

TE AWAROA: 1000 RIVERS



Vision

New Zealand\Aotearoa's 1000 rivers will be in a state of *ora* - health, wellbeing and prosperity.

They will support a full range of aquatic and terrestrial indigenous biodiversity and meet the cultural, social and economic needs of all New Zealanders.

New Zealand's riverside and freshwater ecosystems will be thriving, and Kiwis will take pride in their role as stewards/kaitiaki of waterways across the country.

Mission

- Inspire landowners, local government, businesses, iwi, community groups and individuals with the need to care for New Zealand's rivers, streams, springs and lakes
- Identify the main risks to riverside and freshwater ecosystems, and a toolkit of exemplary measures to ensure their wellbeing
- Encourage local stewardship/kaitiakitanga of our waterways
- Enable communities to take action by providing them with the knowledge, skills and tools to take care of different rivers and their catchments

The Challenge

New Zealanders place a very high value on their rivers, streams and lakes. Overwhelmingly, Kiwis want waterways across the country to be clean and healthy.

In a recent survey, over 92% said either all waterways (56.8%) or most (35.8%) should be safe for swimming, fishing and food gathering.

According to the Parliamentary Commissioner for the Environment, however, water quality was poor or very poor at 52% of monitored river sites, while a further 28 per cent were graded "fair" - with a risk of illness for those swimming there.

Rivers, lakes, wetlands and streams across New Zealand are being degraded by pollution from intensive agriculture, industry, transport and residential uses, and sedimentation caused by subdivision, farming and plantation forests.

Shellfish beds and fisheries are being damaged, and water-based recreation – swimming, kayaking, paddling, rowing, surfing, surf life-saving, fishing and diving. Many people are also experiencing health risks from water-borne pollution.

New Zealand's biodiversity is in danger. Of 179 nations in a recent study, New Zealand had the highest proportion of indigenous species of plants and animals under threat of extinction. Many of these species inhabit fresh water streams, rivers and riverside bush.

The long-term future of riverside and freshwater ecosystems in New Zealand is at risk, threatening the sustainability of communities and key industries.

Some of this damage is irreversible, and remediation can be extremely costly. For a nation that generates much of its wealth from its land and waterways, this makes little sense.

"The economy is a wholly owned subsidiary of the environment"

Herman Daly, senior economist, World Bank

The Approach

Although the blame for polluted rivers is often directed at intensive agriculture, waterways traverse many land-uses. The wellbeing of rivers and other waterways has to be a shared concern.

The Land and Water Forum has made a pioneering attempt to bring different stakeholders together – including regional councils, power companies, farming groups, environmental groups and iwi - to agree on the need for standards for water health across New Zealand.

Because these groups work independently, however, it has been difficult to translate their shared aspirations for healthy waterways into practical action that will achieve the desired outcomes.

At the regional level, too, communities, farmers, industry and iwi are increasingly eager to take care of their waterways, but because they operate independently, their efforts are also often uncoordinated and lack strategic focus.

Likewise, much of the science around waterways, which examines particular biophysical aspects of freshwater ecosystems, is fragmented and expressed in a language that is inaccessible to decision-makers.

Although human activities (including scientific inquiry) are intimately entangled with the biophysical systems that drive river health, these complex dynamics are poorly understood.

Te Awaroa will examine patterns of engagement between different groups of people and rivers, streams, lakes and springs that can contribute to healthy waterways and freshwater ecosystems, and prosperous, successful futures for urban and rural communities in New Zealand.

In the process, we will develop a rigorous and exemplary toolkit of approaches and initiatives that can transform the state of different waterways across the country.

The Philosophy

In many ways, the ‘environmental problem’ – including the degradation of waterways - is due to archaic habits of mind that have been rendered obsolete by the findings of contemporary science.

Radical divisions between mind and matter, culture and nature, and people and the environment have been confounded by the findings of neuroscience, quantum physics and the environmental and social sciences.

Nevertheless, these divisions are still reflected in policy and scientific models that split the natural from the social sciences and people from the environment, leading to strategies that threaten human prosperity and well-being.

Likewise, the idea that people command an inexhaustible nature that was created to serve them, based on ancient cosmo-models (including Genesis and the Great Chain of Being), has no scientific basis.

It gives a false sense of security, based on the illusion that since human beings control the cosmos, they have the power to fix any damage that they do - to waterways or climatic systems, for example.

It is evident that many scientists and policy-makers are using outdated, unfounded assumptions to think and talk about human relations with water, and other biophysical systems.

New and rigorous forms of inquiry that cut across the different scientific disciplines, including the natural and social sciences, are needed to trace the intricate patterns of interaction between human communities and the environments that sustain them.

These may be found in the cutting edge science of complex systems and networks, and in the environmental sciences, where a legacy of relational thinking from the Enlightenment remains powerful.

In many ways, these resonate strongly with Maori ways of thinking, in which people, plants, animals and rivers are joined together in networks of reciprocal relations that link all life forms. In New Zealand, such ideas have also become familiar to many in the wider population.

In the Land and Water Forum, for instance, a convergence between local values, the environmental sciences and Maori relational thinking was evident, with participants discovering a surprising degree of common ground.

Along with our diverse environments, this shared sense of connection with rivers gives New Zealand a strategic advantage in generating innovative approaches that bring people together around waterways, and deliver high quality social, environmental and economic outcomes.

Strategies [Seed funding for design phase from the Tindall Foundation]

Te Awaroa is a world-leading project that seeks to ensure the ora or health of rivers across an entire nation.

It can play a fundamental role in restoring New Zealand's brand as an environmentally responsible producer, and in mending its reputation as an innovative country that places a high priority on taking care of its waterways and the land.

Te Awaroa will work in three key strategic areas to bring together different stakeholders, groups and approaches in evidence-based action around waterways:

1. Research

- Build a powerful research engine to explore the life of waterways by linking research institutions (University of Auckland, Landcare Research, Allan Wilson Centre, NIWA etc) and industry groups across a range of sciences
- Generate a rigorous evidence base about different waterways in New Zealand and their associated communities of people, animals and plants
- Identify and research one or two high profile regions/catchments as pilots to launch the programme:
Okahu Bay in Auckland, an urban stream 'daylighting' project with Ngati Whatua; and the *Waimata River* in Gisborne, the historic site of the arrival of voyaging canoes and of the first European expedition to New Zealand. The 250th anniversary of Captain Cook's landing will be commemorated in 2019.
- Engage a broad range of stakeholders - farmers, residents, scientists, conservation groups, recreational river users, iwi and hapu, local experts etc. - in the research and a range of other activities around particular catchments
- Explore different understandings of different waterways, and experiment across the natural and social sciences and Maori thinking to trace their lives through time.
- Investigate ecologically intelligent strategies such as agro-ecology, liquid urbanism and water sensitive cities

- Develop and disseminate a tool-kit of evidence-based initiatives for revitalising waterways and freshwater ecosystems, while fostering ecologically smart forms of land use and production

2. Outreach

- Create links nationally with Land and Water Forum, NZ Rivers Foundation etc; and globally with groups such as International Rivers or the International River Foundation to create synergies, benefit from lessons/experience etc
- Facilitate exchange of ideas and lessons through discussion forums, eg. Wai Cafes; River Net online knowledge platform, etc.
- Identify and empower transformative case-studies that will inspire and empower communities (Motueka River catchment; Whaingaroa harbour, Raglan; Aorere Catchment, Golden Bay; La Rosa daylighting project etc.)
- Identify a number of high-profile ambassadors (sports people, celebrities, community leaders, academics, business leaders) to promote rivers restoration, and water-sensitive land-based production and urban design
- Engage and excite people through storytelling and interactive tools and apps, harnessing the power of social media and digital communications
- Develop a compelling case around the protection and restoration of New Zealand's rivers, lakes, streams and wetlands, and how this will increase national prosperity and wellbeing

3. Education

- Foster science in schools through freshwater studies and projects
- Galvanise science-based links between schools and tertiary institutions through shared inquiry into freshwater and riverside ecosystems

Our Vision of Success

- People can safely swim and fish in streams, lakes and rivers around the country.
- New Zealand has abundant supplies of clean fresh water.
- Our farms and rural economies are world-leading in terms of water stewardship and high quality, sustainable products.
- People are empowered with knowledge and resources to restore health to our waterways.
- Streams, lakes and rivers are an everyday part of life for individuals, families and communities
- Kiwis participate in a new water culture, with rich cultural traditions and sports centred around water e.g. Matariki, waka ama racing, dragon boats, kayaking, rowing and popular festivals

Benefits

Te Awaroa will

- Underpin the 100% Pure New Zealand brand
- Foster socially and environmentally smart production
- Provide habitats for many rare and endangered species
- Bring communities together, inspiring kai-tiaki through innovation.
- Bring water based science into our schools, and the hearts of our communities

River Ethnography: A Proposed Research Strategy

This research strategy aims to trace the deep history of a waterway from its geological origins to the present, working very closely with locals and drawing upon Maori philosophical ideas as well as cutting edge science.

Such a study is based on the assumption in *tikanga Maori* that each river has its own life and history, from first origins into the present.

The study will trace

- the formation of the river catchment
- the evolution of plant and animal communities in and around the waterway
- the arrival of human populations with their companion plants and animals, and their relations with waterways, including land and water use systems etc. - first Maori, then European settlers – and their impacts on ecosystems and the energy flows in and around the waterway
- the life of the river in the present and in future.

It will explore different understandings of rivers, and their lives through time.

The idea is to work in a quiet and unobtrusive way with community members on topics of high local interest around the life of the river, allowing diverse groups to share their perspectives and imagine and pursue new river futures.

In the process, the team aims to weave together the sciences (particularly the science of complex systems and networks; and the natural and social sciences) with Maori relational thinking in the process of understanding the long-run life of waterways and their associated ecosystems.

Insights into the life of streams and rivers will be widely shared as local communities seek to enhance their current and future state of ora (health, well-being and prosperity).

The research process itself is highly participatory and inclusive, forging links across different stakeholders and groups, and different evidence-based understandings

Governance & Management

Te Awaroa will have a high quality governance board, chaired by a well known figure with business expertise and a powerful environmental ethic.

This might evolve into a Centre of Research Excellence in Rivers Research, highly innovative and drawing on the science of complex networks and systems and Maori thinking to cut across the split between nature and culture, and the social and natural sciences.

Like a number of COREs (eg. Allan Wilson Centre for Molecular Ecology & Nga Pae o te Maramatanga) and Centres (eg the Centre for Brain Research), it will have a strong programme of community outreach and engagement.