The New Zealand Conservation Authority

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Protecting New Zealand's Rivers

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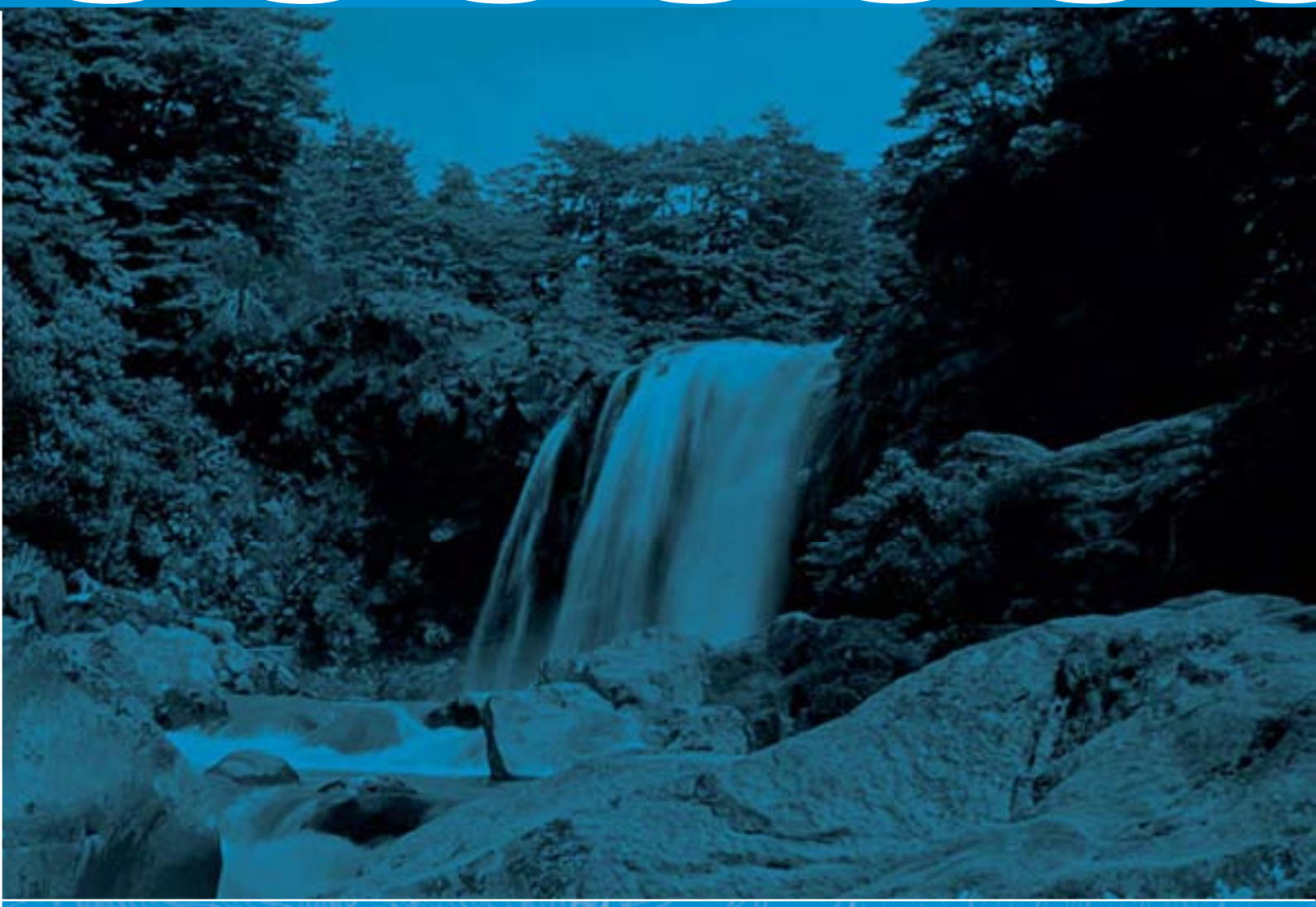

Foreword

Rivers have special intrinsic values that are being incrementally lost. The New Zealand Conservation Authority (NZCA) believes action should be taken to reverse this trend.

Existing statutory agencies have a range of tools available to better protect rivers. Some of these tools would be more effective if they were refined, and there was greater national direction for their implementation.

This discussion paper is the NZCA's advice to the Minister of Conservation and is designed to generate public discussion on the future of New Zealand's rivers.

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Executive summary

Context

New Zealand is strongly influenced by rivers. They are central to the identity of many New Zealanders and are highly valued for their scenic and recreational qualities, as well as their economic potential.

New Zealand has many rivers, great and small, and an apparent abundance of fresh water is conveyed by them from the mountains to the sea. Our freshwater biodiversity is unique; 92 per cent of our freshwater fish species are endemic to New Zealand.

Rivers are inherently difficult to manage owing to their dynamic character, length, size of catchment and diversity of values, as well as the many agencies involved in land, water and fisheries management.

The Resource Management Act 1991 (RMA) provides the primary legislative mechanism for the management of rivers and the water within them. Water conservation orders (WCOs) are the major RMA tool for river protection.

Rivers within public conservation land are perceived to be protected, but the water within them usually is not.

What is the problem?

All is not well with New Zealand's rivers and there is increasing public concern about their state.

National demand for fresh water in New Zealand almost doubled in the decade between 2000 and 2010, for uses such as irrigation, domestic water supply and manufacturing. Demand for energy continues to grow, which means more rivers could be modified to enable hydro-electricity, whether by damming or by diverting water out of a river. The Government aims to have 90 per cent of our electricity generation sourced from renewable sources by 2025.

Water quality in major rivers has declined since 1989, largely attributable to increased agricultural intensification, and the development of farming that is dependent on a reliable supply of water in naturally dry areas.

Declining flows and water quality can adversely affect river health and biodiversity values. Some rivers and streams are now unsuitable for fishing and swimming, and as a source of mahinga kai (food).

Important values and interests in fresh water are not being adequately protected in National Policy Statements and regional plans, despite recent calls for this to happen; particularly from the Land and Water Forum (2010). Examples of these values and interests are the natural character of rivers, recreational use and enjoyment, or the needs of indigenous biodiversity and future generations.

Retired Environment Court Judge David Sheppard summed up the situation as follows:

"Freshwater is being managed in many valuable ways to enable people and communities to provide for their social, economic and cultural wellbeing and for their health and safety.

All is not well with New Zealand's rivers and there is increasing public concern about their state.

"But there are important respects in which the management of freshwater is still not conforming to the elements of safeguarding the life-supporting capacity of water and associated ecosystems; is still not safeguarding the potential of freshwater resources to meet future needs; and is not avoiding, remedying or significantly remedying adverse effects on the environment.

"There are shortfalls in the imperatives that are classified as having national importance; in particular those of preserving the natural character of water bodies; of protecting significant indigenous vegetation and significant habitats of indigenous fauna; and of providing for Māori traditional cultural relationship with their ancestral water and taonga (things or places of great value).

"Although there have been many advances, after a couple of decades the management of freshwater does not yet qualify as sustainable in some catchments and some respects." [1]

What is needed?

The New Zealand Conservation Authority (NZCA) considers that a suite of measures are needed to address the problem.

The outcome sought is comprehensive protection for a representative range of rivers. The set of selected rivers should be genuinely protected in perpetuity in their natural state and should include rivers with outstanding ecological, landscape, scenic, recreational, amenity and cultural characteristics and values.

The NZCA does not seek to protect all rivers everywhere. The challenge is to provide for all interests somewhere and then to respect the decisions that have been made and not subsequently seek to negate or modify those decisions by later relitigation.

The NZCA specifically seeks:

- Government commitment to the protection of rivers
- Specific responsibility and resourcing for achieving such protection allocated to one government agency
- A comprehensive, national strategic approach to secure protection of both outstanding rivers in their natural state and a representative range of rivers
- A stocktake of the extent of river protection to provide baseline information, track progress towards the protection of a representative range of rivers, and determine where additional protection is needed
- The preparation of a national inventory of outstanding rivers and rivers with outstanding characteristics (including biodiversity, landscape, cultural, recreational, amenity) to identify priorities for protection
- More effort to ensure that management mechanisms, including those under the RMA and protected area statutes, adequately provide for the protection of freshwater biodiversity from the adverse effects of activities on land and in water [2]
- Amendment to the RMA 1991 to allow regional councils to use moratoria (similar to those in the Environment Canterbury (Improved Water Management and Temporary Commissioners) Act 2010) to pause consent applications while a river's in-stream values are assessed, flow regimes developed or reviewed, and plans amended; and for water allocation limits in plans to be fixed
- Exploration of opportunities to better protect rivers within protected areas, including giving national park status to rivers including their water within national park boundaries
- The management of Crown riverbeds with conservation values to protect those values
- Enhancement of the use, application and effectiveness of WCOs by relatively small changes to legislation and policy.

1 Sheppard David F (October 2010).
2 New Zealand Biodiversity Strategy Objective 2.1

Introduction

SECTION SUMMARY

- **The New Zealand Conservation Authority (NZCA) can investigate and report on any nature conservation matter of national importance.**
- **Rivers are poorly protected in New Zealand. Even where they appear to be protected because they are within land administered for conservation purposes, such as national parks, the water itself is seldom protected.**
- **The use, development and protection of rivers is governed by the Resource Management Act 1991.**
- **Rivers, and the fresh water within them, have multiple values and are coming under increasing pressure for a wide range of uses, both extractive and non-extractive. How best to provide for the often conflicting demands of these values is challenging.**

Background

New Zealand is a country strongly influenced by rivers: they are significant landscape features and shape our environment. New Zealand's freshwater biodiversity is unique with a high number of endemic species. Rivers generate much of our electricity and provide water for community purposes and irrigated agriculture. They are highly valued for recreation and for their mauri (life force), and also simply for their own sake.

The catalysts for this paper were:

- Increasing public concern about water quality and the state of New Zealand's rivers [3]
- A desire to see progress on the recommendations from the 2005 review of the New Zealand Biodiversity Strategy
- Concern about delays in national guidance for the sustainable management of rivers
- Legislative changes to the water conservation order (WCO) regime in Canterbury
- The release of the 2010 Land and Water Forum report making recommendations for freshwater management

The use, development and protection of natural resources including rivers is governed by the Resource Management Act 1991 (RMA). Sustainable management in terms of the RMA requires managing the use, development and protection of natural resources

3 Hughey et al. (2009).

New Zealand is a country strongly influenced by rivers: they are significant landscape features and shape our environment.

including rivers. WCOs, the RMA's major tool for protecting outstanding water bodies, cover only 13 rivers or parts of rivers and two lakes.

While headwater catchments and mountain streams are well represented within public conservation land, few middle and lower reaches are protected. New Zealand lacks a representative network of protected rivers and freshwater biodiversity continues to decline.

The NZCA considers that rivers have suffered from decision-makers putting greater emphasis on the **use** and **development** aspects of sustainable management, with limited attention to the **protection** aspect.

Purpose and scope

This paper's purpose is to assist public discussion and policy development around improved river management, by reviewing protection mechanisms for rivers in their natural state that have outstanding amenity or intrinsic values, and recommending ways these can be improved and strengthened.

The NZCA recognises the importance of lakes, wetlands and groundwater. This paper restricts itself to a discussion of rivers because of their biodiversity, recreation, cultural, and other conservation values, and current demand pressures on rivers. The NZCA is also aware of the importance of public access to waterways and is familiar with the public discussion that preceded the establishment of the Walking Access Commission and the Commission's work to improve access. River protection requires effective control of pest fish and aquatic weeds but biosecurity issues are beyond the scope of the paper.

About the New Zealand Conservation Authority

The NZCA is a statutory body established by section 6A of the Conservation Act 1987 with responsibility to advise the Minister of Conservation and Director-General of Conservation on conservation matters.[4] The NZCA has prepared this paper under its statutory functions:

- *"To investigate any nature conservation or other conservation matters the NZCA considers are of national importance, and to advise the Minister or the Director-General, as appropriate, on such matters"; and*
- *"To encourage and participate in educational and publicity activities for the purposes of bringing about a better understanding of nature conservation in New Zealand".*[5]

4 The Minister of Conservation appoints Authority members on the nomination or recommendation of four specified bodies (four members), after consultation with three specified Ministers of the Crown (five members) and after the receipt of public nominations (four members). This process ensures that a wide range of perspectives contribute to the advice provided and decisions made by the NZCA.

5 Conservation Act 1987 section 6B(1)(d)) and section 6B(1)(g).

State of our rivers

SECTION SUMMARY

- This section presents an overview of New Zealand rivers, natural river processes and functioning, Māori and societal values, indigenous freshwater biodiversity, public perceptions and some of the use pressures. The protection of rivers is discussed in sections 3 to 6.
- Rivers are inherently difficult to manage, owing to their dynamic character, length, size of catchment area, and diversity of values, as well as the many interest groups and agencies associated with land, water and fisheries management. Some parts of rivers or specific values (riverbeds, land adjoining rivers, wildlife, fish) may be protected through statute, while other aspects of the same river, such as flows, are not.
- The 2005 review of the New Zealand Biodiversity Strategy noted a "serious decline" in the quality of many freshwater systems. This decline is adversely affecting biodiversity values and the full range of services that can be derived from rivers.
- Despite a general reduction in point-source discharges from sewage and industry over recent decades, water quality in major rivers has declined since 1989. Increasing agricultural intensification and diffuse (non-point) discharges and nutrients associated with increased stocking rates and fertiliser use are the main contributors to this decline.
- National allocation of fresh water almost doubled in the decade between 2000 and 2010, predominantly for increased irrigation.

Overview of New Zealand rivers

Rivers have many values: in-stream (includes ecological and intrinsic values); landscape, scenic and natural characteristics; amenity, and recreation (such as swimming, angling, rafting and kayaking). Rivers are a source of mahinga kai (food) and their mauri (life force) is fundamental to Māori culture. Abstractive uses include community and stock water supply, and irrigation. Rivers are also used to generate electricity, for which they are dammed or have portions of their flow diverted,

and for disposal of waste water.

New Zealand has more than 70 major river systems (30 in the North Island and 40 in the South Island) and numerous other streams and watercourses. Half of New Zealand's 425,000 kilometres of rivers and streams are small headwater streams.[6] New Zealand rivers have some unusual characteristics: they are short and steep, and many carry large sediment loads. New Zealand rivers are highly variable in flow, and have very large floods in proportion to their catchment area owing to the country's latitude, climate and mountainous relief. New Zealand also has a large proportion of the international stock of braided rivers; these contain specially adapted biota.

The protection of our backcountry (originally for water and soil protection rather than for public use or biodiversity) means that high water quality is largely maintained there. This provides public benefit by supplying clean water and by diluting the much poorer water quality resulting from intensive land use on farms and in cities further downstream.

Of New Zealand's total length of rivers and streams, 51 per cent lie in catchments with predominantly natural land cover, such as native bush or alpine rock and tussock. The remaining 49 per cent of river length is in catchments that have been modified by agriculture (43 per cent), plantation forestry (5 per cent) or urban settlement (1 per cent).[7]

Each river is an ecological corridor from its source in mountains or hill country to the sea, transcending legal land status, but affected in different parts by the activities permitted on or alongside the river.

The quality and quantity of water delivered to the coast by a river system directly influences coastal water quality and sedimentation processes.

Management of rivers as drainage systems is pervasive. Habitat destruction has resulted, and led to wholesale change in lowland rivers. This practice remains ongoing today.

rivers are owned by the adjacent land owners to the centre line. The legal status of the beds of large rivers is complex. For rivers that meet the test of "navigable", riverbeds are, for the most part, classified as unoccupied Crown land nominally administered by Land Information New Zealand (LINZ) but for flood and sediment management purposes, are managed by regional councils. Rivers are not managed for conservation purposes even where they adjoin public conservation land.

The quality and quantity of water delivered to the coast by a river system directly influences coastal water quality

Few sizable freshwater catchments exist entirely within public conservation land, aside from some rivers on the South Island's west coast.

Fresh water is administered by regional councils under the RMA. The water in most rivers running through public conservation land is not protected by conservation legislation, even though the public thinks it is.

While some upland river and streambed areas are included within protected areas, this is seldom the case in lowland areas, partly due to the paucity of protected areas there.

The beds of smaller (non-navigable)

Management of rivers is shared amongst several agencies. Protection requires a level of co-ordination between them, but this is apparently neither sought nor achieved.

The Crown exercises its overall control of fresh water[8] largely through the RMA, which delegates river management primarily to regional councils.[9] The RMA is the main legislation for managing fresh water in New Zealand. Regional councils' responsibilities for controlling the taking, use, damming, diversion and pollution of fresh water (RMA section 30 (1) (e) and (f)) include the power to set and decide on flow regimes and to manage and allocate water

6 www.mfe.govt.nz/environmental-reporting/freshwater/rivers (accessed 26 January 2011).
7 www.mfe.govt.nz/environmental-reporting/freshwater/rivers (accessed 26 January 2011).
8 The Water and Soil Conservation Act 1967 (WSCA) vested the sole right to use or pollute natural water in the Crown.
9 With limited exceptions, no one can take, use, dam or divert water or take heat or energy from water unless this is expressly allowed by a resource consent or a regional rule (section 14 RMA). Exceptions include taking for reasonable domestic needs, for stock water, fire fighting and takes of geothermal water for use in accordance with tikanga Māori for communal benefit of tangata whenua, uses lawfully established before the regional rule came into effect and other established uses permitted by section 20A RMA. Similarly no one may discharge any contaminant into water, or onto land in circumstances where it may enter water, without authorisation by a plan rule or a specific resource consent.

and activities in riverbeds. Councils exercise these powers through preparing regional policy statements (required) and regional plans (optional), and by their decisions on resource consent applications. Activities on the surface of waters can be regulated through district rules by territorial authorities.

National direction can be provided through national policy statements and national environmental standards.[10] The standards can relate to water level, flow, quality or contaminants (RMA section 43).

No government agency has an explicit responsibility to preserve and protect rivers as an entity.

Regional councils and territorial authorities, Department of Conservation (DOC), and LINZ have various responsibilities for managing the beds of rivers, commercial activities on the surface of rivers, and surrounding land areas. LINZ administers large areas of riverbed, and these are not managed for conservation. DOC manages most indigenous freshwater species including whitebait, as well as the Taupo sports fishery. The Ministry of Fisheries (MFish) manages indigenous species for which there is commercial take (e.g. eels). Fish and Game Councils manage sports fish (other than Taupo fishery) and game birds. The Environment Minister and Ministry for the Environment (MfE) may establish national policy and national environmental standards affecting rivers, which lower levels of government have to variously give effect to, not be inconsistent with, or have regard to.

See Appendix 1 for a summary of agencies and their freshwater management responsibilities.

In addition to its responsibility for indigenous species, DOC actively manages freshwater sites (rivers, streams, lakes and wetlands) within public conservation land and advocates protection for significant freshwater ecosystems outside public conservation land. These are part of DOC's broad functions under section 6 of the Conservation Act 1987, in particular section 6(a), (b) and (d). DOC also has a specific function, "to preserve as far as is practicable all indigenous freshwater fisheries and protect recreational freshwater fisheries and freshwater fish habitats" (section 6(ab)). The Conservation General Policy 2005 identifies DOC's priorities when discharging these functions.

DOC statutory advocacy

DOC's RMA advocacy has been important for achieving the protection of rivers per its functions under section 6(ab), (b) and (d) of the Conservation Act. DOC does this through submissions on regional policy statements and plans, and on resource consent applications for irrigation, hydro generation and other development, and by providing evidence in WCO hearings. The Conservation General Policy identifies DOC's priorities for advocacy outside public conservation land and waters.

Consent authorities typically rely on DOC for expert evidence on freshwater habitat values and ecosystem functioning, both for plan and consent processes. Similarly, Fish and Game commonly provides expert evidence for sports fish and its habitat. In the absence of DOC or Fish and Game advocacy, consent authorities may make decisions without appropriate information, as they seldom commission their own evidence on these matters.

DOC has successfully advocated for stronger provisions in plans and policy statements, and more stringent consent conditions such as changes to minimum flows and mitigation packages on consent applications. Examples of negotiated mitigation packages include ongoing funding for Project River Recovery when the Waitaki hydro scheme was re-consented in the early 1990s, and the establishment of a blue duck/whio recovery package when the Tongariro Power Scheme was re-consented. Project River Recovery has funded a breeding programme and predator control for kakī/black stilt and extensive riverbed willow and weed control in the Tekapo and Twizel Rivers. Genesis Energy helps fund the Central North Island Blue Duck Trust to enhance, protect and promote blue duck/whio populations.

In recent years Government has required departments to work together for a whole-of-Government approach to nationally significant resource consent applications. The process of developing an integrated position by multiple agencies (MfE, MAF, the Ministry of Economic Development (MED), Te Puni Kokiri, and DOC) can result in conservation and biodiversity values being de-emphasised in the

10 Mulcahy K, Peart R and Garvan N (2010).

negotiated whole-of-Government position.

The volume of large resource consent applications has stretched DOC's statutory advocacy capacity. It may also divert scientists and technical experts away from freshwater research and practical protection and management actions.

Advocacy for, and expert evidence about, the protection of ecosystem services and in-stream values of regionally and locally significant rivers is increasingly being led by Fish and Game, voluntary organisations such as Whitewater New Zealand, Forest and Bird, and interested citizens. The full load of advocacy work on behalf of the public is beyond the capacity of these groups.

No government agency has an explicit responsibility to preserve and protect rivers as an entity.

The existence of DOC's statutory functions and priorities does not guarantee that it will advocate on behalf of a river or its values, or that resource or DOC consents that impact on the river's natural functioning will not be given.

River physical processes and functioning

Effective river management requires a holistic view of the river system, including its geology, fluvial morphology, sediment transport, biological habitat, riparian conditions, flow regime, and water quality.

Rivers are linear systems connecting headwater areas to the coast. This connectivity allows the movement of organisms, energy and matter throughout the catchment system.

Human activities can change and disrupt this system and affect river functioning:

- Land disturbance in a catchment, such as cultivation, vegetation removal, and the introduction of browsing animals, can accelerate soil erosion and increase rivers' sediment load.
- Dams and increasing abstraction of water reduce a river's capacity to mobilise sediment.
- Flood control schemes have confined many kilometres of rivers to defined channels, which can accelerate sediment deposition.
- Changes in the delivery of sediment to river mouths can affect sediment supply to the coastal environment and have consequences for coastal erosion.

Reduced outflow of both river water and sediment into the sea may have, as yet poorly understood, consequences. A dramatic decline in the abundance of adult toheroa on Southland's Bluecliffs Beach was observed between 1966 and 1972 and by 1987 the population was estimated at only 0.9 per cent of the 1966 population. The cause of the accelerated decline is believed to be erosion of the marine substrate. This is linked to the reduced river outflow, and therefore reduced sediment load, from the Waiau River into Te Waewae Bay. This occurred when water from Lake Manapouri was diverted from the Waiau River to Doubtful Sound, through West Arm Power station, in 1969.[11]

Water temperature is critical to freshwater life. A 10 degree increase in temperature doubles respiration rates for coldblooded organisms while reducing the proportion of oxygen in the water. Around 25°C seems to be a critically warm temperature for much freshwater life. Where surface water reaches 25°C for periods during summer, several dramatic changes can occur, including accelerated growth of algae. Such temperatures are lethal to the freshwater snail *Potamopyrgus antipodarium*, a significant algal grazer. In the snails' absence, algae grow unchecked.[12] Some fish and invertebrates have a definite preference for water below 16 to 18°C, and are vulnerable if shading vegetation is lost from stream banks, or if water is warmed because of very low flows, with natural variability exacerbated by abstraction.

Climate change is likely to further increase pressure on fresh water in most regions east of the main dividing ranges, as these are predicted to become drier with less rainfall overall,

11 Beentjes, M.P. (2010).
12 Savage, L (2005) at p 16.

or altered seasonal distribution of rainfall, and possibly more frequent and severe droughts. This may lead to reduced run off to rivers and decreased aquifer recharge.

Sea level rise as a result of climate change could increase the salinity of the lower reaches of rivers and aquifers as salt water intrudes increasingly further upstream.[13]

Water quantity (flows)

Water flow in many rivers is highly variable owing to climate (except for lake-, spring- or resurgence-fed rivers). Many rivers have already been modified or degraded to some degree, which means that they are not functioning in a wild state with natural water flows.

For rivers to function in a manner that fulfils their ecosystem services[14] role and sustain the species dependent on them, they should be managed so that their natural variability of flow can occur.

Water allocation for uses such as irrigation, domestic water supply and manufacturing nearly doubled between 1999 and 2010, highlighting the increasing demand for water, [15] and putting pressure on rivers.

Surface water (rivers, streams, lakes and storage reservoirs) accounts for most of the fresh water allocated for human use in New Zealand. Eighty per cent of the volume of fresh water allocated by resource consent in 2010, and 32 per cent of consents, came from surface water sources (the remainder came from groundwater).

Irrigation (46 per cent) and hydro generation (41 per cent) account for the majority of fresh water allocations, with industry, drinking water supply and stock water accounting for 6 per cent, 5 per cent and 2 per cent, respectively.[16]

Water quality

Water quality in New Zealand, while generally good by international standards, is declining according to data from the National Rivers Water Quality Network (NRWQN).[17] Trends in NRWQN data between 1989 and 2007 show an overall decline in water quality across the monitoring network. In particular there is a significant increasing trend in nitrogen (as nitrate and nitrite), dissolved reactive phosphorus and total phosphorus levels.

Numerous studies have demonstrated the influence of land use on the quality of fresh water. NRWQN and regional state of environment reporting show that diffuse pollution from agricultural land use is the main cause of water quality degradation. Dissolved nitrogen, phosphorus, faecal microbes and sediments are the key contaminants from diffuse sources. Animal urine is a source of nitrogen and agricultural fertilisers are a source of both nitrogen and phosphorus.

Some contaminants associated with point-source sewage and industrial discharges have reduced over recent decades.

Pastoral farming occupies 40 per cent of New Zealand's land area. Between 1990 and 2010 the national dairy cattle herd increased from 3.4 million to 5.9 million, significantly increasing the sources of diffuse pollution. Between 1990 and 2005 the use of nitrogen fertiliser in New Zealand increased by more than 800 per cent (the highest percentage increase in 29 OECD countries). Phosphate fertiliser use increased by more than 100 per cent (the second highest increase in the OECD).[18]

The national sheep flock has declined from 34.8 million in 1999 to 32.4 million in 2009 (and is around half the all-time peak of 70.3 million in 1982). Beef cattle numbers also have declined—from 4.6 million in 1999 to 4.1 million in 2009. The number of dairy cows has increased; the most dramatic increase has been in the South Island where the 2.1 million dairy cows in 2009 are around seven times the number that existed 20 years ago.[19]

The reduction in beef cattle and sheep numbers, and any positive consequences for water quality that this may have had, is outweighed by the large increase in dairy cattle. In particular, detrimental effects from dairy cattle relate to the different behaviour displayed by dairy herds (e.g. twice daily walk to be milked, which may include river crossings) and the associated intensification of land use. Dairy cattle tend to be farmed on flat to easy country, and increasingly on irrigated, intensively fertilised pastures. Therefore the most intensive farming is happening close to water sources, and in areas of groundwater recharge.

Time lags in many groundwater systems, where it can take decades for water falling as rain to emerge as

13 Savage, L (2005) at p 7.
14 Ecosystem services refer to a wide range of conditions and processes through which natural ecosystems, and the species that are part of them, sustain and fulfil life. For example hydrological cycles sustain life and provide the basis of our economy (particularly for sectors such as agriculture, forestry, fishing and tourism).
15 www.mfe.govt.nz/freshwater.
16 www.mfe.govt.nz/publications/water/water-allocation-2009-10/page1-html(accessed January 2010).
17 Davies-Colley R quoted in Proffit F. (undated). The NRWQN network is operated only on larger rivers. More rapid declines have been noted on smaller rivers in many regions, according to data collected by regional councils.
18 Land and Water Forum (September 2009) at p 15.
19 www.stats.govt.nz/browse_for_stats/industry_sectors/agriculture-horticulture-forestry.aspx (accessed May 2011).

springs into surface waters, means that recent monitoring results probably reflect the effects of farming practices in the 1960s and 1970s in those catchments. The full effects of current land use may not be obvious in spring-fed streams, lakes and wetlands for another 30–40 years.[20]

Increasing diffuse source pollution from intensive land use degrades rivers' recreational amenity as well as habitat values. During 2003–2009 the proportion of freshwater sites in annual surveys that did not meet the guidelines for contact recreation such as swimming ranged from 40 to 60 per cent.[21]

River water quality also affects coastal water quality. The recently completed (2000–2010) Integrated Catchment Management Project[22], focusing on the Motueka River catchment, showed that the 'catchment' effectively extends offshore, affecting more than 400 km^2 of the marine environment of Tasman Bay. Nutrients and sediment originating in rivers can have a direct effect on marine species. Storm-generated sediment originating from the upper catchment interfered with the feeding of scallops, and appears to be a major contributor to the poor performance of the Tasman Bay scallop resource in recent years.[23]

Indigenous freshwater biodiversity

New Zealand's indigenous freshwater biodiversity is unique: 92 per cent of our native freshwater fish species are endemic because of our evolutionary history isolated from other land masses.

The New Zealand Biodiversity Strategy (2000) included six objectives for the management of fresh water, including:

- Protect a full range of remaining natural freshwater ecosystems and habitats to conserve indigenous freshwater biodiversity, using a range of appropriate mechanisms.
- Ensure that management mechanisms, including mechanisms under the Resource Management Act and protected area statutes, adequately provide for the protection of freshwater biodiversity from adverse effects of activities on land and in water.

The 2005 review of the New Zealand Biodiversity Strategy showed that the health of our indigenous species and natural lands and waters continues to decline. A quarter of New Zealand's indigenous fish species are threatened with extinction. Acutely and chronically threatened freshwater species show a continued decline in their status.[24] Despite control measures, freshwater weeds have spread in several regions, often linked to deterioration in water quality. The review noted a "serious decline in the quality of many freshwater systems, which is having negative impacts on biodiversity values and ecosystem services".[25]

Structures impeding flows such as dams, culverts, fords and weirs can impact on freshwater habitat, destroy connectivity, limit access to critical habitats such as spawning areas, and significantly affect fish passage. Freshwater fish occupy complexes of connected habitats between or through which they often need to pass at two or more life history phases. Nearly half of New Zealand's native freshwater fish are diadromous, spending part of their life cycle at sea and part in freshwater.[26] Studies of indigenous freshwater fish distributions in West Coast South Island rivers and elsewhere show that where migration is unimpeded, most species have a more or less continuous distribution from the lower reaches to the upstream limits of each species' range. Where dams impede fish passage, species richness is lower above dams, even when effects of elevation and distance from the sea

Water quality in New Zealand, while generally good by international standards, is declining according to data from the National Rivers Water Quality Network.

20 Proffit F (undated).

21 Around 200 sites across New Zealand are sampled annually and the information collated by MfE. See www.MfE.govt.nz/publications/water/water-quality-trends-1989-2007/html/page4.html.

22 Collaborators on this study were Landcare Research, Tasman District Council, Cawthron Institute, SCION, NIWA, GNS, Fish and Game NZ and Otago University.

23 Landcare Research (December 2010).

24 A 2009 study ranked 34 of 51 (or 67 per cent) of native freshwater fish taxa as threatened or at risk. Endemic galaxiids *(Galaxiidae)* dominated this group. Four taxa were classified in the highest threat category, nationally critical, and a further 10 taxa were threatened (nationally endangered or nationally vulnerable). Twenty taxa were ranked in the at-risk group with the majority ranked as declining. A large proportion of threatened species occur in the Canterbury and Otago regions where a suite of rare non-migratory galaxiids exist. See Allibone R, David B, Hitchmough R, Jellyman D, Ling N, Ravenscroft P, Waters J (2010).

25 Green W and Clarkson B (November 2005) at p 21.

26 McDowall R. M. (1992).

Public concern about water use and water quality has increased significantly, especially in the last decade.

are considered. Only four[27] lakes greater than 10 km² in area in the South Island have unimpeded fish passage from them to the sea, due to the hydro network.

Habitat fragmentation and changes in land use can significantly affect freshwater fish populations by both reducing total habitat area and changing its configuration. Species that remain within habitat fragments are exposed to sub-optimal conditions. As a result of disproportionate 'edge effects', fish habitat can be reduced over a much greater distance than the length of stream that has been directly affected (by, for example, vegetation clearance).[28] This can cause a decline in adult stocks and restrict fish distributions.

Societal values

Without water, no living thing, human, plant, fish or animal can survive.

Public concern about water use and water quality has increased significantly, especially in the last decade. In Lincoln University's 2008 biennial survey of people's perceptions of the state of the environment, respondents identified freshwater-related issues (use, water quality, water pollution) as the most important environmental issue facing New Zealand.[29] Thirty-two per cent of respondents rated water as the top environmental issue (ahead of climate change or biodiversity loss) compared with just 7 per cent in the 2002 survey. According to the 2008 survey, public perception is that economic development and intensification of some activities, particularly farming and urban development, are increasing pressures on the environment. Respondents were concerned whether rivers can accommodate these pressures while providing for in-stream needs such as healthy ecological functioning, freshwater wildlife, fishing, kayaking and other activities.

DOC's annual surveys track public awareness and perceived value of conservation[30]. In the 2010 survey, *"preserving natural land and water habitats" was the third most important conservation issue identified by those surveyed (35 per cent, up from 30 per cent in 2009). The issue rated the highest in 2007 when the figure was 37 per cent. The other conservation outcomes respondents valued most highly were "protecting national parks and reserves" and "protecting native plants and animals."*[31]

Māori values

For Māori, water is the essence of all life, akin to the blood of Papatuanuuku (Earth mother) who supports all people, plants and wildlife. Māori assert their tribal identity in relation to rivers and particular waterways have a role in tribal creation stories. Rivers are valued as a source of mahinga kai, hāngi stones and cultural materials, as access routes and a means of travel, and for their proximity to important wāhi tapu, settlements or other historic sites.[32] Indicators of the health of a river system (such as uncontaminated water and species gathered for food, continuity of flow from mountain source to the sea) can provide a tangible representation of its mauri.

The relationship between Māori, and their culture and traditions, and their ancestral lands, water, sites, wāhi tapu (sacred place) and other taonga is a matter of national importance under RMA section 6(e), which decision-makers must recognise and provide for. Giving effect to the principles of the Treaty of Waitangi is a requirement of the Conservation Act 1987.[33]

Several notable Waitangi Tribunal claims, such as Whanganui and

27 Lakes Rotoroa (Nelson Lakes), McKerrow, Hauroko and Sumner.
28 Eikaas H S, Harding J S, Kliskey A D and McIntosh A R (2005).
29 Hughey K (2008). The survey seeks New Zealanders' perceptions of all main resource areas and in 2008 included a more specific look at the freshwater environment. The 2008 survey sampled 2,000 people, randomly selected, and had a response rate of 40 per cent.
30 Department of Conservation (September 2010).
31 Department of Conservation (September 2010) at pp 20–21.
32 Te Runanga O Ngai Tahu (undated) "Freshwater Policy" available on www.ngaitahu.iwi.nz.
33 Section 4, Conservation Act 1987.
34 Unwin M (2009)—data relate to the 2007/08 fishing season.
35 SPARC (2008).

Waikato, have sought redress for Treaty breaches in relation to rivers. The Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010 provides redress through a new co-governance entity to oversee river management and give effect to a vision and strategy to protect the health and wellbeing of the river for present and future generations.

Recreation

Recreational use of rivers encompasses a wide range of activities, including both water-based recreation ('wet' activities) and land-based activities ('dry' activities). Water-based recreation includes swimming, boat-based activities (especially jet boating, waka ama, kayaking and rafting), and biota-based recreation (fishing and whitebaiting). Land-based activities vary from passive recreation to walking the dog and playing with children. The maintenance and enhancement of public access to and along rivers is a matter of national importance under RMA section 6(d).

The use of rivers for recreation is difficult to quantify. A lack of data precludes statements about the number of visits to rivers for recreation. The exception is freshwater angling: an estimated 727,400 angler-days per annum occur on New Zealand rivers .[34] Recreation participation data suggest land-based activities, especially walking, may attract much larger numbers of people than water-based activities[35].

The recreational value of rivers is not limited to existing use. Also relevant is the potential for future recreation opportunities that do not currently exist. Such opportunities may result from improvement to environmental factors (e.g. better water quality, a different flow regime or an improved fishery), technological advances (e.g. new boat designs that can navigate previously inaccessible rivers), enhanced access (by foot, vehicle or air), and improved management (e.g. provision of boat ramps or the removal of restrictions). The issue associated with potential value is to avoid precluding future opportunities.

Consent authorities have a statutory role to consider recreation under section 7 of the RMA, where those exercising the functions and powers of the RMA must have particular regard to (amongst other things) the maintenance and enhancement of amenity values, and the maintenance and enhancement of the quality of the environment.[36]

Hydro-electricity generation and irrigation

Rivers have long been a resource used for both hydro-electricity generation (since 1886)[37] and irrigation. The Government has a target of 90 per cent of electricity generation needs being met from renewable sources by 2025. Hydro-electricity is classified as renewable energy. Currently renewable sources account for 70 per cent of electricity generation.[38]

Increased demand for electricity, land use intensification and water-dependent farming development in naturally dry areas has increased the pressure on rivers.

Recent examples of this increased demand for hydro in the North Island include a new hydro scheme proposed for the Motu River (which is currently protected by a WCO[39]) and Bay of Plenty Energy's proposed hydro scheme for the Kaituna River. In the South Island, new hydro generation proposals have been consented by the Environment Court on the Wairau, the Arnold and the Waitaki North Bank, while the Mokihinui and Nevis hydro proposals are under appeal to the Environment Court. New irrigation schemes (sometimes combined with hydro generation) are proposed for Hurunui (resource consents lodged), Waiau (under investigation), Waimakariri (appeal to Environment Court), Rakaia rivers (Central Plains Water/Ashburton Community Water Trust take consented), Lake Coleridge/ Rakaia (under investigation, which would also require amendment to the Rakaia WCO), and Hunter Downs on the Waitaki (consented).[40]

Investment in large-scale irrigation schemes is being encouraged by Government. The 2011 Budget allocated $35 million over five years for the Irrigation Acceleration Fund to support the development of irrigation infrastructure proposals. Further investment from future Budgets was flagged.

As Environment Minister Nick Smith has noted:

"The expansion of irrigation in New Zealand during the past couple of decades has been huge in international terms. Thirty-five per cent of new irrigated land in OECD countries during the past two decades has been in New Zealand—and New Zealand makes up 1 per cent of the population of the OECD".[41]

36 Section 2 of the Resource Management Act 1991 defines "Amenity values" as "those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes". "Environment includes—
- (a) ecosystems and their constituent parts, including people and communities; and
- (b) all natural and physical resources; and
- (c) amenity values; and
- (d) the social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) or which are affected by those matters".

37 Martin, J, (1991).
38 Ministry of Economic Development (July 2010).
39 Mercer, G (23 March 2008).
40 Reasons for the large number of Canterbury proposals include: 70 per cent of New Zealand's irrigated land is in Canterbury, expansion of dairying, and irrigators have shifted their attention to alpine rivers as a source of water given tighter regional controls on groundwater takes in aquifers at their allocation limit.
41 Quoted in Collett, G (23 April 2010).

History of river protection

New Zealand's mountainous environment, high rainfall, and many fast-flowing streams led to efforts to protect steep uplands in river catchments as a way of preventing erosion as early as the late 19th century. In the years after the enactment of the Soil Conservation and Rivers Control Act 1941, districts established their own catchment boards supported by a central regulatory and research agency (National Water and Soil Conservation Authority) within the then Ministry of Works.[42] Local body re-organisation in the late 1980s saw regional councils (with wider functions) replace the catchment boards.

Protecting rivers has been a theme of conservation activism for more than 60 years, spurred on by a growing awareness of the environmental impacts of the large hydro-electric generation schemes under construction at that time. In the 1960s people mobilised to try and save wild river landscapes, such as the Aratiatia rapids and other falls on the Waikato River, from hydro development. The 1970s campaign to save Lake Manapouri from the impact of a major hydro scheme is widely regarded as a landmark in uniting many New Zealanders in a commitment to environmental protection.[43] Other notable campaigns during the 1980s sought to prevent the damming of the Motu River, and the construction of the Clyde Dam, which flooded a significant length of the Clutha, New Zealand's largest volume river.

Government's response to such public concern around flows in the 1980s was legislative change through the Wild and Scenic Rivers Amendment to the Water and Soil Conservation Act 1967 (WSCA), to introduce a new mechanism to protect wild and scenic rivers—the WCO (see sections 4 and 5 of this paper).

NZCA conclusions

No government or quasi-government agency has a specific responsibility to preserve and protect rivers as an entity. This is a significant gap in the legislative fabric: the different obligations of agencies such as regional councils and DOC are failing to give rivers long-term protection. One government agency should be given specific responsibility to facilitate the integrated planning and management of rivers for their protection and long-term sustainability.

A greater commitment by Government, government agencies and local government is needed to safeguard remaining outstanding rivers. This is required because of mounting scientific evidence about the decline of indigenous freshwater biodiversity and the deteriorating health of rivers and streams, the loss of wild rivers and their recreational opportunities to hydro-electricity generation and irrigation, and anecdotal evidence that people can no longer fish or swim in streams they enjoyed as children.

More attention and resources need to be directed to the protection of rivers, including those with outstanding characteristics. Effective and timely river protection can provide certainty that the life-supporting capacity that rivers provide, and their intrinsic, mauri and in-stream values (including recreation and amenity), are safeguarded for present and future generations.

42 Te Ara Encyclopaedia of New Zealand. See www.terara.govt.nz/rivers/conservingrivers.
43 Young, D (2004) at p 168.

For Māori, water is the essence of all life, akin to the blood of Papatuanuuku (Earth mother) who supports all people, plants and wildlife.

Photo: Mavora River, Southland.

Protecting rivers using conservation legislation

SECTION SUMMARY

- **This section describes river protection tools available under conservation legislation (specifically the National Parks Act 1980, Reserves Act 1977 and Conservation Act 1987) and river-specific legislation. It considers the management of Crown land in riverbeds and how this could be improved. Appendix 2 summarises information on the statutory mechanisms for protecting rivers.**
- **The primary way a river is protected under conservation (non-RMA) legislation is that it is located within a protected area (for instance in a national park or reserve). A small number of individual rivers have specific legislation applying to them but none of these give overall protection: they are mostly associated with hydro schemes.**
- **Statutory mechanisms to protect rivers apply to specific parts or values of the river ecosystem (riverbeds, adjoining land, wildlife, or fish). No single mechanism offers complete protection. Riverbeds and banks may be part of a protected area managed by DOC but this does not protect the water.**
- **We have yet to protect a representative range of rivers. As noted in section 2, many highly significant waterways have no formal protection, and few lowland rivers and streams are protected.**[44]
- **Extensive areas of riverbed are managed as Crown land. There is no requirement for them to have management objectives (e.g. for protection of natural or cultural values) or public input into decisions about their use or management.**

Conservation legislation

The purpose and statutory criteria in conservation legislation (e.g. Conservation Act 1987, National Parks Act 1980) emphasise the preservation and protection of natural resources, as do supporting policy and plan documents (e.g. General Policy for National Parks, Conservation General Policy, national park management plans, conservation management strategies). This emphasis is substantially different from the RMA

44 DOC and MfE (2002) "New Zealand Biodiversity Strategy" Theme 2 Freshwater Biodiversity www.biodiversity.govt.nz/picture/doing/nzbs/part-three/.

approach of allowing use and development provided effects are avoided, remedied or mitigated.

Conservation legislation, taken together, protects a network of areas for their natural and historical values. Effort has been made to extend this network so that it is representative of terrestrial ecosystems and habitats. Protection of a representative range of freshwater ecosystems and habitats has received little, if any, attention and has not been achieved.

National Parks Act 1980

Owing to their large size and high level of protection, national parks are of particular importance for river protection. In most national parks (with the exception of the Whanganui River in Whanganui National Park and some rivers such as the Pororari in Paparoa National Park) the declaration of land as national park includes the beds of all waterways within the park boundaries.[45] Where rivers are part of the national park, they have the same level of protection as the surrounding land. Any application to take, use, divert water from or dam a river at a site within a national park would be subject to the statutory tests and processes of the National Parks Act 1980 and concessions provisions of conservation legislation as well as those in the RMA. This includes applying the specific policy guidance in national park management plans and the General Policy for National Parks.

The National Parks Act does not make any specific provision for the protection of aquatic habitats and ecosystems; however, its general provisions apply to aquatic as well as terrestrial values. The general purpose of national parks includes "…. ecological systems, or natural features so beautiful, unique, or scientifically important that their preservation is in the national interest". Two of the specific purposes of national parks are that native plants and animals be preserved, and the park's value as "soil, water, and forest conservation areas [are] maintained". These descriptions can include rivers.

The protection provided by national park status does not extend to the water in rivers or to the river outside the boundary of the park/protected area, so does not protect the river in its entirety. An example is the Waiau River, which links Lakes Te Anau and Manapouri in Fiordland National Park and flows from Lake Manapouri to the sea. Flows have been substantially reduced by the diversion of water to the Manapouri power scheme and subsequently into Deep Cove.

If waters within national parks and public conservation land had the same status as the land they adjoin, they would be better protected. There is a popular view that national park status fully protects rivers within such boundaries.

Most investigations for new national parks have concentrated on terrestrial values rather than aquatic values. With greater recognition of human reliance on ecosystem services, national park investigations could give greater focus to protect river systems and their catchments within the total area proposed for national park status because of the ecosystem services[46] they provide as well as for their intrinsic values.

Reserves Act 1977

The purpose of the Reserves Act 1977 includes ensuring the survival or preservation of a representative range of all classes of natural ecosystems and landscapes that originally gave New Zealand its recognisable character.

The reference to preservation of representative samples is a fundamental ecological concept widely applied terrestrially, and is also the basis for our current marine protection programme. It is an anomaly that it has not been applied across river systems.

Conservation Act 1987

The Conservation Act 1987 promotes the preservation of indigenous freshwater fisheries and the habitats of freshwater fish species, but river and stream protection specifically has generally not been highlighted as a priority in the establishment and management of protected areas.

The Conservation and National Park General Policies apply to the management of freshwater species, habitats and ecosystems as much as they apply to terrestrial species, habitats and ecosystems. There are no specific policies for river protection, although there are specific policies relating to fishing for indigenous species and the release of sportsfish.

Inclusion of rivers and their beds in conservation land does not guarantee their protection as evidenced by hydro

45 The bed of the Whanganui River was not included in the national park. Where the park adjoins the river the national park boundary is the riverbank.

46 Ecosystem services refer to a wide range of conditions and processes through which natural ecosystems, and the species that are part of them, sustain and fulfil life. For example hydrological cycles sustain life and provide the basis of our economy (particularly for sectors such as agriculture, forestry, fishing and tourism).

generation in Kaituna Scenic Reserve, approved in 2010, and by a Meridian Energy Limited's proposal for a dam and power station on the Mokihinui River. The proposed 85-metre high dam on the Mokihinui River would flood more than 14 kilometres of river gorge.

Applicants for resource consents associated with river uses within public conservation land do not need to first get landholder (i.e. Minister of Conservation) permission under conservation legislation (where it is required). This means that a full consent process could be completed only to have access to conservation land declined.

For the proposed Ngakawau River hydro scheme in the 1990s, Buller Electricity withdrew the proposal after a High Court decision confirmed the Minister of Conservation's decision that granting access would be inconsistent with the requirements of the Conservation Act. This occurred before councils heard resource consent applications. In contrast, for the Mokihinui hydro proposal, Meridian Energy Limited has indicated it will seek access to conservation land and/or exchange or disposal of conservation land following the appeal stage of the consents process.

Freshwater Fisheries Regulations 1983

Regulation 68 of the Freshwater Fisheries Regulations 1983 enables the Minister of Conservation to declare any water to be a faunistic reserve through a Gazette notice. The introduction of any plant and the taking or killing of any freshwater fauna is prohibited in faunistic reserves without the Director-General of Conservation's approval. Only three faunistic reserves exist: Lake Chalice, Lake Marion and Lake Christabel.

The Regulations also give the Director-General a decision-making role in relation to fish passage when facilities such as new or modified culverts, fords, dams, weirs and diversions on natural waterways are proposed. Many installers of fords and culverts in particular are unaware of this role. DOC uses RMA processes to comment on a wide range of impacts from in-stream structures and activities. Where it has been satisfied that a Council has imposed appropriate conditions for culverts and fords relating to fish passage, it has interpreted an Environment Court[47] ruling as meaning additional permission under the Freshwater Fisheries Regulations is at its discretion.

River-specific legislation

As a result of public concern about proposed hydro schemes, four lakes and their associated rivers have specific legislation establishing guardians to oversee their management; namely the Waiau and Monowai rivers (Guardians of Lakes Manapouri, Te Anau and Monowai under the Conservation Act 1987) and the Clutha and Cardrona rivers (Guardians of Lake Wanaka under the Lake Wanaka Preservation Act 1973).

River-specific legislation has been enacted recently, as part of a Treaty of Waitangi settlement: the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010. It states in section 3 that "The overarching purpose of the settlement is to restore and protect the health and wellbeing of the Waikato River for future generations".

The various statutes mentioned establish separate governance bodies and, in some cases, set specific flow regimes. While the establishment of such bodies has the benefit of focusing attention on those particular water bodies, if there was to be further river-specific legislation, there is a risk that a proliferation of governance structures, management mechanisms and regimes could give rise to fragmented decision-making.

Protection and management of Crown riverbeds

The riverbeds of navigable rivers are classified as Crown land administered by Land Information New Zealand (LINZ). The Land Act 1948 provides no guidance on management objectives for Crown riverbeds, nor any restrictions on uses; nor are there criteria to guide decisions on private use or privatisation of such riverbeds.

The riverbeds of non-navigable rivers are part of the title of the adjoining land to the mid-line of the river. Where a riverbed adjoins land managed for conservation purposes, whether it is public conservation land or under private covenant, it has the same conservation designation.

Landowners with a title that identifies a river as a boundary (known as a moveable water boundary) have a

47 Transit NZ V Auckland Regional Council, A100/00 (5 NZED 814).

common law right to stable land that has accreted slowly and imperceptibly due to the action of the river along that boundary. This common law right can be converted to legal title by application to LINZ. Conversely, landowners with a moveable water boundary may lose land to erosion by a river.

Accretion can result in areas perceived to be riverbed on braided rivers to be converted to pasture, exotic forestry or vineyards, thus reducing the natural character of a river and its margins.

LINZ has published guidelines for considering both accretion claims and dry stream or riverbed claims[48]. The former do not require public notice but the latter do. Both require a wide range of parties to be directly advised of the application, including DOC. Objections have to be based on material legal or evidential grounds and cannot be simply due to disagreement on principle.

Specific objectives and clear criteria for Crown riverbed management are desirable. This would require amendments to the Land Act.

Crown riverbeds with recognised nature conservation values (especially braided rivers) should be managed for those values.

Protection of land alongside rivers

Crown protection of public rights to access rivers extends back to Queen Victoria's 1840 instructions to Governor Hobson, colloquially known as the 'Queen's Chain'. These instructions were inconsistently applied with regard to river margins. Despite ordinances from as early as 1841 providing for a public access land margin alongside water, and the establishment of uniform policy for the reservation of public land alongside water boundaries in the Land Act 1892,[49] coverage for public access alongside New Zealand rivers remains incomplete.

Part IV of the Conservation Act requires a marginal strip 20 metres wide to be reserved from sale upon disposal of Crown land adjoining a stream more than three metres wide or a lake over eight hectares in size. The purposes of marginal strips include the maintenance of water quality, protection of aquatic life, and natural values of the riparian zone, and provision for public access and recreation (section 24C).

The Conservation Act (section 23) enables an overlying protective status for land adjoining some rivers. A "watercourse area" may be declared for public conservation land or private protected land[50] having outstanding wild, scenic or other natural or recreational characteristics where it adjoins any river, lake or stream protected by a WCO, or otherwise protected. Every watercourse area must be managed to protect the wild, scenic or other natural or recreational characteristics it has when considered with the river, stream, or lake concerned. This is subject to the protective status that applies to that particular land and the WCO provisions.

There are no watercourse areas in New Zealand. The reason for this has not been examined in the preparation of this paper but it might be fruitful to do so, so that the utility of the watercourse area can be assessed.

NZCA conclusions

A representative network of protected rivers should be established.

The beds and waters of rivers that flow within national park boundaries should have national park status unless there is a compelling national interest reason to exclude them.

Greater consideration should be given to rivers and their values when considering areas suitable for designation as a protected area.

Landowner (i.e. Minister of Conservation) consent should be obtained prior to lodging resource consent applications to modify rivers and lakes, or extract water from rivers or lakes, in public conservation land.

Crown riverbeds with recognised nature conservation values should be managed for those values.

The Land Act 1948 should be amended to provide for the establishment of management objectives for Crown riverbeds.

The opportunities available to enhance river protection by applying faunistic reserve or watercourse area status should be explored by DOC.

48 LINZG20710 and LINZG20711 published 30 October 2007.
49 Hayes, B.E (2003) at p 3, 9 and 18–19.
50 For example Queen Elizabeth II National Trust covenant or protected private land agreement under the Reserves Act.

Water conservation orders

SECTION SUMMARY

- This section outlines the history of water conservation orders (WCOs) and how they came to be the major tool for protecting rivers. It describes how the courts have interpreted key terms, the legal effect of a WCO, and the process for applying for a new WCO as well as the steps to amend an existing one.
- WCOs are the main statutory instrument that specifically recognises and provides for the protection of in-stream river values.
- A WCO protects water within a water body in order to protect or preserve its identified outstanding amenity or intrinsic values. These can include: the habitat of terrestrial or freshwater species; fisheries (e.g. whitebait, eels, trout or salmon); wild, scenic or other natural characteristics; scientific and ecological values; recreational, historical, spiritual or cultural values; and characteristics of outstanding significance in accordance with tikanga Māori.
- Rivers that have been modified may still possess suites of these characteristics deemed worthy of protection; however, these must be "outstanding". Courts have interpreted this to mean "quite out of the ordinary on a national basis".[51]
- The effect of a WCO is either to protect a water body in its natural state or to restrict or prohibit abstraction or uses that affect water flow, or quality, or the habitat qualities of a water body in order to protect/preserve its outstanding amenity or intrinsic values. A WCO can prohibit or restrict a regional council from issuing new water and discharge permits but cannot annul existing permits.
- Under the ECan Act, assessments of WCOs in Canterbury (c.f. other parts of New Zealand) give less weight to preserving and protecting nationally outstanding water bodies and greater weight to potential abstractive uses of water. However, the ability to impose moratoria on resource consents for water and discharge permits created by the Act provides a useful mechanism to allow the planning regime to 'catch up' with demand.

51 *See: An Application by the Minister of Conservation (Kawarau River) CO 33/96; The Inquiry into a Draft National Conservation (Mataura River) Order CO32/90; and the Mohaka River Water conservation order WO 20/92.*

52 The purpose of the Water and Soil Conservation Act 1967 was "to make better provisions for the conservation, allocation, use and quality of natural water..... and for the promoting and controlling multiple uses of natural water and the drainage of land, and for ensuring that adequate account is taken of the needs of primary and secondary industry, community water supplies, all forms of water-based recreation, fisheries, and wildlife habitats, and of the preservation and protection of the wild, scenic and other natural characteristics of rivers, streams, and lakes."

53 For example the North Canterbury Catchment Board described its task as "multi-objective planning for water and soil resources with an underlying philosophy of resolving any conflicts between present and potential users in an equitable manner and with any burden evenly shared." It had proposed an overall planning goal of "the wise management of water and soil resources in a manner that yield balanced and sustainable benefits for present and future generations." NAWSCO, (3 April 1984).

WCOs are the main statutory instrument that specifically recognises and provides for the protection of in-stream river values.

History of WCOs

WCOs were first enabled by the Water and Soil Conservation Amendment Act 1981 (WSC Amendment Act; also known as Wild and Scenic Rivers Amendment). The WSC Amendment Act was a response to the impacts of increasing development pressures and the shortcomings of the Water and Soil Conservation Act 1967 (WSCA).[52] Decision-makers under the former WSCA had the difficult task of "balancing" competing demands (such as to carry away waste and provide for recreational fishing) for a particular water body.[53] This 'balancing' favoured resource development ahead of conservation because developmental uses could be more easily quantified in economic terms than less tangible values associated with a natural ecosystem. As a result, river flows, water quality and healthy river functioning diminished.

A notable example was the 1978 case involving the damming and diversion of the Rangitaiki and Wheao Rivers. The Planning Tribunal decided that electricity generation from a renewable source outweighed both recreational interests in an outstanding trout fishery and habitat preservation for the threatened blue duck/whio[54]. The Tribunal noted the "great difficulty in making a value judgement on behalf of the community without guidelines bearing upon those matters"[55]. In another case, the Planning Tribunal held that the WSCA did not contemplate water rights being granted for in-stream purposes such as the use of water for fishery management and fishery enhancement purposes.[56]

Such cases highlighted the inadequacies of the WSCA regime for those interested in in-stream values. Acclimatisation societies (subsequently Fish and Game Councils) together with Save the Rivers Campaign members and the then New Zealand Canoeing Federation[57] argued that there should be legal recourse to protect water, not just to exploit it. This argument was proposed as a direct counter to the then recently enacted National Development Act 1979 (repealed 1986).

In a 1978 discussion paper, the Commission for the Environment raised the concept of protection for wild and scenic rivers. In its review of submissions on the discussion paper, the Commission concluded that there was "a need for a positive policy ensuring protection of rivers or sections of rivers that have outstanding wild, scenic or other natural characteristics in their natural state".[58]

The Ministry of Works and Development and the Minister for the Environment subsequently issued a wild and scenic rivers policy. At the time, much public debate was occurring over the Government's plans for a second aluminium smelter at Aramoana in Otago Harbour, a proposal to dam New Zealand's largest river (the Clutha), and the 'Think Big' schemes. The WSC Amendment Act 1981 was the culmination of this policy effort.

The WSC Amendment Act stated: "The object of this Act is to recognise and sustain the amenity afforded by waters in their natural state" (section 2). This signalled that the WSC Amendment Act was to be administered with an emphasis on sustaining waters in their natural state, i.e. conservation.[59] Where there were outstanding features worthy of protection, the overriding objective of the legislation was to protect those and not to provide for competing uses.

54 Fish and Game New Zealand advocacy questions the soundness of regarding rivers or the water in them as a renewable resource.
55 *Royal Forest and Bird Protection Society v Bay of Plenty Regional Water Board* (1978) 6 NZTPA 361 referred to in Nolan D (ed) (2005).
56 *South Canterbury Acclimatisation Society v National Water and Soil Conservation Authority* (Planning Tribunal C37/83 12 February 1983).
57 Subsequently renamed Whitewater New Zealand.
58 Young D (2004) at p 196.
59 *Ashburton Acclimatisation Society v Federated Farmers of NZ Inc* C.A. 204/86 at p21.

For the first time, legislation specifically recognised and provided for in-stream values of rivers. The instrument to achieve this was called a water conservation order. WCOs could impose conditions, restrictions and prohibitions on the powers of regional water boards to grant water rights over natural waters subject to a WCO.

As Sir Robin Cooke in the Court of Appeal noted:

"In particular cases the needs of industry or other community needs or planning schemes may demonstrably outweigh the goal of conservation. But as a general working rule or guideline the preservation of the natural state as fully as possible or to the extent of protection of outstanding characteristics or features is to be aimed at unless clear and clearly sufficient reason is shown to the contrary. The ultimate criteria must be the public interest. The presumption is in favour of conservation. A strong, really compelling case is needed to displace it." [60]

Section 20B(6) of the WSC Amendment Act set out the matters the National Water and Soil Conservation Authority or regional water board had to take into account when considering an application for a WCO, namely:

- All forms of water-based recreation, fisheries and wildlife habitats;
- The wild, scenic or other natural characteristics of the river, stream or lake;
- The needs of primary and secondary industry and of the community; and
- The provisions of any relevant regional planning scheme and district scheme.

To the acclimatisation societies, the legislation was a step towards national water resource management policy. It established a mechanism whereby a regional or national perspective was part of regional water board and National Water and Soil Conservation Authority decisions, instead of their consideration being restricted to individual streams.[61]

ensures that if a freshwater resource is recognised as outstanding, the objective of its management is preservation or protection, rather than the more 'balance' oriented 'sustainable management' requirement of the rest of the RMA.

As the Environment Court has noted:

"Substantively and procedurally the differences between the WSCA and Part 9 of the RMA are so great that we consider it is not useful, and indeed is probably misleading, to consider the former except as to some guide as to the interpretation of identical words or phrases in the latter." [62]

A WCO can protect a water body in its natural state or, where a waterway has been modified, protect its outstanding characteristics and allow uses compatible with those characteristics.

The broad principles of the WSC Amendment Act, to recognise and provide protection for outstanding waters, were carried over into the RMA when it was introduced in 1991. Part 9 RMA deals specifically with WCOs. Part 9 contains phrases identical to those in the WSC Amendment Act and, like that Act, contains its own purpose and procedures for WCOs. However, legally there are significant differences in both content and procedure. Most importantly, Part 9 of the RMA is only partially subject to Part 2 of the RMA. It has been described as a 'code within a code', which

Purpose of WCOs[63]

WCOs can be sought for rivers, streams, lakes, ponds, wetlands, aquifers, or geothermal waters that are not in the coastal marine area. A WCO can protect a water body in its natural state or, where a waterway has been modified, protect its outstanding characteristics and allow uses compatible with those characteristics.

60 *Ashburton Acclimatisation Society v. Federated Farmers of NZ Inc* [1988] 1 NZLR 78 at 87-88.
61 New Zealand Acclimatisation Societies (June 1983) *An application for a national water conservation order for the Rakaia River and its tributaries.*
62 *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) at p 15.
63 The case summaries in Berry S in chapter 8 "Water" in Nolan D (ed) (2005) in at pp 509-526 were particularly helpful in compiling the following three sections.
64 Berry S in Nolan D (ed) 2005 at para 8.76 on p 516.

Part 9 of the RMA, which deals exclusively with WCOs, has its own specific purpose, giving primacy to the conservation of outstanding scenic and amenity values (section 199). Without this provision, the sustainable management purpose of the RMA (Part 2), which applies to all other allocation decisions under the RMA, may, in the context of WCO applications, have operated in the same way as the balancing test under the WSCA[64] and weakened the prospect of WCOs being gazetted.

The RMA contemplates "preservation orders" that provide for "the preservation as far as possible in its natural state of any water body that is considered to be outstanding"[65] and "protection orders" to protect particular characteristics that a water body has, or contributes to, which are considered to be outstanding.[66] The characteristics that can be protected include:

- The habitat of terrestrial or freshwater species
- Fisheries (indigenous, trout or salmon)
- Wild, scenic or other natural characteristics
- Scientific and ecological values
- Recreational, historical, spiritual or cultural values
- Characteristics of outstanding significance in accordance with tikanga Māori.

A WCO can set conditions relating to:

- The quantity, quality, rate of flow, or level of the water body; and
- The maximum and minimum levels or flow or range of levels or flows, or the rate of change of levels or flows to be sought or permitted for the water body; and
- The maximum allocation for abstraction or maximum contaminant loading consistent with the purposes of the WCO; and
- The ranges of temperature and pressure in a water body.

In considering a WCO application, the Special Tribunal (and the Environment Court in any subsequent inquiry) must have "particular regard" to the purpose of WCOs and other matters set out in section 199 (see Appendix 3).

"Natural state"

"Natural state" means "towards the pristine end of the artificial/polluted to pristine continuum."[67]

The existence of resource consents for abstraction does not necessarily mean that waters are no longer in their "natural state". In the Rangitata WCO case, the Environment Court held that such takes were only authorised temporarily (under RMA section 124 as existing permits had expired) and were not continual, (e.g. takes were shut off during maintenance of intake structures). The Court held that it should consider the Rangitata flow as if the takes were not occurring.[68]

"Outstanding"

To be included in a WCO, a water body either has to be itself outstanding in a national context, or contain outstanding characteristics or features, or contribute in some significant way to outstanding characteristics or features.[69]

The test as to what is outstanding is a "reasonably rigorous" one.[70] Before a feature or characteristic can qualify as outstanding, it needs to be quite out of the ordinary on a national basis.[71] "If one takes a national comparative approach, the fact that the wider region is well endowed with similar high-quality features may well suggest that particular waters do not stand out when considered in a national context."[72]

Special Tribunals and the Environment Court can determine that only some of the values for which a WCO is sought are "outstanding" and/or that these only occur in specific reaches of the river. In relation to Southland's Oreti River, for example, the Special Tribunal considered the river supported an outstanding brown trout fishery, particularly in its upper reaches above Rocky Point, and the upper reaches provided outstanding angling amenity and were of outstanding significance in accordance with tikanga Māori. Parts of the river also provided outstanding habitat for the threatened endemic black-billed gull *Larus bulleri*. But the Tribunal held that on the evidence the river's wild and scenic values and native fisheries were "significant" rather than "outstanding in a national context", though these could contribute to the values considered to be outstanding.

For wildlife habitat values to qualify as nationally outstanding (rather than just significant), a river would have to support at least 5 per cent of the national population of a species.[73]

65 Section 199 (2)(a) RMA.
66 Section 199(2)(b) and section 199(2)(c) RMA.
67 *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) pp11-12.
68 *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) pp11-12.
69 *Re National Water Conservation (Buller River) Order 1989* (Planning Tribunal C28/93 7 May 1993 p 7 at p 18.
70 *Re National Water Conservation (Mataura River) Order 1989* (Planning Tribunal C32/90 4 May 1990).
71 *Re National Water Conservation (Mohaka River) Order 1990* (Planning Tribunal W20/92 8 April 1992) p45. This was upheld in subsequent cases under the RMA such as Re National Water conservation order (Kawerau River) C33/1996 at p 5.
72 *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) p 10.
73 *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) p32.

In the Rangitata case, the Court noted it did not appear appropriate to identify characteristics of outstanding significance to Māori, because it "is not tika" to compare resources across iwi.[74] Yet, in the Oreti application the Special Tribunal determined that the upper reaches of the Oreti were of outstanding significance in accordance with tikanga Māori because of the presence of taonga species (both fish and wildlife), evidence of past occupation, and continuity of flow and high water quality contributing to a vibrant "mauri".[75]

A WCO may extend to an entire river system, including parts of the system that are not in themselves outstanding, but that contribute to the integrity of the system.[76]

Statutory effects of a WCO

As a national instrument to protect values deemed to be nationally outstanding, WCO have a high place in the hierarchy of RMA regulation. Gazetted by Order in Council, they are government regulations. Councils must ensure that their regional policy statements and regional or district plans are not inconsistent with the provisions of any WCO.

A WCO acts in a similar way to operative regional plan rules by constraining the regional council's discretion in managing the water body. It restricts regional council powers to the extent necessary to maintain the outstanding characteristics of a river in their current quality or quantity.

WCOs that were gazetted under the WSC Amendment Act may also have the effect of controlling activities on the beds of rivers and lakes.[77] Despite their gazettal under the old legislation, they are still operative today and continue unless they are changed through provisions in Part 9 of the RMA.

Resource consents granted after a WCO is in place must not be contrary to any restriction, prohibition or other provision in the WCO. A WCO does not affect existing resource consents until these expire and replacement consents are sought, nor existing lawful use established before the WCO was gazetted. For example, the flow regime in the Rangitata River WCO enables the Rangitata Diversion Race Limited to continue to take a third of the river's mean flow for its irrigation scheme and hydro generation at Highbank.

Taking water for the reasonable domestic needs of an individual, or for the drinking needs of their stock, are allowed by the RMA and are not affected by a WCO.

Process for initiating a WCO (outside Canterbury)

Any person, group or organisation can apply to the Minister for the Environment for a WCO for a specified water body, citing the reasons for the application (with reference to RMA sections 199, 200 and 207), the values for which protection is sought, the provisions sought in the WCO and the effects these would have on the water body. The application fee is $1,000 (as at the date of this paper).

The Minister can request further information about an application, and if the application is accepted s/he can appoint a Special Tribunal to invite and hear public submissions and then report on the application.

RMA section 207 requires the Special Tribunal to have particular regard to the purpose of a WCO and the other matters set out in RMA section 199, and to have regard to:

- The needs of primary and secondary industry and the community; and
- The relevant provisions of national policy statements, New Zealand coastal policy statement, regional policy statement, regional and district plans and any proposed plan; and
- The submissions lodged with it.

The Special Tribunal's report will include either a draft WCO or a recommendation that the application be declined. In both cases it gives the reasons for its decision.

The applicant for the WCO and all submitters have the right to refer the Special Tribunal's report and recommendations to the Environment Court, as does anyone else to whom the Court has given leave to do so.

The Environment Court's function is to conduct an inquiry into, and report on, the Special Tribunal's report, not conduct a de novo hearing on the application.

In undertaking its inquiry, the Environment Court, like the Special Tribunal, is required to have particular regard to the purpose of a WCO and the other matters set out in section 199 RMA. Under section 212 RMA, the Court must also have regard to:

74 *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) p 14.
75 Special Tribunal (November 2007) *Summary of the Report by a Special Tribunal Appointed by the Minister for the Environment to consider an Application for a Water conservation order for the Oreti River*, see www.MfE.govt.nz/.
76 *Ashburton Acclimatisation Society v. Federated Farmers of NZ Inc* [1988] 1 NZLR 78.
77 The Rakaia WCO for example prohibits the granting of water permits that facilitate agricultural encroachment into the protected waters.

A WCO acts in a similar way to operative regional plan rules by constraining the regional council's discretion in managing the water body.

- The needs of primary and secondary industry and the community; and
- The relevant provisions of every national policy statement, New Zealand coastal policy statement, regional policy statement and regional and district plans and any proposed plan; and
- The report of the Special Tribunal and any draft WCO; and
- The application and all submissions lodged with the Court; and
- Such other matters as the Court thinks fit.

The Court reports and makes a recommendation to the Minister for the Environment on whether the draft WCO (that which was considered by the Special Tribunal) should be rejected or accepted with or without modifications.

The Minister considers the report from the Special Tribunal (or the Environment Court if an inquiry has been held) and decides whether or not to recommend to the Executive Council that a WCO should be issued. The Minister must decide in accordance with the relevant report, or reject it and give reasons in a written statement to Parliament. If the Minister recommends the making of a WCO, it is gazetted by Order in Council by the Governor General.

Appendix 4 summarises the statutory process for a WCO application outside Canterbury.

Revocation of or amendments to WCOs (outside Canterbury)

No applications can be made to revoke a WCO for the first two years after it has been gazetted. Only minor or technical changes enabling the WCO to better achieve its purpose may be made (section 216 RMA).

Once two years have passed, any person can apply to revoke or amend a WCO. An application to revoke or amend follows the same process as the original application. Applications to amend might be to extend or restrict the WCO's impact.

In 2007 DOC, Fish and Game, Forest and Bird and the New Zealand Recreational Canoeing Association (now Whitewater New Zealand) and rafting parties opposed an application by the Majac Trust to vary the Buller WCO to enable water take from the Gowan River. The amendment was declined owing to evidence from the opposing parties about the importance of the Gowan and Lake Rotoroa to sustaining the eel and trout fisheries, and the effect of Majac's proposed changes to the outstanding rafting amenity protected by the WCO. To date, this has been the only application seeking to reduce the protection afforded by a WCO that has been heard.

Applications to restrict the scope of a WCO preclude submissions in opposition that seek to expand the WCO (section 205(3) RMA). In the Majac Trust case, the Court rejected a submission seeking recognition in the WCO of additional characteristics, namely the kayaking and scenic and amenity values of the Matiri River below the lake. Submitters may make a separate application to expand the scope of a WCO [78].

WCOs in Canterbury

The Environment Canterbury (Ecan) Act 2010 has created a separate regime for granting, amending or revoking WCOs in Canterbury. Firstly, it changed the statutory test and removed the primary purpose of protection. It makes the assessment of an application subject to the Part 2 (sustainable management) provisions of the RMA rather than Part 9 (emphasis on the protection of outstanding amenity and intrinsic values). The decision-maker also has to have particular regard to the vision

78 *Talley v Fowler* CIV 2005-485-000117.

and principles of the Canterbury Water Management Strategy (CWMS) 2009. Although the CWMS was prepared through a collaborative process with public input through meetings, submissions and hearings, it was not a statutory process incorporating legal tests and appeal rights.

The different statutory tests in the ECan Act for a new WCO or applications to amend an existing WCO in Canterbury mean "significantly less weight"[79] is given to the requirement to preserve and protect nationally outstanding water bodies, and greater weight is given to potential abstractive uses of water.

Instead of a Special Tribunal considering an application and making recommendations to the Minister for the Environment, the Government appointed ECan Commissioners to do this at the Minister's request. There is no right of appeal to the Environment Court on the Commissioners' report and recommendations. An ECan decision can be appealed to the High Court only on points of law.

As a local authority, the council is not permitted to allow cross-examination in its hearings; nor did the ECan Act give it this power. The result is that technical and other expert evidence on a river's values and characteristics and relevant planning provisions will not be tested through cross examination nor considered by a specialist court.[80]

MAF papers released under the Official Information Act indicate that facilitating irrigation development in Canterbury by more easily enabling changes to WCO was one of the drivers for the ECan Act.[81]

The provisions of the ECan Act may be primarily used by hydro generation, irrigation and other development interests seeking to amend existing WCOs for Canterbury rivers, given the weakened statutory tests, rather than for new WCO applications. As Whitewater New Zealand president Polly Miller said when announcing the withdrawal of its amended Hurunui WCO application:

"The primary reason for withdrawing is that the ECan Act watered down the water conservation order law and process to such an extent that we have decided that our efforts to protect the river are better directed toward other processes. We are hopeful that withdrawing from the WCO will create a context where a collaborative solution to conservation and recreation needs, and environmentally responsible irrigation possibilities, may be found for the Hurunui/Waiau catchment within the framework of the Canterbury Water Management Strategy." [82]

The legislation also gave new power to the ECan Commissioners to impose moratoria in relation to specified resource consent applications for water and discharge permits, or applications to amend their conditions.[83] The prior approval of the Minister for the Environment to such moratoria is required.

In issuing a moratorium, ECan and the Minister must have regard to:

- The vision and principles of the CWMS; and
- The extent to which the fresh water of that area is subject to:

(i) high or increasing demand or to diminishing quality; or

(ii) is fully allocated, nearing full allocation, or over-allocated; and

- Any other relevant matter.

The 'pause' created by a moratorium is useful because it potentially enables the planning regime for a river catchment to 'catch up' with increasing water demand. To date, moratoria have been notified for the Hurunui and Waiau Rivers. They expired in October 2011 before new regional plan provisions and flow regimes were in place (submissions close December 2011).

The ECan Act provides an opportunity to pursue restoration opportunities through a WCO, as seen for the Lake Ellesmere WCO[84], whereas the RMA (section 9) restricts itself to the preservation and protection of existing conditions.

The ECan Act contains a 'Henry VIII' provision (section 31), which gives the Minister for the Environment wide powers to amend both the ECan Act and the RMA through regulation by Order in Council, rather than through Parliament. The Minister can amend the duration and extent of the ECan Commissioners' powers as they apply, for example, to WCOs, moratoria and plans. This has received wide comment and concern from legal practitioners and academics.

NZCA Conclusions

Conclusions relating to WCOs are presented in section 5 of this paper.

79 Baker M, resource management lawyer (pers. comm., August 2010).
80 Baker M, resource management lawyer (pers. comm., August 2010).
81 MAF Policy (21 December 2009) Briefing on Facilitating Irrigation Development in Canterbury. B09-429A.
82 Whitewater NZ and Fish and Game New Zealand (20 December 2010) press statement.
83 Environment Canterbury had previously requested a moratorium power from the Ministry and previous Environment Ministers to help address the region's "water goldrush, the avalanche of resource consent applications to take water, and the shortcomings of a "first-in, first-served" approach to water allocation when existing takes are approaching or exceed sustainability limits.
84 Lake Ellesmere to get $11m clean-up http://www.stuff.co.nz/environment/5507280/Lake-Ellesmere-to-get-11m-clean-up (accessed 2 September 2011).

Resource consents granted after a WCO is in place must not be contrary to any restriction, prohibition or other provision in the WCO.

Photo: Forest stream, Fiordland National Park. **Crown Copyright:** Department of Conservation Te Papa Atawhai (1996), **Photographer:** Chris Rance.

The use and effectiveness of WCOs

SECTION SUMMARY

- This section discusses how WCOs have been used and evaluates their effectiveness as a tool for protecting and managing rivers. It considers the robustness and length of the WCO process, and the relationship between WCOs and regional plans. It highlights potential areas for improvement.
- WCOs have been particularly valuable in augmenting regional water planning by setting flow and allocation regimes for particular rivers in the absence of regional or catchment plans.
- WCOs are the only RMA mechanism used to effectively protect outstanding rivers. As at November 2011, there were 15 WCOs—13 for named rivers or reaches (including some of their tributaries and associated lakes) and two for lakes.
- WCOs are achieved through a robust process that requires a significant investment of time and expertise by applicants, user groups, and submitters, careful consideration of technical and other evidence by Special Tribunals, and the testing of evidence by the Environment Court. Accordingly, they deserve greater permanence.
- The effectiveness of WCOs could be improved by requiring local authorities to have particular regard to the protection of outstanding values recognised by a WCO in managing land use in catchments where a river is subject to a WCO.
- River management (particularly through regional plans and greater use of WCOs) could be enhanced if a national inventory of outstanding rivers (and outstanding reaches of rivers) was compiled. This would help identify rivers with the highest values nationally as candidates for protection of their natural state through strong plan rules or new WCO applications.

Protection of representative habitats and ecosystems

Only a small number of New Zealand's rivers are protected by WCOs. As at November 2011, there were 15 WCOs—13 for named rivers or reaches (including some of their tributaries and associated lakes) and two for lakes (summarised in Appendix 5).

It seems likely that these rivers represent only a small proportion of those potentially meeting the criteria in section 199 RMA as being outstanding in their natural state and/or having outstanding characteristics.

WCOs have primarily been used to protect rivers under threat. They have not been used to protect a representative range of rivers or as a means to implement the New Zealand Biodiversity Strategy.

Priority action 2.1(c) of the New Zealand Biodiversity Strategy is to progressively protect representative freshwater habitats and ecosystems. The 2005 five-year review of the Biodiversity Strategy assessed progress on implementing this as "limited" relative to the size of the task. The review identified the action as having a "high" priority in the next phase of implementing the Strategy.[85] If WCOs are to assist in achieving such protection, a strategic approach to applications is required.

Fish and Game councils, or their acclimatisation society predecessors, have applied for the majority of WCOs and been at the forefront of their use for river protection. Fish and Game's applications have, understandably, focused on its statutory functions of managing and advocating for the protection of sports fisheries (trout and salmon) and game birds, and the recreational opportunities derived from them, rather than freshwater indigenous biodiversity or other values.

The identification and protection of outstanding biodiversity characteristics has been incidental (although this has been significantly assisted by Fish and Game consulting interested parties prior to lodging applications). Advocacy for, and evidence on, biodiversity and other values relies on participation by DOC, conservation groups such as Forest and Bird, and recreational organisations like Whitewater New Zealand.

The 'water gold rush' of the last 15 years has given Fish and Game and other environmental and recreational NGOs little opportunity to develop a proactive national strategy to identify a representative range of rivers deserving protection based on their values. Available staff and funding resources have been directed to defending rivers under immediate threat from large-scale irrigation and hydro proposals.[86]

Past protection initiatives

WCOs have been used successfully to protect in-stream interests and to safeguard flow regimes before resource consent applications have been lodged for hydro generation or irrigation proposals.

For example, the Central South Island Fish & Game Council was prompted to lodge the application for a Rangitata WCO by proposals for several large new takes to irrigate land on the river's south bank. One third of the river's mean annual flow was already diverted to one of the country's largest irrigation schemes (Rangitata Diversion Race) to irrigate land north of the river and generate power through the Highbank scheme. With no environmental flow regime for the Rangitata, except the de facto one provided for in Rangitata Diversion Race's consent conditions,

WCOs have primarily been used to protect rivers under threat. They have not been used to protect a representative range of rivers

85 Green W and Clarkson B (November 2005) at p 48.
86 Martin D, Forest and Bird field officer (pers. comm., December 2010).

WCOs can therefore significantly enhance the planning framework for rivers and in-stream values by establishing environmental flow regimes

advocates for in-stream values would have had to contest each and every application for further irrigation takes. The WCO application was made before any new consent applications were lodged. Once the WCO was gazetted, the flow regime it established provided certainty for all parties. The flow regime developed through the WCO process meant that a subsequent resource consent application by Rangitata South Limited to take water within the constraints established by the WCO attracted few submissions (and no appeals).

This demonstrates that WCOs are useful for all parties because they provide a clear, transparent mechanism that sets real limits, provides certainty, helps the planning process, lowers costs and makes effective use of stakeholders' time and resources.

Identifying outstanding rivers

A stocktake of the extent of river protection in New Zealand would provide baseline information to help identify freshwater ecosystems and habitats which are not represented in the existing protected areas network, and elucidate the adequacy of current protection tools.

Such a stocktake should map and describe the rivers and river reaches already protected, the extent of protected land in the catchment, the river protection mechanisms utilised (e.g. WCO, regional rules prohibiting dams), the security of any protection, and any management threats and issues. It would help track progress towards the protection of a representative range of freshwater ecosystems and habitats (see section 3), and determine where additional protection is needed.

A national inventory of rivers with outstanding conservation values meriting protection under a WCO could be developed. Priorities for protection could be identified by overlaying the results of the stocktake of rivers currently protected on the inventory of rivers with outstanding values. Public consultation could then be undertaken on the inventory and policy options for progressing protection of these rivers. The inventory would update and extend work begun in 1984 to prepare and publish an inventory of New Zealand's nationally important wild and scenic rivers. It was never completed nor given statutory recognition.[87] (The inclusion of a schedule of waters of national importance (WONI) in the RMA was suggested as part of the Sustainable Water Programme of Action, but not progressed[88]). Possible tools for assessing outstanding rivers are discussed in section 6.

Enhancing regional planning

WCOs have often been sought for rivers that lack a catchment or regional plan, in order to establish a flow regime and allocation limit. When acclimatisation societies applied for a Rakaia WCO in June 1983, for example, there was no management plan that covered the river. The North Canterbury Catchment Board produced a draft management plan for the river two months after the WCO was made.

Once gazetted, WCOs can restrict new takes and diversions to those consistent with the regime established in the WCO. For example, the Rangitata WCO prohibits damming, establishes a flow regime that allows the existing Rangitata Diversion Race take, specifies 1:1 sharing between in-stream and abstraction for some flows, caps abstraction at 33 cumecs (cubic metres per second), and provides for additional takes but only when flows are above a certain threshold.

WCOs can therefore significantly enhance the planning framework for rivers and in-stream values by

87 National Water and Soil Conservation Authority (1984). The 1984 "National Inventory of Wild and Scenic Rivers" initially used assessment criteria for scenic, recreational, wild, biological, scientific and cultural values to rank water bodies into three groups in order of importance with fisheries and tourism values added subsequently. Initially the inventory's purpose was simply to identify wild and scenic rivers and lakes, not seek legislative protection. Government subsequently called for public submissions on a new schedule to the WSCA but this was never passed into law.

88 The work programme for the WONI project included producing a public discussion paper on the value of determining water bodies of national importance, the methods used and the initial list. This was intended as a basis for public consultation on methods and criteria used, alternative approaches and options for managing nationally important water bodies. A technical report notes that the results of consultation could have been developed into a Cabinet paper with a candidate list of nationally important water bodies and options for their appropriate management. The discussion paper was not published. MAF and MfE did not consult on any of the candidate lists for rivers of national importance, or on policy options for progressing the project.

establishing environmental flow regimes where none have previously existed. In the absence of a plan or a WCO, the de facto flow regime is determined by how much water is left after individual consents for water takes are granted.

WCOs also achieve the Land and Water Forum's objective to set rigorous standards and limits on the use of water. These can be inadequate or ineffective in regional plans even where plans exist.

WCOs are not processed by regional councils, but councils can (and should) participate in the WCO process. WCOs take the planning and water management initiative and decision-making powers away from the regional council (except in Canterbury) and give it to the Minister on the recommendation of a Special Tribunal and (and if appealed) the Environment Court. In a WCO application, the regional council is a submitter (albeit an influential one); not the decision-maker. WCOs can limit the powers of regional councils in relation to their water management functions. Once gazetted, WCOs override regional plans. No resource consent can be granted that would be contrary to the provisions of the WCO.

No catchment boards, regional councils or unitary authorities have applied for or supported WCOs. WCOs were rarely mentioned as a river management tool in a recent comprehensive review of regional council practice in setting limits for freshwater flows and quality.[89]

Regional councils have generally opposed WCO applications, but this opposition is not always strenuously pursued. In the WCO application for the Oreti River in Southland, the council chose not to call evidence to support its submission in opposition, and during the Hurunui WCO application, the regional council took a neutral position at the hearing.

The RMA promotes integration between WCOs and regional plans by requiring that a decision-maker on a WCO application has regard to relevant plans, and by requiring that district and regional plans not be inconsistent with a WCO.[90]

For example, in developing its regional plan, Environment Canterbury noted that the WCO for the Rangitata River, gazetted part way through the planning process, was incorporated into the Natural Resources Regional Plan without this causing any significant complications.[91] Other regional councils have successfully incorporated WCO provisions into their regional planning documents (e.g. the Bay of Plenty Regional Land and Water Plan includes a schedule with the provisions of the Motu WCO, and the Tasman Regional Plan includes schedules with the provisions from the Buller and Motueka WCOs).

Funding and cost of the application process

Individual parties must fund the application, legal submissions and evidence for their case in support of, or opposition to, a WCO or its amendment.

The expense of obtaining expert evidence and legal representation to establish the presence of outstanding values has limited the number of WCO applications and the scope of some to critical reaches and tributaries less attractive to development interests, and therefore considered more 'winnable' for the applicant organisation and supporting parties. For this reason, applications often do not include all of the river reaches, tributaries and waterways that have outstanding values.

Fish and Game New Zealand estimates it spent more than $3 million in the 10 years from 2000 to 2010 on applications and advocacy for WCOs.

Since its establishment in 1987, DOC has only applied for one WCO (Kawarau). DOC has had historical involvement in WCOs through applications made by one of its predecessors, the New Zealand Wildlife Service. DOC was a joint applicant with Ngāi Tahu for the Te Waihora/Lake Ellesmere WCO amendment and has been a party to some other applications (e.g. Buller).

Frivolous applications are unlikely given the rigour and cost of the WCO process. All applications to date have been upheld in some form by Special Tribunals and the Environment Court, indicating diligent preparation of applications and supporting evidence.

89 SKM (16 April 2010) The survey included a lengthy questionnaire provided to planning staff in all regional councils and unitary authorities with follow up interviews or meetings. None of the questions were specifically about WCOs.

90 Baker, M (August 2010).

91 Cowie B et al (28 October 2010).

Length and robustness of process

WCO applications under both the WSCA and RMA have proven to be lengthy processes.

As the Environment Court has noted:

"There are at least two reasons why WCO applications are time consuming. The first is that they proceed by way of at least one but usually two inquiries and have to take into account an enormous range of material. Second, if granted they have severe implications as to the use of water. So they are of themselves always of vital interest to conservationists, recreational users and last but not least, to those persons and organisations who wish to take or divert water." [92]

The Environment Court has identified the Special Tribunal's report to the Minister as having primacy. The purpose of any subsequent Environment Court hearing is "to enable a secondary report on matters of concern to further submitters who wish to challenge the findings in the Special Tribunal's report by calling evidence and cross examining witnesses".[93]

Cross examination of witnesses is not permitted before Special Tribunals, but is permitted in the Environment Court, ensuring that expert evidence is tested. Environment Court reports and recommendations have contained detailed changes to the content of WCOs recommended by Special Tribunals. In the Rangitata South case, for example, the Court changed several clauses in the Special Tribunal's proposed draft WCO because of evidence of inconsistencies with national and international guidelines.

For any future Canterbury WCOs or amendments, the ECan Act promises a faster process but it dispenses with cross examination and any opportunity to amend and improve a draft WCO by removing the opportunity for the Environment Court's inquiry and scrutiny.

Permanency of protection

Anyone can apply to amend or revoke a WCO two or more years after its gazettal (section 216 RMA). Amending or revoking a WCO requires a recommendation from the Minister for the Environment to the Executive Council based on a recommendation from a Special Tribunal and/or Environment Court (or in Canterbury, from the ECan Commissioners).

In Opotiki District a proposal by Horizon Energy to dam the Motu River to generate electricity and provide an investment vehicle for Māori has been discussed.[94] This would require the rescinding of the Motu WCO. TrustPower Limited has applied to amend the Rakaia WCO to operate Lake Coleridge for irrigation as well as hydro-electricity generation.

The comprehensive process that precedes the formal gazettal of a WCO outside of Canterbury suggests that the Environment Court is unlikely to recommend amendments to the Minister without strong reason. To date, no existing WCOs have been revoked or amended to reduce their protection.

The one completed application to amend a WCO (on the Buller River) to reduce protection was unsuccessful, partly because of the robustness of the original application process. The Court was unable to see any "materially altered circumstances" from those considered by the then Planning Tribunal that recommended the WCO:

"Having regard to the holistic analysis of the river system undertaken by the Planning Tribunal at that time, this Court must be careful, when considering a variation, that it does not allow changes which might provide for inconsistent administration of the WCO or otherwise create scope for other or wider changes."[95]

The length and thoroughness of an initial application justifies protection being made more permanent. The WCO process is arguably more rigorous than a national park investigation by the NZCA under the National Parks Act, given it involves submissions to, and a hearing and decision report by, the Special Tribunal, and possible inquiry by the Environment Court.

WCOs are frequently cited as the equivalent of 'national parks for rivers'. Removing land from a national park requires an Act of Parliament. Traditionally this has been seen as a significant safeguard.[96] Requiring an Act of Parliament to revoke a WCO would align the status of these two classifications. An alternative would be to extend the time period before an amendment or revocation could be considered under section 216 of the RMA (other than an amendment of a minor or technical nature to enable the WCO to better achieve its purpose).

92 *Talley v Fowler* CIV 2005-435-000117.
93 *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) at p20.
94 *Mercer, G (23 March 2008).*
95 *MJ Talley and others as trustees for MAJAC Trust v Fish and Game* C102/2007 at para. 57.
96 Though legislation can be passed through Parliament under urgency without public submissions, or referral to or scrutiny by a select committee. The ECan Act amending the regime for WCOs in Canterbury was passed through all its stages within 48 hours without submissions or select committee consideration.

Enhancement of outstanding characteristics cannot be considered

The WCO process centres upon the assessment and protection of existing characteristics of the river—it is about maintaining their quality and quantity. The Act does not provide for their enhancement.

In the Rangitata South case[97], the Environment Court found that while it could consider what was needed to halt the decline of an endangered species, section 199(2) appeared to exclude any consideration of a WCO being for the purposes of enhancement, such as an increased minimum flow to improve the habitat of a threatened species to help avoid extinction. This is not sensible and the Act should be amended to provide for this.

Land use and water quality

Many WCOs include provisions that set water quality standards for the protected waters and prohibit point source discharges that do not comply with the standards outside a reasonable mixing zone. Despite being able to establish maximum contaminant loading limits (section 200(c) RMA), WCO applications have not been used primarily to protect water quality except for the Buller River. This may be because safeguarding flows has been the most pressing priority for applicants. There is no ability for WCO provisions to control diffuse sources of sediment or contaminants entering rivers as a result of land use.

The Land and Water Forum 2010 report recommended WCOs be made more effective with respect to water quality; it notes that WCOs are restricted to in-stream influences and are unable to take an integrated approach in addressing other influences such as land use. It recommended that this change.

A more integrated approach would also be assisted by requiring local authorities to have particular regard to WCO status when developing plan provisions for the relevant river or lake catchment.

This is because while WCOs protect the natural water in a river and recognise the wild and scenic elements of the landscape, the Courts have held that they do not, in themselves, protect the landscape elements.[98]

NZCA Conclusions

WCOs are the primary means by which rivers have been protected in New Zealand. They are an effective mechanism for the protection of rivers, albeit that some aspects could be improved.

The use, application and effectiveness of WCOs could be enhanced by carefully considered changes to legislation and policy. This includes, but is not restricted to: lengthening the two year restriction on applications to amend or revoke WCOs; allowing WCOs to provide for the enhancement of outstanding characteristics; and requiring local authorities to take account of WCO status in land use planning including controlling land uses to safeguard water quality. This last change would help promote integrated land and water management as recommended by the Land and Water Forum.

WCOs could be used more strategically to help protect a representative range of rivers with outstanding values.

Conducting a stocktake of the extent of river protection and compiling a national inventory of outstanding rivers and river reaches with outstanding characteristics (including biodiversity, landscape, cultural, recreational, amenity) would help identify priorities for additional protection. Secure protection is needed for river systems and river reaches that remain in, or are close to, their natural state, and have outstanding wild, scenic and amenity characteristics.

Canterbury rivers should once again be covered by the WCO regime that applies to the rest of New Zealand (i.e. in accordance with Part 9 of the RMA) when the term of the ECan Commissioners expires in 2013.

Allocating a government agency specific responsibility for advancing WCOs could help improve their use and effectiveness for river protection in New Zealand. This should be the same agency charged with overall river protection (see section 2).

97 *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) pp137 and 83.

98 Under the former WSCA, the Planning Tribunal held that the WSCA did not authorise the making of an Order to protect landform values, although the contribution that the subject waters make to those values could be taken into account in deciding whether the waters should be subject to an Order. See *Re National Water Conservation (Motu River) Order 1983* (1984) 10 NZTPA 7 at 12.

Other RMA tools for river protection and their efficacy

SECTION SUMMARY

- **This section examines the statutory planning framework for river management under the RMA, other than that for WCOs, and identifies opportunities to enhance river protection.**
- **Decision-making about use and development proposals has occurred at a faster rate than the development of a comprehensive planning framework that includes effective provisions for river protection.**
- **The "use" and "development" elements of sustainable management in the RMA appear to be given greater attention and weight than the "protection" element. Councils have consented major hydro-electricity and irrigation proposals with potentially significant adverse effects on river health and in-stream values.**
- **Strategic planning instruments, such as national policy statements and national environmental standards, have been under-utilised as means to protect rivers.**[99]
- **A National Policy Statement (NPS) for Freshwater Management was released in May 2011 and an NPS for Renewable Electricity Generation was released in April 2011. Both make regional planning compulsory with the latter on a faster time track. Both affect rivers.**

Sustainable management includes "protection" of natural and physical resources

The purpose of the RMA is to promote the sustainable management of natural and physical resources. Sustainable management means managing the use, development, and **protection** [our emphasis] of natural and physical resources in a way, or at a rate, that enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) avoiding, remedying, or mitigating any adverse effects of activities on the

99 National policy statements state objectives and policies for matters of national significance. National environmental standards are legally enforceable regulations that provide a standard to be enforced nationally.

Sustainable management means managing the use, development, and protection [our emphasis] of natural and physical resources...

environment (section 5 RMA)

While sustainable management includes the protection of natural and physical resources, application of the broad overall judgement approach has seen "use and development" being favoured over "protection." The RMA's enabling thrust and effects-based regime means that regional councils have more often sought to remedy or mitigate effects, rather than proactively protect water bodies by prohibiting takes, dams, diversions or other uses that degrade a river's natural state.

Policies and plans under the RMA have not kept pace with the speed of development. Hydro generation and irrigation developments have occurred at a faster rate than either the Ministry for the Environment (MfE) has been able to formulate and achieve operative national policies and environmental standards, or regional councils have been able to finalise and make regional plans operative.

As MfE and the Ministry of Agriculture and Forestry noted in 2004:

"Existing frameworks and processes for resolving competing national interests and optimising complementary outcomes are poorly developed and inadequately used. The national instruments currently available in legislation (e.g. national policy statements, national environmental standards) have been under-utilised".[100]

A result is that individual consent decisions to take, dam, divert and use water are made with little consideration of their cumulative effects over the whole catchment. Fish and Game has described this approach as the "salami syndrome" whereby river flows are sliced incrementally but repeatedly, compromising a river's healthy functioning, habitat values, and recreational and other amenity values. This has also been described as "death by a thousand cuts" and "a little bit more of a little bit less"[101].

The approach described by retired Environment Judge, David Sheppard, could be adopted more widely:

"A water body may be able to tolerate some abstraction, diversion or interference with the natural pattern of changes of levels and flows while qualifying as sustainably managed. But the manner and rate of interference with its natural regime that can be tolerated has to be prudently considered in respect of each water body and catchment, and the conditions that would apply to the proposed abstraction, diversion, or other interference...

"Absence of evidence that proposed abstraction, diversion or other interference with natural levels or flows would be unsustainable does not justify granting a permit. Rather, unless a consent authority is positively satisfied that exercise of the permit would be sustainable management of the resource, it should refuse consent."[102]

Resource consent decisions for abstraction and diversion have been and are made on rivers for which there is either no environmental flow and allocation regime or an inadequate one (e.g. a minimum flow that does not recognise the need to protect flow variability). Controls on land use and intensification have been slow to develop and are rudimentary in areas such as the Mackenzie Basin where water is vulnerable to developments such as intensive dairying.

Section 9 RMA (restrictions on land use) is enabling, meaning that any land use can occur unless a national environmental standard (NES) or district or regional plan rule provides otherwise. However, for water, this presumption is reversed, and water takes or discharges to water cannot

100 MfE & MAF (2004) identified by regional councils during the *Sustainable Water Programme of Action*.

101 McDowall, Robert M (attrib.)

102 Sheppard David F (October 2010).

occur unless expressly allowed by a National Environment Standard (NES), a plan rule or a resource consent. If this latter presumption had applied to land uses affecting water quality as well, these may have been a focus for action earlier.

The deficiencies in the current RMA framework for water management were a stimulus for the Sustainable Programme of Action for Freshwater 2003–2008 and the more recent Fresh Start for Fresh Water.

National Policy Statements[103]

The purpose of a national policy statement (NPS) is to state objectives and policies for matters of national significance relevant to achieving sustainable management under the RMA. An NPS can direct a local authority to amend its regional policy statement or district or regional plan to include specific objectives and policies (without notification or public hearings), or to amend these within a designated timeframe to give effect to the NPS.

The NPS for Freshwater Management was gazetted on 12 May 2011.

Objective A2 of the NPS requires protection of the quality of outstanding freshwater bodies. This may result in regional councils identifying outstanding rivers within their regions but applies only to water quality and gives no guidance as to how this is to be achieved.

On the other hand, the direction given in the NPS for Freshwater Management to establish water quality limits gives a mandate to regional councils to manage the catchments of outstanding rivers, an aspect that cannot be covered by a WCO.

The NPS for Renewable Electricity Generation 2011 requires councils to amend their existing and proposed policy statements and plans within 24 months to provide for renewable energy generation if the documents do not already do so. One policy promotes offsets or environmental compensation where "residual environmental effects" cannot be avoided, remedied, or mitigated. As hydro-electricity is considered renewable, this NPS affects rivers. It can be argued that although water is a renewable resource, rivers are not.

Both the NPS for Freshwater Management and the NPS for Renewable Electricity Generation will therefore guide decision-makers on resource consent applications affecting rivers. However there is no clear guidance on the integration of the two policy statements should they be in conflict.

Maintaining indigenous biodiversity

Under section 30 of the RMA, regional councils have the function of controlling the use of land for the purpose of maintaining and enhancing freshwater and coastal water ecosystems. They are also responsible for objectives, policies and methods for maintaining indigenous biological diversity. Territorial authorities have had a parallel responsibility to control the effects of land use and development to maintain indigenous biological diversity. This should influence the preparation of second-generation regional and district plans to better protect freshwater biodiversity.

MfE's Quality Planning website[104] has a substantial guidance note on indigenous biodiversity to assist councils in implementing these functions. However, specific references to freshwater biodiversity are limited.

The New Zealand Biodiversity Strategy (2000) noted the disparity between achieving representative protected areas on land and in water, and suggested "a special focus on sympathetic management of fresh water and surrounding land areas".[105]

When the Strategy was reviewed in 2005 the need to prioritise protection and restoration of freshwater ecosystems and biodiversity was again highlighted.

Neither the proposed NPS for Indigenous Biodiversity, nor the NPS Freshwater Management include specific requirements relative to indigenous freshwater biodiversity.

There is a need for either a Statement of National Priorities for Protecting Rare and Threatened Biodiversity in Freshwater Environments or the proposed NPS for Indigenous Biodiversity or NPS Freshwater Management to be expanded to include and provide guidance specifically for the protection of freshwater indigenous biodiversity.

103 Biodiversity and national policy statements are discussed in the next sub-section.
104 www.qualityplanning.org.nz.
105 Department of Conservation and Ministry for the Environment (2000) at p49.
106 SKM (16 April 2010).
107 SKM (16 April 2010) See Table 3 at p100.
108 SKM (16 April 2010) See Table 4 at p 101.
109 SKM (16 April 2010) at p25.
110 SKM (16 April 2010 at p24.
111 Ministry for Environment (March 2008) defines **environmental flow** as "the flows and water levels required in a water body to provide for a given set of values which are established through a regional plan or other statutory process." MfE defines **ecological flows** as "the flows and water levels required in a wate rbody to provide for the ecological integrity of the flora and fauna present within water bodies and their margins."

National environmental standards

A 2010 survey and review undertaken for MfE[106] of regional council practice in setting and meeting RMA-based limits for freshwater flows and quality shows inconsistent performance in developing an integrated planning framework for rivers.

All 17 regional councils and unitary authorities in New Zealand have objectives and policies in their regional plans that address water quality and quantity for surface water. In relation to water quality, 11 of 17 regional councils have operative or proposed region-wide water quality limits, but at present only six councils give these limits regulatory status in plan rules.[107] Case law has shown that for limits to be effective in constraining adverse effects, they have to include both strong clear policies and specific rules.

Twelve councils have flow regimes and allocation limits for some or all of the surface waters in their region that have regulatory status in plan rules (eight of these are operative and four proposed). Rules refer to the available level of allocation in the river or the compliance with a minimum flow. Two of these councils (Northland and West Coast) set minimum flows but have no allocation limits, while another four (Auckland, Taranaki, Chatham Islands and Gisborne) have neither minimum flows nor allocation regimes for surface water.[108] Gisborne and Hawke's Bay use short-term consents (5–10 years) to provide more control over consented takes.[109]

Activities that fall outside the set allocation or flow regime generally trigger a change in consent status (generally from permitted or controlled to discretionary as allocation increases). Six councils use non-complying status when some or all of the allocation regimes set in the plans are exceeded. These councils are: Horizons, Nelson, Tasman, Marlborough, Canterbury and Southland.[110]

Setting an environmental flow[111] or water level requires the regional council to identify the natural and use values associated with the water body, and the consequences for those values of changes in the quantity and variability in flows and levels caused by abstraction and diversion. Ecological flows are a subset of an environmental flow regime and provide a base limit on the extent to which flows and water levels can be altered.

Finalising the proposed NES on Ecological Flows and Water Levels is desirable to promote consistency in the selection and application of technical methods

Regional councils have used different technical methods to assess ecological flows, the consequences of abstraction, and flow options. They have applied flow regimes at scales varying from specific catchments to more generic (or default) regional approaches. The lack of a consistent national method has made determining flow regimes more difficult and has generated considerable debate over the appropriate methodology and the impacts of different regimes on river health and values.[112]

The Land and Water Forum noted the importance of NPS and NES in establishing limits, standards and targets for water quality and flows. Finalising the proposed NES on Ecological Flows and Water Levels is desirable to promote consistency in the selection and application of technical methods.

MfE states the NES is intended to: "enable regional councils to avoid over-allocation of the resource and should avoid the degradation of natural values until a thorough assessment of the potential impacts of water use has been undertaken."[113]

Assessing potential impacts of abstractive use first requires an assessment of the river's in-stream values and their significance relative to other rivers in the region and nationally. Enabling regional councils to impose moratoria while they undertake values assessments, promote a collaborative process among stakeholders and amend their plans would help avoid over-allocation and ensure flow regimes were based on a better understanding of in-stream values. Without moratoria,

112 SKM (16 April 2010 at p18). MfE says other challenges councils identified in the timely establishment of environmental flows and water levels included:
- Contentious, litigious and accordingly lengthy decision-making process.
- No consistent agreed methodology for assessing river values and establishing flow regimes. The selection, application and merits of different methodologies are contested by stakeholders through the plan process, including at the Environment Court.
- Data collected using best practice and good science being heavily contested in Environment Court hearings.
- A historical focus on minimum flows rather than environmental flows, resulting in uncertainty that ecosystem function is safeguarded and limited protection for in-stream values when demand increases.
- No consistent agreed methods to respond to the potential impacts of future climate variability or climate change on water availability.
- A lack of flexibility in planning instruments obstructing adaptive approaches. See Ministry for the Environment (March 2008).

113 Ministry for the Environment (March 2008) at section 4.1.

applications for abstraction are likely to continue to outpace plan variations. Moratoria powers in the ECan Act must be directed at specific catchments and require prior approval of the Minister for the Environment. Giving other regional councils a similar ability to implement moratoria would enable them to enhance regional planning.

Regional plans as a protection tool

Regional plans have to promote the RMA's purpose of sustainable management. Matters of national importance in the RMA include the preservation of the natural character of rivers and their margins and protection of this from inappropriate subdivision, use and development[114]; the protection of outstanding natural features and landscapes from inappropriate subdivision, use and development[115]; the maintenance and enhancement of public access to and along lakes and rivers [116]; and the protection of significant habitats of indigenous fauna[117]. However, they comprise only some of the matters in Part 2 that must to be considered when making an "overall broad judgement" of what constitutes sustainable management.

Regional plan objectives, policies and rules controlling the take, use, and diversion of water can provide a measure of practical protection for rivers by prohibiting activities such as damming or large-scale abstraction from specified rivers or reaches, and applying non-complying activity status to activities that would breach environmental flow regimes.

In the Rangitata South case, Judge Jackson noted that a regional plan prepared under section 65 of the RMA gives greater flexibility to deal with water allocation issues than does a WCO under Part 9.[118] However WCOs are more robust than regional plans, and have afforded crucial protection in the absence of regional plans, or catchment plans that set environmental flows and establish an annual allocation limit for particular rivers. Even where regional plans include an environmental flow regime (rather than just a minimum flow), they often do not provide secure protection for natural flow regimes because of the wide use of discretionary or non-complying status for takes that breach the flow regimes.

The case history of TrustPower Limited's consented 73 MW hydro scheme on Marlborough's Wairau River illustrates that non-complying status does not guarantee the protection of in-stream values, even though the granting of that consent is in breach of the flow regime for that river.

Often, robust scientific information about the ecological and other effects of decreasing river flows is not available. Councils have therefore been unable to quantify sustainable allocation limits. There has been reluctance to constrain resource use and economic development in the face of opposition from abstraction and generation interests, and councils have made little use of prohibited activity rules. For example, the Wairau Awatere Plan only prohibits abstraction from four small lakes (all within public conservation land) and an aquifer (if water is to be transferred out of the catchment).

In Coromandel Watchdog of Hauraki Inc. v Chief Executive of the Ministry of Economic Development[119] the Court of Appeal upheld the use of district plan rules to prohibit mining in part of the Thames district, paving the way for wider use of prohibited-activity rules in plans. The Court identified prohibited status as potentially appropriate where a council had insufficient information while developing a plan to determine how an activity should be provided for; where it sought to take a deliberate staged approach; and/or where it wanted to direct in a strategic way the sustainable management of resources.

Prohibited activity rules require adequate scientific justification, strong section 32 RMA benefit-cost analysis[120] and policy support. Given the economic value of water, they are likely to be strongly contested by user interests and must survive the plan submission, hearing and appeal process to become operative. Plan changes can also be initiated to try and rescind prohibited activity status.

In Canterbury, the Natural Resources Regional Plan notes the merit in "protecting some of the region's rivers and lakes in a relatively natural state". It says, "In general the level of protection should be that activities affecting their natural character and value should have no significant adverse effect."[121] Flow and allocation regimes are generally seen as appropriate to achieve this. The plan prohibits dams on a small number of river reaches with high natural character.

Greater use of prohibited status by councils would promote certainty, protect future options, help safeguard

114 Section 6(a) RMA.
115 Section 6(b) RMA.
116 Section 6(d) RMA.
117 Section 6(c) RMA.
118 Jackson J in *Rangitata South Irrigation Ltd v Fish and Game* (Environment Court C109/2004 5 August 2004) at p21.
119 *Coromandel Watchdog of Hauraki Inc. v Chief Executive of the Ministry of Economic Development* [2007] NZCA 473 285/05.
120 Section 32(4)(b) RMA requires this evaluation to take into account the risk of acting or not acting if there is uncertainty or insufficient information about the issue addressed by policies or rules.
121 Natural Resource Regional Plan (as modified by Decisions), Chapter 5 Water Quantity, section 5.4.1.1.

Progress in developing tools to assess and classify waterways on a national scale could improve protection of freshwater biodiversity and rivers.

biodiversity and ecosystem functioning and better provide for the "protection" element of sustainable management.

Protecting water quality

The RMA provides for a system of classifying water bodies through regional rules (section 69). The water quality classes (RMA Third Schedule) relate to the purposes for which water is to be managed. Standards are set for waters that are to be managed for freshwater ecosystems, fisheries, fish spawning, gathering or cultivation of shellfish for human consumption, water supply, contact recreation, irrigation, industrial abstraction, aesthetic and cultural purposes and water being managed in its natural state. Councils can set more stringent and specific standards than those in the Third Schedule but cannot set standards that would result in a reduction in water quality. The classes apply after reasonable mixing of any (authorised) contaminant discharged into the receiving water.

The Bay of Plenty Regional Plan has natural-state water quality standards for waterways in public conservation land, but no similar recognition for abstraction. Environment Canterbury's Natural Resources Regional Plan identifies upper catchment reaches of a small number of rivers within public conservation land as "natural state" waterways for the purposes of water quality classification, but does not prohibit discharges or takes. If a river has a "natural state" classification for water quality purposes, then another classification for abstraction purposes and supporting objectives, policies and rules would seem logical and reasonable.

The Environment Court, however, has discharged Trust Power on the Wairau River from meeting water quality standards.

RMA co-ordination with conservation legislation

The National Parks, Conservation, Wildlife, and Reserves Acts and the Freshwater Fisheries Regulations 1983 enable protection of the land part (riverbeds and banks) of freshwater habitats with significant conservation or species values. As flows and discharges are primarily administered by regional councils under the RMA, however, complementary provisions are needed in regional plans and policies to ensure that the quality of such protection is maintained in resource consent decision-making.

The waters within public conservation lands are generally of high value and in a natural state. Development of them may be inconsistent with their conservation and protection and could also be inconsistent with sustainable management of water.

RMA section 104(1) sets out the matters to which decision-makers on resource consents must have regard. They do not include conservation management strategies or national park management plans. While a consent authority has a discretion whether or not to consider them under section RMA 104(1)(c) ("any other matter the consent authority considers relevant and reasonably necessary to determine the application"), their specific inclusion would ensure that they are indeed considered.

Methods for assessing the values of rivers

Progress in developing tools to assess and classify waterways on a national scale could improve protection of freshwater biodiversity and rivers. These tools can identify rivers or sections of rivers that are "outstanding" nationally and merit preservation and protection using WCOs, regional plan rules and/or

additions to public conservation land and waters. One such tool is the Freshwater Ecosystems of New Zealand (FENZ) geodatabase. FENZ includes rankings for biodiversity value that indicate a minimum set of sites that would provide representative protection for a full range of freshwater ecosystems, while taking account of human pressures and connectivity.[122]

Rivers or river reaches with outstanding landscape, amenity, recreational, cultural and other values could be identified using the River Values Assessment System (RiVAS).[123] It seeks to provide a standardised method for regional councils to assess the significance of both in-stream and out-of-stream river values. It can be used to generate lists of rivers graded by relative importance for different uses.

Collaborative processes

Non-statutory, multi-stakeholder collaborative processes for consenting abstractive river uses are increasingly being explored in an attempt to reduce the adversarial and litigious nature of subsequent RMA processes. They are hoped to result in better-formulated consent applications, encourage more efficient use of existing takes, and therefore reduce demand for water.

The Land and Water Forum (itself a collaborative process) endorsed further use of collaborative processes and recommended:

"The establishment of a non-statutory National Land and Water Commission as a co-ordinating, leadership and collaborative body to oversee the implementation of a National Land and Water Strategy.

"National instruments should be developed to enable and give priority to large scale consents, regional plans and water conservation orders that have undertaken an initial collaborative approach over proposals that have not undertaken that approach.[124]

"We need to use the RMA and the tools it provides to greatest effect, together with a national strategic approach, and using collaborative approaches to engage water and land users, and communities, including iwi, in the management of our water resources." [125]

NZCA conclusions

Greater emphasis needs to be placed on the protection of rivers as a means to achieve their sustainable management. The over-emphasis on use and development requires correction.

A Statement of National Priorities for Protecting Rare and Threatened Biodiversity in Freshwater Environments should be issued. NPSs should include specific policies on indigenous freshwater biodiversity.

Appropriate guidance is needed to resolve conflicts between NPS Freshwater Management and NPS Renewable Electricity Generation.

NESs would help improve water management and allocation, and also achieve improvements in the slow and heavily contested process of establishing environmental flows and water levels in regional plans. Prompt gazettal of the proposed NES on Ecological Flows and Water Levels is desirable.

Consideration should be given to amending the RMA to allow regional councils to use moratoria (similar to those in the ECan Act 2010) to pause consent applications while a river's in-stream values are assessed, flow regimes developed or reviewed, and plans amended.

Regional plan objectives, policies and rules controlling the take, use, and diversion of water should be used to provide a measure of practical protection for rivers by prohibiting activities such as damming or large-scale abstraction, diversions or other uses that degrade a river's natural state. Non-complying activity classification can also give some level of protection but cannot be relied upon.

Regional plans should recognise and protect the natural state of rivers within public conservation land through plan objectives, policies and methods. Rules prohibiting new takes, diversions and discharges would provide secure protection for such rivers.

RMA decision-makers should be required to have regard to the protected status of public conservation land and waters if a consent application affects conservation land or waters within it (reflecting the protection component of sustainable management).

An amendment should be made to RMA section 104(1) to include by name management plans and strategies issued under other legislation (e.g. conservation management strategies, national park management plans, fisheries plans, iwi management plans) as a mandatory consideration in resource consent decision-making.

122 DOC through its Natural Heritage Management Strategy using scientific and technical expert teams has assessed representative ecosystems to prepare a draft list off sites requiring protection for their ecological values. These sites have been identified using a weighting of their relative value, the degree of threat, and the cost of protection and restoration. The list includes some rivers. Their value ratings have been derived from FENZ. The highest priority sites are being included in conservation management strategies.

123 Hughey K, Booth K, Deans N and Baker MA (December 2009).

124 Land and Water Forum (September 2010) at p 43.

125 Land and Water Forum (September 2010) at p 18.

Greater emphasis needs to be placed on the protection of rivers as a means to achieve their sustainable management.

Photo: Waipakihi River, Kaimanawa Ranges.
Photographer: Brian Stephenson.

Enhancing river protection NZCA recommendations

Protect outstanding rivers

1. Government commitment is required to protect river systems and river reaches that remain in or are close to, their natural state and or have outstanding wild, scenic and amenity characteristics.

Many of our rivers are already highly altered from their natural state, especially in their lowland reaches. A commitment to protect those remaining outstanding or natural rivers would prevent any further loss of these high-value rivers. Once these values are lost it is expensive and almost impossible to return them to their previous state—a poor legacy for future generations.

Establish a network of protected rivers

2. A key objective of national water policy should be the establishment of a representative network of protected rivers, including rivers with outstanding ecological, landscape, scenic, recreational, amenity and cultural characteristics and values.

It is important to protect a fully representative range of the different freshwater ecosystems, habitats and biodiversity. While some upland rivers and mountain streams are included within our protected places, few middle and lower reaches are protected. Many highly significant waterways have no formal protection whatsoever.

It is equally important that rivers with outstanding characteristics be protected, even if they are no longer in their natural state.

Once established, this network should be genuinely protected and not eroded by development proposals.

3. A stocktake of the extent of river protection in New Zealand is needed to provide baseline information, track progress towards the protection of a representative range of freshwater ecosystems and habitats, and determine where additional protection is needed.

This baseline information would ensure future policy is developed on a fully informed platform. The protection of rivers could be enhanced if a national inventory of outstanding rivers (and parts of rivers) were compiled to identify and prioritise candidate rivers. This would ensure rivers with the highest ranking values are targeted for protection.

4. Allocate a government or quasi-government agency specific responsibility for protecting rivers, including advancing water conservation orders (WCOs).

No government agency has a specific responsibility to preserve and protect rivers as an entity. Giving a single agency this responsibility could help promote a more strategic approach to river protection generally, and WCOs specifically, so as to protect a representative range of rivers with outstanding values.

5. Regional councils could make greater use of prohibited activity status in regional plans to secure protection (from development and extractive uses) for remaining wild and natural rivers with outstanding values.

While non-complying activity status in a regional plan provides a signal to users as to what is considered an inappropriate activity due to the values of a specified location, it does not guarantee that development proposals that affect those values will be declined as evidenced by the 2010-approved hydro-electricity scheme for the Wairau River.

Ensure water management properly reflects the conservation status of conservation land and the rivers within it

6. RMA decision-makers should be required to have regard to the protected status of lands and waters managed by DOC if these are affected

by a consent application, to properly reflect the protection component of sustainable management.

Each river is an ecological corridor from its source in mountains or hill country to its end at the sea, and is affected in different parts by the activities on or alongside the river. Although public conservation land has a protected status, and in a limited number of instances the water also, they can be negatively impacted by activities upstream, downstream and around them, as they are all parts of complicated interconnected ecosystems. It is therefore important that the impact of activities on conservation values are explicitly required to be considered in decision-making.

7. The RMA should be amended to include conservation management strategies and conservation and national park management plans by name in section 104(1)(b) or (c) as matters that consent authorities must have regard to.

While a consent authority has the discretion whether or not to consider them under section 104(1)(c) RMA ("any other matter the consent authority considers relevant and reasonably necessary to determine the application"), their specific inclusion would ensure that such strategies and plans are considered.

Such an amendment would be consistent with the approach taken in section 66(2)(c)(i) where regional plans must have regard for them.

8. Landowner permission should be obtained prior to lodging resource consent applications to modify or extract water from rivers in public conservation land.

Applicants for resource consents that will affect public conservation land currently do not need to first get landowner (i.e. DOC) permission under conservation legislation. This means that a full consent process can be completed only to have use of conservation land, where required, declined.

9. Rivers, including water, within national park boundaries should have national park status.

Owing to their large size and high level of protection, national parks are of particular importance for river protection. In most cases, national park status protects the beds of all water bodies within the park boundaries but in only some cases does it cover the water. Even then, the protection provided by national park status does not extend to river flows, nor does protection extend beyond national park boundaries. Therefore, even if a river is in part in a national park, it is not protected in its entirety.

Indigenous biodiversity

10. A Statement of National Priorities for Protecting Rare and Threatened Biodiversity in Freshwater Environments should be issued or the current proposed NPS for Indigenous Biodiversity or the NPS Freshwater Management expanded to specifically include freshwater indigenous biodiversity.

New Zealand's freshwater indigenous biodiversity is unique—92 per cent of our freshwater fish species are endemic because of our evolutionary history isolated from other land masses—and is in decline. Its protection needs to be made a priority in decision-making around land and water management for this decline to be halted and reversed. Whilst a draft NPS for Indigenous Biodiversity has been released, it only covers (a narrow range of) terrestrial species.

Protect Crown riverbeds

11. Crown riverbeds with conservation values should be managed for those values.

The Land Act 1948 should be amended to provide for the establishment of management objectives for Crown land including riverbeds and a public consultation process for the disposal or leasing of any interest in them.

Extensive areas of riverbed are managed as Crown land. They provide critical habitat for braided river birds and riverbed plants. There is no requirement for them to have management objectives or for there to be public input into decisions about their use or management.

Mechanisms in conservation legislation

12. The opportunities available to enhance protection for rivers by applying faunistic reserve or watercourse area status should be explored by DOC.

The National Parks, Conservation, Wildlife and Reserves Acts, and the Freshwater Fisheries Regulations 1983 enable varying levels of protection of freshwater habitats with significant conservation values through such instruments.

Retain WCOs and improve their use

13. WCOs should be retained to provide protection for rivers and other water bodies with outstanding values.

Regional planning has often lagged behind increasing demand for abstraction of surface water. WCOs have been valuable in augmenting regional water planning through setting flow and allocation regimes for particular rivers in the absence of regional or catchment plans.

WCOs are achieved through a transparent and robust process requiring a significant investment of time and expertise by applicants, user groups, and submitters, and careful consideration of technical and other evidence by Special Tribunals and testing of evidence by the Environment Court.

14. The RMA should be amended to enable a WCO to include provisions applying to land use that may impact on the effect of a WCO, and to require local authorities to have particular regard to the protection of outstanding values, as recognised by a WCO, in managing land use through plans and consent decisions in catchments where the river is subject to a WCO.

This would help implement the recommendation of the Land and Water Forum that the WCO provisions in the RMA be amended to enable them to achieve an integrated management approach.

15. The RMA should be amended so that WCOs can provide for enhancement of outstanding characteristics.

Case law indicates that enhancement of an outstanding characteristic (e.g. of a threatened species population through an improved flow regime) is beyond the scope of the legislation.

16. The two year restriction on applications to amend or revoke operative WCOs should be lengthened. Or alternatively, give WCOs greater permanency appropriate to the rigorous process for achieving a WCO.

17. Canterbury rivers should be considered under the standard RMA process after October 2013.

In Canterbury, the ECan Act means WCO applications are considered against different criteria with Environment Canterbury Commissioners rather than a Special Tribunal making recommendations to the Minister. The Environment Court now has no jurisdiction over WCOs in the Canterbury region.

The different statutory tests for a new WCO or applications to amend an existing WCO in Canterbury mean significantly less weight is given to the requirement to preserve and protect nationally outstanding water bodies, and greater weight is given to potential uses of water.

Improve river management under the RMA

18. A National Environmental Standard on Ecological Flows and Water Levels should be implemented.

Additional national standards and policy guidance for recognition of river values not covered by the proposed National Environmental Standard on Ecological Flows and Water Levels would help provide more comprehensive protection for river values.

Establishing standards for water is both politically and technically difficult and expensive. If requirements in the NPS Freshwater Management to establish standards for all rivers in all regions are to be met in a nationally consistent and meaningful way, there needs to be national guidance on how to set these standards and what they must encompass. Without NESs setting flow and quality standards, litigation by vested interests will continue in each region.

The NES needs to include a tool that sets 'hard limits', i.e. takes beyond the limits set in plans are not allowed. Currently most plans allow consents to be applied for, and granted, beyond the allocation limit set in a plan.

19. The RMA should be amended to allow regional councils to use moratoria (similar to those in the ECan Act 2010) to pause consent applications while a river's in-stream values are assessed, flow regimes developed, and plans amended.

Consents involve legal rights to use water. It can be legally difficult and prohibitively expensive to take back water that has been allocated if it is subsequently found that a river is over allocated and not able to sustain its in-stream values.

Government commitment is required to protect river systems and river reaches that remain in or are close to, their natural state and or have outstanding wild, scenic and amenity characteristics.

Lower Moeraki River, South Westland.
Photo: Wilderness Lodges NZ Ltd

Glossary

CWMS Canterbury Water Management Strategy 2009

DOC Department of Conservation

ECan Environment Canterbury

ECan Act Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010

FENZ Freshwater Ecosystems of New Zealand

Fluvial morpohology the study of the processes and pressures operating on river systems

Hāngi earth oven

Hapū kinship group, subtribe

Hydro hydro-electricity generation

Iwi extended kinship group, tribe

Kaitiaki guardian

Kaitiakitanga the exercise of guardianship

LINZ Land Information New Zealand

MAF Ministry of Agriculture and Forestry

Mahinga kai food

Mātaitai seafood

Mātaitai reserve an identified traditional fishing ground established as a mātaitai reserve under the Fisheries (South Island Customary Fishing) Regulations 1999

Mauri life force

MfE Ministry for the Environment

MFish Ministry of Fisheries

NES National Environment Standard

NGO Non-governmental organisation

NHMS Natural Heritage Management System

NPS National Policy Statement

NRWQN National Rivers Water Quality Network

NZCA New Zealand Conservation Authority

OECD Organisation for Economic Co-operation and Development

Rāhui a restriction or control of specified activities put in place by the tangata whenua as kaitiaki to manage an area in accordance with tikanga

REC River Environment Classification

RiVAS River Values Assessment System

RMA Resource Management Act (1991)

Rohe geographical territory of an iwi or hapū

SWPOA Sustainable Water Programme of Action

Tangata tiaki/kaitiaki guardians

Tangata whenua indigenous people of the land

Taonga things or places of great value

Tauranga ika fishing ground

Tika correct, proper

Tikanga Māori Māori customary values and practices

Wāhi tapu sacred place

WONI Waterbodies of National Importance

WSCA Water and Soil Conservation Act 1967

WSC Amendment Act Water and Soil Conservation Amendment Act 1981; also known as Wild and Scenic Rivers Amendment

WCO Water conservation order

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Appendices

Appendix 1: Freshwater management bodies and their responsibilities

From: Mulcahy K, Peart R and Garvan N (2010) Managing freshwater: An EDS Guide, Environmental Defence Society at pp.154-155. Reproduced with kind permission of the authors and the Environmental Defence Society.

Management body	Role in freshwater management	Key legislation
- Minister for the Environment	- Oversees freshwater management under the RMA - Recommends the issue of national policy statements on fresh water - Recommends the making of national environmental standards related to fresh water - Recommends the approving of requiring authorities for water infrastructure - Recommends the use of water conservation orders - Calls-in matters of national significance related to fresh water - Oversees the Ministry for the Environment	- Environment Act 1986 - Resource Management 1991 - Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010
- Ministry for the Environment	- Provides policy advice to the Minister on freshwater management - Disseminates information on freshwater management Engages in collaborative efforts to improve freshwater management	- Environment Act 1986 - Resource Management Act 1991
- Environmental Protection Authority	- Processes freshwater management matters of national significance that are 'called-in'	- Resource Management Act 1991
- Minister of Conservation	- Oversees coastal management under the RMA including fresh water within the coastal environment - Recommends the issue of the New Zealand coastal policy statement - Calls-in matters of national significance within the coastal environment - Oversees the Department of Conservation and Fish and Game Councils	- Conservation Act 1987 - Resource Management Act 1991
- Department of Conservation	- Manages the conservation estate - Manages wildlife - Undertakes research into freshwater fisheries - Advocates for the conservation of aquatic life and freshwater fisheries including involvement in RMA proceedings - Promotes the benefits of conservation and prepares and disseminates conservation materials - Manages the Taupo "sports" fishery and whitebait fisheries - Controls introduced species that cause damage to indigenous freshwater species and habitats	- Conservation Act 1987 (especially section 6 and Part 5B) - Freshwater Fisheries Regulations 1983 - Resource Management Act 1991 - Wildlife Act 1953

Management body	Role in freshwater management	Key legislation
- Minister of Fisheries	- Manages freshwater fisheries, excluding sports fish and whitebait	- Fisheries Act 1996
- Iwi and hapū	- Exercise kaitiakitanga over freshwater bodies - Co-governance and co-management arrangements for specific water bodies	- Deeds of Settlement - Rotorua and Taupo fisheries regulations
- Fish and Game Councils	- Manage freshwater sports fish and gamebirds (mainly waterfowl) - Advocate for the interests of sports and game including involvement in RMA proceedings - Licence anglers and gamebird hunters - Undertake hatchery and breeding programmes for sports fish - Undertake research, information and education activities	- Conservation Act 1987 (Part 5A) - Wildlife Act 1953 (Part2) - Resource Management Act 1991
- Regional councils	- Control discharges affecting freshwater bodies - Control the taking, use, damming and diverting of fresh water - Allocate fresh water - Control the impact of land use on freshwater quality, quantity, ecosystems and natural hazards - Control the introduction of plants to the bed of freshwater bodies - Maintain indigenous freshwater biological diversity	- Local Government Act 2002 - Resource Management Act 1991
- Territorial authorities	- Control the impact of land use on fresh water - Control activities on the surface of freshwater bodies - Provide water and wastewater services - May control drainage	- Local Government Act 2002 - Resource Management Act 1991 - Land Drainage Act 1908
- Guardians	- Make recommendations to the Ministers on management of hydro lakes	- Conservation Act 1987 - Lake Wanaka Preservation Act 1973

Appendix 2: Statutory mechanisms for protecting rivers

Mechanisms to protect rivers occur in 17 separate statutes. Only three relate to the whole river—water conservation orders, the protection of rivers within protected areas and river specific statutes. All other tools relate to a specific component of the river ecosystem (riverbeds, adjoining land, wildlife, fish). The main river protection mechanisms described in the main text or summarised below include:

- Water conservation orders under the RMA
- Protection of rivers that fall within protected areas: National Parks Act, Reserves Act and Conservation Act
- Statutory advocacy by the Department of Conservation (DOC)
- Protection of riverbeds and management of Crown land
- Protection of land alongside rivers: marginal strips, watercourse areas
- Protection of wildlife
- Protection of freshwater fish and management of fishing
- River-specific Acts (which may encompass a complete river system).

Water Conservation Orders

1. See sections 4 and 5 and Appendices 3, 4 and 5.

National Parks Act 1980 and Reserves Act 1977

2. See section 3.

Conservation Act 1987

3. DOC's broad functions under section 6 of the Conservation Act 1987 include: "to manage for conservation purposes, all land, and all other natural and historic resources" held under that Act. (section 6(a)). This includes managing the conservation estate, which includes rivers, lakes, streams, and wetlands.

4. Advocacy for protection of freshwater ecosystems is part of DOC's broad functions: "to advocate the conservation of natural and historic resources generally" (section 6(b)) and "to prepare, provide, disseminate, promote, and publicise educational and promotional material relating to conservation".. (section 6(d)).

5. DOC has a specific function: "to preserve as far as is practicable all indigenous freshwater fisheries, and protect recreational freshwater fisheries and freshwater fish habitats." (section 6(ab)).

6. DOC summarises its freshwater conservation management functions as:
   - Protecting freshwater natural heritage
   - Protecting nationally important freshwater ecosystems and sites
   - Safeguarding the natural ecological character of freshwater ecosystems and habitats
   - Protecting freshwater species and stocks
   - Managing alien invasives
   - Providing for recreational use of freshwater ecosystems and species
   - Providing access and recreational facilities, subject to protection of freshwater values
   - Harvesting and managing stock.

7. The Director-General of Conservation has a range of specific powers in relation to freshwater management (section 53(2) and (3)) including:
   - Undertaking research, surveys, and investigations into freshwater fisheries;
   - Issuing plans and publications relating to freshwater fish;
   - Advocating for the conservation of aquatic life and freshwater fisheries generally;
   - Managing the Taupo sports fishery;
   - Acquiring and protecting habitats;
   - Controlling any introduced species causing damage to any indigenous species or habitat.
8. The prior approval of the Minister of Conservation is required to introduce a freshwater species into waters where it does not already occur and for all releases into waters within lands administered by DOC (section 26ZM). Movement of aquatic life between sites where the species already occurs and between the islands of New Zealand requires the prior consent of the Minister of Fisheries (to address risks of disease transfer).
9. While the RMA contains the primary controls on contaminant discharges to water, the Conservation Act (section 39(4)–(7)) defines offences in relation to discharges that cause adverse effects on freshwater fish and their habitat in waters of any tenure. These provisions are rarely used by DOC. The Act also sets out defences.

Protection of riverbeds

Crown ownership of riverbeds

10. The Crown owns riverbeds by one of three mechanisms:
    - The statutory taking of navigable riverbeds through the Coal Mines Amendment Act 1903, which vested all navigable rivers in the Crown. By subsequent Acts and section 354(1) of the RMA, the beds of navigable rivers remain vested in the Crown. The Court of Appeal has held that for a river to be Crown land under that law it had to be navigable in 1903. In deciding whether a river is navigable, the river as a whole is to be considered even if there are barriers (e.g. waterfalls) on it .
    - Existing title if the riverbed is in a defined Crown title from previous acquisition from Māori or subsequent owners or the purchase of title to a riverbed.
    - The acquisition of ad medium filum aquae rights (ownership rights over riverbed to the centre of the river as a result of acquisition of the adjoining land).
11. Whether the riverbed is still Crown land (even if it was navigable in 1903) is determined by examining whether there has been a subsequent grant of title to the bed. This could be through an explicit grant or through the grant of a land title where the surveyed boundary of the land title includes the riverbed.
12. Where land has a boundary that is a non-navigable stream or river, the certificate of title or computer register issued for that land does not usually include any part of the bed of the stream or stream, and the Registrar will decline to make any endorsement on the title as to whether or not the landowner has any rights to the stream or riverbed.

Protecting riverbeds

13. Activities in riverbeds (such as earthworks, structures and planting) are controlled by regional councils under the RMA.
14. Riverbeds like any other piece of land can be legally protected through addition to public conservation land, a covenant or similar measure. For riverbeds that are Crown land, protection is generally achieved using the Conservation Act (section 7), which allows the Minister of Conservation to negotiate an agreement with the Minister responsible for the

land (generally Minister of Lands) that it becomes conservation area. The riverbed of the Hunter River and Freshwater River on Rakiura/Stewart Island were recently protected using this process.

15. In some cases, riverbeds are mistakenly thought to be public conservation land because large areas of adjoining land are. The bed of the Pararari River in Paparoa National Park and the Whanganui River are not conservation land, nor are the beds of the upper Rakaia or Rangitata Rivers. For some rivers this is because the land allocation process of the late 1980s, when DOC was established, did not always specifically identify riverbed land as part of the land parcel allocated.

16. The New Zealand Conservation Authority is not aware of any schedule of the amount and type of riverbed land within the conservation estate and its biodiversity values. Riverbeds not in Crown ownership are privately owned by a variety of types of owner.

Protection Of Land Alongside Rivers

Marginal strips

17. Part IV of the Conservation Act requires a marginal strip 20 metres wide to be reserved from sale upon disposal of Crown land adjoining a stream more than three metres wide or a lake over eight hectares in size. The purposes of marginal strips include the maintenance of water quality, protection of aquatic life, and natural values of the riparian zone and providing for public access and recreation (section 24C).

18. Marginal strips are set off where high country pastoral lease land is freeholded through tenure review or when a pastoral lease is renewed. Since 1990, over two thirds of pastoral leases have been through a renewal process and marginal strips should have been set aside.

19. Marginal strips created since 1987 have been notated on the land title and move when the boundaries of the river move. Since 1987, all previous strips set aside under section 58 Land Act 1948 have been deemed to be marginal strips. They do not move, however, when rivers move and can often be within or well away from the actual river or stream margin.

Esplanade reserves and strips

20. Section 229 RMA sets out the purpose of esplanade reserves and strips. They help to protect conservation values by maintaining or enhancing the natural character of riparian and coastal margins, water quality, and aquatic habitats and help with flood protection. They also enable public access to and along rivers, lakes and the coast, including access to undertake customary activities (such as gathering of mahinga kai).

21. Esplanade reserves may be required when land is subdivided or developed or when a road is stopped. Section 230 RMA provides that a 20 metre wide esplanade reserve is created when land beside a river (with an average width of three metres) is subdivided into allotments of less than four hectares, unless a plan rule or resource consent waives or reduces this.

22. They can also be created voluntarily. Land ownership is transferred to a territorial authority and they are classified as reserves under the Reserves Act 1977. The landward boundary is fixed, so does not change as the river moves.

23. Esplanade strips may be required by a rule in a plan, when land is subdivided or developed or when a road is stopped. They can also be created voluntarily by agreement. Esplanade strips are a legal instrument created between a landowner and a territorial authority. Land in the strip remains owned by the landowner.

24. The creation of a strip, and any conditions relating to its use and management, are noted on the land title. These can include excluding public access during certain times. The conditions are binding on every party having an interest in the land. Strips do not need to be formally surveyed.

25. Unlike esplanade reserves, the landward boundary of an esplanade strip moves as a river moves (e.g. bank erosion) so that the width of the strip remains unchanged.

Access strips

26. Access strips can be used to enable public access to or along water bodies or public land. They can be established (and cancelled) at any time by agreement between the landowner and the territorial authority under section 237B of the RMA. Access strips are surveyed and fixed. Ownership remains with the landowner.

Legal roads

27. In many cases when Crown land was subdivided in the 19th and 20th centuries, legal roads were set aside along rivers, lakes and the coast (as part of the Queen's Chain). These can be identified on cadastral maps. Like section 58 Land Act strips, they do not move when rivers change their course. In themselves they do not provide protection but they do provide a buffer. Any land uses on legal road (other than the right of public passage) require consent from the territorial authority.

Watercourse areas adjoining rivers protected by water conservation orders (WCOs)

28. The Conservation Act (section 23) provides for an overlying protective status of "watercourse area" for conservation land or private protected land with outstanding wild, scenic or other natural or recreational characteristics that adjoins any river, lake or stream protected by a WCO. Every watercourse area must be managed to protect the wild, scenic or other natural or recreational characteristics it had when the associated waterway was considered for WCO status, subject to the protective status that applies to the land and the WCO provisions. Watercourse areas are established by Order in Council on the recommendation of the Minister of Conservation. They require the landowner's consent if established over protected private land.

Protection Of Wildlife

Wildlife Act 1953

29. The Act safeguards designated species of wildlife including waterbirds, some invertebrates and amphibians throughout New Zealand. The Act enables the establishment of wildlife refuge, wildlife sanctuary or wildlife management reserve status over water bodies to control some activities (e.g. motor boat use) affecting wildlife.

Wildlife Regulations 1955

30. While the RMA contains the primary controls on contaminant discharges to water, Regulation 43A of the Wildlife Regulations provides for offences in relation to discharges that cause adverse effects on protected wildlife and their habitat in waters of any tenure. The regulations are rarely used by DOC.

31. DOC could more regularly use section 43A and section 39(4)–(7) Conservation Act to reinforce councils' enforcement responsibilities under the RMA.

Stautory Acknowledgment Of Rivers

Ngāi Tahu Claims Settlement Act 1998

32. The statutory acknowledgement instrument in the Ngāi Tahu Claims Settlement Act recognises Ngāi Tahu's particular cultural, spiritual historical and traditional associations with specified areas on Crown land and a number of rivers and

lakes such as the Tutae Putaputa/Conway, Hurunui, Paringa. Clutha and Waitaki Rivers. Statutory acknowledgements aim to improve the implementation of RMA processes, particularly decision-making in relation to notification of resource consent applications.

33. Local authorities within the Ngāi Tahu rohe (geographical territory) must record all relevant statutory acknowledgements in their plans and policy statements. Statutory acknowledgements empower the Crown agency responsible for the management of the area to enter into a deed of recognition providing for agreed input by Ngāi Tahu into management processes. This has facilitated Ngāi Tahu input into national park management plans and conservation management strategies and the rivers covered by these.

Managing Freshwater Fishing

Whitebait Fishing Regulations 1994

34. DOC manages the whitebait fishery focused on the young of the inanga, kōaro and banded kōkopu. Fishing is controlled using the Whitebait Fishing regulations, which set the whitebait season in the North and South Island, hours of fishing, specifications for the nets, screens and other gear that can be used and how, and offences.

Whitebait Fishing (West Coast) Regulations 1994

35. In addition to the provisions noted above, a schedule to these regulations lists 22 areas where whitebait fishing is prohibited on the West Coast to protect spawning areas and other key habitats.

36. DOC also seeks to protect whitebait habitat by encouraging landowners to fence off from stock riparian vegetation used for spawning.

Freshwater Fisheries Regulations 1983

37. These apply largely to sports fish but include provisions about freshwater conservation, including to protect fish passage and control liberations of introduced fish and weed species.

38. Regulation 43 requires mechanisms to allow fish passage to be provided when new culverts, fords, dams and diversions are constructed unless the Director-General gives written approval to do otherwise.

39. Regulation 65 controls freshwater fish species gazetted as "noxious" (e.g. rudd and koi carp) and sets out restrictions on their taking, possession and sale.

40. Regulation 68 enables the Minister of Conservation to establish faunistic reserves through a Gazette notice. The introduction of any plant and the taking or killing of any freshwater fauna is prohibited in faunistic reserves without the Director General's approval.

Fisheries (South Island Customary Fishing) Regulations 1999

41. The regulations enable mātaitai reserves (a recognised traditional fishing ground—see glossary) to be established over fresh water as well as coastal water but as the title indicates, only in the South Island. Mātaitai reserves are important traditional fishing areas or mahinga kai (food) with which tangata whenua (the indigenous people of an area) have a special relationship. Tangata tiaki/kaitiaki (guardians) chosen by the tangata whenua manage non-commercial fishing within the reserve by recommending bylaws to be approved by the Minister of Fisheries. Bylaws can restrict or prohibit the taking of fish or aquatic life (e.g. species, quantity, size, area) or the use of particular fishing methods. Bylaws can only apply to species managed under the Fisheries Act 1996, and not to species managed under the Conservation Act (e.g. trout). The Ministry of Fisheries consults on proposed bylaws before they are enacted.

42. The first freshwater mātaitai reserve was established in 2005 on a 10-kilometre reach of Southland's Mataura River. Bylaws prohibit the taking of tuna (eels) and kanakana (lamprey) and the use of fyke nets within the Mataura mātaitai.

Temporary closures under the Fisheries Act 1996

43. Sections 186A and 186B of the Fisheries Act 1996 allow the Ministry of Fisheries to temporarily close or temporarily restrict or prohibit a method of fishing in any area within New Zealand fisheries waters, including fresh water and tauranga ika (fishing grounds) for customary management purposes. Such closures can only last two years unless their objective is not achieved and tangata whenua apply for an extension. Their purpose is to improve the size and/or availability of depleted fish stocks, or to recognise and provide for the use and management practices of tangata whenua. Temporary closures or method restrictions may provide legal support for a rāhui (temporary restriction put in place by tangata whenua).

44. Anybody can suggest to the Ministry of Fisheries that a temporary closure or method restriction should be implemented. The Chief Executive must be sure that it will meet the intended purpose so must provide for tangata whenua input and participation, and have regard for kaitiakitanga when assessing a proposal.

River-Specific Legislation

Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010

45. The Act creates a new co-governance entity, the Waikato River Authority, to oversee river management. Waikato-Tainui are an equal partner with the Crown. The Authority is charged with giving effect to Te Ture Whaimana (vision and strategy for the river) reviewing it, and undertaking monitoring and reporting. The Authority has powers to request call-ins under the RMA and appoint accredited iwi commissioners to resource consent hearings related to the river. Te Ture Whaimana influences RMA decisions by Environment Waikato because it is included in the Regional Policy Statement and prevails over any national policy statements or the NZ Coastal Policy Statement in relation to the Waikato River. The legislation also provides for the development of a cross agency integrated river management plan and joint management agreements.

Guardians of Lakes Manapouri, Te Anau and Monowai (section 6X Conservation Act 1987)

46. The Minister of Conservation appoints the Guardians under section 6X Conservation Act 1987. Their functions include advising the Minister on any matters arising from the environmental, ecological, and social effects of the Manapouri-Te Anau power scheme on the rivers flowing in and out of Lakes Manapouri and Te Anau. They have the same role in relation to the effects of the Monowai power scheme on rivers flowing into and out of Lake Monowai. The Act charges the Guardians with having particular regard to the effects on social values, conservation, recreation, tourism, and related activities and amenities. The Guardians prepare an annual report to the Minister. The major rivers affected are the Waiau and Monowai Rivers.

Lake Wanaka Preservation Act 1973

47. One of the four purposes of the Act is to prohibit any works (except in an emergency) that vary or control the flow of the Clutha River between the lake outlet (the source of the Clutha River) and the confluence of the Clutha and Cardrona Rivers. The Act establishes the Guardians of Lake Wanaka to advise the Minister of Conservation and the Otago Regional Council on lake levels and flows.

Appendix 3: Water conservation orders: relevant sections from the Resource Management Act 1991

Section 2 Interpretation

amenity values means those natural or physical qualities or characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural or recreational attributes:

intrinsic values, in relation to ecosystems, means those aspects of ecosystems and their constituent parts that have value in their own right, including—

a) their biological and genetic diversity; and

b) their essential characteristics that determine an ecosystem's integrity, form, functioning and resilience:

When considering whether to recommend a water conservation order, the Special Tribunal and Environment Court, or Environment Canterbury Commissioners (for applications in Canterbury) must have "special regard" to the matters in section 199.

Section 199 Purpose of water conservation orders

(1) Notwithstanding anything to the contrary in Part 2, the purpose of a water conservation order is to recognise and sustain—

(a) outstanding amenity or intrinsic values which are afforded by waters in their natural state:

(b) where waters are no longer in their natural state, the amenity or intrinsic values of those waters which in themselves warrant protection because they are considered outstanding.

(2) A water conservation order may provide for any of the following:

(a) the preservation as far as possible in its natural state of any water body that is considered to be outstanding:

(b) the protection of characteristics which any water body has or contributes to, and which are considered to be outstanding,—

(i) as a habitat for terrestrial or aquatic organisms:

(ii) as a fishery:

(iii) for its wild, scenic, or other natural characteristics:

(iv) for scientific and ecological values:

(v) for recreational, historical, spiritual, or cultural purposes:

(c) the protection of characteristics which any water body has or contributes to, and which are considered to be of outstanding significance in accordance with tikanga Māori.

Section 200 Meaning of water conservation order

In this Act, the term water conservation order means an Order made under section 214 for any of the purposes set out in section 199 and that imposes restrictions or prohibitions on the exercise of regional councils' powers under paragraphs (e) and (f) of section 30(1) (as they relate to water) including, in particular, restrictions or prohibitions relating to—

(a) the quantity, quality, rate of flow, or level of the water body; and

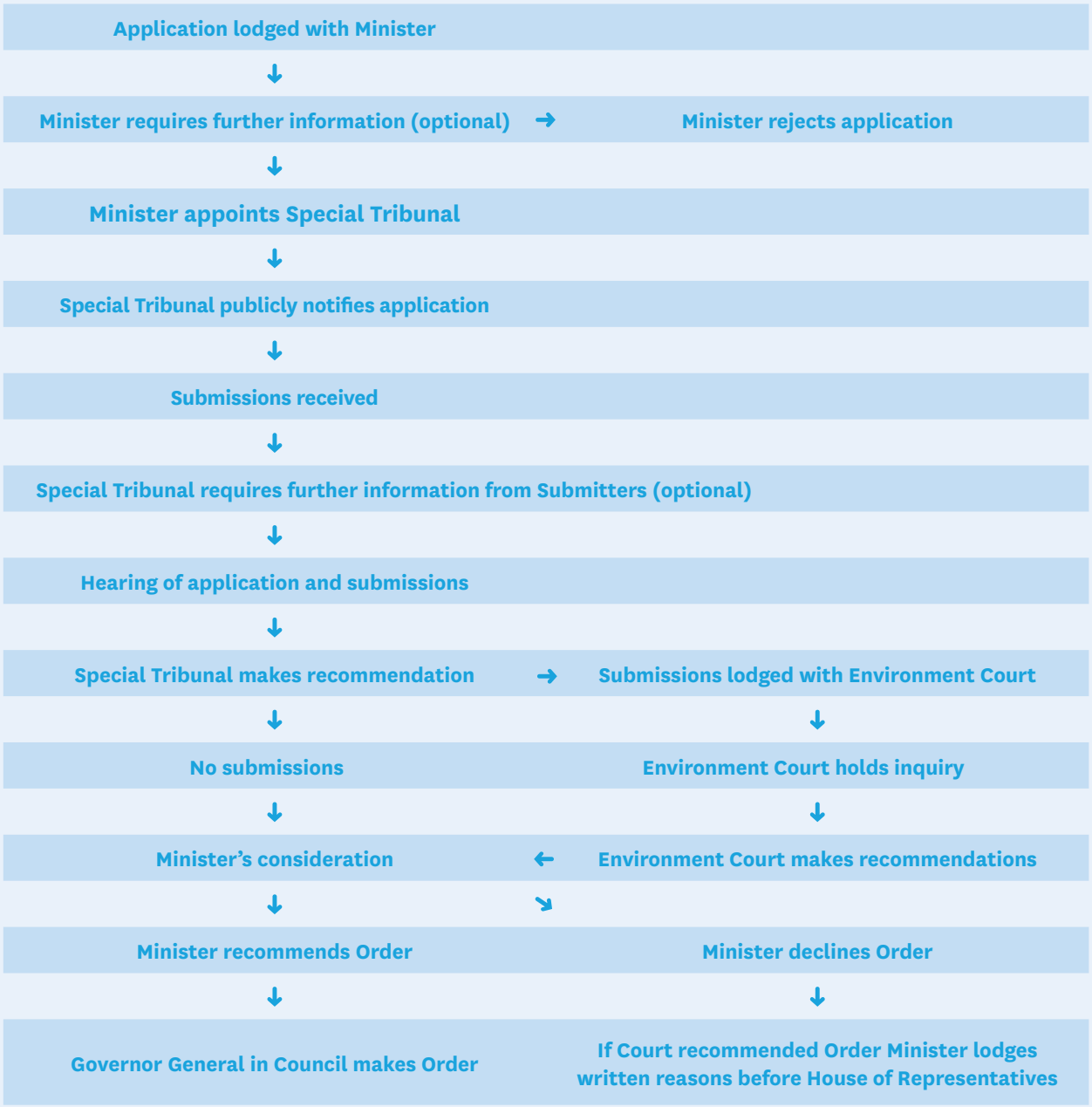
(b) the maximum and minimum levels or flow or range of levels or flows, or the rate of change of levels or flows to be sought or permitted for the water body; and

(c) the maximum allocation for abstraction or maximum contaminant loading consistent with the purposes of the Order; an

(d) the ranges of temperature and pressure in a water body.

Appendix 4: Process for water conservation orders (outside Canterbury)

Source: Mulcahy K, Peart R and Garvan N (2010) Managing freshwater: An EDS Guide, Environmental Defence Society at p 198. Reproduced with kind permission of the authors and the Environmental Defence Society.



Appendix 5: Water conservation orders (as at April 2011)

There are currently 16 water conservation orders (including one amendment) with applications to vary two existing orders under consideration.

Water body (including protected reaches)	Date of gazettal	Outstanding characteristics or features	Other considerations	Provisions and Protection provided
Pre RMA				
Motu River From and including the Motu Falls to the SH 35 bridge and five tributaries: Waitangirua Stream, Mangaotane Stream, Te Kahika Stream, Mangatutara Stream and part of the Takaputahi River below its confluence with Whitikau Stream.	1984	Not stated in WCO.	Permits maintenance of SH35 including bridges and for soil conservation and associated matters permitted	- River to be preserved as far as possible in its natural state. - Dams prohibited.
Rakaia River Mainstem and tributaries of both the Rakaia and Wilberforce Rivers upstream of the Rakaia /Wilberforce confluence, including the Harper River, Lake Heron and its inflowing streams, and Lake Coleridge/Whakamatua and its tributary streams.	1988	- Outstanding natural characteristic in the form of a braided river. - Outstanding wildlife habitat above and below the Rakaia River Gorge. - Outstanding fisheries, and outstanding recreational, angling, and jet boating features.		- Dams prohibited. - Order establishes a minimum flow at Rakaia Gorge (which varies monthly) and caps allocation for abstraction downstream of this. - Retain in their natural state the quantity and rate of flow of all natural water in the Rakaia River upstream of its confluence with the Wilberforce River, the Wilberforce River, and all tributaries of both the Rakaia and Wilberforce (including the Harper River), the quantity and level of Lake Heron, and the quantity and rate of flow of natural water in the lake's tributary streams. - Retain partially in their natural state (subject to replacement consents) the quantity and rate of flow of the wRakaia below its confluence with the Wilberforce River and Fighting Hill (Rakaia Gorge). - Retain in their existing state the quantity and level of natural water in Lake Coleridge, and the quantity and rate of flow in the lake's tributary streams; and the flow between of Fighting Hill recorder (Rakia Gorge) and the sea - Sets water quality standards for receiving water and prohibits discharges which would breach these.

Water body (including protected reaches)	Date of gazettal	Outstanding characteristics or features	Other considerations	Provisions and Protection provided
Lake Wairarapa	1989	- Outstanding wildlife habitat, partly created by natural fluctuations of water levels, particularly over the eastern shoreline.	- Continued operation of the barrage gates at the lake outlet is permitted	- No right to divert water from lake or to grant water rights which would "diminish significantly" the wildlife habitat.
Manganuioteao River Mainstem and tributaries of the Manganuioteao, the Mangaturuturu and Makatote Rivers, and the Waimarino and Orautoha Streams.	1989	- Outstanding wild and scenic characteristics. - An outstanding wildlife habitat for the blue duck/whio (*Hymenolaimus malacorhynchos*). - An outstanding recreational fishery.		- Dams prohibited - Retain in their natural state the quantity and rate of flow of the Manganuioteao River upstream of its confluence with Waimarino Stream; the Makatote and Mangaturuturu Rivers. - No takes to reduce the natural flow by more than 5 % or reduce the following reaches below the minimum flow for the Manganuioteao River downstream of its confluence with Waimarino Stream, Waimarino and Orautoha Streams. - Sets water quality parameters and prohibits discharges which would not comply.
Lake Ellesmere	1990	- Outstanding wildlife habitat.		- Sets lake levels for artificial opening and closing. - Prohibits any damming, stopbanking, polderisation or drainage of any part of the lake that is inconsistent with the lake opening and closing regime established in the Order except for research purposes and replacement consents and maintenance of existing drains and stopbanks.
Ahuriri River Ahuriri River and mapped tributaries from its source to its entry into Lake Benmore, associated ponds, tarns and lagoons part of Omarama Stream	1990	- Outstanding wildlife habitat - Outstanding fisheries. - Outstanding angling amenity.	- Allows consent applications for maintenance of roads, bridges, pylons and public utilities, soil conservation, flood protection and erosion control work research and emergency sewage discharges.	- Prohibits dams in waters covered by the Order. Any dam outside protected waters must not affect flow regime for waters protected by the Order. - Quantity and level of water in all lakes, ponds, tarns, lagoons and streams (other than Omarama Stream) to be retained in their natural state. - Establishes a minimum flow regime for Ahuriri River and Omarama Stream and prohibits any takes that are inconsistent with this. - Establishes broad water quality standards and prohibits discharges that would breach these beyond the mixing zone.

Grey River Ahaura River downstream of Hamers Flat. Blue Grey River , its tributaries and Lake Christabel	1991	- Incised Ahaura Gorge with its meandering pattern is an outstanding natural characteristic. - Outstanding scenic features, particularly Ahaura Gorge and Lake Christabel	- Allows consent applications for road, bridge and pylon maintenance and soil conservation and flood protection works.	- The waters of Lake Christabel and the Blue Grey River must be retained in their natural state. - Prohibits any water permits for hydro generation, any dam on the Ahaura River upstream of Hamers Flat, and any dam downstream of the Ahaura Gorge which would affect flows or water levels in the Gorge. - Any water right granted for mining or other purposes in the Gorge must not detract from outstanding characteristics and features.
Under the RMA				
Rangitikei River - from its confluence with Makahikatoa Stream to Mangarere Bridge; - the Whakaurekau River and its tributaries; and the Kawhatau River and named tributaries	1993	- Upper Rangitikei River have outstanding wild and scenic characteristics; and - outstanding recreational, fisheries, and wildlife habitat features. - Middle Rangitikei River has outstanding scenic characteristics; and outstanding recreational and fisheries features.	-Allows granting of consent applications for road, bridge and maintenance and soil conservation and flood protection works. - Provides for existing use rights and replacement consents	- Prohibits dams on the upper and middle river. - Establishes broad water quality standards which any discharges must comply with after reasonable mixing - Quantity and rate of flow in the upper river must be retained in their natural state - Rate of flow of middle river must not be reduced by more than 5 % of natural flow
Kawarau River - Schedule 1 lists waters to be preserved in their natural state and Schedule 2 protected waters, and their outstanding characteristics. - Schedule 1 includes: - Part Dart River mainstem and some of its tributaries, - Route Burn and its tributaries, - Part Rees River mainstem and some of its tributaries Greenstone River mainstem including Lake McKellar and its tributaries. - Part Caples River mainstem, Lochnagar and Lake Creek. - Schedule 2 includes: - Kawarau River to Lake Wakatipu control gates - Nevis River mainstem - Shotover River mainstem - Part Dart and Rees Rivers - Lake Wakataipu - Lochy River - Von River - Diamond Lake and Reid Lake - Nevis wetland on Roading Lion Creek	1997	Outstanding amenity and intrinsic values meriting preservation in natural state as contributing to: - people's appreciation of pleasantness of waters. - aesthetic coherence - cultural and recreational attributes - biological and genetic diversity of ecosystems - essential characteristics that determine the ecosystem's integrity, form, functioning and resilience Outstanding characteristics as - habitat for terrestrial and aquatic organisms -as a fishery - for wild scenic, and natural characteristics - for scientific value - for recreational and historical purposes - significant in acccordance with tikanga Māori	- Allows granting of consent applications and regional rules for maintenance or protection of network utility operation, maintenance of soil conservation or river protection works, roads, bridges and pylons, research into restoration and enhancement, and replacement consents for existing lawful uses. - Operation of Clyde power station and changes in Lake Dunstan levels unaffected	- Schedule 2 lists the specific prohibitions and restrictions on the exercise of regional council's powers in section 30 (1) RMA to grant consents or make regional rules for specific waters. - Prohibits damming. - Requires maintenance of fish - passage, specified water quality classifications. - Requires braided character of rivers such as the Dart and Rees to be maintained. - Hydro-electric generation only allowed on Nevis River if restrictions complied with e.g. any dam sustains flows which allow kayaking in Nevis Gorge.

Water body (including protected reaches)	Date of gazettal	Outstanding characteristics or features	Other considerations	Provisions and Protection provided
Mataura River - from source to sea and tributaries upstream of confluence with Otamita Stream - Waikaia River and tributaries - Otamita Stream - Mimihau Stream and Mokoreta River and their tributaries	1997	- Outstanding fisheries - Outstanding angling amenity features	- Allows granting of consent applications and regional rules for fisheries and wildlife habitat research, roads, bridges, pylons and other public utilities, soil conservation and river protection activities, and stockwater reservoirs.	- Establishes minimum flow regimes for Mataura and Waikaia Rivers which must not be breached. - Prohibits granting of consent applications and regional rules which would contravene the Order. - Prohibits dams on the Mataura and Waikaia Rivers. - Sets water quality standards for protected waters and prohibits discharges which do not comply after reasonable mixing. Standards differ depending on the reach.
Buller River - Schedule 1 lists waters to be maintained in their natural state including Travers, Sabine and D'Urville Rivers, Lakes Constance, Rotoiti and Rotoroa and Daniells, Deepdale, Ohikanui, Blackwater, Ohikati, Gowan and Mangles rivers and part Owen, Matakitaki, Glenroy, Maruia rivers. - Schedule 2 list protected waters including Buller River and Gowan, Mangles, Tutaki, Owen and Fyfe rivers and Mole Stream. - Schedule 3 – Lakes Rahui, Maori and Matiri and Matiri River - The schedules also identify relevant outstanding characteristics or features.	2001 (amended 2008)	- Outstanding recreational characteristics - Outstanding wild and scenic characteristics - Outstanding fisheries or wildlife habitat features - Outstanding scientific values	- Allows granting of consent applications and regional rules for minor water uses by DOC for conservation management. - Allows granting of consents for fisheries and wildlife habitat research, hydrological and water quality investigations, roads, bridges and network utility operation and soil conservation and river protection works. - Allows replacement consents for Maruia Springs Thermal Resort	- Quality, quantity, level and rate of flow of Schedule 1 waters are to be retained in their natural state; Schedule 2 waters to be protected in accordance with conditions in the Order. - Schedules 2 and 3 set out restrictions and prohibitions which apply to specific reaches and water bodies. - Prohibits damming in specified waters - Regional council cannot grant resource consents or make rules which would not maintain the channel cross section, meandering pattern and braided character. - Limits alternations in natural flow in Schedule 2 rivers to 5% - 15 %. - Establishes flow regime for Gowan River. - Requires resource consents and regional plans to maintain lake levels in Lakes Rahui, Maori and Matiri within their natural range. - Requires maintenance of fish passage. - Sets water quality standards including limits on turbidity/ suspended solids for Schedule 2 and 3 protected waters.

Motueka River - Schedule 1 lists waters to be retained in their natural state eg North and South Branches of Wangapeka River, upper Motueka above Gorge) and Schedule 2 waters to be protected and their relevant outstanding characteristics or features. - Schedule 3 list waters to be protected for their contribution to outstanding features.	2004	- Outstanding recreational characteristics - Outstanding fisheries and wildlife habitat features - Outstanding scientific values - Outstanding wild and scenic characteristics (e.g Part of the Motueka and Wangapeka Rivers contain or contribute to an outstanding brown trout habitat and fishery, nationally outstanding habitat for blue ducks/whio, waters in a karst system that demonstrate outstanding qualities, provide specific scientific and recreational values and have wild, scenic and recreational characteristics)	- Allows applications for water permits for management of conservation land, roads, bridges, pylons and other public utilities, soil conservation and river protection works, fisheries and wildlife habitat research, hydrological and water quality investigations, and release of water from water augmentation schemes in catchment	- Quality, quantity, level and rate of flow of Schedule 1 waters are to be retained in their natural state; Schedule 2 and 3 waters are to be protected in accordance with provisions in the Order. - Prohibits dams, including structures which prevent brown trout passage - Establishes minimum flow regimes and restrictions on alternations of river flows and form for Schedule 2 and 3 rivers - Requirement to maintain fish passage - Sets water quality standards including limits on turbidity/ suspended solids for protected waters and prohibits discharges which do not comply after reasonable mixing.
Mohaka River - Mohaka River and its tributaries from headwaters to Te Hoe Gorge	2004	- Outstanding trout fishery in the upper river, Outstanding scenic characteristics in Mokonui and Te Hoe Gorges - Outstanding amenity for water based recreation	- Allows granting of water permits and regional rules for gravel extraction, roads, bridges, river crossings, pylons and other public utilities, and soil conservation and river protection provided do not detract from outstanding characteristics	- Prohibits dams unless less than 3 m. high, on a tributary and they do not detract from outstanding characteristics or features. - Water permits and regional rules for other purposes must not detract from outstanding characteristics and features.

Water body (including protected reaches)	Date of gazettal	Outstanding characteristics or features	Other considerations	Provisions and Protection provided
Rangitata River - Schedule 1 lists waters to be retained in their natural state and their relevant outstanding characteristics or features. It includes Clyde and Havelock Rivers and all their tributaries, and their relevant outstanding characteristics or features. - Schedule 2 lists waters to be protected in accordance with provisions in the Order and their outstanding characteristics. It includes the whole of Rangitata mainstem below Clyde/ Havelock confluence, tributaries - Brabazon Fan, Black Mountain Stream , Deep Creek, Deep Stream, Ealing Springs and McKinnons Creek. - Schedule 3 lists waters to be protected for their contribution to outstanding features, and the features to be maintained – Rangitata River and all its tributaries below Clyde/Havelock confluence and hydraulically connected groundwater in lower catchment	2006	- Outstanding amenity and intrinsic values including outstanding salmon fishery - Outstanding recreational values – upper river for jet boating, rafting, and canoeing; gorge and lower river – kayaking and rafting - Outstanding habitat for terrestrial and aquatic organisms including outstanding native bird habitat in upper river above gorge, outstanding habitat for black fronted terns – lower river below Arundel bridge; outstanding habitat for macro-invertebrates – whole river - Outstanding wild, scenic and other natural characteristics - upper river and gorge - Outstanding scientific and ecological values as a braided river system and - Outstanding historical, spiritual and cultural characteristics - Outstanding significance in accordance with tikanga Māori	- Allows granting of consent applications and regional rules for minor water uses by DOC for conservation management. - Allows granting of consent applications for fisheries and wildlife habitat research, hydrological or water quality investigations, roads, bridges, pylons and network utility operations, soil conservation and river protection activities, gravel extraction which does not materially alter channel cross section, meandering pattern or braided river characteristics. - Allows granting of replacement consents for Rangitata Diversion Race.	- Prohibits damming in Schedule 1 and 2 waters. - Prohibits damming in Schedule 3 waters which would materially alter sediment flow or reduce bird habitat. - Establishes a detailed flow management regime which establishes minimum flows for the Sept/May and May/ September, requires 1:1 sharing between the river and water abstraction above an initial allocation band, caps allocation. - Restricts takes from hydraulically connected groundwater which would affect tributary flows in lower river - Requires maintenance of fish passage and fish passage on any intakes - Restrictions to ensure the maintenance of water quality. - Establishes water quality standards and for Schedule 2 and 3 waters and prohibits granting of consents or regional rules which do not comply after reasonable mixing.
Oreti River - Oreti mainstem - Weydon Burn and Windley River, and other tributaries upstream of Lincoln Hill - Schedule 2 lists waters to be protected for their contribution to outstanding features includes hydraulically connected groundwater	2008	- Outstanding habitat for brown trout - Outstanding angling amenity - Outstanding habitat for black billed gulls - Outstanding significance in accordance with tikanga Māori	- Allows granting of consent applications for roads, bridges, and network utility operations, soil conservation and river protection works, fisheries and wildlife habitat research , protection of human or animal health	- Prohibits dams on Oreti River, Weydon Burn and Windley River and tributaries - Requires maintenance of fish passage - Prohibits discharges which reduce water quality outside a reasonable mixing zone.

Appendix 6: New Zealand Conservation Authority freshwater principles

New Zealand's freshwater resources are approaching crisis point.

These principles are a tool to guide the assessment of the New Zealand Conservation Authority's role, its contribution to, and/or response to issues relating to freshwater management.

These principles acknowledge the interaction of freshwater with the land from the mountains to the open sea and recognise that freshwater is essential to all life. It exists in various states, described by the hydrological cycle: in the atmosphere, as snow and ice, and as liquid water both above and below ground, some of which is geothermal in nature.

Water is only in part a renewable resource.

The Authority believes that current and future generations of New Zealanders all have the right to enjoy the benefits of our common freshwater resources, so that we can all fully enjoy the environmental, social, cultural and economic benefits associated with freshwater.

The Authority is concerned that economic drivers are dominating the management of freshwater issues to the detriment of other values and believes freshwater management requires taking a long -term, holistic approach, to conserve and protect freshwater it for all its many uses and values.

Governance

1. Freshwater is a taonga - a treasured and common resource vital to all our lives and must be respected and managed for the benefit of all the people and natural ecosystems of New Zealand.
2. Freshwater environments should be managed in an integrated, long-term, whole-of-catchment, way that recognises the complex inter-relationships of the various components and values.
3. Decisions about the allocation of water must be made in the context of the whole catchment, region and ecosystem, encompassing the range of environments, flow regimes, landforms and landscapes.
4. There should be clear national policy to address competing values and uses.
5. Decision-making should provide for public and tangata whenua participation at all levels form community to Government, and be informed by principles of Kaitiakitanga, stewardship and traditional knowledge as well as scientific understanding.
6. The quantity and quality of freshwater should be regularly monitored; new information and research results reviewed, and management continually adjusted to incorporate these.
7. Where there is insufficient information, or effects may be irreversible, the precautionary principle should apply.
8. Use of water for drinking (by humans and animals) has priority over other consumptive uses.
9. Any allocations granted should be based on evidence of environmental sustainability, fairness and equity, rather than greatest potential economic gain, and should preclude any possibility of on-selling or trade.

Protection

10. Freshwater management should provide for the protection of all instream values especially the connectivity of water bodies, their riparian margins, and the protection of indigenous biodiversity, natural character, intrinsic, recreational and aesthetic values, wilderness values, historic and wāhi tapu values and ecosystem services.

11. Priority should be given to New Zealand's unique indigenous flora and fauna.
12. Indigenous aquatic species should be present in natural abundance and be able to, if their natural lifecycles require, freely migrate up- and downstream, to and from the sea, through river mouths and in and out of lakes.
13. The role of rivers, lakes and their outlets in provision of sediments for natural coastal processes should be recognised.
14. Freshwater management should provide for the rehabilitation of degraded water bodies and their margins.
15. Freshwater management should include prevention of the establishment of new pests and provide for the containment/reduction/elimination of existing ones.
16. Freshwater management should provide for the provision of open space adjoining freshwater bodies and access to estuaries, lakes and waterways for the benefit, recreational use and enjoyment of the public.

Sustainability

17. Freshwater management should ensure that any use of water resources, and the indigenous species therein, is ecologically sustainable and managed in a way that maintains its potential for future generations.
18. Water should be safe for both swimming and food harvesting.
19. Freshwater management must address the cumulative effects of both abstractive uses and discharges.
20. Reduction or elimination of water pollutants should occur at their source, rather than clean up and remediation after environmental damage has been done; land uses creating diffuse-source pollution must therefore be monitored as stringently as point-source discharges.
21. Environmental outcomes for freshwater should be based on the values and physical characteristics of the particular waterway.
22. Freshwater management regimes should acknowledge the changes brought about by natural processes including floods, droughts and climate change.

Management

23. Authorised uses should generally be time-limited and reviewable and contain conditions specific to timing and quantity of abstraction.
24. New Zealand needs a national water quality- and quantity- monitoring network that provides comprehensive coverage of flowing waters, lakes and wetlands, capable of providing data that is compatible across regions.
25. Collected data should be used for research and modelling to connect precipitation and river flows enabling greater understanding and prediction of flows and river behaviour.
26. Resources are required to expand management capability and provide appropriate hydrological skills at regional level, and hydrological modelling skills at a national level.

Footnote: These principles should be read in conjunction with the other current NZCA principles and the template for section 4 of the Conservation Act (giving effect to the principles of the Treaty of Waitangi).

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