

The Political Economy of Freshwater Rivers and the Commodification of the Sacred in Aotearoa/New Zealand

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Introduction

The increasing degradation of the world's rivers, coupled with the increasing need for energy sources has seen the conservation and management of waterways emerge as one of the world's most urgent issues in the twenty-first century. Issues around the production of energy and the conservation of water as the source of life sit at the conjunction of indigenous traditional knowledge, indigenous cultural and spiritual values and identities, increasing global concerns for the conservation and preservation of waterways, and the enhancement of the global economy. One of the most problematic concepts in this entire contested process is that of 'resource management', implying as it does, that the natural treasures of the planet are resources to be utilized and exploited for the taking. Another is that of sustainability, a term and concept which means different things to different people,¹ and yet touted as the definitive factor in any resource management issue.

The language which permeates environmental policy and discourse is itself an indicator that there is something drastically wrong with the way we view those natural treasures which, as indigenous peoples say, have been handed down to us from our ancestors. The language speaks of commodification and management, of something to be exploited with and wrestled with, and it is with this concept that I wish to take issue. To do so, I am going to speak about my own river, a river that is sacred to my people;

a river that is wild, that is unique, that has already been damaged in parts by existing hydro stations, that is true; yet it remains one of the world's unique braided rivers and as such, a unique ecological habitat and, to my people, a reservoir of great spirituality;

a river that is one of the world's greatest salmon fisheries;

a river that is an important habitat for braided river birds including dotterel, the black-fronted tern, the Caspian tern, the threatened wry-bill plover and one of the world's endangered species, the black stilt bird (For many of these birds, credible experts agree, despite proposed mitigation plans the chances of surviving the loss of two-thirds of the river's waters are little to none);

a river that is under enormous threat because of a perceived energy crisis, or perhaps more truthfully, because of greed for ownership and power;

a river of which 60 kilometers of the wild braided flowing waters of its lower reaches are to be diverted through a 20 metre high canal containing power generating stations. This scheme will result in the waters being diverted right away from the river for agricultural irrigation which, as even the power company acknowledges, will so pollute the waters as to make them unsafe for human swimming at the place where it rejoins the remains of the river near the river mouth.

This, the beautiful Waitaki River of the South Canterbury region of New Zealand.

Waitaha, the Indigenous People of the Waitaki Valley

The most important cultural signifier of identity for Maori – not a homogenous group but made up of many different tribal groups – are our mountains and rivers. They are, without exception, our first manner of identification – when we meet for the first time, when we stand to speak in a meeting, when we farewell our loved ones to the next plane of existence, we acknowledge first, our mountains, our rivers. In our language, the question “who are you” translates literally to ‘whose water are you from? ko wai koe?’. Our mountains and rivers are more than geographical markers, although they are those as well, they are our genealogical connections to the land; they connect us to our ancestors, they connect us with our spiritual being. The word for spirit is wairua – two waters that flow together.

My own tribe, from my mother, is Waitaha, the water carriers. The original inhabitants of Te Waipounamu, the South Island of New Zealand, Waitaha have historically had a unique cultural, spiritual, and physical association with the Waitaki River, and the mountains which give it birth. Today Waitaha families still reside along the banks of the river where they have maintained these associations. The Waitaki River and surrounding valley is the location of particularly significant cultural sites. Close to the Waitaki River mouth, for instance, is the site of an ancient Waitaha Whare Wananga or traditional place of specialized learning.² Scattered throughout the river valley are sacred burial places and ancient cave drawings. Within and along the river system itself are traditional fishing sites, places where our people sailed in their unique mokihi, canoes made of rushes, and wonderful, unique ecosystems.

The river valley is an ancient trading route of my people as they crossed to the west coast to gather pounamu or greenstone (jade), known to Waitaha as the peace stone, and which they traded with others tribal groups. To this day its mountain reaches contain hidden places which are very sacred. Its lower reaches were also our home. It was up this river valley that, in protest against the government’s failure to keep its promises, my ancestor’s brother, the prophet Te Maiharoa, led his people to camp in the snow-ridden basin of Te AoMarama, the Place of Light. My ancestors had a very unique connection with the river and its valley and its care and protection was paramount. Today the valley and river are shared with a later tribal group, Ngai Tahu, who came from the North 200 years ago, and who, in the context of neoliberalism and the restructuring of indigenous peoples-states relationships, have forged a partnership relationship with the state.

This paper is driven in part by the concerns of my people and other groups such as the Waitaki River Users Group and Waitaki First, for the wellbeing of the Waitaki River in the face of impending further degradation of the river system. Included amongst Waitaha’s concerns are:

- desecration of spiritual beliefs and values associated with the river
- significant numbers of cultural sites, many of which have not been publicly identified
- preservation of ancient rock cave drawings
- preservation of food sources
- conservation of existing wetlands
- the mauri or life force of the water itself

I begin my discussion with a brief comment on sustainable resource management policies and the

management of rivers in the Canterbury region of the South Island of New Zealand where I was born and grew up and where, according to our histories, my Waitaha people have lived for over two thousand years.

Water and Resource Management in Aotearoa/New Zealand

Perhaps the best explanation of New Zealand's sustainable resource management policies for water is that given by NIWA, the National Institute for Water and Atmospheric Research. As NIWA notes in its report on Sustainability Research,¹ "The Resource Management Act (RMA) (Part II Purpose and Principles) defines three broad components of sustainability:

- (a) Sustaining the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations
- (b) Safeguarding the life supporting capacity of air, water, soil and ecosystems
- (c) Avoiding, remedying or mitigating any adverse effects of activities on the environment"

In New Zealand, the land of supposedly pristinely pure, sparkling rivers, abundant fish and ecologically sound rolling green pastures, water management has become an increasingly contested issue. According to NIWA, the significant water issues facing New Zealand are recognized internationally. New Zealand's water quality has been rated as third out of the 142 rated countries (behind Canada and Finland) but 92nd in terms of reducing water stress.² On the indicators for waste reduction and consumptive pressures (defined as the ecological footprint per capita), New Zealand rated 140th (Note - see recent MfE report on waste – one of the highest levels of world – over 900 kg per person, more than the average American!). So in contrast to our touted tourism image, in the land of milk and honey, all is far from pristine.

95% of the 3588 respondents in a 2001 Ministry for the Environment survey saw the health of our streams, rivers and lakes as a very serious issue.³ Certainly the management of water resources has become one of the most contested. As NIWA points out, the longest-running Planning Tribunal hearings ever held in New Zealand were about setting the minimum flows in rivers. The most serious degradation issue is that involving our freshwater rivers. It has become apparent that the reduction of water in our aquifers combined with the degradation and abstraction of water from our rivers, streams and lakes and factors such as over-use of energy per capita, means there will be insufficient water flow to meet long-term requirements for the maintenance of freshwater eco-systems and biodiversity.

Changes in land use have drastically impacted on water quality and degradation of freshwater habitats. The shift from sheep and cropping regimes to intensive dairy farming which is still expanding at a growing rate in New Zealand's lowlands and is propelled by the construction of the giant dairy company Fonterra, is seeing increased deterioration of water quality. The increase in abstraction for the irrigation of pasture is similarly seeing a drastic drop in water levels. Combined with loss of natural vegetation along streams and rivers, the effect on freshwater ecosystems is one of increased degradation.

¹ NIWA July 2002

² 2002 Environmental Sustainability Index produced by the Global Leaders of Tomorrow Environment Task Force of the World Economic Forum, cited *ibid*. Includes percentage of territory under severe stress and use of pesticides and fertilizers.

³ NIWA, *op. cit*.

Particularly at risk are the wild and broad rivers in the Canterbury region. Rivers which are born in the snowfields of the Southern Alps, a mighty range of mountains stretching the length of the South Island, in the middle of which is the sacred birthing place of the gods. The headwaters of these shingle bed rivers flow from the icy sheets of the mountains, spring out of rock faces into mighty waterfalls, wind through breathtakingly beautiful gorges, across the great stony river beds of the Canterbury Plains, and onto the sea. These mighty rivers, which I swam in my youth, are in danger of dying. These rivers are drying up. The remaining water is more often than not, barely a trickle, and a polluted trickle at that. These rivers are contested sites, struggled over by powerful dairy giants, recreational users groups such as freshwater fishermen, environmentalists, the indigenous peoples to whom their waters and valleys are sacred, by developers and by power companies.

Regional Councils currently administer regulatory frameworks on a regional catchment basis. At the centre of such catchments are the river networks which extend into estuarine or coastal systems. To date there are no tools that integrate climate, hydrological and oceanographic processes, neither is there a national water management plan. River management is conducted piecemeal within the contested framework of the RMA. As NIWA note, the National Agenda for Sustainable Water Management, developed by the Ministry for the Environment to provide water managers with tools to work within the RMA exists but only in draft form.

In the high priority area of water resource management, freshwater is considered likely to be the single most limiting natural resource to sustainable development in New Zealand.⁴ Given that water management is the single greatest ecological challenge facing New Zealand, it is to be deplored that there are still no national policies for water management and that, as with our waste management, our energy management is likewise in total disarray.

Response to the Energy Crisis

Last winter, despite a proliferation of hydro-electric power plants in the South Island, and geothermal plants plus oil and gas ventures in the North, New Zealand faced its third big electricity crisis in just over a decade.⁵ In a country of little more than 4 million people and some of the cheapest power in the developed world, power consumption has doubled every 22 years.⁶ Decades of cheap power during which energy consumption skyrocketed, saw demand for electricity increase at a higher rate than our economic growth.³ In terms of energy efficiency, New Zealand is in the bottom third of OECD countries. Reliance on the economic imperatives and the market model instead of reliability of supply has resulted in the current energy crisis. Hydro-electric dams currently supply about 60 percent of New Zealand's electricity generation, but in less than two decades dams will provide just over half of the country's electricity.⁷

Plans to match the 150 megawatts of new generation required each year to keep pace with economic and population growth include new geothermal developments and several wind energy projects. They also include the expansion plans of the four big power generating companies.⁴ Each of these plans threatens the survival of native fish species as well as in some cases, rapidly

⁴ NIWA op. cit.

⁵ Lyons 2003

⁶ Ibid.

⁷ Ministry of Commerce 'Energy Outlook to 2020'

disappearing native flora and fauna. One of these is the Aqua Project for the Lower Waitaki Valley.

The Waitaki River and Basin

Engineering Geologist David Bell, describes the geology of the Upper Waitaki Basin from whence the Waitaki River originates.

“The Upper Waitaki Basin is an area of changing light and vista in which the natural elements dominate, and in which one can appreciate and understand the majesty of the processes that shape a landscape dominated by ice and earthquakes. For here the landscape itself acts as a teacher to even the uninitiated, and presents a changing kaleidoscope of beauty and tranquility sculptured by the harshness of wind, water and ice. And here the actions of humans are also dwarfed by the landscape, and yet seem to form an integral part of it, be it farming or forestry or power generation: for here we are continually reminded that society must live in harmony with the natural environment, and that we cannot and must not destroy our heritage and our future”.

Then there are the canal and power station systems that represent a major part of the country’s generating capacity...In this scenic valley of grand and awe-inspiring beauty, the construction of a major hydro-scheme in the Upper Waitaki back in ...utilised canals and other above-ground structures, and raised one of the contributing lakes by some 38 metres, to increase the flow of water.

Project Aqua

Proposed by the supply company Meridian Energy⁵ as a solution to both the increasing shortage of irrigation for farm land and the increasing demand for power, the one billion US dollar Project Aqua scheme, the largest power scheme in New Zealand’s history if it succeeds, will divert the flow of the Waitaki River at the historic pioneer village of Kurow, with over 70 percent of the average volume going down a canal, and the balance flowing down the existing Waitaki River bed. It is worth noting at this point that, at one of many conferences, an expert in the field of energy made the strong point that the amount of power that would ultimately be provided by Project Aqua expected in due course to supply one-eighth of the country’s power needs, would be saved by consumer’s learning to turn off their heated towel rails.

As Waitaki First⁸ note, approximately 340 cubic metres per second from Waitaki River will be diverted into the canal at Kurow in situations of high flow. More generally however, Meridian will divert 280 cubic metres per second which is approximately 73% of average mean flow of water in the Waitaki River.⁶ The remaining flow will descend down an enormous 60km-long and up to 20- metre high canal on the south side of the Waitaki River valley, with the water used to drive six hydro-electric power stations, sited up to 10km apart. The canal will remove approximately 1000 hectares of prime agricultural and potential viticultural land from production and severely disrupt communities along the valley.⁹ The water will re-enter the river through an outfall near the mouth of the river where jet boats glide, anglers fish, where my people swim and gather traditional foods. Described by Meridian as a low impact power scheme, nothing could be

⁸ An organization established to protect the Lower Waitaki River

⁹ <http://www.waitakifirst.co.nz/>

further from the truth.

In addition to the pollution of the waters, the loss of its vital life force and the endangerment of unique species, there are other severe impacts. The little town of Kurow below which lie the canals and the powerhouses of the existing power schemes which have so damaged the waters of this wonderful river will be enormously affected by the construction of what local resident Bruce Ansley calls “a serpentine monolith running through one of New Zealand’s most scenic valleys”.^{10 7}

The Draft River Management Strategy – proposals for environmental mitigation

Included in the Draft Lower Waitaki RMS are proposals to monitor and mitigate the long and short term effects of Project Aqua on in-stream indigenous biodiversity, braided river bird habitat, the biodiversity of wetlands on river terraces, turf land vegetation and in-river recreation.⁸ It includes provision for consultation with the Ngai Tahu tribe who have political and numerical dominance within the area and judicious plantings and screening in order to mitigate the impact of the 20-metre high structure on the landscape.

Nowhere is there acknowledgement of the spiritual nature of the river, or mitigation for the loss of life force. Indeed, how could there be?

Resistance and response

Initially hesitant, the response by the local community is building in momentum. Driven by processes of discussion, consultation with the Energy Company and education, where there was initially 65% compliance, according to Meridian Energy, there is now a rapidly growing opposition. Resistance activities by the community have included a protest art exhibition, a day of free jet boat rides to give people a chance to see the river first hand and to inform them of the effects of Project Aqua (over one thousand people took up the invitation), and countless public meetings.⁹ Actively opposing the project also, are the remnants of the earliest arrivals to our land, a people who throughout history have been known as the peace people, the gardeners, the water carriers, the families of Waitaha.

Maori communities are in certain ways extremely vulnerable in regard to development projects. The RMA specifically requires developers to have regard for the cultural values of local Maori communities. Hence developers are obliged to enter into a consultation process with Maori, or at least with their representatives. Leaving aside the contestable issue of representation, there are particularly poignant issues which face Maori as an indigenous people who have suffered external colonization.

The conjunction of developmentalism and the increasing articulation and recognition of indigenous rights and the protection of indigenous cultures and rights to their lands within international law frameworks has impacted on indigenous peoples in multiple ways. In recent decades, the spiritual significance of their land, forests, mountains, lakes and rivers have been key themes in indigenous peoples’ efforts to reclaim their customary, cultural and political rights. A common theme expressed by indigenous peoples is the spiritual nature of their relationship to their lands and waters and in particular, the function of guardianship.

¹⁰ Ansly 2003

A central principle of indigenous peoples' ontologies and cosmologies is the inseparable nature of the relationship between the world of matter and the world of spirit. The interrelationship between all forms of existence is fundamental to Maori cosmology and ontology. It is inscribed within Maori stories of origin and genealogies. It is this notion of interconnectedness that governs Maori understandings of and relationships to the physical world and to the world of metaphysics. It is the principle that governs reciprocity, the principle of life itself.

Another vital concept is that every individual element of the natural world, each individual rock and stone, each individual animal and plant, every body of land and of water, has its own unique life force. This life force, called *mauri*, is an essential element of wellness. One of the many notable effects of the existing hydro stations is the loss of life force from the water immediately it passes through the first hydro station.

Coupled with the notion of interconnectedness is the notion of balance. The requirement of balance is reflected in Maori notions of the reciprocity of all things, a principle which permeates every aspect of Maori social and political life, and is expressed in the relationship between the dimensions and layers of existence comprising being and non-being.

The counter discourses and strategies of resistance of indigenous peoples, situated as they are at the intersection of emerging new forms of liberalism and the recognition that the overtly colonizing dynamics of assimilation and integration that had underpinned indigenous peoples - states relationships could no longer continue in the same form, have had a marked impact on the development of new forms of engagement at the national and international level. One result is recognition in international law that the customary rights of indigenous peoples were unextinguished by treaties of secession unless specifically stated otherwise by the indigenous occupants. This has shaped states' responses to indigenous peoples' demands for self-determination in significant ways. Another result can be seen in international instruments concerning indigenous peoples' 'right to development'.

There are a number of wider implications which come into play here. These include the restructuring of the state within new global frameworks and the re-interpretation of indigenous peoples' sovereignty and self-determination within an economic paradigm. In Aotearoa/New Zealand, for instance, the reconfiguring of indigenous rights to self-determination as a 'right to development' sits at the intersection of indigenous autonomy and identity and an emerging neoliberal interpretation of development as economic development. (Here the co-option of indigenous elites has played a critical role).

The resurgence of Maori activism across multiple arenas in the late 1970s and early 1980s was arguably responsible for the development of a raft of initiatives by the state which were aimed at the re-incorporation of Maori within what was rapidly becoming a neoliberal state.¹¹ Underpinning the response of the state was the recognition that unless new relationships were developed with Maori and key aspects of their demands met, the challenge by Maori to the legitimacy of the Crown would not only undermine investment confidence, it would actively inhibit the ability of the state to carry out its business.

¹¹ Fleras & Spoonley 1999

The treaty settlement process (based on the 1840 document, the Treaty of Waitangi, which guaranteed Maori sovereignty over all their lands and resources and the rights of British citizenship, whilst guaranteeing the colonisers the right to stay and first choice over lands and resources) which ostensibly seeks to redress past wrongs, has seen the development of new tribal structures whose aim is economic development. In some cases, and in co-operation with what have been termed 'state-owned elites' among the Maori community, this has seen the sale of land and waters which have been returned by the state as compensation for wrongful confiscation. For some Maori, this can be described as nothing less than the commodification of our lands and waters and perhaps also, our souls.

The imperialist project for the conquest of land and resources, for bodies as cheap labour and for souls as tamed and compliant minds, executed through both physical and mental violence, has, it almost seems, triumphed. Like those whose determined global domination on land, sea and air is assuredly about control and ownership of resources, who shout "for us or against us" as they rain down weapons of mass destruction which poison the earth and its peoples, it seems that Maori too, are in danger of being tempted to succumb to the great god of commodification.

The Global Economic World Order and the Commodification of the Sacred

Contextualized within the framework of the energy crisis and the Cold War, the competing environmental discourses of the final years of twentieth century laid the framework for the increasing commodification of what Habermas termed 'the life world'. By the time of post-world war two, the construction of the Bretton Woods system was predicated on what the then US Secretary of State Morgenthau expressed as an "elementary economic axiom ... that prosperity has no fixed limits".¹² The limitless exploitation of the earth's resources was assumed as a given, providing for the infinite expansion of global economic growth which would be presided over by the United States. Unhindered by what Morgenthau described as "economic evils – the competitive currency devaluation and destructive impediments to trade – which preceded the present war",¹³ international trade would provide a most effective deterrent to war – a theme expressed most notably by Saint-Simon in the 18th century. In Heideggerian terms, the earth's resources were viewed as a 'standing reserve' existing solely for the profiting of human endeavors.

The establishment of the WTO and the implantation of the GATS signalled a paradigmatic shift which was articulated by the first Secretary-General of the World Trade Organization, Renato Ruggiero, as "the framework for a new global order",¹⁴ and as a "single global economy".¹⁵ Critical to the establishment of this new framework for global order has been the denationalization and privatization of public commodities, goods and services and the (re) commodification of land, water and other natural resources including those designated as the global commons.

A fundamental principle of GATS is the subjection of the positive list approach to continuous expansion of sectoral commitments. Some of the implications of this regime are exemplified in the

¹² Morgenthau, cited Ibid: 55

¹³ Henry Morgenthau in his closing address to the 1944 Bretton Woods Conference, cited Chossudovsky 1998: 11

¹⁴ Ruggiero 1998

¹⁵ Ruggiero 1996

list of 160 sub-sectors and activities submitted in the European Union's Schedule of Specific Commitments, European Communities and their Member States as an outcome of the Uruguay Round.¹⁶ Arguably the most significant of these are the privatization of health, education, and fundamental requirements for life such as water.

The privatization and trade in services has enabled the monopolizing of water provision by transnational giants such as Monsanto. In reference to the increasing pressure on natural resource markets, Monsanto is cited as saying "These pressures and the world's desire to prevent the consequences of these pressures will create a vast economic opportunity."¹⁷ Looking at the world through the lens of sustainability" they go on to state, "we are in a position to see current and foresee impending resource market trends and imbalances that create market needs. We have further focused this lens on the resource market of water and land". It has become a widely acknowledged fact that the wars of this century will be fought over water. As they are currently being fought over that rapidly peaking energy resource, oil.

An Ecological Ontology for Global Citizenship

The inadequacy of current ontological paradigms is demonstrated in the contestation between the needs of the human and physical environment, and those of capital and the market. I have argued elsewhere that in many respects, the transformational timespace of the present moment parallels that of the sixteenth century point of decision in which the understanding of the unity of 'One' was relinquished in favor of division and separation and a re-construction of the nature of 'science'.¹⁸

Then, as now, issues of power underpinned the transition from a unifying ontology based on an understanding of Oneness, to an ontology based on division and separation. Lyotard stated that,

Humanity is divided into two parts. One faces the challenge of complexity, the other that ancient and terrible challenge of its own survival. This is perhaps the most important aspect of the failure of the modern project.¹⁹

Arguably it has become the whole of humanity who is faced with "that ancient and terrible challenge".

The timespace of today's moment is one of choice. Like the rest of humanity, Maori stand poised within this moment. A critical choice confronting Maori is whether to relinquish the traditional cosmologies and ontologies grounded in oneness and interconnectedness, the subjugated knowledges which defined us as peoples, in favor of forms of economic freedom? Or to re-examine the notion of sovereignty in the context of those ancient values and traditional ontologies that have been posited as an alternative model for global order - a new humanism embedded in the principles of social justice, the sacredness of existence and the oneness of being?

¹⁶ GATS/SC31

¹⁷ Monsanto strategy paper cited Shiva @ http://www.biotech-info.net/seed_to_water.html, accessed 20/07/99

¹⁸ see Stewart-Harawira, M. 2004 (forthcoming); also Stewart-Harawira, M. 2003. (forthcoming)

¹⁹ Lyotard, 1984: 79

The challenge facing indigenous peoples who exist within neoliberal competitive state formations, including Maori, is to re-embed their traditional ontologies and cosmologies at the core of indigenous socio/politico/economic aspirations. In the case of Project Aqua, the challenge for Ngai Tahu in their consultations with Meridian Energy, is to realize that yes, there is an alternative. There is an alternative to rolling over and going with the best deal that can be made. In the face of growing community opposition to the monolithic power structure, the alternatives become more visible and more accessible. For Waitaha, who are few in numbers and who have been dispossessed by the treaty process, the challenge is to find ways to stand up and be counted, and to make our voice heard. For myself, one such way is to engage with the ontological underpinnings of notions of sustainable development, of ecological justice, and of global citizenship.

My thesis is that traditional indigenous principles, which are shared with many of the ancient philosophies of the western world, provide a framework and context for the development of a new socio/politico/economic ontology for global order. They provide the cornerstone of an alternative global structure, for an inclusive, pluralistic and spiritualized framework for global citizenship and wellbeing; a framework grounded in a new eco-humanism at the root of which is a deep understanding of the spiritual nature of Being.

Ecological justice and global citizenship require an urgent re-visioning of the way in which we understand the past, present and future, and of the way in which we view relationships. It requires the reframing of scientific capacities for creation and re-creation within a paradigm of the interconnectedness of the material and spiritual worlds, of pre-existence, emergence and the fulfilment of potential. It involves coming to terms with the spiritual reality of our shared existence.

Ecological justice, I contend, requires nothing less.

4,893 words

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End Notes

¹ According to the National Institute for Water and Atmospheric Research, “Sustainability” has been defined by a wide range of national and international organisations, but in all definitions, sustainability means looking after resources for future generations while maintaining present or foreseen activities. These definitions cover all organisational levels, including:

Global: “The ability to meet the needs of the present generation without compromising the ability of future generations to meet their needs” (World Commission Environment and Development 1987).

National: “Sustainable development is about ensuring a better quality of life for everyone, now and in generations to come” (UK Government). The Australian National Strategy for Ecologically Sustainable Development (ESD) defines ESD as “development which aims to meet the needs of communities today while conserving our ecosystems to the benefit of future generations”.

Regional: As one of many examples of NZ regional definitions, Environment Canterbury defines the purpose of sustainability as being to achieve a sustainable environment “for the benefit of people, communities and future generations...”

² Traditional place of specialized learning

³ The last 20 years has seen a 64 % increase in the number of gigawatt hours generated.

⁴ These plans will come under the scrutiny of the Resource Management Act and the Kyoto Protocol. As itemized by Keith Lyons for the Forest and Bird Society (August 2003), they include:

1. the Dobson Hydro Scheme which, will “flood three valleys in the Kaiata Range near Greymouth including part of Card Creek Ecological Area using water diverted by a canal system from the Arnold River. At an estimated \$100 million, the scheme would create a 500-hectare storage lake, inundating 394 hectares of public conservation land. The scheme proposes to reduce to one third the current flow

of the Arnold River, affecting the enjoyment of canoeists and kayakers as well as the river's ability to support healthy fish and invertebrate populations. Habitat for two threatened native fish species, the giant and short-jawed kokopu, would be destroyed by the flooding and the scheme would create barriers for species such as long-finned eels and kokopu which need to migrate to sea to breed. Also affected, the Card Creek ecological area is one of the few remaining areas in the Grey ecological district with valley floor podocarp forest which includes rimu, and an unusually high proportion of kahikatea and matai.

2. A 550-metre wide earth dam proposed at the Rangitata Gorge for a combined \$278 million hydro-generation and irrigation scheme. This would completely disrupt the river's natural flow regime and flood 18 kilometres of the upper river. The Rangitata also provides outstanding values as a braided river. Birds include wrybill, black-fronted tern and banded dotterel, and native fish include torrent fish and koaro.

3. A dam on the Hurunui River about the junction with the Mandamus River in North Canterbury. Planned by Hurunui Irrigation and Power Trust, It would form a 15-kilometre-long storage lake for an irrigation and hydro scheme. The dam would destroy the natural rhythm of the river, impede fish migration, substantially reduce flows downstream across the plains and change its braided character.

⁵ It is worth noting that Meridian Energy's new alliance partner is the infamous company, Bechtel.

⁶ Between the years 1927 and 2000, the mean daily flow for the Waitaki River below the Waitaki dam has been 358 cm per sec for the full period for which records have been kept. The current minimum flow, under Meridian Energy's existing resource consents, is 120 cubic meters a second. This will change to between 100 and 140 cumecs depending on the month of the year, as up to three quarters of the water is diverted.

⁷ Meridian Energy has invested significant money in playing down the effects of Project Aqua. By way of mitigation, in return for the noise and dust, residents on the same side of the street as the construction will get \$5,200 when the deal is done and \$7,800 a year during the construction process. Those on the opposite side of the street will get less. If things get bad enough for some families, the energy company has offered to relocate them, but no one knows where because at present, there is nowhere to relocate them to.

Importantly, in contrast to wind turbines which can get up and running much more quickly, Project Aqua which will be built in stages over six to eight years will generate nothing for several years. Neither will it improve energy-security in those dry winters when, due to falling lake levels, it matters most. Most of the power it generates will be in the summer when not only is there the most water in the river, there is also the lowest demand. In a very dry winter there will be little and possibly no water available in the lower Waitaki for diversion into the Aqua canal because the flow will not exceed the minimum required for the river itself.⁷

Special legislation introduced by the Environment Minister provides for a new statutory body to determine how much water should be available in the Waitaki catchment and how it should be used. A board of commissioners would then consider the effects and decide on all applications to take or discharge into the water of the Waitaki River. Under the current Resource Management Act, there is no provision at all for considering cumulative effects. The new legislation allows for the setting up of a process of water allocation amongst the various stake-holders, another term that expresses a fundamental flaw in the way we conceive of our natural treasures. Problematics include the allocating board's appointment by the Environment Minister and that it may consist of as few as two people.

⁸ These proposals include monitoring of effects including flushing flows, determination and management of the relative values of indigenous and exotic fish populations, construction of alternative wetland areas, providing one open braid to give uninterrupted flow of water for fish passage, promoting the use of fencing to exclude stock from the main riverbed and riparian margins, ensuring continuous fish passage between the main river and major tributaries, predator control, stock and farming controls, management of access to the riverbed, monitoring of riverbed bird populations and effectiveness of predator and weed control, and creation of a predator-free complex fencing of some areas of turf land and relocation of other parts.

⁹ Key players in these processes are early organized groups such as the Waitaki River Users' group, a coalition organization of affected parties formed to share resources for research and consultation in relation to the Waitaki River;⁹ Waitaki First, established to oppose Project Aqua and thereby protect the lower reaches of the Waitaki River and support alternative environmentally sustainable irrigation schemes, the recreational fishing organization and powerful lobby group, New Zealand Fish and Game, the equally proactive and outspoken

environmental organization Forest and Bird, and of course, the representatives of the local Ngai Tahu tribe with whom Meridian Energy is obliged to consult under the provisions of the RMA.