

Interim Report to the Robin Rigby Trust

Having begun work at Landcare Research on September 27th, and recently back from Christmas Holidays, it is a good time to reflect on the project so far and to look towards future directions.

WHAT ARE THE PROJECT OBJECTIVES?

The broad objectives of the research project are to draw attention to the vulnerable nature of a coastal community in New Zealand, with climate change being the primary driver of coastal vulnerability. As many of the impacts of climate change will be felt through water (precipitation variability, sea-level rise and salinization of coastal margins, flooding, drought, etc), freshwater resources and their interaction with coastal ecosystems are a principle focus of the research. The core objectives of the research are twofold: to work with the community in order to increase awareness and understanding of coastal and freshwater vulnerabilities; and to move the city council toward making decisions that will help prepare for climate change impacts while improving other environmental assets for the community such as improved water quality and ecosystem health, recreational opportunities and quality of life.

HOW HAS THE PROJECT CHANGED?

As initially designed, groundwater resources were the intended area of focus of the project; however, through preliminary investigations and through conversations with Landcare Research colleagues, Nelson City Council staff, the Department of Conservation, the Fish and Game office in Nelson, and local residents, surface water, especially in urban streams seemed to be the area in need of more attention.

The Nelson region has a number of freshwater streams that feed into the coastal ecosystems (beaches, estuaries, harbours, etc) which are very important for ecosystem function, and also have a very high value for tourism, aquaculture, recreation, and aesthetic purposes. The project has changed slightly to focus on surface water in an urban catchment and its effect on the coastal receiving environment, rather than focusing on groundwater resources.

WHERE WILL THE PROJECT TAKE PLACE?

Through recent meetings with the Nelson City Council and discussions with other stakeholders I have decided to use the Waimea Estuary as the case study coastal ecosystem. The Waimea Estuary is the South Island's largest enclosed estuary (3455 hectares) with a 65 km internal coastline. It is fed by 22 rivers and streams and is an important site for migratory birds including bartailed godwits and other endangered birds.

Of the 22 tributaries to the estuary, I will be focusing on Orphanage Stream and its catchment area. The headwaters of the stream are forested while the middle reaches have livestock grazing and suburban development, followed by more intensive urban development and infrastructure near the coast.

HOW WILL I ACHIEVE THE OBJECTIVES?

As an "outsider" and relatively new to the Nelson region, working with the community and meaningfully engaging with them on issues happening in their own backyards can be a challenging undertaking. Fortunately a renewed push from the community began a little over a year ago to better protect the Waimea Estuary. The community has developed a vision for the estuary, as articulated in the management strategy. This process and the existing level of

January 14th 2011

community engagement have provided a great foundation for further work in the estuary and tributary streams.

Collaborating with Nelson City Council (NCC), the community engaged in the Waimea Estuary Strategy, the residents of the Orphanage Stream catchment as well as other stakeholders and groups, the redefined research project will compile existing scientific literature and reports on native fish, freshwater ecology, first flush stormwater data, water quality measurements, flow recorder and land-use. From the scientific literature survey an analysis of the issues in the catchment will be generated. Key experts, residents and stakeholders will also be interviewed to better ascertain existing and future issues. Potential climate change impacts will also be discussed for the catchment.

With the help of the community and using their stated vision and values within the Waimea Strategy, I will provide recommendations and an action plan for the NCC that they can implement to achieve the articulated desired outcomes. Through Forum meetings, the community and stakeholders will provide input and help craft the recommendations and the action plan for the NCC. The research project will serve as a pilot study and if successful could be replicated for other tributaries to the Waimea Estuary.

TIMELINE?

It is anticipated that the project will be completed by the end of August 2011.

I would like to close by extending my heartfelt thanks to Mary and Doug Rigby and the Robin Rigby Trust for providing me with the opportunity to undertake this project and to learn more about the beautiful landscapes and waterscapes of New Zealand.

I would also like to thank the Canadian Water Network for providing additional funding for the research project.

WHAT HAS BEEN DONE TO DATE?

Over the last three months I have familiarized myself with local issues affecting coastal environments in the Nelson and Tasman Region, especially with respect to urban streams. I have participated in community events focusing on rivers and coasts such as:

Events: Film – Waterwhisperers¹ NZ
Land and Water Forum Public consultation
Nelson Environment Awards (Networking opportunity)

I have met with staff at the Nelson City Council
Meeting with Martin Workman and Paul Sheldon
Meeting with Lynne Hall

And other councils
Meeting in Wellington with Nicci Wood and Christine Harper
Visit of Waitangi Park

I have attended academic presentations
Presentation by Judy Lawrence: Flexible time-adapted decision making - local government response to the effects of climate change
ICM Review – presentations from researchers

And have had discussions with other researchers and stakeholders
Robyn Simcock
Meeting with John McLaughlin – Marsden Park
Nelson Environment Centre
Lawson Davey, Fish and Game, Nelson

Project description, How has the project changed?

Forecasted climate change impacts for Nelson region, high intensity rain events and extreme weather are likely to become more frequent and severe over time. City and regional councils need to examine and implement strategies to better prepare for these impacts in order to protect infrastructure and property, reduce hazards and safeguard people's health and safety.

Decisions about allocating funds for climate change adaptation need to be made in the short-term. Some of these adaptation options are for forecasted impacts within the next 10, 20, 30, 40 or 50 years. They can be complex decisions with significant uncertainty, making the task for decision-makers all the more challenging. In the meantime, actions can be taken now that will reduce the impacts of flooding and other damage caused by climate change impacts. These actions may also have other positive environmental benefits such as improved water quality, better habitat protection for fish and wildlife and improved property values. One area where this is the case is urban stormwater. High water levels in urban streams and spikes in water levels are frequently caused by stormwater flow in urban catchments. Especially where there is a high proportion of permeable land-cover. Water travels over the landscape quickly

¹ *Shot in stunning locations around New Zealand, this film explores the work of ten communities as they seek to heal damaged waterways and protect them for future generations.*

We meet the people behind the recovery and conservation of some of Aotearoa New Zealand's precious waterways - these are fishermen, conservationists, scientists, farmers, local iwi and divers who share a passion to safeguard their local rivers, lakes, coastlines and oceans.

January 14th 2011

and enters the urban streams. When these heavy rain events coincide with high tides, damage caused by flooding can be significant.

cause peak we have enough While decision-makers and need to be taken While councils are climate change adaptation science is still evolving, there needs to be an assessment of how

January 14th 2011

Rationale
Partners: Landcare Research, Nelson City Council
Methodology
Expected Outcomes
Utility

Budget Expenses	
Travel	(to NZ, Wellington, Christchurch)
Living expenses	Accomodation, food