

Developing the Residential Red Zone into Green Space: The Mahinga Kai Exemplar Project



Prepared for the Avon Ōtākaro Network

Mallory Kindred, Sean Trinder, Milan Covic, Reuben Stuart

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Executive Summary

- The Avon Ōtākaro network laid objectives to gauge the community interest in creating valuable green space in the area of Lake Kate Sheppard and its surroundings, which had been badly damaged by the Christchurch earthquakes.
- Lake Kate Sheppard is council owned land, along with surrounding land that has been classified as the Residential Red Zone, with no possibility for future residential construction. This space provides an opportunity to implement several green educational initiatives.
- The research involved surveying the general public as well as interviews with local schools involving both students and teachers.
- Results of the research show support for green space conversion as well as the implementation of community gardens.
- There was a desire for contemporary *mahinga kai* education facilitated through outdoor classrooms.
- The research process was limited by the small amount of time allocated to research, which in turn limited the scope of the results. Obstacles with organising meetings around the timetables of different groups also limited our possible connections.
- Our research has depicted a young and eager community who are excited to hear about further action. Possibilities for further research are numerous, such as additional educational themes for outdoor classrooms and the possibility of technology use. More work on outdoor learning methods and multi-level student education with an expansion into secondary schools will also be required.

Introduction

The area of land that borders the Avon/Ōtākaro River in Eastern Christchurch has been left battered and barren after the Christchurch earthquake sequence of 2010-11. The land has been purchased by the Crown as it is deemed 'unfit' to live on and its future is currently undecided (CERA, 2014). In amongst the currently purposeless land, there is a small clearing of Christchurch City

Council owned land along Anzac Drive which has a water body on either side, the water body to the east is called Lake Kate

Sheppard. On this land, it had been proposed to apply the 'Mahinga Kai Exemplar Project'

(fig 1.) as a result of act 17 of the Natural

Environment

Recovery Program

for the greater

Christchurch which

states 'Act on

opportunities to

restore and enhance

mahinga kai',(ECAN,

2013) this will largely be done through education at the lake. The effort will be a joint

collaboration between Te Rūnanga o Ngāi Tahu , Ngāi Tūāhuriri, Avon Ōtākaro Network, and



Figure 1 map of Lake Kate Sheppard with the proposed areas of interest for the Mahinga Kai Exemplar project (numbered locations). The map also shows the different environments of the lake (lettered areas).

Canterbury Waterways Research Centre. This will bring a collaborative focus on the creation of a culturally sustainable resource (Carr et al., 2012). Due to the many interests of the collaboration, it has been proposed that there will be eleven significant sites dispersed around Lake Kate Sheppard which relate to *mahinga kai*. *Mahinga kai* is a very important concept, it relates to sustainable food gathering practices and their customary harvests. Christchurch was an important stop for food gathering for tangata whenua as the landscape was very different from its present state. Christchurch and its surrounding areas offered many opportunities for food gathering, and were traditionally renowned for an abundance of fish, waterfowl, and plants (including medicinal plants) (James, 1991). An idea of how the area may be set up can be seen in figure 1. Due to time constraints and practicality, the first three themes have been extracted for the purpose of this research; *mahinga Kai*, Food, and Natural fibers and their uses.

The idea of outdoor classrooms has been suggested as an interesting initiative (Dillon et al., 2005) that will further distinct this already interesting study. An outdoor classroom offers hands on and an interactive educational environment, where students will be interested in learning as it will be a change from traditional classroom methods of learning.

Working alongside our community partner Avon-Ōtākaro Network, we aim to demonstrate there is potential to grow and develop urban green space in the Residential Red Zone and also prove that the Mahinga Kai Exemplar Project will be a valuable resource for the potential use of residential red zone land along the Avon/Otakaro. We aim to collect data from the general public regarding their knowledge and perception of the area, any ideas of potential uses of the residential red zone and their needs and wants for the area as this project has the potential for a multitude of benefits across the greater Christchurch.

To increase our understanding of concepts and theories related to our research, relevant literature was explored that lead us on the path to a solution for our question. To ensure that quality data was collected, the methodology was researched and refined which increased the success rate of respondents to our surveys. Relevant methods were employed to collect quality data which leads to the results and discussion where the ideas addressed above are covered in further detail.

Results from data collection are discussed and examined to draw conclusions regarding our research question: How will the Mahinga Kai Exemplar Project be a valuable resource for the potential use of red zoned land along the Avon-Otakaro River?

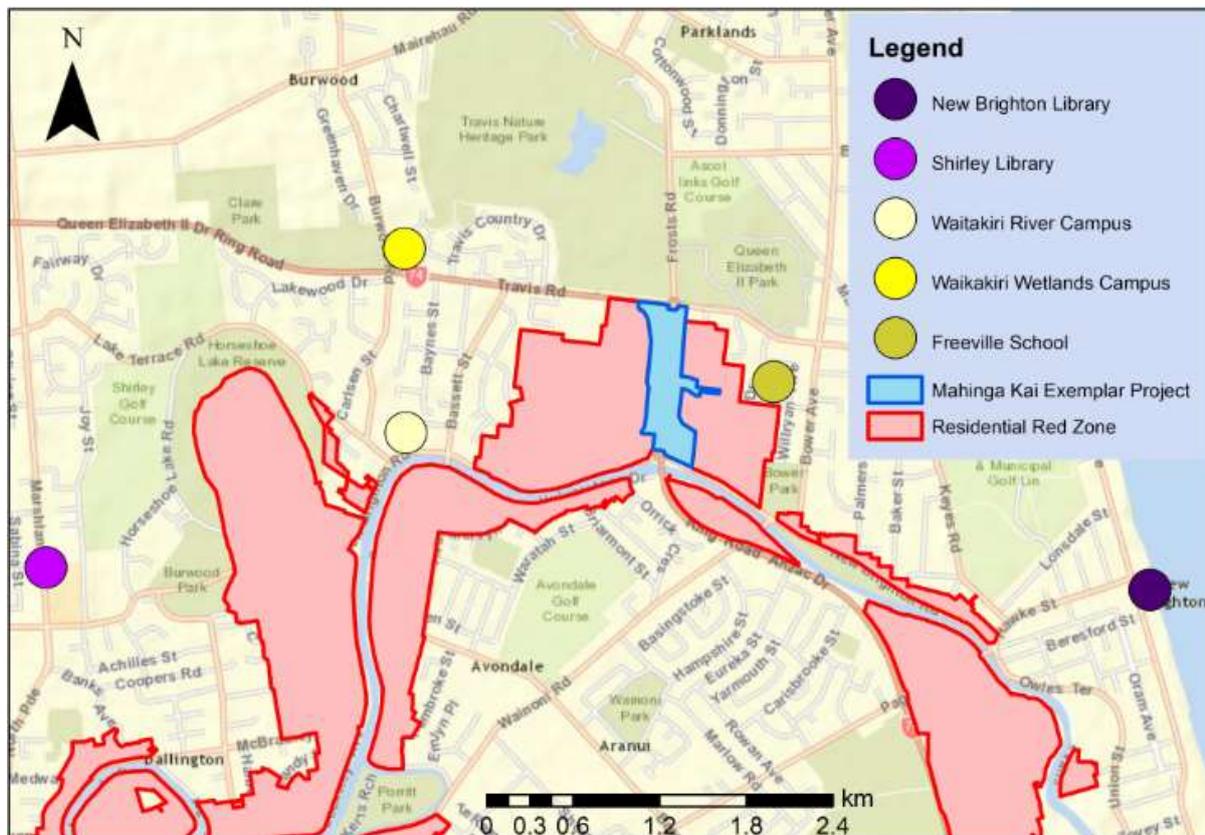


Figure 2: map showing Lake Kate Shepherd (blue) in relation to the Residential Red Zone (red). Also shown are research locations at local libraries (purple) and schools (yellow)

Literature Review

The concept of restoring wetland environments to their natural state is becoming a higher priority to local councils and governments worldwide, according to research by Breuste (2013), as the need for conservation becomes more apparent. The opportunity to conserve and restore Christchurch’s wetlands system into a recreational area, as highlighted by McInnes (2011), has arisen due to the establishment of the Residential Red Zone along the Avon-Ōtākaro River. A study by Zedler & Leach (1998) discusses how conservation and restoration call for community engagement in order to be successful. Communities can be formed around common ideas, in the Mahinga Kai Exemplar Project; a sense of community has already been created around the notion of outdoor classrooms. Research completed by Casagrande (1997) states that sense of community will also benefit the maintenance of the

area as a whole. This is further supported by the work of Brown & Wattchow (2011) who endorse the positive effects of engagement in cultural practices such as mahinga *kai* and the strength they give to communities. Dillon et al (2005) suggests that outdoor classrooms will provide interactive and hands on education for children, this will also benefit teachers as it will enrich their development. The Incorporation of Maori cultural values is suggested by Townsend et al (2004) who recommends that the use of ideals such as Taonga and Kaitiakitanga can augment contemporary conservation strategies and enhance their overall effectiveness for future generations. By integrating Western science and traditional Maori knowledge it is hoped that there will be increased support and enthusiasm for the conversion into an active learn environment.

Methodology

The research themes for this project were *Mahinga kai*; outdoor classrooms, green space in the red zone and community led initiatives such as community gardening and collaborative education between primary and tertiary students. The research methods for this project were investigative and focused on social aspects. This involved working with the general public and schools near Lake Kate Sheppard, including both students and teachers, in order to get an understanding of what the community knew about Mahinga Kai, and what they wanted Lake Kate Sheppard to look like as a green community space. The methodology involved a quantitative approach, and a qualitative one.

Quantitative data often comes from a large source, and often has little depth (Bednarz, 2008), however for this assignment it was an integral part. It was important because the responses gathered would be benefitting the future community and educational aspects of Lake Kate Sheppard. The participants in the research were divided into the general public, students and teachers from local schools.

Quantitative methods were used during the study by distributing surveys to fill out, and recording the responses. This was done at Shirley Library, and New Brighton Library due to their proximity to Lake Kate Sheppard (fig 2), and also because of the community aspect of libraries. The survey questions that asked questions about what participant's thoughts such

as transforming parts of the Residential Red Zone into green space, using *mahinga kai* as a means for education, and people's contribution to community gardens. The survey was also conducted online through Qualtrics, and advertised through social media in order to increase the number of responses.

Several schools were also approached. The schools chosen were Freeville Primary School, Waitakiri River Campus, and Waitakiri Wetland Campus. The procedure involved a group discussions and questions with groups of 15-40 children aged 5-10 years, and discussions lasted approximately 15 minutes. The discussion involved topics related to the key themes of this research. These schools were chosen due to their proximity to Lake Kate Sheppard, their previous stewardship of the area, and their potential to use the lake as an educational area. While visiting schools, questions were asked to the students about their thoughts on outdoor education, and learning about *mahinga kai*.

Qualitative data was the second approach for research. Qualitative data is information from few sources that has significant depth to it (McLafferty, 2010). In this assignment, qualitative data came from the knowledge of school teachers and school students through discussions. This data was important because it showed what these participants knew about community and educational areas, in order to understand the potential, and what was important for Lake Kate Sheppard to be successful in those areas, as well as providing insight into the potential uses of the converted Residential Red Zone.

Research in this approach involved interviews with people who had a significant understanding of community, and educational areas. Discussions were conducted with teachers of the aforementioned schools about successful learning methods at the Primary level and their interest in active project participation and incorporation into the curriculum. An interview was also conducted with the University of Canterbury Sustainability Office regarding the implementation and management issues associated with community gardens, as well as their future potential.

Ethical considerations are an important part of research in human geography (Hay, 2010), and they played an essential role in the research process for this assignment. Ethical

considerations were abundant in the quantitative approach, where the surveys were constructed so they did not cause any offense, or ask for any personal information. Before any field surveying began, permission was requested from the respective authority. Such as the library staff at the Libraries or school teachers at the schools, these measures ensured the research questions were ethically acceptable. The right to refuse being surveyed by anyone asked to participate was also respected during the research.

Results and Discussion

Our information gathering methods yielded a total of 295 tangible responses; 197 of these were from primary school children, 30 from the paper surveys conducted in the local Libraries and 65 gathered via online surveys through the Qualtrics website. There was a good correlation in the results concerning the relationships between children and adults with many having similar opinions on key questions. This correlation across demographics is going to be vital to the success of Lake Kate Sheppard as it means whole families will be encouraged to learn, maintain, and form communities around the proposed developments. The high response rate that our research received may also be an indication of strong community interest in the research topic, which will no doubt result in increased support for proposed initiatives.

The results from our research gave solid support to the pre-existing assumptions surrounding the community desire for increased recreational space in the residential red zone and the positive attitude concerning outdoor classrooms and community gardening. The results also highlighted the need for an intensification of *mahinga kai* education as a contemporary conservation and education tool, as well as future opportunities for student led education across primary, secondary and tertiary levels.

Green space in the red zone

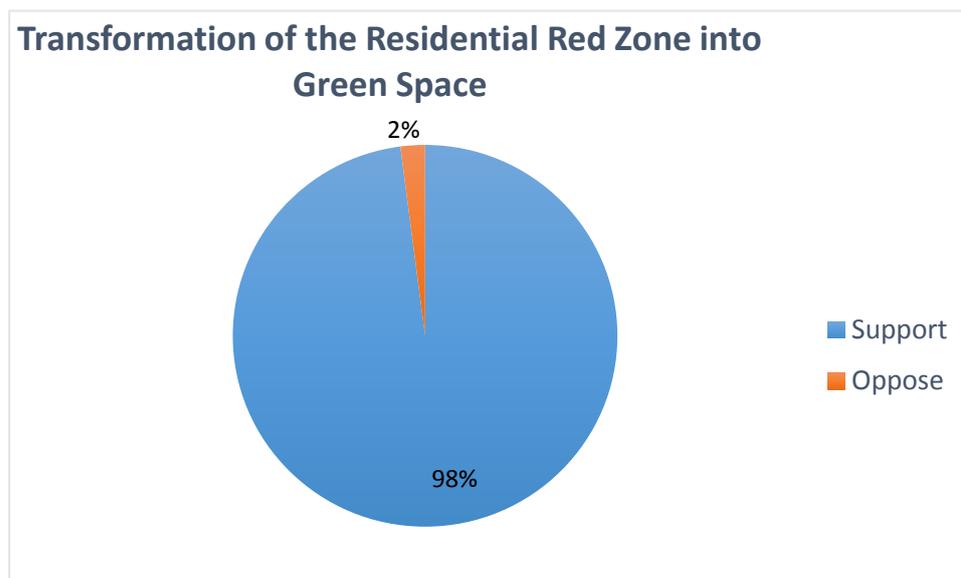


Figure 3: pie chart showing support levels for turning the Residential Red Zone into green space

Our results showed that a majority of responses (97% children, 99% adults) were in favour of seeing this space utilized for recreational activity. These results were encouraging as they depicted a residential body that have accepted the loss of their residential area and are ready to support initiatives to transform the space into something that is worthwhile and beneficial for future generations.

The suggestions from children concerning what they would like to see in this green space were listened to intently, as it is future generations that will ultimately benefit from these developments. Recreation and sporting activities were at the top of the suggestion list, there was also a healthy interest in seeing more native plants and birds in a restored wetland environment. One of the more interesting suggestions made by several students was the implementation of natural playgrounds as opposed to the current standard of plastic and metal. Not only do these nature oriented playgrounds provide children with more diverse play possibilities, but they help to encourage a passion for nature from an early age, all while costing a similar amount to traditional playgrounds (Weintraub, 2010).

The benefits of easily accessible urban green space are numerous and well documented, a regular interaction with nature has been shown to reduce tension and stress while

improving self-esteem and general mental and physical health, as well as moderating the effects of ADHD, autism and other childhood illnesses (Beatley, 2011). Increased residential green space could also serve to nurture the drive for preservation of native flora and fauna, a topic that is of increasing significance to Christchurch and New Zealand in general. Studies have shown that exposing children to nature from a young age will help to create future generations of adults who viscerally and passionately care about nature, are interested and dedicated to its protection or restoration (Beatley, 2011). Injecting more nature into our urban environment seems to be the perfect way to restore our connection with nature and boost our will to preserve it.

Outdoor Classrooms

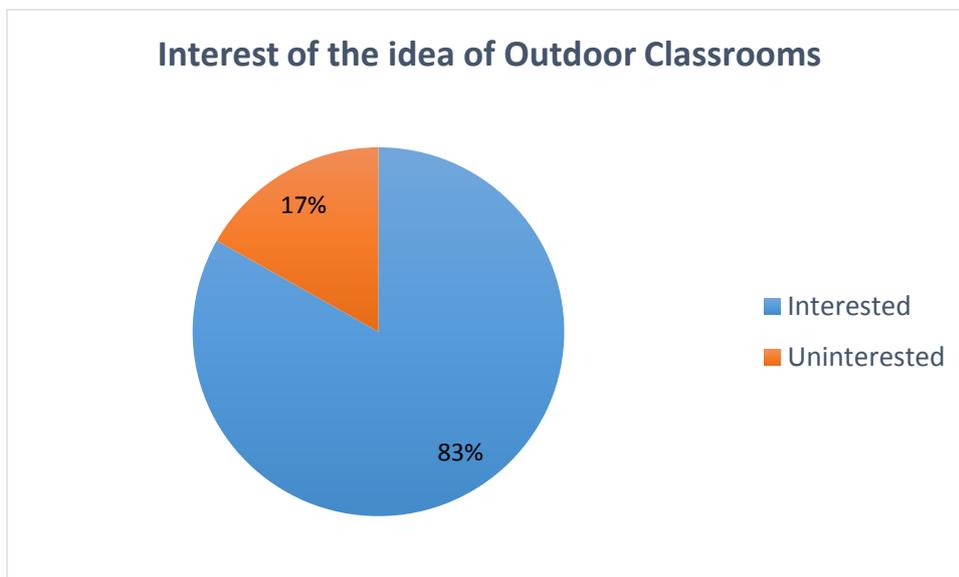


Figure 4: pie chart showing interest in outdoor classrooms

Of the surveyed individuals 88% of children and 74% of adults were in support of more outdoor learning being run in the school curriculum. It is encouraging to see the majority of adults being in favour of these developments, as support from the parents and other adults of the community would be vital to the success of these outdoor classrooms.

Studies on outdoor classrooms in the United States have cited the factors of community support (volunteer labour, expertise, and donations), direct student involvement, teacher training, and administrative support as being the most critical aspects of successful long term outdoor classrooms (Kail, 2006). The possibilities for these classrooms are plentiful, given the dynamic environment of the Avon Ōtākaro River and Lake Kate Sheppard, some

examples could be recording and describing native birds, learning to identify local native plant species, or examining the biodiversity of the tidal and freshwater systems.

In addition to the three key topics outlined the exemplar project calling for classrooms surrounding the subjects of *mahinga kai*, Harakeke, and Community gardens, the children were also quizzed on their interest in three other proposed classroom topics. The first of these topics was concerning the namesake of Lake Kate Sheppard and the woman's suffrage movements, a large amount of children, especially the girls, were excited to learn more about this significant historical event in an outdoor setting. The second topic put forward was surrounding the Canterbury earthquakes and the geological processes that Christchurch is undergoing, while there was still some support for this topic, it was dismissed by some students as they understandably felt they had learned enough on the earthquakes already. This boredom could be overcome by perhaps looking at other aspects of geology, such as fossils and the geological time scale. The third topic is one of particular importance in the upcoming year, 2015 marks the 100th anniversary of the Gallipoli landings during World War I and with it the birth of the ANZAC spirit that has helped to shape modern New Zealand. Nearly all of the children were excited to learn more about the ANZAC's and the sacrifices they made in the name of freedom. All three of these topics could be effectively conveyed in an outdoor classroom setting.

Mahinga Kai

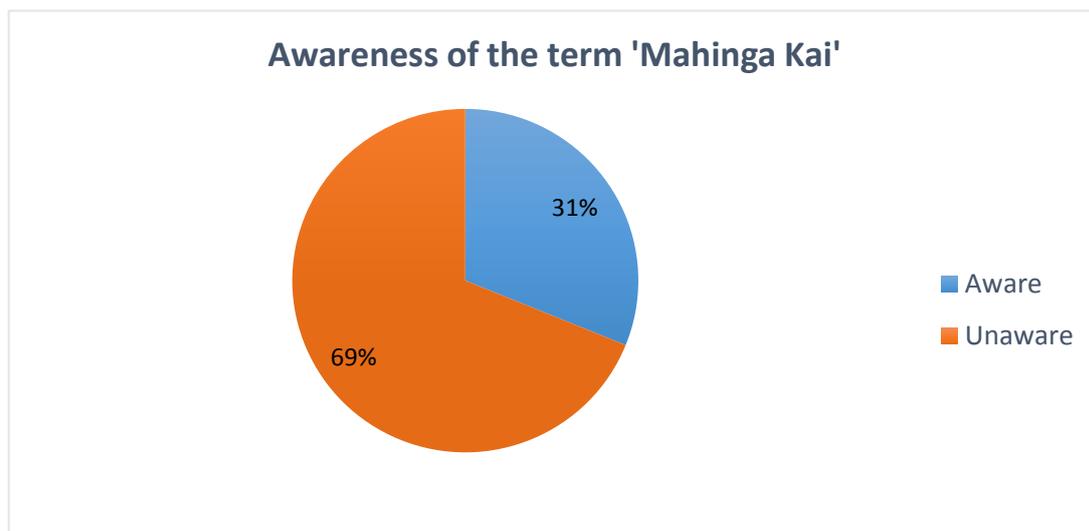


Figure 5 pie chart showing awareness among surveyed individuals of *mahinga kai*

Our research revealed that 31% of adults and 28% of children (figure 1) had at least heard of the term before. A separate question in the group discussions revealed that 74% of children had actively participated in *Harakeke* weaving at school, so they had been learning about *mahinga kai* practices without knowing it.

These findings of relatively low awareness highlight the need for an increased drive surrounding the education of *mahinga kai* doctrine as a tool that can help to nurture a respect and care for nature. The contemporary significance of *mahinga kai* is less for the sake of survival and practical applications as it was in the past. Today the value of *mahinga kai* lies more in its education possibilities in a cultural, historical, biological or geographical setting. When combined with other important Maori values such as *Taonga* (sacred possessions) and *Kaitiakitanga* (guardianship obligation), the full potential of *mahinga kai* as an education and management tool can be realised (Townsend et al., 2004) and then applied in the lake Kate Sheppard area.

Discussions with teachers from Freeville and Waitakiri primary schools showed support for increased teaching of *mahinga kai* values, and also plans for an intensification of this area of the curriculum coming in 2015. Utilizing the proposed outdoor classroom areas in the Lake Kate Sheppard area with a unique practical aspect would provide schools with a valuable

location to teach contemporary and historical *mahinga kai* doctrine in new, exciting and memorable ways.

Community Gardening Initiatives and Collaborative Education

Community gardens make a useful addition to any recreational green space as they serve as conduits for resident communication and organisation. Gardens at home or school can provide learning opportunities for children and lead to a desire for wider community action and pride. Three quarters of interviewed children had had enjoyable gardening experience either at school or at home, while 82% of adults were in favor of increased community garden activities in Christchurch. Involvement in community gardens can benefit communities in multiple ways including food security, human health, the local ecology and social capital, as well as creating opportunities for community development through education, skills and training (Firth et al., 2011). The combined interest of children and adults will lead to the formation of organised communities around the gardens.

The potential of collaborative learning between primary and tertiary students is an idea that has not had extensive research. However, this research supports this idea as 96% of the surveyed students were excited to participate in more learning activities with university students. Discussions with teachers revealed enthusiasm and support for the notion, this news is exciting as it provides more grounding for the success of such ventures. Outdoor classrooms could serve as a conduit for these activities, where children could engage with university students on a range of exciting topics in an interactive outdoor learning environment.

Limitations

Research Time Frame

A time frame of ten weeks were given to us to conduct our research, which reduced our ability to engage with wider range of community groups and people of importance to the Mahinga Kai Exemplar Project. Working around the calendar of the primary schools leading up to the holidays made organising meetings particularly challenging. Plans to extend our

surveys and discussions into the secondary school sector at Linwood High School were cancelled due to our time constraints. Data from secondary students would have provided further confidence in our results regarding the preference of outdoor classrooms and creative ideas for community space in the red zone that were presented to primary school children (Clifford et al., 2010).

Communication

Discussions with primary school children were influenced by the year of the classrooms as the children's ages ranged between five and ten. This impacted on the ability to understand and communicate effectively the questions asked. A classroom of five year olds were asked less descriptive questions and more closed ended questions, compared to older classrooms of ten year olds who had a better understanding of our questions. Due to this, we acknowledge that the results will vary due to the age and understanding of the students (Creswell, 2009).

Demographics

Our engagement with the public in Shirley and New Brighton libraries posed challenges to our results received from paper surveys. Many participants were from the East and had experienced hardship from the earthquakes and government decisions to red zone properties (CERA, 2014). Therefore, our research became a secondary focus and the government and council decisions of the red zoned land the primary focus. We acknowledge that attitudes of the public were subject to past experiences of the earthquakes which may have had an impact to the results of turning land that was once owned by residents into green space (Gomez & Jones, 2010).

Experience

As our research has been conducted under a problem based learning process, our experience was limited in geography research methods, techniques and practices. These skills have been obtained and learned throughout the research process, potentially impacting our quality of research methods. Engagement with primary students and our

organisation of the preferred and most appropriate method within schools was taken carefully due to our inexperience (Spronken-Smith, 2005).

Conclusion

The Mahinga Kai Exemplar Project is a valuable resource to demonstrate a further extension of green community space along the Avon-Ōtākaro River, which would effectively complement existing plans for the new Christchurch central city. An overwhelming majority of participants were in favor of transforming the residential red zone into green space. Lake Kate Sheppard's potential as a demonstration to Christchurch residents, council and the national government is very valuable, as our results suggest that a range of creative uses and ideas are feasible for a community space which Christchurch can benefit from (Dillon et al., 2005). The three themes of *mahinga* Kai, Community Gardens and Harakeke (flax and weaving) as resources for outdoor classroom learning were positive amongst primary school students and schools studied, with *mahinga* Kai emerging as the focus for 2015 curriculums at primary schools we surveyed.

Further research into the proposed themes for outdoor classrooms should be encouraged, as our results suggest primary school children would positively engage in themes of national and regional significance. Secondary schools such as Linwood High School should also be engaged for future research, as an extension of creative ideas and proposals for outdoor classrooms would greatly benefit our existing research (Clifford et al., 2010). The importance of children for the guardianship, maintenance and community use of the lake and further community space in the red zone is paramount (Brown & Wattchow, 2011). Ideas from children presented in our research suggest contemporary and sustainable activities and installations that can enhance the Christchurch community, with notable suggestions of natural playgrounds and local food being used as produce (Dillon et al., 2005). These creative ideas will benefit the emerging generations to come, and our research suggests that children will be tool to change attitudes regarding sustainability amongst the public and parents through interactive activities conducted at Lake Kate Sheppard and the red zone in the future (Dillon et al., 2005). A further recommendation should include the use of technology in how the community engages in interactive learning, with the use of

applications to enhance this.

Sharing knowledge and creating a sense of community through the collaboration of primary, secondary and tertiary levels has also emerged as the next step in promoting further green space along the Avon-Ōtākaro River (Dillon et al., 2005). One primary school that we surveyed was in support of tertiary students engaging and teaching a particular discipline of interest with primary schools. These steps for the future will enhance Lake Kate Sheppard as a current resource, and further enhance and promote knowledge amongst the Christchurch community to develop creative and interactive uses along red zoned land by the Avon-Ōtākaro River (Brown & Wattchow, 2011; Dillon et al., 2005).

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