, but on the school’s mission statement, and reinforcing teachers’ personal and professional growth. In 2003 the principal instituted “staff reflection books” as a further tool in staff professional development. As one part of the reflective process, teachers are asked to answer the question “What makes me a good teacher?” Their responses to this question are prominently displayed on a colourful noticeboard in the staffroom (see pictures).
Several other visual reminders of the school’s mission statement and views about teaching, learning, and leadership are displayed around the staffroom. One large wall collage created by staff is a “full values contract”, where each staff member puts forward the qualities and attitudes they want to see among the staff (e.g., honesty, resource sharing, positivity environment, risk-taking, flexibility). A display on another wall asks “What future skills do we need to encourage [in students]?” and answers this question with an extensive list (e.g., lifelong learners, reading and writing, communication, questioning and challenging ideas, adaptable and tolerant). Another board shows the school’s mission statement surrounded with photographs of students at work in the school.

The visual display of the school’s values and philosophies extends to other shared spaces in the school into many classrooms. Several “sayings” are embedded in the school culture, such as:

- To be the best you can be.
- Be the you you want to be.
- If it is to be it is up to me.

These mantras are printed on large posters in the assembly hall, and are reinforced during school assemblies. In many classrooms, students and teachers also devise and sign a class “values contract”, an idea which stemmed from a professional development programme that the school had been involved in. The class contract is the basis for discussion when students make inappropriate behaviour choices.

If someone does a put-down…we can say ‘Excuse me, which part of this contract have you just ignored or broken?’…because they are the ones that set it up in the first place, I believe it has more meaning. (Teacher B)
Another of the school’s innovations is “Channel K”. Channel K is a challenge to each person to make three positive comments to three different people each day. Students are invited to enter a school-wide poster competition to “advertise” Channel K, and their entries are displayed in various windows all around the school.

The role of Māori knowledge and values in the school culture

Although approximately a third of students are Māori, staff reported that Māori knowledge and values have no special or significant role in the school culture over and above the core values and philosophies which underpin the school’s relationship to students. Although there were Māori teachers in the school, at the time of the case study the school did not have a specific teaching programme for Māori language or culture (though there had been Māori language teaching in previous years). Māori teachers in the school were felt to provide strong messages within their own classrooms, but other teachers indicated this was not an area where their own personal knowledge and skills were rich. Teachers said they did try to include elements of Māori knowledge or culture within their classrooms, for example by having karakia before class trips, or sharing food.

Role of the community in the school

The principal said that the community was supportive of the school but did not have a large role in determining schools’ goals and policies. Parents were often involved in school trips, but the school had never had a PTA. This was thought to be because students were only at the school for two years, and so most parents’ involvement with the school was short. The principal felt that the school made it clear to parents what the school stood for, and what it valued, and when parents gave feedback, this was positive. The principal had an “open school” policy for parents, but suggested that the biggest barrier to parents coming into the school was the students:

…who, at this age, do not want mum and dad hanging around the classroom unless it’s to take them on a class trip. (Principal)

Views about education

The principal and teachers described the purposes of education as including:

- to develop lifelong learners;
- to make a huge difference in children’s lives;
- to take children from wherever they currently are, and to move them forward;
- to extend children’s interests as far as possible;
- to make children aware of their world; and
- to supply the next generation with the skills and attitudes necessary for society to progress.

…[the most important thing for students to learn in school] is the thing that I would call citizenship… looking out for each other. Ethics and morality.

(Teacher B)
Teachers felt the intermediate age was an important time for students to become independent workers, and gain confidence to attempt challenges and “take risks”.

I do heaps in my class to get them to express their own ideas, express themselves, rather than trying to follow peer pressure. (Teacher F)

All teachers encouraged students to participate in a variety of different activities such as sports, quizzes, competitions, and other extension activities offered in the school.

Giving them a wide range of experiences so that they can find what they are good at. And that whole thing about ‘being the best you can be’... so ‘if this is where you want to go, it’s up to you. We are able to provide the knowledge and guidance to get you there’, but the motivation basically comes from the child. With a few extra pushes! (Teacher E)

Several teachers said they often discussed their personal teaching goals and philosophies with their students.

I always share with them [the students] what I want to get out of my teaching career and how I want you [students] to be a part of it. (Teacher D)

Teaching students by starting “where they were at” was encouraged throughout the school. This was often challenging for teachers and required them to teach at multiple levels depending on students’ existing skills and abilities. Students’ skills and abilities could vary widely within each classroom.

The focus group students expressed similar views about education to those of their teachers and principal. One group of Year 8 students said the most important things to get out of school were:

…getting to know what you think about everything. Learning stuff you haven’t done at school before. Experiencing other things. Being confident to know that, if someone came up to you and asked you about something you’ve learned, that you’d be able to explain it to them. (Group of Year 8 students)

Environmental education at Kamo Intermediate School

The policy status of environmental education in the school

The school did not have an official environmental education vision statement, although Teacher B had drafted an environmental education overview which she thought might eventually become the school’s official environmental education policy statement. The overview refers to Environment 2010 (Ministry for the Environment, 1995) and the Guidelines for environmental education in New Zealand schools (Ministry of Education, 1999), and states that:

Our programme of planning and implementing EE at Kamo Intermediate School is to teach units which integrate areas of the curriculum and incorporate the essential skills and values of the NZ Curriculum Framework. We anticipate that by teaching EE students will be enabled to develop the qualities that are needed to ‘successfully create contribute to and participate in a sustainable future’.
The curriculum status of environmental education in the school

The school has a designated environmental education co-ordinator, and this responsibility has been held by three teachers during the past few years. However, environmental education is not planned, taught, and assessed school-wide in the same way as other curriculum areas. The school’s curriculum delivery is overseen by a curriculum director, who in turn oversees seven teachers who act as curriculum area leaders for each of the seven essential learning areas of the New Zealand Curriculum Framework: science, social studies, English, mathematics, technology, the arts, health and physical education (including education outside the classroom). An eighth curriculum committee oversees curriculum programmes for gifted and talented students. The curriculum area leaders work with a committee of teachers, one from each syndicate, to plan for teaching, assessment, and resourcing in each area. Environmental education is not directly included in this schema, though the principal suggested that it might eventually reach this status (as education outside the classroom had done). Each classroom teacher plans their own individual classroom teaching.

The origins and development of environmental education in the school

The school’s serious involvement in environmental education began approximately four years prior, when a teacher (Teacher A) applied for and won a Northland Regional Council environmental curriculum award for a unit of work on rivers. The award provided funds to “kickstart” environmental education in the school, and enabled two classes to go kayaking on a rural river and compare this to an urban stream they had studied. With the principal’s support, Teacher A became the school’s first environmental education co-ordinator/facilitator.

…the principal encourages ‘passions’, letting teachers go off on their passions, and mine was environmental education. (Teacher A, now at the regional council)

The first environmental education project: Islands of Life

In 1999, teacher A sought further environmental education assistance from the Northland Regional Council, and in 2000, she and a regional council staff member were selected to participate in the regional facilitator training through the Ministry of Education’s environmental education professional development programme. In 2001 the school became an environmental education “pilot school” and a second teacher (Teacher B) undertook environmental education professional development training. As part of the professional development, Teacher B was challenged to go away and teach a unit in environmental education. Teacher B chose to do a unit on recycling.

Then we had to do something ‘for’ [the environment], for our [pilot school] project. (Teacher B)

At that time a number of other things were happening in and around the school. For example, an Australian visiting teacher, the “wildman”, had come to the school and led several activities
including a bird count of species in the school grounds. At the same time, Teacher A and a teacher with whom she job shared (Teacher C) took their class on a trip to an island which had been reforested as a native bird sanctuary. These events stimulated a decision about what the school’s environmental education pilot school project would be.

We [Teachers A and B] were talking in the staffroom about what project we were going to do, and we both came up with the idea of attracting native birds back to the school grounds, and planting native trees to do that. (Teacher B)

The project was called “Islands of Life” and began in 2001. In May 2001, the two classes taught by Teacher B and Teachers A and C began to plan the project. The classes put together a proposal and presented this to the principal and Board of Trustees, and applied for another Northland Regional Council environmental curriculum award. Next, the classes worked together to identify the tasks and skills that would be needed to turn one small part of the school grounds into an “Island of Life”. Once these were identified a number of “action groups” were formed, and students chose which group they wanted to work in. Students’ roles could include everything from working with landscapers on design plans, to designing and building birdboxes and feeder tables, to co-ordinating sponsorship and media coverage of the project. Construction and planting took place in September and the “Island of Life” was officially opened in November 2001.

Figure 7

The first Island of Life

2002: Islands of Life 2

At the end of 2001, Teacher A left the school to become a self-employed environmental educator. The Year 8 students moved onto secondary school and the Year 7 students rolled over into Year 8. Since Teacher A had job shared with Teacher C, another teacher (Teacher D) became the co-
teacher of this class. Teacher B took on the role of school environmental education co-ordinator, and together the two classes embarked on a second environmental education project.

On the first day of school, Teacher B introduced the new cohort of Year 7 students to the Islands of Life, and explained that they would be involved in some sort of environmental education activity that year. The two classes discussed many ideas about what they could do for their own environmental education project. Collectively, the students decided that one Island of Life wasn’t enough.

We sort of wanted to improve the school, and to let the public come in to look at the work we had done. And other schools, to make them want to do like environmental stuff to protect their birds. Sometimes we get birds that you don’t really see, waxeyes and stuff like that. (Year 8 student)

Over two terms, students in Teacher B’s and Teacher C’s and D’s classes used the “action group” model to plan and organise the second Island of Life, meeting weekly or bi-weekly to check on their progress. Students said they had “a lot of input” throughout the planning.

If there was a question that came up, it wasn’t just the teachers that answered it, we all had an opinion. (Year 8 student)

All the teachers really did was help organise and help on the day… they were just like our guides. (Year 8 student)

The project included the construction of a worm farm and the landscaping, mulching, and planting of a hillside at the back of the school field. The planning took several terms, and two days were spent constructing and planting the second Island of Life. Students said they felt very proud of all the work they had done.

We really appreciated all the work we’d done, and other classes respected it. (Year 8 student)

You can just look out your window and see what two classes of kids and teachers accomplished…it was so easy to do something like that to make such a big difference in the school. (Year 8 student)
The students felt they had learned a lot from doing the project. For example, they knew more about gardening, tree planting, and birds and insects. Bird and insect counts done before and after the Islands of Life were constructed, and students’ own observations, confirmed that there had been a noticeable change in the insect and bird life on their school grounds. The Islands of Life had been the context for much of the students’ learning and one student described it as “the classroom outside the classroom”.

It’s also given us a skill for life…. It hopefully encourages you to do something big. (Year 8 student)

Students said they felt their confidence had been boosted through the project, because they felt like they really knew what they were talking about when explaining the Islands of Life to visitors. One student was invited to help the regional council present an upcoming workshop on environmental education, in the school holidays, for teachers from around the region.

I think it’s really important to have the kids talk about what they’ve done instead of us standing out there in front of the kids. (Teacher C)

Most of the students said the project had been quite different to anything they had done at school before.

[At my old primary school] there was this thing called the plantation, and they changed that up a bit… but the kids didn’t do much. It was just the adults, the teachers. Kamo Intermediate’s been awesome for me and I don’t want to go to high school, but I have to. And I think even when we go to high school, Islands of Life is still going to be a part of our lives. (Year 8 student)
Students felt it would be a great shame if the school ever stopped teaching environmental education.

It’s taking away the chance for other kids…it’s taking their pleasure away, the pleasure that we got to have. (Year 8 student)

In 2002, the school entered the Islands of Life into an international young environmentalist competition. The school was chosen as one of eight world finalists, and five students and one teacher went to Sweden for the final round of the competition. Several teachers and the regional council staff stressed the important role that this and other competitions played in raising children’s pride in their achievements.

Competitions are really cool because they focus the children’s attention on being the best…and at this stage, I don’t think that many people are entering these. So it’s really good to enter them and win them. (Teacher B)

The students who went to Sweden had since gone to high school. The current Year 8 students were very proud of the national and international attention their school had received for the project.

It feels so good that your school is known around the world… it’s all happened in just two years. (Year 8 student)

2003: the Green Dream

By 2003, a teacher in another syndicate (Teacher E) had participated in the regional council’s environmental education professional development. Spurred on by the training, and the successes of the other environmental education classes, Teacher E and her class initiated a new environmental education project called “Green Dream”. This built on Teacher E’s previous year’s teaching where students had done a science unit to investigate the needs of plants.

Because I went on this course, we talked to the kids about some of the environmental things they could do. I told them they already had a lot of knowledge about growing of plants etc, and because of the Islands of Life, the kids thought why not do something so that [The Islands of Life] won’t cost them so much. (Teacher E)

The class decided they would construct a greenhouse to plant and raise native seedlings to provide trees and shrubs for the Islands of Life. In addition to constructing the greenhouse and raising seedlings, the students would also cultivate compost, do worm farming, and other gardening activities.

**Environmental education in the context of the school's values, culture, and philosophy**

Environmental education was felt to align very well with the school’s values, culture, and philosophies about learning.
I see [environmental education] fitting in perfectly. It’s an extension of caring for yourself and other people, into caring for the world that they live in.

(Teacher B)

The action group model was seen as particularly successful for facilitating student-led learning.

It’s been very student-led and student-focused, which was scary at the beginning, but it’s been so cool! (Teacher A)

**Teachers’ views of environmental education**

The teachers viewed environmental education as being “in, about, and for” the environment. It was seen as important for students to learn about the (natural) environment, about living systems, what impacts and effects these systems, and how they could help to look after the environment, and to do this in a “positive” way.

…not making them feel that doom and gloom is about to happen, and that the world is about to end…so you actually do something ‘for’ the environment. You get in, you get dirty, you get engaged in a project that will do something for the environment in the immediate term, but in the long term you’ll also switch these brains on to thinking about looking after the environment. (Teacher B)

Teacher C saw environmental education as a way of fostering social responsibility in children, and hopefully allowing them to develop their own beliefs about the environment. Teacher D thought that students’ engagement in the environmental education projects at intermediate might encourage students to engage in other projects and activities as they moved on to high school.

If something comes up when they go to college next year, they’ll think of it in a different way. Whereas if they’d had no input [in the environmental education project] last year then maybe they’d just push things aside, don’t want to give it a go. (Teacher D)

**Relationship to the essential learning areas**

Teacher B and Teacher C acknowledged that environmental education took “a lot of time”. The environment was the basis of a lot of learning in both their classes. Both teachers favoured an integrated curriculum approach to balance curriculum coverage against the time demands of a project like Islands of Life. For example, Teacher B’s teaching plan for Islands of Life covered science, technology, social studies, mathematics, and English achievement objectives. Teacher B’s planning also listed a range of specific learning activities, and learning outcomes for the project in terms of knowledge and understanding, attitudes and values, and skills (see Tables 3 and 4). Teacher E initially approached environmental education from a science perspective, looking at plant growing, soil, and landforms, but thought that environmental education could be related to all curriculum areas. Another teacher (Teacher F) had taught a unit on marine reserves as a social studies topic.
Role of the Guidelines for environmental education in New Zealand schools

The Guidelines for environmental education in New Zealand schools was described as playing an important role in the school’s environmental education, in terms of establishing a big picture philosophy. There were about six copies of the document in the school. The teachers who had participated in environmental education professional development were familiar with the Guidelines. Teacher C (the current environmental education co-ordinator) said the Guidelines were good for teachers who weren’t sure what environmental education was. Two teachers who had not had environmental education professional development (Teacher F and Teacher D) had seen the Guidelines but had not really used them and were less familiar with their contents.

I probably do feel a bit uneducated about environmental education. (Teacher D)

Involvement with people/agencies from outside the school

The Islands of Life project involved many interactions with outside people and agencies. The regional council staff noted that Kamo Intermediate School was “very good at making a fuss of their supporters”, for example, by inviting sponsors and other schools to be part of the celebrations of their success and effort.

The school’s been very happy with the media and community attention it’s received due to EE, nation-wide. (Teacher A)

A local expert had also been invited to assist with an environmental education unit on marine reserves that had been taught in several classes in 2002. Teachers at Kamo Intermediate had gained ideas from visiting other local schools, for example, a local primary school had provided a template for the school’s worm farm. Conversely, other schools had visited Kamo Intermediate to see the Islands of Life and to learn more about the school’s environmental education practice. There was no indication of significant problems or issues arising from the school’s involvement with these other people and agencies. Occasionally the school’s success in environmental education placed some extra demands on staff, for example, to arrange speaking engagements for their students to share their environmental education experiences with other schools and organisations.

Challenges and sustainability issues

The future of environmental education in the school

Teacher A thought the fact that environmental education was still occurring in the school even after she left was testament to its success in becoming a part of the school’s practice.

If you’ve got 20-plus teachers, it’s not everybody’s main passion. It started with me, but I’ve been delighted to see it snowball…to skyrocket. (Teacher A)

Staff felt environmental education in the school was likely to continue in the future. Interestingly, one of the regional council staff had recently asked students at a school assembly to raise their hands if they had been involved in environmental education.
I was surprised in a way how small the percentage was (of kids) who had been involved in environmental education, for the amount of profile and mana and success and ‘wow’, that only half the students were involved…. (Regional council staff member)

The role of the “passionate” teachers in developing a self-sustaining teaching and learning approach for environmental education in the school was acknowledged.

(Teacher A)’s really good at getting great results so that’s been a really important part of the school’s growth. She’s established teaching and learning systems that have continued on, and are a great model for others. (Regional council staff member)

Teacher C hoped that in the long term, more teachers in the school would begin to integrate environmental education into their teaching. Teacher C suggested that she or Teacher B could develop units or resources that other teachers could use, rather than other teachers having to develop their own from scratch. Teachers D and F both said they would like to know more about environmental education and become more familiar with the Guidelines.

Definitely for me I would like some sort of course or staff meeting, just to make me a little more focused on what it’s all about. (Teacher D)

Maintaining student engagement

Teacher D reported that two children’s parents had complained about the amount of school time that the Islands of Life project had taken. Teacher D felt that students had sometimes got “bogged down” during the project, and that some may have lost interest or wanted to do other things. She had also noticed that some students had struggled with the skills required to undertake tasks in their action groups: for example, writing sponsorship letters, or using video cameras. Similar “little issues” for students had occurred throughout the project. Some students agreed the long planning process had been challenging at times.

Sometimes it got a bit boring when you’ve been sitting there for a couple of hours and you just can’t ‘click’, you don’t know what to do. (Year 8 student)

Or you’ve got heaps of work to do but you’re just not in the mood to do it. (Year 8 student)

Time

Teachers named time as the biggest challenge for including environmental education in their teaching and learning programmes. The amount of work required to raise money and secure sponsorship had also been a challenge.
<table>
<thead>
<tr>
<th>Achievement Objectives</th>
<th>Science</th>
<th>Technological Capability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 3/4</td>
<td></td>
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</tr>
<tr>
<td></td>
<td><strong>Making Sense of the Living World</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Students can:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• investigate special features of common (NZ) animals/plants and fish and describe how these help them to stay alive.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• explain, using info from personal observations and research, where and how a range of familiar NZ plants and animals live.</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Making Sense of Planet Earth and Beyond</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Students can justify their personal involvement in a school-initiated environmental project.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students will:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• gather and collate information on needs and opportunities in the local (school) environment.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• with reference to identified needs and opportunities –</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• explain possible solutions and strategies and select appropriate options, justifying their decisions.</td>
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<tr>
<td></td>
<td></td>
<td>• prepare a plan of action, identify and collect the required resources and produce the selected solution to meet agreed or specified criteria.</td>
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<tr>
<td></td>
<td></td>
<td>• present design, plans, outcomes to rest of group.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• review decision and progress, assessing how satisfied they are with their strategies and outcomes.</td>
</tr>
<tr>
<td>Social Studies</td>
<td>Mathematics</td>
<td></td>
</tr>
<tr>
<td>----------------</td>
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<td></td>
</tr>
<tr>
<td><strong>Places and Environment</strong></td>
<td><strong>Number</strong></td>
<td></td>
</tr>
<tr>
<td>Students will understand –</td>
<td>Explaining computation and estimation.</td>
<td></td>
</tr>
<tr>
<td>• how different groups view and use places and the environment.</td>
<td>• Students should be able to -</td>
<td></td>
</tr>
<tr>
<td>• how and why people express a sense of belonging to particular places and environments.</td>
<td>make sensible estimates and check the reasonableness of answers.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resources and Economic Activity</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will understand how and why people manage resources</td>
<td>Students should be able to measure area and perimeter.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>English – Writing and Presenting</th>
<th>English – Writing and Presenting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will write and present reports using a variety of media.</td>
<td></td>
</tr>
</tbody>
</table>
### Learning Activities

Table 4

*Learning activities and learning outcomes for Islands of Life 2 project (Teacher B)*

<table>
<thead>
<tr>
<th>Learning Activities</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• research the special features of NZ trees.</td>
<td>Knowledge and understanding of</td>
</tr>
<tr>
<td>• research the special features of NZ birds.</td>
<td>• special features of NZ trees and shrubs</td>
</tr>
<tr>
<td>• research the special features of NZ insects.</td>
<td>• special features of NZ fauna</td>
</tr>
<tr>
<td>• research the special features of NZ fresh water eco-systems.</td>
<td>• simple food chains</td>
</tr>
<tr>
<td>• research the construction of waterfalls.</td>
<td>• functions of plants and birds and insects in environment</td>
</tr>
<tr>
<td>• investigate the impact of people on the forests of NZ.</td>
<td>• landscaping</td>
</tr>
<tr>
<td>• investigate the best native trees and shrubs for planting in the school grounds and that will attract native fauna.</td>
<td>• special features of NZ freshwater life.</td>
</tr>
<tr>
<td>• estimate and calculate the number and associated costs of trees required for planting in a given area.</td>
<td></td>
</tr>
<tr>
<td>• plan and carry out active class tree planting activity.</td>
<td>Attitudes and values such as –</td>
</tr>
<tr>
<td>• write letters to gain sponsorship to help pay for the planting.</td>
<td>• a respect for the beliefs and values of others.</td>
</tr>
<tr>
<td>• design a concrete or wooden pathway to ease access to the Islands of Life.</td>
<td>• an appreciation and concern for living things.</td>
</tr>
<tr>
<td>• cost out the path.</td>
<td>• an awareness of the need for individual and group action in maintaining New Zealand’s bio-diversity</td>
</tr>
<tr>
<td>• design a pattern for the concrete path.</td>
<td></td>
</tr>
<tr>
<td>• keep records of all the action group’s activities and present in a scrapbook.</td>
<td></td>
</tr>
</tbody>
</table>
• communicate with the media to keep them informed about progress of the plan.
• communicate with the school and local community about progress of the plan.
• investigate appropriate food for birds during winter and provide such food.
• make a notice board telling the story of the development of Islands of Life.
• celebrate the achievements of the group.
• investigate increased insect life by doing quadrants.
• investigate increased bird life by doing 5 minute bird counts.

Skills, such as –

• critical thinking – comparing and contrasting to make connections and generalisations.
• research and inquiry – locating info in the community or libraries or www.
• numeracy – estimating and calculating and measuring, taking surveys.
• communication – expressing views and ideas about the environment using different media.
• physical skills – using tools and materials safely and efficiently – planting and constructing.
• decision-making – organising, planning and implementing an environmental project.
• co-operation – working co-operatively with others in a project and demonstrating an ability to compromise, negotiate and collaborate.
PAPATŪĀNUKU SCHOOL

School profile

School type Composite
Roll size 224
Decile rating 3
Locality Rural
Student ethnicity NZ European/Pākehā - 40%
Māori - 59%
Pacific - 0%
Other - 1%
Staffing 16 full-time, 4 part-time

Background

School context

Papatūānu School is a rural school in a farming community, approximately 30 minutes’ drive from a small city. The school caters for Year 0 to Year 13 students. Students are primarily drawn from the rural community surrounding the school. Some students, particularly in the secondary syndicate, travel to the school from the nearby city for a small school education, or because of attendance or behavioural problems they have encountered at their previous schools. There are five classrooms and about 100 students in the junior syndicate (Year 0–6). The senior syndicate, of about 100 students (Years 7–13), includes two Year 7/8 mixed classes, two Year 9/10 mixed classes, and separate subject classes for Years 11, 12, and 13 students. Because the school is small, most secondary subject departments comprise only one teacher.

In 2002, the school underwent a change of leadership. The previous principal’s background had been in primary education. The new principal’s background was in secondary education, and a specific task of her appointment was to strengthen the school’s secondary programme.

Environmental education at Papatūānu School

Environmental education began to seriously flourish in the primary school in the late 1990s under the previous principal. The school’s major environmental education focuses have been gardening, beautification of the school grounds, and litter management/waste reduction. Key players in the school’s environmental education are Teacher A, a primary teacher with a strong passion for environmental education, and Teacher B, the school’s secondary science teacher, who has a

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6 Pseudonym.
background in environmental resource management. The school caretaker has also played a key role in matters relating to the school grounds and waste management systems.

The school’s environmental education was initially driven by Teacher A, supported by the former principal who had an interest in environmental education.

[Teacher A] was really keen to try something. She worked with the teachers in her area and said ‘Look, why don’t we give this a go?’ (Former principal)

Teacher A’s initial focus was to work with students to develop aspects of the school environment. The Year 4 and 5 class had also been studying recycling and waste disposal as part of a science and social studies unit. This led the junior school to examine its own production and handling of waste. The primary students established a worm farm, and a system for rubbish sorting and recycling in the school.

In 2000, the Year 6 class embarked on a project to build a garden to commemorate the new millennium. The school had an underdeveloped and underutilised horticulture block, and Teacher A wanted to revamp this for students to begin working with plants in the primary school. The school won a $2000 environmental award, which enabled Teacher A and her class to plan and build the millennium garden.

Environmental education began to gain momentum across the school. The primary students began to market and sell seeds they had cultivated through their gardening projects, and the garden and recycling activities were the context for learning activities across curriculum areas.

In 2001, Teacher A and the school’s secondary science teacher (Teacher B) attended environmental education professional development workshops run by the local regional council.

There was nothing new in the environmental education professional development…but what it did do was to pull everything together. Give it names, give it importance, give it recognition. It was great…to feel part of a movement. (Teacher A)

The school applied to become an environmental education pilot school. In 2002, Teacher A stepped back from the role of environmental education co-ordinator and passed this responsibility on to Teacher B, the secondary science teacher. The focus of the pilot school project was to move towards “zero waste” in the school. A high point for the school was when a Year 7 and a Year 8 student were selected to represent New Zealand at an international children’s conference on the environment in Canada, based on essays they had written about environmental education in their school. Teacher A and some other staff invested much time and energy securing sponsorship for the students’ journey.

In some ways, 2002 was a peak year in the momentum of the school’s environmental education. With the change of leadership in 2002 came several changes which had a major impact on all aspects of the school’s policy and practice, including its involvement in environmental education activities. These changes will be described further below.
Case study methods

The previous principal and the current principal were both interviewed. Three teaching staff were interviewed: Teacher A (the instigator of the school’s environmental education); Teacher B (the secondary science teacher and current environmental education co-ordinator); and Teacher C, who was teaching an NCEA level 1 course on agriculture and horticulture, offered for the first time in 2003. The school caretaker was also interviewed. Ten students from a range of age levels were also interviewed. These included a group of Year 4/5 students from Teacher A’s class, the two students who went to Canada in 2002 (now Year 8 and 9), two Year 11 students, and the Year 12 leader of the school’s environmental committee.

The school culture

The school’s mission statement is:

To develop a caring supporting learning environment, which promotes the skills necessary to lead responsible, fulfilling lives through academic, cultural, ethnic, social and physical endeavours.

The school’s “four pillars” are that it is:

- a rural school;
- a bicultural school;
- an environmental school; and
- an enterprising school.

The four pillars are seen as strongly interrelated, and reflective of the needs of the community which the school serves.

The fact that we’re a rural school… is our special character. It encapsulates all the other pillars - environment, bicultural, enterprise. It can all be summed up in the fact that we’re rural. (Principal)

At the time of the case study, the school’s charter was being revised to more clearly articulate and infuse these four pillars into the school’s policies and practices. All staff felt it was important for the school to equip rural students for the lives they were going to lead, whatever sort of life that was going to be.

The role of Māori knowledge and values in the school culture

Teacher A described the school culture at the time of the case study as in a “state of flux”. In part this was due to the normal sorts of changes associated with a change in leadership. Most significantly, the whole school was involved in a culture shift that was predominantly related to the role and place of Māori in the school. When the current principal took up her appointment, one of her top priorities had been to revisit the school’s relationship to its Māori students, and the local Māori community.
At that time, there was a Māori language classroom at the back of the school, but the Māori language teacher did not have a permanent position or a management unit. Kapa haka was treated like a sports practice, fitted in at lunchtime or after school. The principal reported that the school has made “huge progress” in terms of its commitment to Māori during the last 18 months. Māori language is now compulsory for students to Year 10, and Māori language teaching has been shifted to a large refurbished room at the front of the school. The Māori language teacher has a permanent position and a management unit, and kapa haka is timetabled into the weekly school routine.

On a deeper level, the principal sought to renegotiate the role and participation of the Māori community within the school. Although there were Māori parents on the Board of Trustees, on the whole, the principal said there had been no forum for Māori families to come into the school and feel comfortable. In March 2002, the principal and approximately a third of the staff attended an iwi meeting at the local marae as an icebreaker. Subsequently, the school held a teacher only day in which the whole staff went to the marae. As a result of these and other meetings with the Māori community, the school’s Board of Trustees signed an agreement with the local iwi which defined special roles and privileges that were to be afforded to kaumātua and kuia when they came into the school. This had particular implications for the school’s processes for dealing with student misbehaviour, particularly for Māori students.

It used to be ‘[if] they’re bad, they’re down the road’. And now things are really being worked out… Kaumātua come in, they have a safe and supportive arena to air their grievances and to be part of the problem solving. It’s just great. (Teacher A)

In addition to these local changes, Teacher A felt that broader changes were contributing to a culture shift in New Zealand schools in general.

The fact that the ‘old’ type of schooling is finally being seen as failing most children. And that we need to look at things in a different way… different ways of teaching. (Teacher A)

**Role of the community in the school**

The principal reported that the community generally gave very little feedback about the school’s policies and practices.

As long as the kids are happy and they think they are doing well, no news is good news [for parents]. (Principal)

The school communicated with parents through newsletters, and parents came into the school to help when and as required. In terms of the school’s environmental education, Teacher A reported that some members of the school community had recently become involved in local environmental issues, such as river care projects.

A lot of that is the result of kids going home and saying about things they’ve done at school… ‘We shouldn’t dump our rubbish there,’ or ‘What happens with the water from the cowshed, where does it go?’ They start asking questions…(Teacher A)
Teacher A was gratified to hear that students’ school environmental education activities were having impacts on some homes and families.

Views about education

The principal felt that it was important for students to learn how to manage their own learning.

…actually how to understand the learning process. It’s no good giving them content if they can’t process it. (Principal)

She also saw literacy, numeracy, learning skills, and social skills as important. For some students it was important to learn how to let others learn alongside them, rather than being disruptive and thereby interfering with their own and other students’ learning.

Teacher A felt that school was an important place for students to learn “lifeskills”.

Conflict resolution, care and respect for themselves and living things, including the earth around them. (Teacher A)

The development of students’ base values was also seen as important. Teacher A wanted students to recognise the power of individuals to make change.

Teacher B felt that students should learn how to learn, learn about themselves and the world, and develop morals and values through their school education. Teacher C thought that it was important for students to learn how to cooperate, as well as knowing about their rights and responsibilities as individuals. She felt school should develop students’ compassion and respect for other cultures, and that they should learn skills that will “help them get on in the world”. She believed that school programmes should be put together to take account of the specific needs and interests of the students involved.

There’s no point in a child being forced down an academic path, when probably with a little bit of academic and a lot more vocational work, they would get a lot more out of life. (Teacher C)

Environmental education at Papatūānuku School

The policy status of environmental education in the school

At the time of the case study, the school did not have a formalised environmental education policy, because the school’s charter and strategic plans were in the process of being rewritten. Teacher A had supplied the principal with a folder of existing environmental education documentation, and the principal intended that the new strategic plan would include a detailed plan for environmental education with specified objectives, aims, intended outcomes, personnel, and timeframes. Such a plan had already been constructed for other areas, such as LEOTC.

The principal professed that she was no expert in the “hands on” aspects of environmental education. However, she did enjoy developing policy and strategic planning, and was looking forward to developing, with staff, the school’s environmental education strategic plan. Teacher B,
the current environmental education co-ordinator, had assembled a portfolio of documents and records of the school’s previous and current environmental education activities towards this end.

**The curriculum status of environmental education in the school**

In line with its charter as an “environmental school”, the school’s aim was for environmental education to be infused across the curriculum, at all levels in the school. Teacher B hoped to have a whole school curriculum plan for environmental education, from Year 0 to Year 13, by the end of the year. The intention was that each teacher would teach one half term unit relating to environmental education, or else make sure that in each half term slot, one of the subjects was doing something with an environmental slant.

**Environmental education in the primary syndicate**

In the primary school, at least in Teacher A’s class, environmental education permeated through practically everything the class did.

> To me environmental education is so important, it needs to be in absolutely everything, all the time. And for children to be aware of it, and for adults to be aware of it, all the time. (Teacher A)

Teacher A’s class spent a lot of time working in the garden and nursery areas. Her classroom was replete with biological learning resources including plants, animals, and an egg incubator. A small group of children from teacher A’s class talked about many things they did which they considered “environmental education”. These included their gardening activities, rubbish, and recycling. One student also discussed learning about space and other planets as being environmental education. The students felt it was very important to do environmental education.

> So rubbish doesn’t pile up everywhere. And so people don’t live by the side of the road in a pile of litter or something. (Year 4/5 students)

They were wary of bringing plastic litter into the school, because it would not rot away like other materials. The students liked doing environmental education because they got to spend time out of the classroom and they felt it was more interesting than other things they did. They felt that Teacher A knew more and did more environmental education than other teachers in the school.

Teacher A said she and other primary teachers tried to integrate Māori knowledge and values into their environmental education as much as they could. She felt that the te reo teacher was invaluable in sharing her knowledge of Māori perspectives on the environment. Input from Māori students was also valued. One project that was planned for the coming year was to plant a Māori medicinal garden.

Other primary teachers included environmental education in their classroom programmes in various ways. One newly arrived new entrant teacher and her class had instigated rubbish sorting and built a small worm farm in their classroom, when most other classes had abandoned sorting their rubbish. This teacher had been a lead environmental education resource person at her previous school, and her environmental education teaching was based strongly in the “Living world” strand of the science curriculum.
Environmental education in the secondary syndicate

The status of environmental education had waxed and waned in the senior school. Staff suggested that many students in the senior school were less inclined towards being “environmental”.

It’s almost as though it captures the imagination of 10 year olds, but it doesn’t appear to capture the imagination of 15 year olds… (Principal)

This was not the case for all senior students. When the school’s “zero waste” scheme had been up and running, two Year 10 students (now Year 11) had volunteered to sort the school’s rubbish for recycling.

I think being a country school it’s quite important because we are surrounded by trees and paddocks of grass. I think it’s quite important that there’s no rubbish lying around, in case the animals, cows and stuff, get into it. (Year 11 student)

The students felt that, through the school, they had learned to respect the environment more, and were more aware of the impacts that pollution had on the environment (for example, that it could pollute drinking water). However, litter was clearly an ongoing problem within the school. The students reported that recently, students had been banned from walking around the school grounds while eating morning tea, until the amount of litter around the school decreased.

One problem for maintaining motivation and interest in environmental education in the secondary school was the fact that many of the secondary students came from town, and had not come through the school’s primary programme. However, Teacher A said that when environmental education was going well within the school, gardening and other environmental education activities had proved valuable for intermediate and lower secondary students who were having difficulties with learning, socialisation, or anger management.

They would go out there in that garden, and they would be stars. They would be part of something that they really cared about. It was absolutely lovely to see. (Teacher A)

Teacher B had made some inroads into environmental education in the secondary school in 2002. That year, a student environmental group was formed, and the group proposed several ideas for projects to beautify the school environment. Subsequently, Teacher B’s Year 10 technology class undertook a project called “from nothing to something”. They were supported by Teacher A’s Year 9 technology class who made a video of areas around the school that were identified as “nothing areas”, which the students could transform into something more pleasing.
The Year 10 students applied for permission from the Board of Trustees to design and paint murals on two concrete walls outside the senior classrooms.

Our murals will include our own designs of our school logo, thoughts and feelings of our local environment and our community. The murals we would like to present on the concrete walls would provide the school with improved aesthetic values. Also to be consistent with the school’s commitment to environmentally educate throughout our school and community. (Letter from Year 10 students to Board of Trustees, May 2002)

The students produced a video application to the regional council to help fund their project. The funding application was successful, and the class got permission from the Board of Trustees to design and paint the murals. However, the project ran into some difficulties and was not completed in 2002. The problem appeared to be a clash of perspectives about the aesthetics of the mural. The ostensible purpose of the mural project was about involving and empowering students to take some meaningful action “for” the environment, that is, to identify and scope the project, negotiate permission, and actually carry through their project, consistent with the principles of environmental education. However, the Board of Trustees appeared to be concerned about the artistic quality of the mural, and stipulated that the students be overseen by an artist parent. There was some disagreement between the adults involved in the project, the mural project stalled, and time ran out before it could be completed. Staff who were interviewed expressed disappointment at what had happened with the project. The principal felt she had learned an important lesson for future environmental education projects involving changes to the school grounds.

So in future if they are doing anything like a mural, I will make it very clear that it is laid down by the environmental education committee, without gratuitous nonsense of people’s opinions on what is ‘good art’. (Principal)
NCEA agriculture and horticulture

In 2003, the school was offering a Year 11, level 1 NCEA agriculture and horticulture course. This was taught by Teacher C, a secondary English and social studies teacher. Teacher C had started her teaching career as a science teacher, and had a horticulture and agriculture teaching background. Recently she had become involved with special needs education. All these things influenced her interest in including environmental education in her teaching.

Environmental education in the classroom has come in as the documents have come in. I think I’ve already sort of done it, but since the documents have come in it’s been more a part of my lesson plans. (Teacher C)

The impetus for developing the Ag-Hort course was Teacher C’s interest in providing a vocationally based option for senior students in the school.

Teachers’ views of environmental education

The principal thought that environmental education was important for enabling students to recognise and engage with environmental issues.

To me, it is about understanding the issues and how to address them….getting the children to think globally, and we hope, motivating the children to act locally in their school, and in their community. (Principal)

The principal felt that environmental education could easily be related to any of the essential learning areas. For example, her own Year 13 bursary English students had just been studying the novel *The power and the glory*. As part of their study, students had researched the book’s setting, Mexico in the 1930s and 1940s.

They have been absolutely gobsmacked about the geography and climate and environment of Mexico, and how hostile it is….we just couldn’t get over it…. We ended up having a huge discussion about it yesterday, and how hard it was to live a subsistence existence in that place. (Principal)

The Year 7–10 music class was studying the Che Fu/DLT hip hop song “Chains”.

It’s actually a protest song about France destroying the Pacific, and making everything radioactive…it’s a really powerful message in that song. (Principal)

The principal also felt that environmental education had a relationship to visual and performing arts, particularly in a Māori context where the arts were strongly connected with the natural and spiritual environment.

Teacher A saw environmental education as “the thread that runs through everything”, reintegrating knowledge that was usually “compartmentalised” in western ways of thinking. She felt that environmental education was grounded in base values of respect and care. Teacher A felt that environmental education was essential for preparing students for the future.

These kids are going to be the ones that are part of the decision-making that will save the planet… they’re going to have to come up with solutions. So I think it’s
absolutely paramount that we prepare them for it. Without making them so scared about the future. They need a bit of optimism. (Teacher A)

Primary students engaged in various actions “for” the environment. Letter writing was a favourite activity. For example, one class had written to McDonalds, suggesting ways to cut down on take-away litter. The students sent samples of potato starch containers and described the ways that their own school cut down on waste. McDonalds wrote back to each child, thanking them for their letters and saying they would look into the suggestions.

The kids got an idea of their own power through things like that. (Teacher A)

Teacher B saw environmental education as providing students with knowledge, understanding, and a feeling of being responsible for the environment around them. Teacher C saw environmental education as a basic component of any education.

Environmental education to me is just life education. (Teacher C)

Teacher C felt that environmental education was about learning how to use the environment profitably, and in a way that was sustainable. She felt that it was impractical or impossible to sustain a “total greenie” lifestyle unless you could devote your entire existence to it.

…and not many of us can do that, because we have other commitments… the normal majority of people have other things that occupy their time, like family, businesses or whatever. So environmental education is making all these people aware of a sensible level, a level that is appropriate to sustain the environment…. (Teacher C)

She hoped that her students would develop long-term, “common-sense” understandings about environmental sustainability.

I want my kids in my classroom to have educational goals that will make things more positive. An understanding of what will keep their environment safe and well… what they can do to help, but at the same time, what they can do for the rest of their life to just keep going. (Teacher C)

Teacher C had networks with other ag-hort teachers in the district, and these were a source of support and ideas for her planning. She also sought a lot of resources from regional and district councils and other environmental, agricultural, and horticultural organisations.

Support for environmental education practices in the school

The principal and teachers involved in environmental education felt that most staff in the school were supportive of environmental education, though support was stronger in the primary school. Teacher B suggested that the secondary syndicate was disadvantaged for environmental education by being more classroom bound, and constrained by curriculum and timetabling, than the primary school. Teacher A’s experience was that the secondary teachers often saw environmental education as “one more thing” to deal with on top of many other existing demands on their time and energy.
Putting it in the documents in the senior school does not necessarily mean that it will be followed through. Just because of time restrictions, and assessments, etc. (Teacher A)

However, it was Teacher B’s intention to involve all the secondary teachers in developing a cross-curricular overview for environmental education in the senior school in 2003.

To have a look at how we can piece in the existing environmental education units that are in social studies, geography, technology, science and biology. We’ve already got a good spread there, but perhaps we could improve the [environmental education] focus a little bit. (Teacher B)

**Waste management and grounds management**

In terms of the school’s adoption of school-wide environmental practices, there were sometimes tensions between what the most environmentally committed teachers wanted to happen in the school, and other staff’s willingness or ability to work within those parameters. For example, the school’s aim of “zero waste” required a lot of management.

Recycling in a very small admin area is chaos. We’ve got cardboard and paper everywhere, there is nowhere to put it. (Principal)

Sometimes people forgot to put out the food buckets which were meant to go to the pig farm, leading to a smelly problem. At Teacher A’s request, the principal had experimented with double-sided photocopying to save paper. However, this was abandoned because of the time and difficulty (and wasted paper) it had caused “getting things the right way up”.

The school’s attempts to move towards “zero waste” had depended heavily on the caretaker’s time and co-operation, in terms of maintaining a viable system for waste handling and disposal. His own background was in organic agriculture and he was amenable to environmentally sustainable school grounds management practices.

I guess I’m the kind of caretaker that thinks outside the square, especially for environmental things. If teachers have an idea, I will listen very hard…I’m always willing to try new ways of doing things, not like other caretakers who do things the same way for 100 years. (caretaker)

The caretaker played an important role in any decisions relating to the school grounds or waste management, whether it was the principal wanting to remove a stand of trees, or a teacher wanting to develop a new garden site.

He [the caretaker] is always challenging me when I want things tidied up, cut down, shifted….he can argue the case for leaving a shrub exactly where it is, or not putting a shrub in. He is a really strong influence on me because I have to think twice… (Principal)

**Weed control**

There had been some disagreement among staff over the use of synthetic herbicides to control weeds around the newly built planter boxes for Teacher C’s Ag-Hort course. The region was
known for a particularly hardy grass species which was extremely difficult to control. In Teacher C’s opinion, weedkiller was the most practical way to deal with this problem, provided the weedkiller was applied carefully, with the appropriate precautions taken.

And yet it is a real issue for some people. That when you are being environmentally friendly you are being so, so totally green. I don’t believe that’s the case – I think you can be green without being ‘totally green’. (Teacher C)

The use of chemical herbicides was at odds with the organic/permaculture approach used in the school’s existing student garden. Determining the location of the Ag-Hort planter boxes so that they would not contaminate the organic garden required “months of negotiation”. Eventually, the boxes were established at a suitable distance from the organic garden.

Teacher C said she had discussed with students why they were using chemically treated wood for their planter boxes.

We have talked about the need for these to last. Things can’t just fall over once we’ve finished using them. We want to leave these for others. So the kids have built these [planter boxes] with careful planning and foresight for the future. (Teacher C)

Interviews with each of these staff suggested a range of different sensibilities and attitudes about the environment and environmentalism.

**Role of the Guidelines for environmental education in New Zealand schools**

Teachers A, B, and C were all familiar with the Guidelines and used them in their environmental education programme planning. There were only three copies of the Guidelines in the school.
I found that a very useful document. Useful for keeping me on track, so I’m not getting over-the-top, or undercooking. It’s a good guideline. (Teacher C)

However, Teacher C questioned how many teachers in the school other than teachers A, B, and herself, had actually seen the Guidelines, let alone were familiar with their contents. She felt that the whole staff needed to sit down and go through the Guidelines together, and discuss, as a group, what needed to be done to incorporate environmental education into their teaching.

**Involvement with people/agencies from outside the school**

Under the previous principal, the school had engaged in a lot of education outside the classroom (EOTC). However, the school’s policy on EOTC had recently become more stringent in terms of safety and risk management, and this had reduced the frequency of trips outside the school grounds. Distance was one barrier for the school to work with outside people and agencies. However, Teacher A had used many different people and agencies from outside the school at various times, for various purposes. These included the regional council, agencies involved in waste disposal and management, community workers, and environmental organisations. She had brought in a friend who worked at a television network to help the Year 10 students to produce their “from nothing to something” video. During the school’s “zero waste” campaign, Teacher A had liaised with the shop across the road from the school, so that one day a week was a “plastic-free” day, when the shop would not sell plastic-wrapped food items to the children.

**Challenges and sustainability issues**

**Competition with other priorities in 2003**

The biggest challenge for environmental education in the school in 2003 was competition with other priorities for the school that year, in particular, the establishment of kapa haka and other changes relating to the role of Māori knowledge and values in the school culture.

Right now [environmental education]’s low on the agenda… but I do have a great optimism, I just see everything as cyclical. We just happen to be down on the other side of the moon at the moment. It will come around again. (Teacher A)

The principal agreed that the school’s focus on environmental education had backslid in the last year.

Environmentally, we’re in a bit of a slump at the moment, although Teacher B has started to pick up with it, and has got some documentation together. But that’s what happens when you get a change of ownership. (principal)

**Staff**

The principal and Teacher A both felt it was important that environmental education should not be dependent on one staff member. This is one reason that teacher A had chosen to pass the mantle...
of responsibility for environmental education to Teacher B. It was also a way of trying to bring environmental education more into the secondary school.

Teacher A has done a wonderful job in the primary school. But when kids get into the Year 7–13 area they are much harder to motivate, perhaps apart from this year’s Year 11 who worked on the mural last year with Teacher B. (Principal)

Teacher B felt that “reluctance of staff to adopt change” was one barrier to the implementation of whole school environmental education practices, in particular, those relating to recycling and waste management. However, the principal felt that environmental education had already strengthened the staff collegiality “even those of us who are not natural-born recyclers”. The principal felt she had already started to change her ways, for example, to recycle more at home.

I know for a fact that the passions and beliefs of people that I respect, like my colleagues, my students, the school in fact, has changed me. I am now committed to environmental education at our school. (Principal)

The principal felt the school still had a long way to go, but was looking forward to building environmental education further into the senior school.

The future of environmental education in the school

Teacher B had drafted a set of intentions for environmental education in the school in 2003. These included:

- school-wide recycling, strong focus on the secondary sector;
- curriculum focus, environmental education school-wide and cross-curricular;
- herb and Māori medicinal garden construction; and
- finishing wall murals.

Teacher A hoped that environmental education would gain a lot more prominence in the school over the next few years.

I’d like to see it really and truly become an integrated part of every hour of every day. I’d like teachers to be extremely aware when they do planning, but more than anything, I’d like to see teachers really and truly modelling [environmental education]. (Teacher A)

She felt that all teachers in the school were aware of environmental issues, but recognised that it was “asking a lot” for teachers to model environmental practices in everything they did.

Anything else that the Ministry could put out that would make secondary teachers feel better about integrating environmental education, and not feeling like it’s a whole heap of more paperwork, would be very helpful. (Teacher A)

Teacher A also hoped to bring the Board of Trustees into the planning of environmental education in the school.
Table 5

*Papatūānuku School’s environmental education action plan (drafted six weeks after the case study site visit)*

<table>
<thead>
<tr>
<th>Action to be taken</th>
<th>What’s involved</th>
<th>Who takes responsibility</th>
<th>Time line</th>
</tr>
</thead>
</table>
| Whole staff/Board of Trustees PD session on EE Guidelines | Set a date and time (max – 1 hr)  
Prepare presentation  
Include ELA’s  
Promotion of EE *Guidelines*  
Workshop  
Allow time for discussion | Principal to help set date  
EE/science advisor (TEAM solutions) to plan general presentation  
EE/science advisor (TEAM solutions) to lead discussion | As soon as possible |
| Presentation of present Environmental Strategic Plan for 2003 – proposed ideas | Set date (shortly after EE presentation) and time  
Present Plan in present form – with view for including new input and ideas | EE co-ordinator and Teacher A to present school’s strategic plan to staff also bringing in history of EE at Papatūānuku School | Shortly after *Guidelines* presentation |
<table>
<thead>
<tr>
<th>Survey of Staff/BoT views, feedback and ideas regarding PD session and Strategic Plan, including personal interests to pursue under EE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey to also include students and families (different questions?)</td>
</tr>
<tr>
<td>Survey to special interest groups (Māori families)</td>
</tr>
<tr>
<td>Develop survey questions and prepare survey</td>
</tr>
<tr>
<td>Give survey out after presentation of EE Strategic Plan to get Feedback</td>
</tr>
<tr>
<td>EE co-ordinator and EE/science advisor (TEAM solutions) to develop questions – run by Principal before publishing</td>
</tr>
<tr>
<td>EE co-ordinator to give out survey</td>
</tr>
<tr>
<td>EE co-ordinator and EE/science advisor (TEAM solutions) to collate responses</td>
</tr>
<tr>
<td>Responses to be feedback to staff/BoT/students/families</td>
</tr>
<tr>
<td>Same as above</td>
</tr>
<tr>
<td>Promotion of cross-curricular teaching unit based around waste management (?)</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Discussion of implementation methods in whole staff meeting</td>
</tr>
<tr>
<td>EE co-ordinator to organise and motivate the process</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Continuation of painting of Wall Mural – using Years 9 and 10 students</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Herb and Māori medicinal garden construction – possibly secondary</td>
</tr>
</tbody>
</table>
| school ‘pet’ project | to take lead role (EE co-ordinator) 
Plan developed as to when, what and how the planting will take place | By end of Term 2 |
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Development of Student/Staff EnviroGroup</td>
<td>Representatives from across school levels to look specifically at Environmental issues at school (e.g., recycling system)</td>
</tr>
<tr>
<td></td>
<td></td>
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</tbody>
</table>
Flaxwater Area School is a large rural area school situated in a coastal town 40 minutes’ drive from the nearest city. The local environment provides easy access to a wide range of different and valued natural environments including marine, estuarine, freshwater, and bush environments.

The school is part of a diverse community. It is primarily Māori and European which is reflected in the school roll. The 2001 census showed that 30 percent of the population identified themselves as Māori and 20 percent had an income over $30,000. A significant proportion of the residents commutes to the nearest city to work, choosing to live locally for lifestyle reasons.

We’ve got affluent people that work in [the city] … and then we’ve got very poor families. We’ve got families with no internal cold or hot running water. (Principal)

The rural, mixed income, and “alternative lifestyle” nature of the school community impacted on the school.

…our kids are essentially unsophisticated. Most identify with rural; [we are] quite unique in that we are essentially a bicultural school. And the structure of our community is changing. Last term we lost quite a few of our families to the four winds, and I think it’s because residential house sales have pushed rentals up so it’s cheaper for people to live in [the city]. (Principal)

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7 Pseudonym.
The school is divided into a primary syndicate (Year 1–8) and secondary syndicate (Year 9–13), and a Year 1–11 Māori immersion unit. There is a marked shift in the student population going from primary through intermediate and into the secondary school. Many parents chose to send their children to the city for intermediate or secondary education to broaden their social horizons, or because of historical negative perceptions of Flaxwater Area’s secondary school. As a result, the secondary student population is quite different from the primary student population. The secondary area is relatively small and includes a significant number of students for whom academic achievement is a struggle.

**Environmental education at Flaxwater Area School**

Flaxwater Area School has been involved in environmental education for several years. This has mainly been through teachers with a specific interest in environmental education and who are sufficiently passionate about it that they put significant time and effort into it beyond their normal workload. Several teachers have been involved in the development and trialling of Enviroschools materials since the start of Enviroschools. However, the school is yet to become an Enviroschool itself.

Currently, environmental education occurs on a fairly ad hoc basis with individual teachers including as much or as little as they feel appropriate. In practice this means that a few teachers have some interesting and worthwhile environmental education incorporated into their existing programmes, while most don’t consider it. There is a reasonable amount of education "about" the environment and "in" the environment but very little "for" the environment. There is some environmental education in both primary and secondary areas, mostly in the form of units with an environmental theme. The secondary area is beginning to look at ways to link environmental programmes with qualification standards.

The Roopu feels that because the environment is such an integral part of life for Māori, their whole programme has an environmental education flavour.

There are several active environmental organisations in the community that offer and provide support for school-based programmes. The school’s location in a particularly diverse and rich environment encourages environmental awareness.

**Case study methods**

Interviews were conducted with the principal, the environmental education co-ordinator, and four classroom teachers. One of these was a teacher involved in environmental education in the secondary part of the school. One was a classroom teacher in the primary part of the school who had a particular interest in the environment and brought this into her teaching, and two teachers together who teach in the Māori immersion unit, the Roopu. Informal discussions also took place with the deputy principal.

Students who had been involved in environmental education were interviewed in two groups of 4–5. One group was from a Year 10 class and one from a Year 5/6 class. A Year 12 student who has had considerable involvement in environmental initiatives was also interviewed.
A range of documents was reviewed, including charter information, and planning documents. Although requested, the timing of the case study meant that there was little in the way of student work to look at.

The school culture

The school is strongly grounded in its local community and places an emphasis on meeting the needs of staff and students in special and sometimes unique ways. There is a strong culture of celebrating the positive that has been actively developed since the current principal took up his position seven years ago. The school values its bicultural nature which it actively seeks to promote. The school takes pride in being somewhat innovative, trying things out and offering students opportunities that are most likely to help them get ahead or pursue specific interests. As the principal put it:

We’re quite prepared to do things that are unique and special that meet our needs and our students’ needs so often that correlates very strongly with conservation issues and utilising the environment. (Principal)

The way the school takes an interest in each student personally was also commented on.

I enjoy teaching here because of the personal approach … we deal with them [the students] as if they are very much part of the process, not imposing what we wish upon them but their needs come to the fore. … and part of our school’s kaupapa is also to be involved with the community and that does happen but in a piecemeal fashion in some cases … (Environmental education co-ordinator)

Staff believed the values and culture of the school were reflected in the running of the school but acknowledged that at times conflicts between the values held by different parts of the community lead to dissatisfaction with decisions made about how the school operates.

The role of Māori knowledge and values

Because of the strong local Māori community, the school places a high priority on incorporating Māori knowledge and values into the education it provides. This is reflected in management structures, consultation processes, teaching and learning programmes, and the establishment of the Roopu unit which provides total immersion and bilingual classes in a programme quite separate from the rest of the school. The Roopu is much more whānau-based than the rest of the school and puts a lot of effort into involving the family of students in their education.

A recent review has led to a specific strategy for enhancing Māori achievement looking at classroom practice, the incorporation of Māori cultural values and belief systems, and relevant examples. A strong link is seen between Māori values and beliefs and environmental education. According to one teacher:

Environmental education fits in perfectly there, because this is where we live.

However, it was noted that not all staff accept this and tend to see the inclusion of Māori values and culture as an “add-on”.
The role of the community

The community plays an important role in the life of the school. The Māori community particularly is involved through a process of consultation on major decisions. Active interest groups in the community, particularly those with an environmental focus, also frequently contact the school both offering their services and asking for time to present their message. There is considerable environmental expertise available locally that some teachers find valuable in support of their teaching. From time to time the school helps in local projects, for example, carrying out a public survey for an Extreme Waste project. The deputy principal has worked hard to build up a good relationship with parents and families of the students which enhances the community view of the school as a caring and supportive place. The school has had a poor reputation in the community in the past and such views have been difficult to shift.

Environmental education at Flaxwater Area School

The policy status of environmental education in the school

The school prospectus includes statements about education that makes use of the local environment, for example: “Access to and use of our special local environment”.

The local environment is acknowledged, particularly by senior management and some key teachers, as an important aspect of the life of the school. However there is no formal policy structure to support this nor is there any to support environmental education. A group of four teachers with a passion for environmental education have established a steering group to develop environmental education at the school in a more formal way, based on becoming an Enviroschool and on their involvement in the environmental education professional development project. However, while this was running well, three of the teachers were going to be away from the school during the following year. The group is informal but is acknowledged by the principal.

The curriculum status of environmental education in the school

Environmental education has no official status as part of the curriculum at Flaxwater Area School. However, it is incorporated into some teachers’ programmes. Mostly this is done by giving an environmental “flavour” to a unit rather than by identifying specific environmental education outcomes in the planning. This is encouraged by senior management but not formally acknowledged. Part of the school’s planning review process looks at use of the local environment within existing curriculum areas.

There are no formal management structures that support environmental education at Flaxwater. There is an implicit interest in caring for the environment that influences the actions of staff in existing management positions but this is not formalised in any way.

None of the school’s planning documents require an environmental education component. Those units that incorporate at least some environmental education do so in ways that suit the teacher concerned. Teachers who choose to do so may give some of their units an environmental theme,
possibly one a term in some cases. They try to build environmental awareness and attitude development around the curriculum objectives they already have in place.

I look at what I need to cover and what I want to cover, based around the science curriculum. (Environmental education co-ordinator)

The lack of ability to identify specific learning in environmental education was acknowledged as an area that needs to be developed. The environmental education group is looking at how environmental education could be included more specifically in the curriculum structure. This has been delayed because of the school’s emphasis on the Māori Development Strategy. According to the teachers interviewed, there is no requirement for environmental education in existing curriculum documents, although some links were acknowledged, particularly in the science and social studies documents.

The Roopu teachers were quite definite about their belief that the environment infuses the whole of their kaupapa and that their curriculum therefore has environmental education as an integral part of what they do.

**Specific examples of environmental education practice**

**Flax collection**

The school has acquired and maintains the Orchiston reference collection of flaxes used for traditional purposes. While not specifically regarded as part of the school’s environmental education, it is regarded as a taonga and valued by the school. Students are involved in its maintenance and are made aware of its importance. The collection is growing on a site adjacent to and owned by the school. The property is also used for school camps and a range of other school activities so students are quite often in and around the collection.

**Catchment survey work**

From time to time one or more of the teachers has taken a secondary class out on the harbour to do catchment surveys with the local Environment Centre. These are intended to monitor the effect of changes in water quality entering the harbour. The survey work is relatively self-contained and so isn’t tied into specific teaching units in class.

**Cockle monitoring**

There has been an ongoing project in conjunction with NIWA monitoring cockle populations in the harbour. However, changes in the nature of the project have meant that this has not happened for about a year.

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8 Rene Orchiston of Gisborne spent over 30 years tracking down, documenting, and maintaining traditional cultivars of New Zealand flax. Her collection forms the basis of a National Collection maintained by Manaaki Whenua – Landcare Research.
Stream monitoring

There is a local cluster of five schools (Flaxwater and four primary schools) that regularly monitor sections of a range of local streams to see if the quality of the water entering the harbour is actually improving. It was originally set up as a data gathering exercise for a computer class but has since evolved more into an environmental exercise. Stream Sense resources are used for the data collection. The primary schools have found it hard to maintain their involvement because of the amount of organisation required. There is a hope that this can be linked to the work of “Harbourcare”, a local environmental group, to look at the effect of their tree planting programme.

Extreme waste

One class was recently involved in a highly successful survey of community behaviour with respect to rubbish. It was carried out on behalf of the local waste centre and had links to a national programme. The data gathered was fed into the national survey rather than used by students, but the social studies unit that the survey formed part of was thought to be effective in getting students to think differently about rubbish. It was the best-remembered environmental education mentioned by the students.

Teachers’ views of environmental education

For some teachers, the environment flavours all of their teaching and they can see ways of bringing it into what they do in a range of creative ways. For others, environmental education is seen as something to be introduced on top of what is already being done.

The views of the staff interviewed were fairly consistent. They were strongly centred on developing students’ awareness and care for the environment. It was seen as ideally being integrated into everything the school does.

The principal felt that environmental education should go beyond expanding students’ knowledge, understanding, and care and respect for the environment.

…’cause the next thing is, so what? – it’s about taking an active role and doing something positive in that regard … to give a koha back. (Principal)

Encouraging students to support sustainable practices was seen as important, as was developing teaching around specific environmental issues such as pest control and endangered species.

Those interviewed all felt that environmental education needed to be based in the local environment although one teacher suggested that in fact students had difficulty looking locally—they tend to be either very individualistic or global in their views. There was a strong emphasis on the need for involvement in activities “for” the environment and how people can play an effective

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9 Stream Sense is a resource kit for secondary schools produced by Environment Waikato. The resource is distributed free of charge to all schools in the region.
part in bringing about change. This was acknowledged as the hardest part of environmental education.

**Students’ perspectives**

Students’ views of what environmental education is were similar to those expressed by the teachers.

Learning about the environment. (Year 10 student)

Recycling … not hurting the environment. (Year 4 student)

All students agreed that they should do environmental education at school because many students “just don’t care”. They thought people should learn about how the environment works and what we should do to make this world a cleaner place.

The Year 10 students could remember specific examples of units that they had done in class, specifically one that involved doing a survey of community views on recycling. The students commented more on their interactions with the people they interviewed than on the environmental learning that took place. They also spoke about studying the greenhouse effect in social studies, and an estuary study in science.

The secondary students commented that most of what they do in social studies is about the environment. Their social studies teacher is one of the teachers involved in the environmental education planning group. When asked about what they thought they had learnt, they commented on finding out about the values of people in the community. They identified a greater awareness in themselves of the effect of specific practices, mostly relating to rubbish. The students commented on how they were able to inform the people they talked to which made them feel that they could have an impact. They enjoyed doing the survey itself but had little interest in what was done with the data they collected.

The Year 4 students remembered going on bushwalks and doing clean ups in school and in the community, but did not think these activities were linked to anything they were learning in class either before or after. They said they learnt to “keep the environment clean and don’t kill the wildlife”. They described how they were much more aware of how much rubbish is in the environment having been involved in the clean ups. They understood rubbish as a problem and were able to suggest some ways of reducing the amount of rubbish in the environment.

The primary students also described how, from time to time, they go and collect things from outside and use them to make items like kites and artworks. They said this was environmental education because they learnt to only take things that were on the ground.

Because if you take something off a tree it’s like a giant coming along and ripping your arm off. (Year 4 student)

The primary group indicated that conversation about the environment was a normal part of the way their class runs.

We know all about it because our teacher talks about it… (Year 4 student)
They said they thought it was good to do environmental education because it made you more aware of the environment and “more sensitive to nature”. They thought that recycling and looking after trees were important things to learn about.

**Intended learning in environmental education**

When asked about the learning they intended students to get out of environmental education, teachers mentioned that students should:

- develop an understanding of their place in the environment;
- develop a sense of responsibility towards it;
- understand what it has to offer them;
- become aware of the impact of their actions on the environment; think about their actions and their consequences;
- look at it on a community level; and
- acknowledge the link between themselves and the environment.

No examples of assessment of environmental education outcomes were available. While this was partly due to the timing of the study, it was also acknowledged by the teachers that in most cases they didn’t assess environmental education outcomes specifically. Evidence of an attitudinal shift in some students was identified, for example, through increased talk about what happens to food containers left lying on the ground. The environmental education co-ordinator mentioned that in a unit taught earlier in the year that was designed to look at relationships between organisms and the environment, students tended to give a lot of factual information and very little of the personal opinion sought.

**Role of the Guidelines for environmental education in New Zealand schools**

While they knew of the Guidelines and were at least partly familiar with their content, none of the staff interviewed used them specifically for planning. However, the Guidelines are seen as providing useful background to supplement planning by providing ideas for activities and by keeping the focus on the environment. It appeared that one of the reasons for not using the Guidelines more was a lack of time to become really familiar with them.

**Involvement with people/agencies from outside the school**

Many of the school’s environmental education activities involved links with one or more of the active local environmental organisations. These organisations are generally keen to have some involvement with the school, partly because they see it as a way to encourage environmentally supportive practices in young people.

Most of the interactions involve one-off events rather than sustained links. While appreciated by staff, this is not seen as ideal. Also, the links are with individual organisations and not co-ordinated in any way. This is seen as an important area to develop because of the great potential
seen in working together but is seen as difficult to achieve because of the diverse nature of the organisations and their goals. The environmental education co-ordinator planned to develop more effective links during 2003.

**Challenges and sustainability issues**

**The future of environmental education in the school**

There is a clear impetus within the school to formalise environmental education as part of the curriculum and to embed this within the management structures of the school. While it has been a desire on the part of some teachers, it is now also recognised and supported by senior management. This will be developed through 2003 and beyond.

> The one thing that we need to work really hard on from my point of view is actually getting in to really tie in our environmental education because we’re in such a fantastic place for it. (Environmental education co-ordinator)

The school has been accepted as a pilot school in the Ministry of Education environmental education professional development programme. It seems that this, together with the development of the school as an Enviroschool, will form the basis for the future development.

In the longer term, there is a desire to see better integration of environmental education through the various parts of the school, particularly between primary and secondary areas.

> It would be good see primary students coming into the secondary area with a good grounding in the concepts of environmental education and an ownership of their responsibility and guardianship for their environment. (Environmental education co-ordinator)

A need is seen for clear pathways to qualifications with an environmental focus and that recognise achievement in environmental education.

More generally, those interviewed expressed a desire to see environmental education become an integral part of the way the school operates and to see the student population more aware of their environment and how they can make a useful contribution towards sustaining it.

**Constraints**

A number of constraints were identified. Some of them were specific hurdles that need to be overcome in order to make significant progress, others were more of an ongoing problem, often affecting other curriculum areas as well.

**Time**

The time factor was seen as the most important challenge. Two issues were identified – planning time and timetabling. Time is needed for teachers to sit down and work together on planning and to reflect on what environmental education is all about. There also needs to be flexibility in the
timetable to accommodate what is planned for. Environmental education presents some specific challenges for timetabling, for example the need for students to be out in the environment.

Developing effective practice in the secondary part of the school

Two main areas of concern arose here. The first is the shift in the nature of the student population with significant numbers going through to the nearest main centre for their secondary education. The second is the need to identify ways of linking environmental education with the qualifications framework in order that students and the community can see how achievement in environmental education can be recognised formally, “when it counts”.

Establishing links with community organisations

There are a number of projects that the school is involved in, some of which are ongoing. There are visions of how these projects can be tied in to other local initiatives but bringing the threads together requires some effort and ways to do this in a way that is sustainable have not yet been identified.

The nature of the environmental education learning experiences

A need is seen for developing experiences that focus on education "for" the environment. This is seen as difficult but necessary if environmental education is to have any lasting benefit.

There is also a tension between student involvement in projects, which is short-term, and the length of the project which is long-term. Giving the students an extended view of the projects is seen as important but difficult.

…as individuals some of the students appreciate the long-term significance of the projects but as a group, generally [they don’t]. (Environmental education co-ordinator)

This was seen as related to students’ unwillingness to think beyond themselves. When they did, they tended to look at global issues rather than at their local environment. It was suggested that possibly students felt powerless to make changes and that active involvement in local projects where they could make a difference that could be seen would be useful. However, it was acknowledged that this kind of approach requires much more time and effort. Allowing the students to engage directly with specific environmental issues has a number of implications, in particular the time taken to allow the necessary thinking and problem solving with the flow-on effects on other curriculum requirements.

…to set it up with that [the ‘for’ the environment aspect] as your purpose, you’ve actually got to let go of a lot of your own control of the situation. You’ve got to let the kids take the action that they feel is necessary and that’s where you don’t get through the curriculum very fast and you don’t .. you know.. you have to let go of a few other things, takes a little more time and a little more energy and it’s approaching it from a different point of view… (Environmental education co-ordinator)
Getting all staff on board

This was seen as an ongoing but important issue to deal with.
Kura Kaupapa “A”

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**Background**

**School context**

Kura A is situated in a mixed-income suburban community where Māori comprise approximately 60 percent of the population. A large number of the Māori are from the local tribe and live on traditional tribal owned land. About 100 metres from the school is a semi-industrial area. This is the main production site for a nation-wide manufacturing company.

There are approximately 70 students in junior school (Years 1-6), 15 students in the middle school (Years 7 and 8), and 26 students in the senior school (Years 9-12). The junior school classes are divided into Years 1 and 2, Years 3 and 4, and Years 5 and 6. There is one Year 7 and 8 class, one Year 9/10 class, and one Year 11/12 class. The school also has an on-site pre-school.

The school has a number of special features that contribute to its character. First, it is located within a kilometre of a large lake and the local mountain dominates the view from every part of the school. Part of the mountain is a dedicated reserve where the Department of Conservation has recently built a walking track beside one of the streams and planted a considerable number of New Zealand native plants. Second, the school is Māori immersion except for the classes that teach English. Even the Spanish classes (it is compulsory for every student in the school to learn Spanish) are taught using the medium of Māori language.

The school draws most of its students from outside the immediate area, with some families having moved so that their children could attend. All the teachers have children enrolled in the school which not only makes them members of the whānau but is also evidence of their commitment to the kura.

**The school culture**

The school was officially opened in 1993 and moved to its present site in October 1998. Since then it has undergone some significant changes. Specifically, the roll has doubled (the roll in 1998 was 45 students) and the school now caters for Years 1 to 12 rather than Years 1 to 7 students.

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10 Pseudonym.
Māori is the first language of the school. English is introduced as a second language. In 1998 the whānau requested the introduction of a third language on the basis that this would extend student understanding of language learning. The language chosen was Spanish. The principal has developed specific resources using the medium of Māori to support the teaching of Spanish. Students are now capable, confident speakers in Māori, English, and Spanish.

The school’s curriculum teaching and learning is directly related to the local area. The principal wanted students to learn about the historical significance of the school site and the surrounding area, both ecological and cultural, for pre-European and contemporary Māori society. Student learning experiences both inside and outside the classroom link directly to ancestral Māori knowledge and values. Overseas trips provide opportunities to develop cultural relevance for whānau (extended family), staff, and students. Cultural relevance relates to how students develop an understanding of the centrality of Māori innovation in the journeys from Hawaiki to Aotearoa. Towards this end, students from standard 4 upwards had travelled to the Cook Islands in 2001 and a trip to Tahiti is planned for the later half of 2003. School policy is to travel to a Pacific Island every two years. National and international trips explore the re-enactment of the migration journey.

At present Kura A does not have an official policy on environmental education (as it does, for example, for education outside the classroom). It does, however, have someone designated as the co-ordinator of environmental education in the kura. She described environmental education as “interwoven” throughout the kura’s charter and strategic plan.

**Case study methods**

Initially, the school was approached to take part in the critical stocktake component of the research. Discussions between the principal and one of the project directors revealed that the school was planning for environmental education to become the key whole school curriculum focus for 2003. The principal agreed to a researcher being a part of this planning process.

The principal and the environmental education co-ordinator for the school were interviewed in 2002. A half-day staff environmental education professional development session run by the school environmental co-ordinator and the principal was observed. In addition, a meeting between the principal, the school’s environmental education co-ordinator, and a newly appointed regional environmental education adviser to discuss the school’s involvement with the ‘Enviroschool’ programme in 2003 was observed.

A range of documents including the charter, strategic plans, policies, and information about the teaching and learning approaches was reviewed. Examples of student work on pollution of the river by a nearby mill, one of the objectives for a field trip in Term 3 (2002), were observed on the wall in the Year 3 and 4 classroom.

In 2003, several months after the case study site visits, a further conversation took place between one of the research directors and the principal.
Environmental education at Kura A

Kura A’s move to incorporate environmental education as a core component of the curriculum can only be understood in the context of the principal’s vision for the school and the commitment of the staff as a whole to Te Aho Matua. Overarching these the principles of the local tribe guide the thinking and actions of the teachers, students, and local community. Connections and guardianship are both important aspects of these principles.

Elaborating on the notion of connections, the principal explained that Māori have a very different conception of themselves as a part of the environment than do non-Māori. In the Māori worldview there was never a time of pre-human impact. In all stories and legends Māori are always a part of the environment—the western notion of the environment in a "pristine" condition does not exist. Moreover, Māori are connected with the environment in a personal way best explained as a familial. Individuals are seen as having a direct relationship to Papatūānuku ("the Earth Mother") and Ranginui ("the Sky Father").

It is a priority of the principal that the children develop a sense of connection with the environment so that they “palpably feel their ties to this particular part of Aotearoa”. He expressed the hope the children would retain a sense of connection with the area when they were older through the ties they had developed while they were at school. To this end, he thinks it is important the children learn about the history of the local area and what it was like before colonisation (by Pākehā). He has a deep knowledge of and passion for the area and its history which he shares by walking the whole school around the school grounds explaining the history of the land and the significance of the plants (and animals) on the school property to that history. This activity, which is part of the school culture, is enjoyed by staff and students alike. The principal considers that the children making connections with the past and understanding the magnitude of the changes to the environment is important because it opens up possibilities for future actions to restore the land and subsequently, perhaps, the animals that depend on it. To this end, only native species have been planted on the school grounds. The principal has plans to establish both a traditional food garden and a medicinal garden on the school grounds.

The planting of natives has been guided by student analysis of the archived minutes from hearings of the Māori Land Court from 1880 to 1912. The analysis has been undertaken by senior secondary students as a part of their Te Reo Māori, history and geography courses. Using this information, eco-sourcing of plants and animals from, were possible, the original or local environment is undertaken. The minutes also provide planting schedules and stories relevant to the history of the environment in the local area. These have been used to guide the planting at the school. In 2001, this information was also used by students to analyse planting (what was planted, where, and why) by the Department of Conservation along the walkways on the local mountain. It is the principal’s intention that this information will become part of the curriculum for the younger children.

The school’s embracing of environmental education can partly be attributed to its involvement in the "Living Values" programme. In 2000, a school action plan was developed to begin to integrate values more deeply into policy and practice in the school. The initial emphasis was on implementing, reviewing, and/or enhancing specific programmes and policies, including: the "Virtues" programme, Philosophy for Children, the school gardening club/kaitiakitanga, and the establishment of peer mediation, all of which incorporated a focus on values to do with care for
the environment. In 2001, the focus was on identifying ways to enhance or improve teaching and learning practices, to more closely reflect the values of Te Aho Matua and the local tribe.

Developments in 2002, which culminated in environmental education becoming a core curriculum focus, were initiated by Teacher A’s attendance at a course on the Guidelines. Teacher A is passionate about the environment, evidenced by her home recycling practices and the time she has spent camping in the local area. She was invited to take part in the 2-day course in Terms 3 and 4 because she was teaching Year 3 to 8 science. She attended with the principal’s full support. In Term 3, after the two days of the course, she entered her Year 3 and 4 class into the Keep New Zealand Clean programme run by the local city council. As part of this programme, her children cleared an area adjacent to the school that served as a dumping ground for assorted rubbish including large items such as beds and fridges. The children erected signs in Māori urging people not to dump rubbish. Their efforts were recognised by the school community and commended in the local newspaper. Teacher A commented that she had been overwhelmed by the enthusiasm and commitment of the children. A message in the children’s homework book states:

…kohia nga rapihi kia tiaki i a papatūānuku

This translates as ‘Pick up rubbish to show that the earth mother is cared for (by people).’

Also in Term 3, Teacher A described and implemented an integrated science/social studies unit with an environmental theme with her children. Through the unit the children learned about the water cycle, the history of the local area, and the impact on this environment of a nearby paper mill. They undertook a field trip to investigate the pollution of the river by the plant and began paper recycling. This unit allowed the teacher to help the children see the connection between the paper they were using and recycling, the trees from which it is made, and the pollution that arises as part of its manufacture, all as part of learning about whanaungatanga (where we are from).

In Term 4, Teacher A moved to encourage other staff to recycle paper. The school’s current environmental education activities include a daily collection of unwanted paper from classrooms to be placed in the environmental education co-ordinator’s recycling bag. She expressed a keen sense of achievement to have seen her first bin of paper sent to the recycling centre the week prior to being interviewed. She commented that the children were becoming aware of environmental education issues and were active in a minor way in putting up posters urging others not to pollute the lake and lakeshore.

Also during Term 4, Teacher A and the principal sought to formalise the school’s vision for environmental education. The Taiao (environmental education) vision for the school is:

Ki Te arahi i ngā tamariki o Te Kura o [the local area] ki te tū hei kiaiarihahi mō te taiao o te Koutu, [the local area], [the region], Aotearoa, Te Ao.

To lead the children of [the kura] so that they in turn may become leaders for the environment of [the local area], [the region], New Zealand, the World.

Ki te hoatu ki a rātou te rangatiratanga (power), te kitenga (awareness) me te mātauranga (knowledge) mō taua mahi, me te āta mohio anō rā, nō konei tātou.
To give to the children the power/self determination, the awareness and the knowledge of this practice (environmental education), and also the self knowledge that this (the environment) is where we belong.

Teacher A explained that the values espoused in the vision statement were:

Entrenched values within Māoritanga and [the local tribe] and everything this encompasses.

Both the principal and Teacher A commented on the importance of developing a shared (amongst the staff and children) awareness and knowledge of the environmental issues such as deforestation, the endangerment of native species and the impact of pollution and pests, and of environmental “solutions” such as worm farming, replanting, re-establishing native habitats, the re-introduction of species, pest control, and recycling.

Teacher A also emphasised that, while she has ideas for the school programme, she valued the fact that the children had their own ideas and was happy to “fly with what they want”. She was guided by the kura community’s view that teachers and children need to take ownership of this learning area.

Late in term 4 the decision was made to make environmental education a focus for the kura’s programme in 2003. The kura has been accepted into the Enviroschools programme for 2003. Along with the principal, Teacher A, now designated the kura’s environmental education co-ordinator, introduced the above vision to the staff at the environmental professional development/planning session in early December, 2002. The vision was supported unanimously. The consensus of the staff was that they already understood and supported the "ethos" of environmental education as outlined in the Guidelines. The Māori ideas of kaitiakitanga (guardianship) and whanaungatanga (relationships), for example, were already embedded in the way that the older children in the school looked after the younger children.

The principal emphasised, however, that environmental education would need to be viewed through “a Māori filter” and pointed out that this would mean the teachers moving their thinking from kaiarahi (leader) to kaitiaki (guardianship). He explained that staff would need to acknowledge kaitiaki that were already there\textsuperscript{11} and teach this knowledge to their students as well as the staff owning kaitiakitanga (responsibility for the sustainable use and management of natural and physical resources).

Given the ready acceptance of the vision for taiao, the focus of the discussion at the planning session quickly turned to “What is environmental education practically, on the ground?”. The staff had previously decided the environment of the nearby island would be their focus in 2003. Their priority for the development of an environmental programme was: "nga herenga". That is, their goal was to develop a programme that would build on the existing physical, spiritual, and emotional connections between their children, the school, and the island, and also develop these further. To this end the staff, their families, and the school prefects decided to camp on the island the week before school started in 2003. Once school began, every student in the school would

\textsuperscript{11} For example, Matuatonga, the stone God for crops, who is known by all the teachers to have resided in the area but was taken to the nearby island in the early twentieth century.
have the experience of living on the island with two classes travelling to the island each week. In the planning session the teachers discussed the environmental issues they expected to face on the island, including:

- rubbish—especially on the foreshore. The question was posed as to what rubbish there would be on the island;
- weeds such as blackberry and lake weed;
- pests such as rats;\(^\text{12}\)
- the effects of introduced plants and animals on the native flora and fauna of the island;
- the impact tourism on the environment.;\(^\text{13}\) and
- the staff questioned the impact humans have had on the environment.

At the conclusion of this, Teacher A reminded staff that it was also important to maintain day-to-day environmental practices such as paper recycling. She has been financed for 1000 worms so that in 2003 she can start a worm bin in her classroom. She aims to use food scraps collected from all the classrooms to add to this on a regular basis.

**Environmental education in 2003**

As planned, staff and students visited the nearby island. The focus for student activities was to listen to and identify native birds, to identify native and non-native trees, and to study the special features of the landscape. Students also located Department of Conservation rat-traps and considered why they were placed in a particular setting. There are plans to purchase tents so that students can stay overnight on the island and visit it more regularly so that it becomes part of who they are.

Alongside this, all classes are part of a "reduce, reuse, and recycle" programme and the planting of native trees and shrubs has continued. As of Term 2, the local company is no longer collecting recycled paper but a parent is taking it to the depot. Staff are working to infuse an environmental education perspective into all units. Thus far, for example, students are investigating biodiversity and the impacts of global warming as well as culture in preparation for a trip to Tahiti.

The long-term intention is that the kura further develop its ties with the local island, continue to upgrade the grounds, and to infuse an environmental education ethos into the teaching and learning programme.

\(^{12}\) In another meeting between the principal, environmental education co-ordinator in the school, the newly appointed environmental adviser and the regional facilitator for environmental education, we were informed by the facilitator that the island had been sprayed by plane to kill the rat population. However, the local city council had not permitted the land bordering the shore to be sprayed so the rat population had survived there and was gradually re-infesting the island.

\(^{13}\) In the meeting mentioned above the principal spoke of a business proposition made to a local Trust Board and the local city council to build a helicopter pad on the island for tourist transport. The Trust Board was currently opposed to this.
CHRISTCHURCH GIRLS' HIGH SCHOOL

School profile

School type Secondary
Roll size 994
Decile rating 10
Locality Urban
Student ethnicity NZ European/Pākehā - 87 %
Māori - 4 %
Pacific - 1 %
Other - 7 %

Staffing 56 full-time, part-time

Background

School context

Christchurch Girls’ High School is a girls’ school, situated in a high-income suburban community in a large city. The school has a long history and a well-established reputation for academic achievement, which students and their parents recognise.

They [students who come to this school] come believing they are going to do well. They genuinely want to do well. (Teacher B)

Although academic achievement is paramount in the school’s reputation, broader social, cultural, and sporting aspects of education are also an important part of the school’s history. In recent years, the school has begun to re-examine the kind of educational opportunities it offers to students, and the extent to which these support the development of well-rounded students capable of making positive contributions to their communities.

The current principal came to the school in 1999. Her arrival coincided with a phase of major staffing changes in the school, partly due to a number of long-serving staff reaching retirement age. The principal and senior management team initiated several change processes within the school, and a number of new staff were appointed to fill the positions left by retiring staff.

Coincidentally, in 2000, the school’s enrolment scheme also changed from a system of selecting out-of-zone students according to academic achievement, to a system where students from outside the school zone gained entry by a balloting system.

In 2003 the school was about to undergo a self review to look at how well its curriculum and course offerings were meeting students’ broader education needs. The senior management team was also looking at establishing a staff “learning group” which would meet regularly to focus on teaching and learning across the school.
Environmental education at Christchurch Girls’ High School

Environmental education at Christchurch Girls' High School takes the form of a Year 12 level 2 NCEA course called “Sustainable Futures”. The course was initiated and implemented by a biology teacher (Teacher A), and a geography teacher (Teacher B), who share the teaching of the course. The course is being offered for the first time in 2003 and has 12 enrolled students.

The impetus for the course began in 2001, when the biology and geography teachers went to a two-day Guidelines for environmental education in New Zealand schools professional development course and learned that they could apply to become an environmental education pilot school. Both teachers were enthused by this possibility. Teacher A (biology) had been looking for ways to teach environmental education in the school for some time, and both teachers were interested in cultivating more cross-curriculum approaches within the school. The teachers approached the principal and senior management team who were “quite receptive to our ideas” (Teacher B). Teachers A and B considered how environmental education could be brought into the school curriculum.

We had a look at what we were doing already in our programmes within the sciences and the social sciences and we thought, that’s really not enough. We were confined by our curriculum documents. We weren’t able to take it [environmental education] as deep as we’d like. (Teacher B)

Both teachers felt there were “really important [things], that kids should be talking about and getting involved in” which weren’t possible within the existing subjects/curricula.

…like actually having time to go and work with a community organisation… you just don’t get the time [in existing science and geography courses] to allow students to go out there and work with another group. (Teacher B)

The teachers were also interested in doing a senior level “academic” environmental education course, as opposed to a Year 9 or 10 level course as they had seen at other secondary schools. The teachers submitted a proposal for the Year 12 Sustainable Futures course to the school’s curriculum committee. Eighteen months later, the Sustainable Futures proposal was accepted, and the two teachers worked together to plan the course’s objectives, content, and assessment processes. Mostly of the course preparation occurred between the end of the school year in 2002 and the beginning of the new school year in 2003.

Case study methods

The principal, assistant principal, and Teachers A and B were interviewed individually. Seven of the twelve Sustainable Futures students were interviewed in groups of three and four. A variety of course documents was also collected and reviewed. A researcher sat in on two Sustainable Futures class periods. A community-based environmental educator who has supplied materials for the course was also interviewed.
The school culture

School values and philosophy

The school’s mission statement is:

To provide for young women a positive and caring educational environment which encourages them to realise their creative and intellectual potential and which fosters their physical, emotional and social development.

The principal felt it was important to foster an environment in the school where students felt safe to ask questions, and could always find someone in the school who could offer them whatever help they needed. Teacher B described the school’s culture as “changing” in the four years she had been at the school. These changes were due to both the recent changes in staff profile, and the vision of the school’s management team.

When I first came to the school …. it wasn’t a culture and philosophy that I felt comfortable with. Basically the girls were here to get top academic marks. It didn’t matter whether they were really thinking about what they were doing. That seems to be changing now. (Teacher B)

Teacher B thought the changes in the school culture were visible in warmer interactions between staff and students, and a greater sense that the school needed to focus on producing students who were not just academically excellent, but also capable of contributing positively to their communities. The changes were also visible in the number of staff in the school with new ideas who were “willing to challenge, and do things a bit differently”.

Views about NCEA

The principal was supportive of NCEA, because she thought it gave a better indication of what students could do. Teacher B also supported NCEA.

I think it actually helps students see where it is that they’ve got to improve. If we do it properly, it’s about saying to the kids ‘It’s more than just cramming a whole lot of stuff into your brain to be regurgitated, it’s also about looking at what are the issues, teasing out what it means’. (Teacher B)

Teacher A liked that fact the NCEA assessments required students to demonstrate high-level thinking skills. However, she had mixed feelings about NCEA, because the new system required so much time and paperwork to be spent on assessment, that it took time away from the kind of teaching that could foster these higher-level thinking skills. The principal did, however, describe assessment at senior secondary level as “the tail that wags the dog” and said that the amount of assessment required at senior secondary level was excessive.

The role of Māori knowledge and values in the school culture

The principal and teachers reported that Māori knowledge and values, regrettably, had a very low profile in the school culture. The school was undertaking a needs analysis of its Māori students,
and recent steps towards increasing the prominence of Māori culture in the school included the establishment of a kapa haka group. Teacher B felt that there should be more attention to Māori knowledge, values, and culture in the school’s social studies programmes, and that more work with staff was needed in this respect.

**Role of the community**

Staff indicated that there was some apathy among the parent community in terms of actively engaging in students’ education. Staff felt some parents thought that getting their daughter into the school was the end of their responsibility, and expected that the school should do the rest in terms of ensuring the girls’ academic success and achievement. The lack of turnout and support of PTA events and meetings had also disappointed the school PTA.

**The Sustainable Futures course**

Sustainable Futures has no prerequisite courses or recommended subject combinations with other Year 12 courses, although Teachers A and B saw Sustainable Futures as leading into many possible tertiary courses.

> We’ve talked to the students that there are numerous courses at polytech and university that will take them places. But often they don’t see those pathways at Year 12. (Teacher B)

Sustainable Futures is currently only offered at Year 12, but students who take the course can go on to Year 13 biology or geography if they choose.

The principal, assistant principal, and both teachers described Sustainable Futures as fairly unusual for the school. It was not common for the school to “invent” new courses, but the special character of Sustainable Futures had appealed to the senior management team and the head of the curriculum committee.

> I guess the most motivating factor [for approving the course] was to provide a broadened curriculum for the girls. Traditionally the school was providing a reasonably narrow, academic curriculum…also the approach to learning is challenging to traditional means of ‘teacher, chalk, talk’, ‘sage on the stage’ philosophy…[In Sustainable Futures] the girls are out ‘doing’. That’s really exciting, and that’s something we’re trying to promote more widely within the school. (Assistant principal)

The teaching approach in Sustainable Futures set it apart from most other courses. Students were expected to be more involved in deciding what they were going to do and how they were going to do it. Teachers A and B saw themselves as co-learners with their students, in the sense that much of the course content and processes would be constructed by the teachers and students during the year.

**The aims of Sustainable Futures**

The aims of the Sustainable Futures course, outlined in the course booklet, are:
• To develop an awareness of our environment, the complex interrelationships of the living
  world and the non-living world, and how ecosystems function.
• To develop an awareness of how human activities are breaking down the support systems of
  our planet and the consequences of this.
• To provide appropriate knowledge and understanding of environmental issues as a basis for
  informed decisions about and action for, the New Zealand environment.
• To promote an awareness of New Zealand’s role in global environmental efforts.
• To develop skills to achieve these aims, including observation, research, data collection and
  management, interpersonal and communication skills.

For Teacher A, it was important for the course to raise students’ awareness of environmental
problems in New Zealand and world-wide, to provide students with information and research
skills. Her own background in science had given her opportunities to visit and study ecosystems
in New Zealand and around the world. She believed that first-hand experiences were essential for
students to understand different environments and see the human impacts upon them.

[It is important for students to] learn to have a real respect for the living world.
This is what sustains this planet. I feel that there are vast numbers of people who
don’t realise that that’s the case. (Teacher A)

She also wanted students to see and meet people who were taking actions to preserve or sustain
the environment, so that, when students found some project that inspired them, they would feel
competent to get involved in taking some action themselves.

Teacher B wanted students to come out of the course with skills about how to work with
community groups, and some understanding about different perspectives on how people view the
environment.

I think environmental education is more than what happens in the school, it’s
about brainstorming with other people, within community groups or whatever.
‘How can we make a change? What can we do to change people’s attitudes?
What are the ethics when it comes to the environment?’… all these things,
actually sitting down and talking to other people who are interested in the
environment. (Teacher B)

She suggested that young people were sometimes reluctant to phone someone up and make initial
contact, and therefore it was important for students to have the chance to go out and engage with
community groups during the course.

[Students need to develop] skills for making initial contact, introducing
themselves, establishing what they want to do, and actually moving forward, or
moving backwards to find another direction if that one didn’t work out. (Teacher
B)

Teacher B also wanted students to become confident in their ability to hold opinions, and to know
how to find further information to support their opinions, rather than reacting to environmental
issues on a “gut” level. She also wanted the students to reflect on the process of learning they
were engaged in.
I think education is about bringing out the best in students by actually encouraging them to question… I’ve always said to my students ‘challenge me, if you think what I’m saying is a load of rubbish. Challenge me, but you’ve got to support your arguments as well’. (Teacher B)

**Course content and materials**

The course is taught under three main “themes”:

- Term one: Our Earth, our values
- Term two: Biodiversity
- Term three: Energy and waste: our responsibilities

The compulsory part of the course finishes at the end of term three, and term four is spent on an optional unit and presentation of students’ major project for the course.

The teachers provide students with one or two booklets of readings for each term, compiled by the teachers from a wide variety of sources. In 2003, the term one readings for “Our Earth, our values” included articles and papers on the “Gaia” concept, recent global summits on sustainable development, and western and non-western environmental values and ethics. Near the end of the term, the course focused on one example of conflicting values in environmental education: the issue of GE. In addition to the readings and the class discussions, Teacher B brought in six guest speakers to present their viewpoints on GE to the students. The speakers included research scientists involved in GE research, a member of a local Māori natural resource committee, and an independent anti-GE lobbyist.

At the time of the case study (late term one), the students were preparing to go on a three-day field trip with Teacher A, where they would visit a wide range of New Zealand ecosystems (such as bush, coastal, estuarine, and alpine). This would lead into the term two theme of biodiversity.

During the course development, the teachers had established contact with a local community environmental education provider who had developed a wide range of resource material for a nation-wide community education project aimed at educating adults in ways of making their own households more sustainable, environmentally friendly, and economical, with a focus on waste management, energy use, water consumption, gardening, and shopping. The community educator made the teaching materials available to the Sustainable Futures course, and the teachers have agreed to adapt or incorporate these in term three.

**Assessment**

The course is assessed against six achievement standards worth 25 credits in total. The previous year, the teachers had been part of a group that approached the Ministry of Education to request the creation of achievement standards specifically for environmental education. The proposal had not been successful, and the teachers therefore had to select appropriate science and social studies achievement standards to assess Sustainable Futures. The selection process involved looking at which biology and social studies achievement standards were not currently used in the school. The standards that were selected for the course are shown in the table below.
Table 6

<table>
<thead>
<tr>
<th>Achievement standards for Sustainable Futures</th>
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<tr>
<td>Social studies 2.2</td>
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<td>Science 2.3</td>
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<td>Biology 2.9</td>
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<td>Social studies 2.3</td>
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<td>Social studies 2.4</td>
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<td>Social studies 2.5</td>
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The teachers wanted to ensure they were teaching an environmental education course, not a social studies or biology course that fulfilled the assessment requirements. This had required some “tinkering” with the way the social studies and biology achievement standards were met, so that they reflected, and were reflected by, the context of the Sustainable Futures course.

In some ways, these social studies [achievement standards] for enquiry don’t work particularly well. By that I mean that we actually spend a lot of time looking at procedural things rather than getting out there and doing things. Environmental education is about ‘doing’, and we’re a bit confined with the social studies [achievement standards].

For example, Teacher B used the debate over GE as the context for assessing social studies achievement standard 2.4.

When I had a look at the [assessment example] on the web for social studies, it was ‘give them this thing to read, they’ve got to tease out what the different viewpoints are.’

By contrast, Teacher B felt that Sustainable Futures teaching had built up to the assessment in a more authentic way. Students had had time to read and discuss a lot of background material on GE, and over a week, listened to presentations from six speakers with different perspectives on the issue. In focus group interviews, the students debated over how well the social studies achievement standard measured what they felt they had learned in Sustainable Futures.

First student: We’re doing this social studies assessment, and we’re going to be marked against people who are actually doing social studies, and we’re not.

Second student: We did it in a different way, I think we did it a lot more in-depth. Like they would have got a piece of paper with political views on it, whereas we had actual people.

A few days after the students completed achievement standard 2.4, Teacher B used a period of Sustainable Futures to ask for feedback from the students about the GE guest speakers. A researcher sat in during the discussion. The students had much to say about the various speakers and the way that they had presented their perspectives on GE. They had been most impressed by speakers who they felt gave well-argued perspectives, and were less impressed with speakers who they felt had given information without making it clear what their own position was.
The major action project

Social studies achievement standards 2.3 and 2.5 are assessed as part of the students’ major project, to be presented in term four. The main point of the project is to research, plan, and actually undertake an environmental “action”. It is up to the students to decide what the project will be, and how they want to do it (for example, as individuals, as small groups, or as a whole class), and who else they will involve. Teacher B had no predefined ideas about what constituted an appropriate action. She and the students had already discussed several ideas, including letter writing, organising a peace march, or working with the Board of Trustees to investigate the school’s ecological “footprint”.

They’ve got to see that there are pathways to them making change. It’s not just them standing up and waving the flag. It’s about getting people on board who can actually make some change. (Teacher B)

Challenges for new ways of teaching

A key feature of Sustainable Futures is the discussion-based teaching approach. Teacher B felt that one of the biggest challenges for the course was for students to adjust to a different style of teaching and learning.

…I’ve had students say ‘what is it you want us to write down? Why haven’t you got lots of notes? How are we going to pass the exam if we haven’t got lots of notes?’…getting to the stage, where at the end of a lesson, [to say] it’s ok to have sat around and discussed all period. That’s still learning. They’re not used to it. (Teacher B)

Teacher B was surprised that some of the girls were “a bit scared, a bit nervous about voicing their own opinions”. Teachers A and B had discussed with other staff the need to have better “scaffolding” in the junior school programmes, so that in the long term, students would learn to feel comfortable about talking and discussing their views in class.

Support and resources

Role of the Guidelines for environmental education in New Zealand schools

Teachers A and B used the Guidelines for environmental education in New Zealand schools as a platform in planning the course. Teacher B had not known about the Guidelines until she went on the environmental education professional development course. When she returned to school she found them in a box in a “pristine state”. Afterwards, she asked the assistant principal to get extra copies, and made sure that every HOD in the school had a copy. Teacher B felt it was time to do further work with staff across the departments to look at how environmental education could or should be better integrated across the school curriculum.
Involvement with people/agencies from outside the school

Teachers A and B both drew heavily on outside people and agencies for the Sustainable Futures course.

For me, outside agencies are absolutely key, because we are getting outside ‘experts’, so-called, to present ideas to the kids… we want them to actually work with community groups, and establish the relationships themselves, whoever that’s going to be. (Teacher B)

Teacher B was particularly pleased that the Sustainable Futures course had created the opportunity to establish a relationship with local Māori iwi, through the guest speaker who came to talk about Māori perspectives on genetic engineering. Both teachers drew on the science and environmental education expertise of staff from local tertiary education institutions. As described earlier, the course had also established a link with a community based sustainability education project. The Sustainable Futures course had also generated interest from other schools, and agencies with an interest or a stake in environmental education. The teachers had been asked to contribute to workshops for other secondary teachers interested in establishing similar courses in their own schools.

Students’ perspectives

Motivation for taking the course

The students who were interviewed each had different reasons for wanting to take the course. Some had a strong interest in environmental issues, while others were attracted by the teaching style of the course, or were looking for something “different” to complement their other academic subjects. One student had an interest in snowboarding and wanted an outdoor career. Another was an ESOL student who wanted to learn about different cultural values and perspectives on the environment. Others were interested in building careers in conservation or environmental law. All students suggested they were in the course by choice, rather than by default.

Attitudes of other teachers and peers

Teacher B described the 12 students as the “brave ones”, because they were willing to do the new course in spite of some of the negative comments that had been directed towards the course from other staff. Students confirmed that some teachers had made negative comments.

I remember my English teacher saying last year ‘Oh, and there’s Sustainable Futures, but I don’t know why anyone would do that, is anyone in this class doing that?’ And I was the only one, and I thought, well I’m not putting up my damn hand! (Sustainable Futures student)

The students found it irritating that some other teachers didn’t seem to know what Sustainable Futures was, or didn’t see it as a “serious” subject. Some of the students’ peers had also expressed similar attitudes.
This school’s quite academic, ‘good solid subjects’ like chemistry, calculus etc. and [Sustainable Futures] isn’t seen like that. (Sustainable Futures student)

One of our friends tries to convince us that we should have done geography, and that this is going to be absolutely useless. (Sustainable Futures student)

The Sustainable Futures students were generally unfazed by these attitudes and comments. They liked the fact that the style of teaching was different from their other subjects. For some, this had been unexpected.

I thought we’d be writing more notes, to tell you the truth. When we first started all the discussion, I actually preferred it. It builds up your confidence in different ways. It’s all great to know the facts and everything but if you can’t express it, what’s the point of knowing it? (Sustainable Futures student)

**Students’ views about education**

In general, the students’ views about education were similar to those expressed by Teachers A and B.

The basic facts are important, but after that you don’t really need to know all this hard…. I mean it’s not necessary, it’s more important to build up morals and stuff, and learn about other people’s cultures. (Sustainable Futures student)

Personal development. Finding out who you are, where you want to go with your life. Instead of learning that if you put magnesium with something else, it’s going to blow up. That’s cool to know, but I don’t think school focuses enough on personal decisions, and how to be a good person in society. (Sustainable Futures student)

**Sustainable Futures compared to other subjects**

Students said it was unusual for teachers in other subjects to seek their views and opinions about the course content and teaching approaches.

First student: Teachers don’t really come up and say to you, like….

Second student: - ‘do you like what you’re learning?’

First student: Yeah exactly. You get your termly reports but they’re pretty vague….

When teachers did ask for students’ feedback, for example, on an assessment, students felt their opinions generally had little impact.

In chemistry or something, [the teacher] will ask us ‘How did you find that test?’, but it wouldn’t matter. It’s done, it wouldn’t make any impression on anyone. (Sustainable Futures student)

The students also recognised ways that Sustainable Futures challenged them, compared with what they were used to in other subjects.
In some ways it’s sort of less ‘safe’. Because of the discussion, you don’t have a set thing to follow. Like the assessment we just did. Normally [in other subjects/classes] we’d have a list ‘This is what you’ll be doing, this is how you should do it, this is what you’ll end up with.’ (Sustainable Futures student)

One group of students thought that fear and uncertainty about assessment might have scared other students off from taking the course.

**Expressing their views in class**

The students thought that having a small class was part of what made the class so successful for them. In particular, they felt comfortable discussing their views with a small group of peers who they knew were prepared to listen to their views without putting them down.

The people that chose [Sustainable Futures], it’s kind of an ‘out of the way’ subject, so they actually want to be there. So they respect it when you’ve got an opinion. (Sustainable Futures student)

The students thought they would gain research and discussion skills from the course, even if they did not end up pursuing further study in environmental education. Already, they felt they had learned a lot from the course.

…[it’s learning] stuff you don’t hear about in geography. It goes into more depth about things… like GE…sustainable resources and stuff. (Sustainable Futures student)

We probably know more about genetic engineering than most people in the school. Some people might know more about the actual biology or the mechanics of genetic engineering, but we know more about the background and stuff. (Sustainable Futures student)

**Students’ environmental concerns**

Students thought they were becoming more aware of how serious the world’s environmental problems were. Of major concern to them were issues of pollution and litter. They felt that most people didn’t care about the environment or just couldn’t be bothered looking after their own environment. However, some students traced the root problems of pollution back to a consumerist habits.

We keep thinking about individual people littering as a really bad thing, but then you look at what big companies are doing, that’s where the real problem is I reckon. (Sustainable Futures student)

Is it going to matter, in the long run, whether you put rubbish in the bin or on the ground? Because in the long run, it’s going to end up in a landfill anyway. But if you don’t buy the plastic bag in the first place, then it isn’t there. (Sustainable Futures student)

The students felt that New Zealand’s small population was the main reason that its environmental problems were less severe than many other countries. They recognised that people in poor
countries often had more immediate priorities than a concern for their environment, and that these countries needed assistance from rich nations to become more sustainable in the long term.

It has to be a complete community project. A couple of people can’t go out there and say, we’re going to change the world. It has to be a global and national decision. (Sustainable Futures student)

People have to know they’ve got more political power. They got the person in there, so if they are doing something you don’t like, as a community we can do something about it. (Sustainable Futures student)

**The power of young people to contribute to change**

Most of the students said they thought that young people could contribute to the solution of environmental problems, and indeed, felt that if their generation did not instigate change, it would be too late. Most of the students said they generally felt optimistic, rather than pessimistic, about the future.

For me, optimistic is how we can change it for the better. Pessimistic is learning about the effects we are having, and how bad it is. (Sustainable Futures student)

Most students were not sure what they would do for their major action project for the course. Some were concerned or nervous about the amount of work involved, while others were “stoked” that they were going to have the chance to actually “do” something.

**Challenges and sustainability issues**

**Time and energy**

Teachers A and B had both spent “a huge amount of time” putting the course together.

I think this is incredibly important, and I want to do whatever I can to make it happen while I still teach at this school….It’s taken up most of my life for the last year and a half. (Teacher A)

**Cross-curricular teaching**

The cross-curricular nature of Sustainable Futures gave Teachers A and B the opportunity to work together and get to know each other better. This was unusual because there were few opportunities for teachers to work collaboratively across curriculum/departments in the school. However, teacher B pointed out that each teacher was still teaching mainly within their own subject area because of the way the course was structured.

It has built a relationship between the sciences and the social sciences, but I still think there needs to be more… I’d like this to be a catalyst for change in the school, that we do a lot more cross-curricular work and talk to each other. (Teacher B)
Budget and staff

Due to the small number of students taking the course, it was not economically viable for two teachers to take the course. It was likely that only one teacher would teach Sustainable Futures the following year. The two teachers, the principal and assistant principal all felt that at this stage, the course was dependent on teachers A and B and would not continue if these teachers were to leave the school. In the long term, both teachers hoped that the school would eventually appoint a new staff member with specific environmental education background. They felt they also needed to network better within the school, to identify and work with people who would be interested in teaching the course.

The school needs to value it and believe it is as important as other traditional subjects. (Teacher A)

Teachers A and B suggested that some other staff seemed threatened by the new course, fearing it might take students away from other subjects. Because of the reaction the course had received from other staff, Teacher B felt that any new course, especially one that is substantially different to anything that has come before, should have the chance to be promoted in a school assembly. Teacher A was hopeful that the course would gain acceptance once the initial cohort of students got through it. She thought other secondary schools could look to Sustainable Futures as an example.

You’ve just got to want to do it, then get in and start doing it. Then after a while, you’ll get students speaking for it, if it’s a good course….the initial setting up part is hard, but I think it will begin to build up its own momentum. (Teacher A)
RIVERVIEW SCHOOL

School profile

School type Independent
Roll size 836 (416 day pupils and 420 boarders)
Decile rating Not applicable
Locality Rural
Student ethnicity NZ European/Pākehā - 87%
Māori - 1%
Asian - 3%
Foreign fee paying - 9%

Staffing 87 full-time, 129 part-time

School context

Background

Riverview School is an independent school, charging fees for attendance. Although a number of students attending are supported by scholarships, students are generally from middle- to high-income households. The school consists of a preparatory school serving Years 7–8 and a senior school serving Years 9–13.

The school is located in farmland close to a small town, and reasonably close to a large urban centre. The school offers both boarding and day student options and has a catchment, although locally concentrated, which extends throughout the North Island. The local catchment encompasses mainly middle- and high-income homes. Day students are drawn either from the local rural or urban areas, whereas boarders are predominantly from the wider rural areas.

The school is situated in spacious grounds with mainly single-storey buildings and ample playing fields. The buildings reflect a European colonial style and are well-appointed, and teaching rooms are in good condition and generally well-equipped. There are large areas of grassland with introduced trees providing shade. A special feature of the grounds is a small area of original kahikatea forest. This forest contains many mature kahikatea but an ecologically poor understorey, with much weed infestation. A second feature of the school property is a productive farm that provides income and other opportunities for school activities.

14 Pseudonym.
The school culture

The school was founded in the 1930s as a private Christian school. It is founded on the Anglican faith which is manifested through regular chapel services and religious education, as well as underpinning the core values of the school. The school places a big emphasis on family, which it embraces in several ways. It has a tradition of family members within and across generations attending the school. It has a strong alumni spread throughout the country who support and take an interest in the school. The high percentage of boarders enhances the family atmosphere as half of the students are present within the school for 24 hours a day during the week, and staff of the school act in loco parentis during this time. Additionally, the school runs tutor groups for all students with a specific staff member. Tutor group sessions are held each week, bringing each student into regular contact with a particular staff member, allowing development of strong staff-student relationships.

Students take pride in their school, as evidenced by support for school teams in competitions. Staff indicated that there was a low level of littering, graffiti, and property damage within the school grounds. There was a feeling that students had respect for their teachers and the school.

The ethnicity of the school was described as reasonably monocultural, with most of the students having a New Zealand European background. There is an increasing number of Asian students (international student numbers doubled to 60 in 2003), but few Māori or Pacific Islanders. This student mix is reflected in the colonial style architecture in the school and reflects a low level of ethnic cultural activity. Māori knowledge and values are taught within the school faculties, particularly in languages, and the school has recently begun a kapa haka group. One teacher interviewed felt that more emphasis should be placed on a Māori role within the school.

Case study methods

The principal, property manager, chaplain, and three teachers (the environmental education co-ordinator, a science teacher, and a geography teacher) were interviewed individually. A focus group was conducted with students who were interested in environmental initiatives under the Enviroschools programme. A researcher attended a Year 11 biology class and discussed environmental issues with the students, including a visit to the school’s kahikatea grove. Some course documents were also collected and reviewed.

Environmental education at Riverview School

Background

Environmental education operates at a number of levels at Riverview School. At one level, the school has been offering field-based camps to Year 10 students for more than 30 years. These camps began in Te Urewera National Park and currently involve students there in assisting with the Kiwi Recovery Programme, amongst other activities, but now also take groups of students to other locations and involve them in other conservation work such as pest monitoring strategies, and outdoor recreation.
Another level of environmental education began when a teacher who was particularly passionate about the environment joined the school. This teacher became concerned with the amount of resource wastage around the school, and with the enthusiastic assistance of the new property manager, began a recycling scheme at the school. This now involves paper recycling boxes installed in each classroom, separate rubbish bins in the grounds for cans, and other waste, and contracting commercial recyclers to collect inorganic waste that had previously been disposed of in a landfill on the school’s farm.

A remnant kahikatea stand of approximately one hectare is located on the school grounds. A stock exclusion fence was erected about 10 years ago and restoration work has been carried out through weed control, plantings, and pest monitoring. Recent building work on campus has allowed diversion of water into the stand. The stand is used by many teachers as an outdoor classroom for teaching in the environment.

Environmental education has been taught within science, biology and geography units, and an increasing focus is being placed on planning environmental education components within other units in these subjects. The Principal of the school is openly supportive of these initiatives and is keen to see them taken further.

Recent developments include the school becoming one of the first secondary level schools to be admitted into the Enviroschools programme. Planning for this development has included visits by an Enviroschools facilitator to the school, constitution of a student interest group, and support for new initiatives. In particular, the school plans to become actively involved in two local environmental projects that aim to create mainland islands.15 This will involve students learning about, and in, the forest ecosystems and assisting with restoring their health with pest monitoring and eradication.

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15 In each case the plan is to restore the native bush environment with predator control and other measures.
Policy status of environmental education

As Riverview is an independent school, it does not have a charter and is subject to less regulation from the Ministry of Education. The development of the school is overseen by a Board of Trustees which follows a strategic plan. This plan contains references to the importance of the school environment and the involvement in the Enviroschools programme. No overall policy exists for environmental education in the school. However, a policy does exist regarding waste recycling that arose out of joint concerns of the environmental education co-ordinator, the property manager, and the farm manager about how the school’s waste was managed.

The curriculum status of environmental education

The school has recently appointed an existing staff member as an official environmental education co-ordinator, as the school enters the Enviroschools programme. Up to the present, environmental education has been taught within a number of faculties in a subject-based manner. The environmental education co-ordinator noted that there was “not much integration across the school but pockets were going on.” She expressed a desire to see environmental education integrated across subjects, that there “should be some sort of continuity. I would like to see a strand going right through the school”. It was noted that involvement in the Enviroschools programme will “push” the school towards a whole school approach to environmental education. One teacher noted that “philosophically it should be integrated across subjects rather than as a subject itself, as it relates to all subject areas” (geography teacher).

Teachers felt that there was no space in the curriculum for environmental education to become a strand itself. There was a feeling that if that happened, something else would have to go. Workload issues, particularly in relation to the implementation of the National Certificate for Educational Achievement (NCEA) were cited as a problem. On the other hand, one teacher felt NCEA provided a vehicle for teaching environmental education as it provided the flexibility to teach units that could be orientated towards environmental education.

Areas that were identified as offering pockets of environmental education were:

- outdoor education, which offers camps and other Learning and Education Outside the Classroom (LEOTC) opportunities for students to learn about and in the environment and in some cases take action for the environment;
- biology and science, which offers units in ecology, conservation, biodiversity, and recycling;
- social sciences, which offers units on environmental issues such as the Amazon rainforest, and urban planning, in which values and perceptions can be explored;
- English, in which Year 11 students write an essay on New Zealand conservation, horticulture, in which students assist with urban planting in the local town; and
- religious education, in which students discuss environmental ethics.
Role of the Guidelines for environmental education in New Zealand schools

Awareness and use of the Guidelines within the school was mixed. One teacher had received a copy from the Ministry soon after they were published, had read them and placed the copy on a shelf. This teacher was aware of the planning modules in the Guidelines but cited lack of time to use them. He noted that the Guidelines were produced at a time when teachers were under stress from a variety of changes, that latest being NCEA.

A different experience was described by the environmental education co-ordinator. She had been unaware of the existence of the Guidelines until she saw a copy outside the school environment. She obtained a copy for herself from the Ministry and used them to confirm her own understandings of environmental education, and to convince the school principal that the school should apply to become an Enviroschool. The co-ordinator and a science colleague were familiar with the planning modules in the Guidelines but felt that they were orientated too much towards primary and intermediate school levels to be of much use.

The principal of the school had seen the Guidelines but was unaware of whether they were being used in teaching environmental education.

Teacher views about environmental education

The environmental education co-ordinator has a personal passion for environmental education, based on her own experiences and philosophies. She holds a science degree in biology and earth sciences, and she teaches biology and science at the school. She had had no professional development in environmental education, although this year she was awarded a Royal Society Teacher Fellowship, in which she is studying conservation in native bush areas with the Department of Conservation. Her formal involvement in environmental education began when she attended one informal meeting about Enviroschools. This meeting convinced her that her school could become an Enviroschool, and after discussion with the principal, she made an application for the school to join the programme. The principal has recently appointed her as the environmental education co-ordinator within the programme. She felt that environmental education was about instilling passion for the environment in her students, and how that could cause a ripple effect from the students to their families and the wider community.

Another science teacher felt that her interest in environmental education stemmed from the science, particularly the biology, that she taught, and influential teachers in her school and teacher education years. She holds a biology degree. She had had no professional development in environmental education, and her interest in environmental education had been stimulated by the enthusiasm of her colleague, the environmental education co-ordinator. She felt environmental education meant teaching about and in the environment, and getting “students involved in issues”.

A different view was espoused by a geography/social studies teacher. In his view, these subjects had been teaching environmental education for a long time, particularly the "about" and "in" the environment dimensions. He felt the recent push towards environmental education had encouraged more consideration of education for the environment, which led to a greater consideration of the values and perceptions that people hold towards the environment. He noted that some of his geography colleagues in other schools felt the focus on environmental education was driven by “a bunch of zealots trying to hijack what geography has always done”. This teacher
had also had no professional development in environmental education, although he noted he would like to have some if he could find the time. He had read the *Guidelines*.

The staff at the school held similar views about what they wanted students to achieve through their environmental education. These views focused on students understanding and appreciating the environment, people’s values, and their own responsibility towards the environment. For example:

> I want the students to have a moral obligation, go into the environment and realise what they can do and that they are responsible for helping. (Environmental education co-ordinator)

> I’m concerned that the students grow an appreciation of their relationship to the environment, and that they approach the environment in caring ways. (Chaplain)

> I want students to be able to understand what makes up an environment, in terms of the components, both natural and cultural. To appreciate the interaction between people and the natural environment, and the impact people have on the environment. To understand that there are a wide range of values that people hold about the environment, and to appreciate why people hold those values, and identify what consequences may arise from people holding those values. (Geography/social sciences teacher)

The teachers noted that there were no official channels for specific reporting on environmental education student achievement, although this was often covered in reporting on subject achievement. Aspects of environmental education such as the service work with DOC at Year 10 is reported to the community through school publications.

Student outcomes were seen to include gaining a “sense of gratification because they have done something”; enjoyment and commitment to their work; attitudinal change towards rubbish and recycling; experiences in the environment; achieving passes in their assessments. One teacher described the excitement and enthusiasm with which the students undertook the recycling unit at Year 9, and the potential of environmental education as an outlet for student energy and passion.

**Student views of environmental education**

The school has made an effort to include students in the decisions made about their environmental initiatives. An environmental portfolio has been held by a senior student committee for the past few years and projects have been planned and undertaken by that committee. With the school’s embryonic involvement with the Enviroschools programme, a student interest group (its meeting comprising five students) has been convened and they have met with the principal, interested staff, and an Enviroschools facilitator. The students in this group were predominantly in the senior school. Under the Enviroschools programme the principal gave this group a mandate to research and plan environmental initiatives for the school, and assured them of the school’s support wherever possible. This student interest group has begun a survey of students to ascertain their views about how the school environment could be improved. Their views about environmental education focused on care of the future. For example:
I think it’s about helping people to understand our environment, so the next generation can care for it. (Focus group student 1)

Learning to respect the place we live in, and doing all we can so that future generations have what we had. (Focus group student 2)

The students felt that it was important to study environmental education at school, as the “place we live in reflects us” (Focus group student 3).

Members of the student interest group had mixed experiences with environmental education at Riverview. One student felt that they had “not really done any at school”. Other students in the group identified the recycling of paper and plastic milk bottles, the importance of the kahikatea stand, the Year 10 camps, and the emphasis in one of their subjects (biology) on conservation. The students expressed doubt about the awareness amongst the student population of the recycling procedures available in the school. Indeed when a researcher spoke to a Year 11 biology class about the recycling scheme, few members of the class were aware of the paper recycling station visibly located in their classroom. The students in the Enviroschools interest group felt they could work towards improving the recycling facilities. They also expressed a desire to plant more trees in the school grounds, particularly around some newly built boarding houses, “to create a nicer environment”.

Community links in environmental education

Environmental education at Riverview School involves a number of links with the community. There is a strong relationship with DOC dating back to the beginning of the Year 10 camps in Te Urewera National Park. This link was initiated by members of the staff at the time. Links with DOC have also been established by the environmental education co-ordinator for involving the school’s students at Years 10 and 12 in the Te Kauri Restoration project. Further links are being established with the Maungatautari Ecological Island Trust which aims to surround the peak of a mountain near the school with a predator-proof fence and eradicate pests from the forest.

Other links have developed on an ad hoc basis, such as with a local recycling company, the Tree Trust, in a neighbouring town and with scientific experts who act as guest speakers within subject units. Teachers stated that they would like to form more links with community groups and individuals, but cited a lack of time to develop these links, and knowing where to find them, as issues they faced.

Resources and support for environmental education

The school has a budget item for environmental education which permits funding of small projects. The principal noted that the school was prepared to fundraise for larger projects rather than rely on Government funds. The strong alumni for the school was seen as a way of raising funds for such projects. Curriculum and pedagogy resources from the Ministry of Education were much appreciated. Other resources used included textbooks, maps, the Internet, and videos.

Staff at the school held mixed views about the human resources available to support environmental education. It was agreed that the property manager and the cleaning staff had been very supportive of the recycling initiatives. It was noted that some staff were not particularly
receptive of the Enviroschools initiative and it was felt that they were concerned it may further impact on their workloads. The environmental education co-ordinator noted that this staff reluctance was, however, slowly changing as she helped staff become more aware of what they were already doing that was in fact environmental education, and what small changes they could make to enhance their practice in this area.

Challenges and the sustainability of environmental education in the school

The challenges expressed by the staff regarding environmental education at Riverview School centred on increasing staff participation, finding space in the timetable to take students off-campus and into the environment, educating the students to use the recycling scheme, and getting professional development in environmental education. Increasing staff participation in environmental education was challenged by workload pressures, a crowded curriculum, and the time needed to foster and co-ordinate the school’s approach to environmental education. The principal described the way forward as getting students and staff to work together on projects of an achievable scale. One immediate challenge noted by both staff and students was to educate everyone in the school, particularly the students, to use the recycling scheme. Additionally, pressures of a crowded curriculum and many opportunities in the sporting and cultural areas for students to pursue were seen as stumbling blocks to getting a whole class available for field trips into the environment. Finally, teachers felt that more professional development in environmental education would be desirable to enhance their teaching, but the challenge lay in finding time to undertake it.

All staff spoken to believed that environmental education was sustainable at the school. While it was acknowledged that the environmental education co-ordinator was an important driving force behind environmental initiatives, staff believed that there was sufficient momentum now from other staff to continue to build on those initiatives. The move to become an Enviroschool was seen as a key step forward. The principal noted that “there is a culture developing within the school to carry it forward”.

The future of environmental education in the school

The future of environmental education at the school looks promising. A momentum is building that is about to be enshrined in the school’s involvement in the Enviroschool programme. Whilst this provides no guarantees of continuation of environmental education at the school, it provides a formal recognition of the many initiatives underway. The solid foundation of a long involvement in service in the conservation area, strong family values that encourage respect for the environment, staff who have a strong interest in environmental issues, and support from the school’s leadership are key factors in the success of environmental education at Riverview. New and exciting initiatives to involve students in local conservation projects and a commitment to funding environmental projects at school look likely to continue the further development of environmental education at the school.
REFERENCES


