Semester 2 2015

Geography 309: Research Methods in Geography - Final Report

Outdoor Classrooms in the Mahinga Kai Exemplar Project

Working towards the implementation of a unique and beneficial outdoor learning experience

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Contents

Executive Summary

- The research question which emerged throughout the project was: *How can outdoor classrooms in the Mahinga Kai Exemplar Project provide a unique and beneficial learning experience that caters for the needs of teachers at local primary schools?*
- The project was developed in collaboration with the Avon-Otakaro Network and aimed to take the concept of outdoor classrooms in the Mahinga Kai Exemplar Project closer to implementation. Mahinga kai was a key concept driving the research, which is often defined as customary food gathering but also tends to spiritual and cultural needs, which are essential to development and overall wellbeing.
- Qualitative data collection was the chosen research approach and focus groups were seen as the most appropriate method of obtaining the data. Audio recordings of the focus groups were transcribed onto an Excel spreadsheet. These were analysed through discussions which identified key themes in the transcriptions.
- Key findings from the theme analysis include the desire for an easily accessible site which offers a range of hands-on scientific activities run by a knowledgeable and engaging facilitator. The activities should be based around the core values of mahinga kai and differ from others on offer locally. Additionally, it was suggested that a multipurpose start-up site with the necessary facilities for children would be easier to facilitate and maintain.
- The findings were used to make a number of recommendations that have been included in the report which can be used by the Avon-Otakaro Network to bring the project closer to reality.
- Limitations to the research relate to the timeframe allowed to carry out the project, the number of participants involved in focus groups, as well as the number of focus groups conducted, and cultural subjectivity around kaupapa Māori.
- It is recommended that the Avon-Otakaro Network continue to utilise university students. To overcome some of the limitations faced by the researchers on this project it is recommended that future research is conducted by students with an education or Te Reo background.
- Further research could focus on working alongside an appointed education provider to develop high quality learning resources and lesson plans.

Introduction

The Anzac Drive Reserve in Eastern Christchurch has been deemed residential red zone land after the Christchurch earthquake sequence of 2010-2011. The Mahinga Kai Exemplar Project was proposed for this area as a result of the Natural Environment Recovery Program for Greater Christchurch which stated that one of their 17 projects would "act on opportunities to restore and enhance mahinga kai" (ECAN, 2013). The Mahinga Kai Exemplar Project aims to produce exceptional, well-used learning resources and outdoor classrooms situated on residential red zone land either side of Anzac Drive. The current proposal is to have 11 classrooms sites spread throughout the area as visible in Figure 1. Each of the classrooms will be based around a different topic including both physical and social science topics, as shown in Appendix A. The chosen topics have been selected with the intention of being adaptable to as many areas of the curriculum as possible (Bates & Smith, 2014).

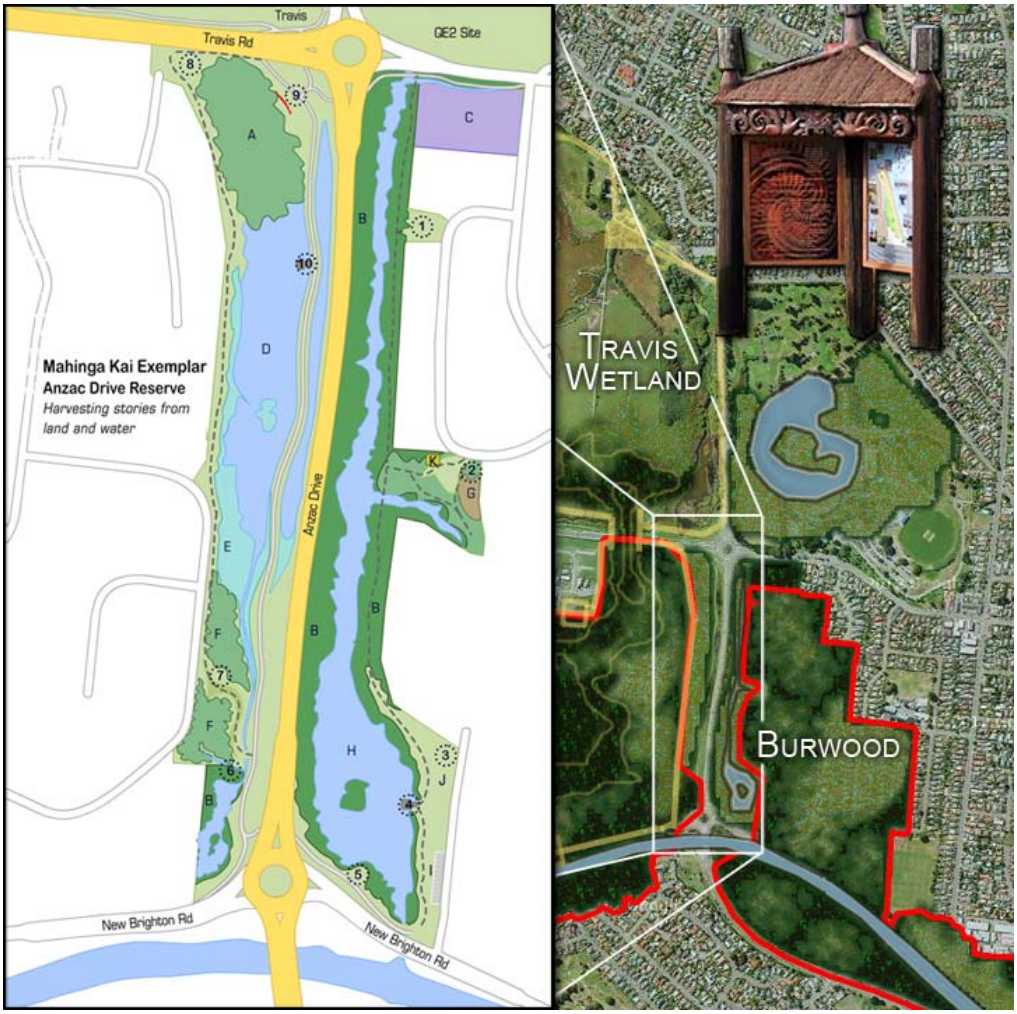

Figure 1. A map of the Mahinga Kai Exemplar Project (Avon-Otakaro Network, n.d.).

The research builds off that undertaken by previous Geography 309 students who identified a desire from local community members and school pupils to see the Mahinga Kai Exemplar Project used as an educational greenspace (Kindred, Trinder, Covic & Stuart, 2014). After discussions with the community partner from the Avon-Otakaro Network, it was identified the key issue was bringing the project closer to implementation by addressing the needs of primary school teachers who would be using the area. The most suitable and essential topics that would cater to the needs of teachers and students, while satisfying curriculum and health and safety requirements, needed to be identified in order to achieve this goal. Throughout the project the research question emerged to be: *"How can outdoor classrooms in the Mahinga Kai Exemplar Project provide a unique and beneficial learning experience that caters for the needs of teachers at local primary schools.*"

The researchers aimed to answer the previously stated question by holding a number of focus groups with local school teachers in order to identify the most important issues when taking the idea closer to implementation. The results will provide the Avon-Otakaro Network with recommendations that can be used to assist with the establishment of the outdoor classrooms.

Literature Review

Research papers were chosen to provide background context to the project and were exemplars of theoretical and methodological research, necessary for the qualitative data collection process. Although an extensive amount of research was presented for the project, it became apparent that the research that was initially focussed on was not directly relevant to how the question was evolving. Therefore, further research has been ongoing throughout the project, to ensure continuity of knowledge on mahinga kai and kaupapa Māori.

Mahinga kai

Mahinga kai is used to represent sustainable Māori relations with food and resources, being a connection between the nourishment of whānau and the environment around them. The concept of mahinga kai links to material, spiritual and cultural needs, which are essential to development and overall wellbeing of Māori iwi (Water & Cahn, 2007). Mahinga kai has a seasonal element, where unlike permanent cultivation sites, the gathering of food moves with the seasons and life cycles of various animals and plants (Water & Cahn, 2007).

Historically, gathering was both a social and economic activity, as engagement in mahinga kai practices created opportunities for learning about ecosystems, species and the spiritual and physical connection to Māori culture (Tipa, 2013). Today many people who still practice mahinga kai are called 'modern traditionalists' as they partake in mahinga kai values and traditions, but do not rely on it for survival (Panelli & Tipa, 2009). A connection then evolves that provides opportunities for children to learn about sustainable gathering of kai and ecological knowledge of the gathering area from a "living landscape", which informs the research project of a wider context (Panelli & Tipa, 2009).

Although the context of mahinga kai use has changed over time, its importance has not diminished. Ngai Tahu is determined to maintain their relationship with mahinga kai and continue with ongoing efforts to restore it to a high position, enhancing the education, knowledge and skills of Māori (Tipa, 2013). Therefore, the defined areas of mahinga kai and Māori rights over them for education of their whānau becomes a key concept that can be directly linked to outdoor learning environments.

Outdoor classroom environments

While researching outdoor classrooms, it was found the most effective way to engage school students with environmental knowledge was through first hand experiences (Ballantyne & Packer, 2002). It was clear combining observation with action is a powerful teaching strategy. The experience of being outdoors was the most valuable part of learning for the students, and it was clear worksheets and reports were unpopular, as it removes the sense of freedom (Ballantyne, 2002).

Results of research conducted by Bentsen, Schipperijn and Jensen (2012) on school teachers in Denmark indicated that 72.9% of teachers use green space within walking distance of their school in a defined area and that 65% of teachers always or mostly use the same place. Forests, green school grounds, streams and lakes were the most commonly used green spaces. Teachers indicated that natural flora and fauna, water, easy access and gathering places were the most important features of green space (Bentsen, Schipperijn and Jensen, 2012). In consideration of these research findings, it was decided the inclusion of data from local teachers within close proximity to the Mahinga Kai Exemplar Project would be the most beneficial for the research findings and overall results.

In New Zealand research, it was identified that there was a need to provide outdoor learning that focuses on culture and place rather than the traditional adventure and activity based outdoor

learning (Legge et al., 2012). This literature provides motivation for the research as it highlights the need for an outdoor education service based on cultural protocols.

Methods

Methodological Framework

Initial literature reviews and site visits allowed the development of a more succinct research question, for which a qualitative approach was chosen. A qualitative approach fundamentally deals with social structures or individual experiences (Hay, 2010). The social structure of the classroom environment and the connections between teachers, students, the curriculum and health and safety requirements were of interest. Qualitative studies focus on the analysis of words which are accessed through open ended questions and provide in depth information (Creswell, 2014).

Data Collection

In order to answer the research question it was decided that focus groups with teachers from local primary schools would provide the most relevant data. The research question deals with the needs of teachers from local primary schools and so the target population was well defined. Rāwhiti School and Waitākiri School were initially selected as these are close to the area and are the most likely to be using the outdoor classrooms on a regular basis. Ilam School was then selected to allow for a comparison from another part of the city and because of its accessibility from the University of Canterbury. The location of all three schools can be seen in Figure 2. The teachers were self-selected from within the schools - those who were willing to participate and were available in the given time frame. This meant that the composition and size of the focus groups were varied and therefore needed to be taken into consideration when interpreting results. According to Litoselliti (2003) the distinguishing feature of a focus group is the emphasis on interaction between participants. Due to lack of availability only one participant was present at the Ilam focus group, while two were present at Rāwhiti and five at Waitākiri, severely limiting interaction and introducing personal bias.

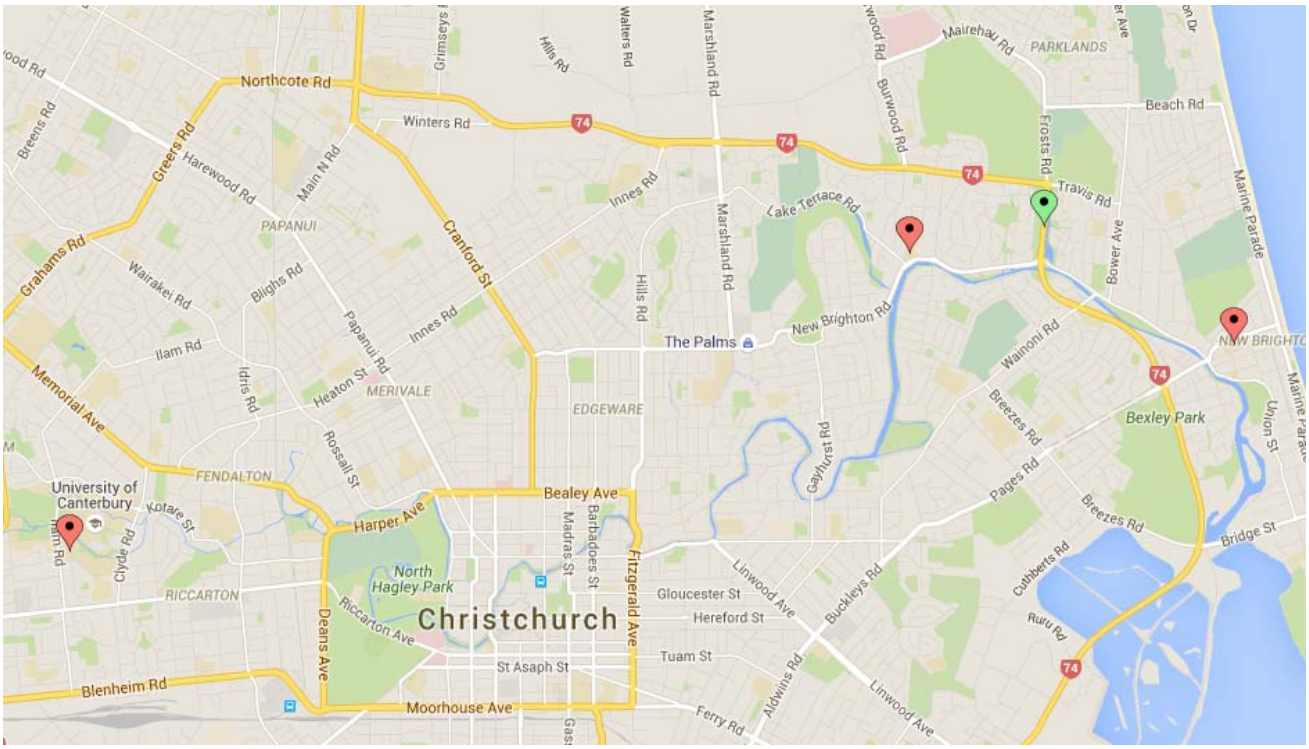

Figure 2. A map of Christchurch with the schools selected to hold focus groups marked with red (from left to right) Ilam, Waitākiri and Rāwhiti Primary Schools. The Mahinga Kai Exemplar Project is indicated with a green marker.

The initial step at the focus group was to explain the research project and to get participants to sign the consent forms prepared to comply with ethics approval. In order to answer the research question classroom topics were introduced, teachers were asked to select their top three topics as a group and issues of implementation were discussed. Recordings were made with audio capable devices and written notes of the general discussion were taken to complement the recordings. The focus groups lasted approximately 45-60 minutes and delivered a wealth of information that a quantitative survey could not have.

Data Analysis

Once the data had been collected, transcription and analysis could be completed. The recordings were transcribed on Excel; the first column was used for each minute of the focus group (i.e. one row for each minute) and the second column was used to write the key ideas and specific quotes that exemplified the idea during that minute. This process was lengthy and required listening to the recordings multiple times while simultaneously typing into the Excel spreadsheet. The data was then

cleaned by deleting comments which were irrelevant to the research. In order to begin the analysis of the transcribed data, the comments from all three focus groups were discussed by the researchers until several themes emerged. Comments and quotes were then classified under one of the emerging themes, which were discussed individually for each focus group and then compared to the comments made under the same theme at other focus groups.

Results and Discussion

The results from the theme analysis of the qualitative data are summarised below. It is important to recognise that these are the opinions of a select few individuals and do not necessarily reflect the opinion of the school as a whole.

Classroom ideas

The top three classroom topics are shown in Table 1.

	Ilam School	**Rāwhiti School**
1	Harakeke	Māori medicine
2	Food gathering (mahinga kai)	Harakeke
3	Orchards and water	Fish

Table 1. Top three outdoor classroom topics chosen by Ilam and Rāwhiti.

Waitākiri's top three were more complex and combined a number of topics, as seen in Figure 3. They thought mahinga kai was a very unique but overwhelming concept that needed to be broken down. This would allow students to make personal connections with the topics by creating activities that

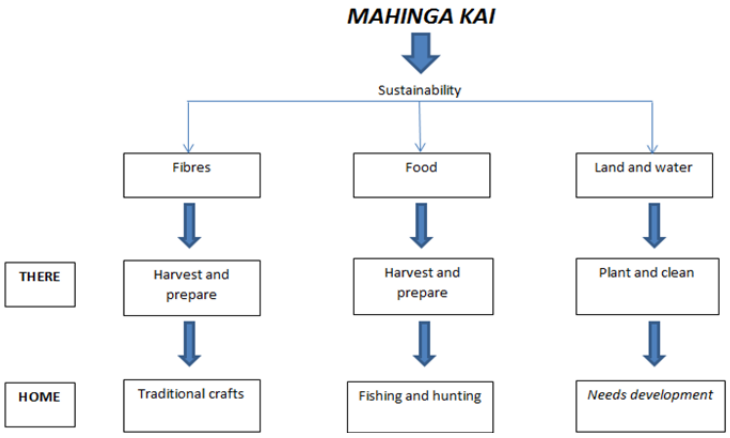

Figure 3. Waitākiri participant's interpretation of mahinga kai linking to outdoor classroom topics.

teach skills that can be applied at home or in the community.

Each focus group contributed a unique perspective when considering the eleven classroom topics. There were conflicting views on the possibility of offering earthquakes as a topic, but this depended on the context in which it was taught. Both Ilam and Rāwhiti were concerned that earthquakes remain a sensitive topic for students and that they had received enough education about them throughout the past five years. Waitākiri considered it an important topic as it has historical significance that cannot be ignored, *"we need that earthquake narrative in there, it's saying this land was originally wetlands and it's no good for building on, this is what it's good for [wetlands and mahinga kai] […] The narrative could be really useful[1]".* This shift from tectonic plate movements to a focus on how the land and water are connected and influenced by earthquakes is specific to the area which was once used for mahinga kai by local Māori.

All three schools felt that the purpose of the classroom topics should be science based and they would not be inclined to use them for teaching social science. Waitākiri said *"we love teaching social science but that [an outdoor classroom] is not the right context for us",* therefore Anzac and Kate Sheppard were considered less appropriate topics to be offered. There is very limited options for hands-on activities and the areas do not hold any historical or cultural significance apart from namesake or statues, *"for Kate Shepard women's suffrage, all I can really see is a sign, what else would you put there as an outdoor classroom apart from a billboard?"* (Waitākiri). Harakeke was a standout topic for all three schools. Ilam liked the hands-on activities that could be adapted to suit a range of age groups. Waitākiri and Rāwhiti agreed that the topic would be beneficial to connect students to the local environment.

Both Waitākiri and Rāwhiti currently utilise the nearby Travis Wetlands Education Centre and suggested that the Mahinga Kai Exemplar Project could be an extension of their classes and offer completely different and unique topics. They did not want an overlap of topics between the two sites, *"[Plants] I think that's covered really well at Travis Wetlands, so that probably wouldn't be as useful"* (Waitākiri). The qualitative data received offered valuable insights into the project that could only be provided by knowledgeable and experienced educators. The most popular topics ranked by teachers all provided the potential for hands-on activities and acquiring knowledge to be used at both home and school. Although the teachers were initially asked to select their top three topics the more valuable findings came from the discussions that followed.

[1] […] refers to removal of unnecessary information from with the quotes.

Multipurpose start-up site

There were concerns over the proposal of there being multiple sites due to accessibility, health and safety and the usefulness of all 11 topics. Ilam would consider using the outdoor classrooms if the site was set up in a small area that would be able to handle various topics and activities. The idea of walking around the sites proved to be unpopular due to some logistical reasons, *"the land is damp underfoot and some children cannot afford gumboots"* (Rāwhiti). It was also suggested that some sites are too close to the road making them less suitable due to safety and noise issues.

These results were consistent from work done by Bentsen, Schipperijn and Jensen (2012) which stated teachers preferred to use the same location when visiting green space. This finding suggests that having 11 outdoor classroom sites is unadvisable as the students are unable to build a connection with the classroom while walking between and visiting multiple sites. Thus, having a site that caters for many activities and age groups is beneficial to both the teachers and students.

Facilitators

All teachers unanimously thought that the classrooms needed to be run by outdoor facilitators with particular knowledge and skills. This came down to two key reasons; uncertainty around kaupapa Māori and teachers not having the specific skills required. Waitākiri said *"we need someone with a science knowledge and a Te Reo* Māori *knowledge too, that would be perfect".* Rāwhiti also expressed concern about *"cultural protocols"* and felt having a facilitator was important to *"show the things that you can touch and the things that you can't".* Both Ngai Tahu and the Department of Conservation were discussed as potential facilitators and all schools felt that whoever was employed to the role must display an ability to connect and grow a rapport with the students. Waitākiri had previously attempted to find a flax weaving expert to teach but was unable to do so. Thus, there is clear demand for facilitators with skills in this area.

This finding is key to answering the research question as it reveals how important an outside facilitator is for meeting the needs of local teachers who cannot provide the necessary skills to make this project a reality. Skilled facilitators are vitally important for making the learning experience beneficial for students. This is because when facilitators are knowledgeable and engage the students they learn while having fun.

Accessibility

Rāwhiti stated that they would have no accessibility issues if they did not have to cross Anzac Drive and are within walking distance. Waitākiri expressed that they would prefer to have a site on the left side of Anzac Drive as it is closer to them and they could avoid crossing Anzac Drive which has a 70km/h speed limit. Ideally they would like to walk or scooter to the site saying that *"by walking it is more of an excursion, but in terms of taking cars there it seems ridiculous."* For schools from outside the immediate area there will need to be bus bays and turn arounds to facilitate transporting children to the site. Ilam stated that the *"further away it is from the school the more worthwhile it must be to go there",* identifying a *"proportional relationship"* between distance, time, and cost. It was mentioned that Shirley Boys High School will be moving to the old Queen Elizabeth II site in 2018 which may bring the possibility of the Christchurch City Council installing pedestrian crossings.

Understanding the conditions which determine a schools ability to access the Mahinga Kai Exemplar Project is extremely significant to the projects implementation. By providing easily accessible classroom areas the needs of teachers are considered and the greatest number of children will be able to receive benefit from the area.

Point of Difference

One of the challenges for this project is making the concept unique so that many schools are able to come and use the site to learn new knowledge that isn't taught anywhere else. Providing different content to the education provided at Travis Wetlands was essential for the two focus groups based in this region. As Waitākiri explained, *"Classrooms would be different from Travis as you could […] have an expert there we could do harvesting with […] We could perhaps have a little nursery happening at the school where we plant, so we are part of the mahinga kai tradition of renewal."* It was evident that to make this concept worthwhile for teachers, it needs to be both unique and different from other learning resources, while connecting material to what is already taught as part of their required curriculum. It was clear that using mahinga kai as the key point of difference was significant in its value to the teachers in a positive way. The focus groups talked about wanting their students to know that this land can sustain our people in modern time with a similar purpose to the past, so a creative narrative could relate to learning from the past, to go forward. It was agreed that mahinga kai was a strong

enough point of difference to use this site as an outdoor education area, but there would have to be a high level of education provided for it to be worthwhile taking students there.

There is a clear indication that the learning environment in the Travis Wetlands area already provides a range of education catering to some of the needs of the teachers. However, a multipurpose site with the main element of mahinga kai that provided a significant point of difference, gained real enthusiasm from the teachers and the potential of this was clearly understood.

Hands-on Activities

There was a clear consensus that there must be an element of hands-on activity involved in the outdoor classroom experience. When asked how to make the experience as valuable as possible, tactile and hands-on participation was suggested as necessary to fully engage children, especially younger students. Ilam said, *"all kids love doing, but especially the younger ones"*. This was illustrated in the chosen top three topics, showing hands-on activity would be a desired option, such as with harakeke weaving. Incorporating kaupapa Māori ideas with practical science experiments that can be established or completed on site and taken back to the classroom was encouraged. Hands-on activities will engage the students while meeting the requirements of the curriculum.

Age appropriateness

Ilam and Rāwhiti felt that the same topics could be used to teach the children of different age groups as long the depth of information was varied, *"it doesn't matter with the age group, as a 5 year old takes on board knowledge differently to a 10 year old"* (Rāwhiti). Waitākiri suggested its younger students could go to Travis Wetland and use their education facilities, with the older students attending the Mahinga Kai Exemplar Project. These findings are significant as it was made clear that students will be able to benefit from any topic as long as it is presented at a level that they can comprehend. Additionally teachers identified that the most benefit will be received if the Exemplar Project complements the education providers of Travis Wetland.

Facilities and Resources

Waitākiri stated, *"for outdoor classrooms we need access, we need toilets, and large space for class groups".* It was suggested by Ilam that the classroom areas needed to be friendly and safe,

especially for the junior children. They would also prefer a site away from traffic and for any hazards to be brought to their attention during the planning stages, *"Those in themselves [hazards] aren't barriers as long as the teachers know about them"* (Ilam). Rāwhiti and Ilam both stressed the need for somewhere to sit, write and to eat their lunch. Rāwhiti felt that the walkways needed some work before they brought their classes there as not all of their students have access to sturdy shoes or gumboots. The needs of local teachers can be catered for by giving information on hazards prior to the school excursions, bettering walkways and the addition of facilities such as toilets and seating.

Limitations

Several limitations challenge the utility of the research. Cultural subjectivity had a profound effect on the research. The concept of mahinga kai and the cultural significance of the Anzac Drive Reserve was initially unfamiliar and challenging to understand. All group members are Pākehā and had to undertake their own extra research to educate themselves on these Māori concepts.

The timeframe in which to conduct the research has been narrow. By the time focus groups were decided as the research method, schools were preparing for their parent teacher interviews which meant staff were extremely busy. Consequently researchers were unable to source a large number of teachers to participate.

Lastly, focus groups varied in size - between one and five teachers attended each focus group - which in some cases severely limited the data collected. The point of a focus group is to record the exchanges between individuals and gather insight into how meanings, events or experiences are contested (Gomez & Jones, 2010). Gomez and Jones (2010) suggested that focus groups give best results when participants are not familiar with each other so they are required to explain things more. However as the research compared the results between rather than within focus groups the method was justified. It has also been suggested that the ideal number of participants is between 8 and 10 and that there should be 4-5 sessions run with new participants on the same topic (Gomez & Jones, 2010).

Recommendations

The following recommendations have been proposed to the Avon-Otakaro Network after considering the results. It is believed that these actions will be hugely beneficial and will help achieve the goal of making the classrooms a reality.

- In order to keep the project as unique as possible mahinga kai should be at the forefront of all lessons and activities.
- The topics that are taught should be able to be varied to cater for the needs of the age group that is attending.
- Regardless of the topic being taught, the inclusion of hands-on practical activities is essential. For this reason, the harakeke topic was extremely popular and it is suggested this topic is made a priority.
- Employ engaging and knowledgeable facilitators to run the lessons. It was suggested that the involvement of Ngai Tahu would enhance the project by ensuring adherence to kaupapa Māori.
- The classroom activities should not repeat what is being offered at Travis Wetlands Education Centre but can complement it.
- Have one or two sites initially which can facilitate a number of the classroom topics. The fewer number of sites will be easier to maintain and students will not have to navigate boggy terrain and busy roads.
- All schools expressed that they would not be prepared to cross Anzac Drive. Therefore if the project is to be accessible to multiple schools they will need to consider having a site on both sides of the road.
- The initial sites should have safe areas for the children to sit, write and eat their lunch away from traffic. Ideally toilets need to be accessible from the area. It has been suggested that site G has potential to be a multipurpose start-up site.
- For schools from outside the immediate area there will need to be bus bays to facilitate transporting children to the site.
- Have a booklet or internet resource available to teachers before they arrive that indicates the topics, activities and health and safety considerations. Teachers must be aware of the hazards before arrival to allow for adequate preparation. Introducing the topics to the students before the visit will add context to the activities and provide a more beneficial excursion.

Conclusion

This Geography 309 research project was undertaken using a qualitative research process which lead to the discovery of a range issues that were important to local teachers. The key findings were the need for

an easily accessible site which offers a range of hands-on scientific activities run by a knowledgeable and engaging facilitator. The activities should be based around the core values of mahinga kai and differ from others on offer locally. A multipurpose start-up site with the necessary facilities for children would be easier to facilitate and maintain. These results have led to a series of recommendations for the future success of the Mahinga Kai Exemplar Project.

Although the findings have resulted in recommendations that the researchers believe to be valuable for the implementation of the outdoor classrooms, it is important to reflect on the reliability of the findings. The results are based on the opinions of a select few individuals from a small number of focus groups and cannot be assumed to represent the views of all teachers who could potentially use the area in the future.

It is recommended that the Avon-Otakaro Network continue to utilise university students. To overcome some of the limitations faced by the researchers on this project, future research should be conducted by students with an education or Te Reo background. Further research could focus on working alongside an appointed education provider to develop high quality learning resources and lesson plans for the Mahinga Kai Exemplar Project.

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We would also like to acknowledge how grateful we are to have learned kaupapa Māori concepts and the importance of mahinga kai during this project. It has been a privilege to learn through research and knowledge from our community partners.

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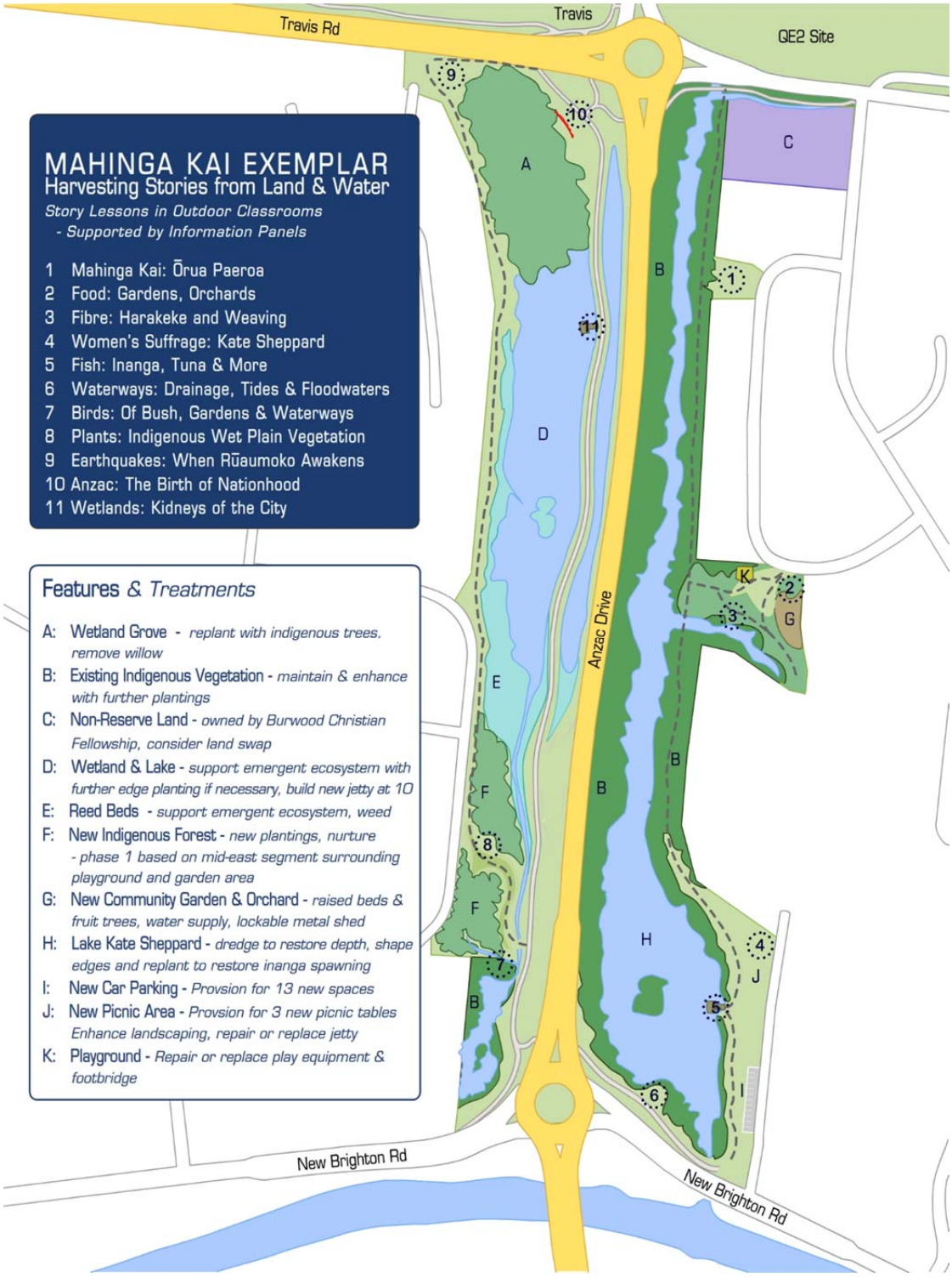
Appendix A

Map of the Mahinga Kai Exemplar Project showing classroom sites and topics.



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