

# **ARE REGIONAL COUNCILS PAST THEIR USE-BY DATE?**

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## **1 INTRODUCTION**

Regional councils and their prime enabling legislation for resource management, the Resource Management Act (RMA), have been in place for nearly 20 years. It is relevant to look at whether the arrangements are effective and whether any changes would facilitate improvements in resource management.

This paper is written from the perspective of the Canterbury region where there has been a long standing issue with air quality in Christchurch and rural towns in Canterbury, and a more recent issue with water management with the growth in irrigated agriculture, particularly associated with conversions to dairying.

The paper covers four main themes:

- mechanisms and constraints for effective functioning of regional councils;
- issues related to water management in the Canterbury region;
- trends in environmental governance;
- governance aspects that are past their use-by date and where is the future of resource management.

## **2 MECHANISMS AND CONSTRAINTS FOR EFFECTIVE FUNCTIONING OF REGIONAL COUNCILS**

The Resource Management Act provides two main mechanisms for regional councils to manage natural resources: regional plans and consents. In contrast to land, where a land owner can undertake any activity unless constrained by rules in a plan or conditions on a consent, for water no activity is authorised unless there is a rule in a plan or a consent that enables that activity to be undertaken.

### **Christchurch Wastewater Outfall**

The Resource Management Act has been an effective tool in addressing point source discharges. A good example is the wastewater discharge for the Christchurch sewage treatment plant. The current discharge is to Avon Heathcote Estuary. Christchurch City Council applied for a consent to continue the discharge to the estuary. While this is a lower cost solution, it was not the preferred option by the regional council or the community. Their preference was for an ocean outfall. The City was granted a six year consent (to September 2009) to continue its estuary discharge and then replace it with an ocean outfall. The outfall is close to completion. The outcome will be a reduction of 90% of the nitrogen load and 98% of the phosphorus load to the estuary.

## Air Quality

However, the Resource Management Act is not so effective in dealing with diffuse sources. Wintertime air quality in Christchurch has been a problem for more than 50 years. The dominant source is domestic wood heaters with about 80% of the particulate emissions coming from open fires and wood burners. After extensive scientific investigations the regional council notified an Air Plan and commenced a Clean Heat programme. The Air Plan has recently cleared all of the legal processes and will become operative for winter 2010.

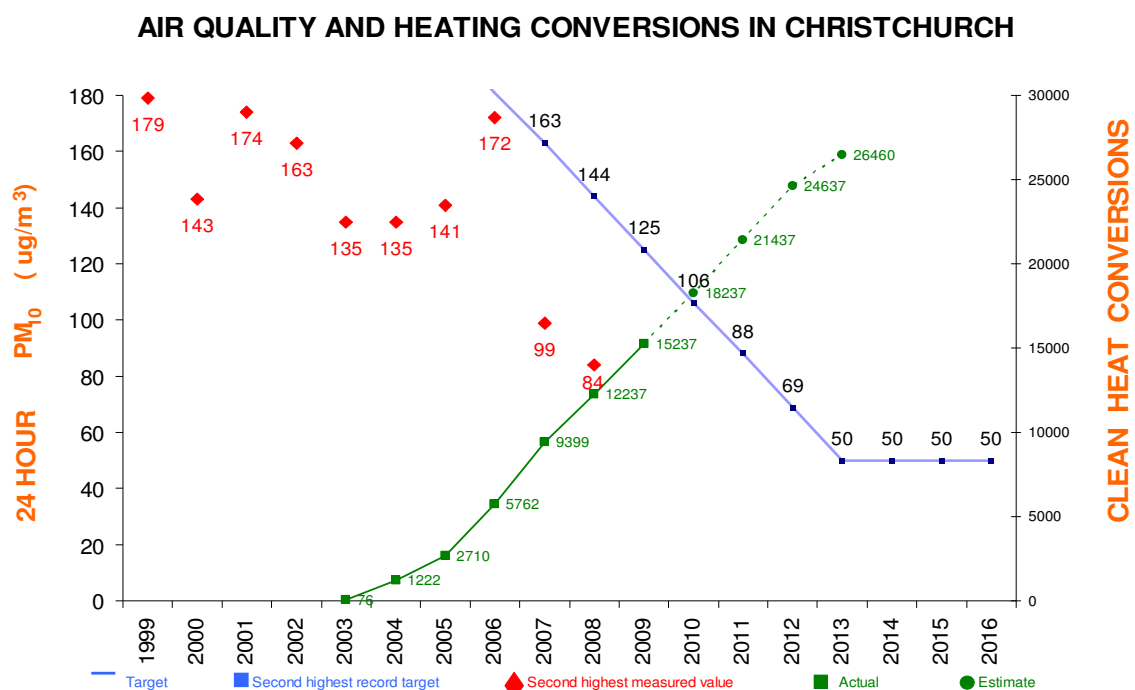
The Clean Heat programme provides subsidies to households to convert to cleaner forms of heating. It provides full assistance to homeowners who qualify for rates rebate and partial assistance to others whose primary heating source is an open fire or high-emission wood burner. There is also a scheme for rental properties. It is funded by a targeted rate on properties in the Christchurch airshed – these are the beneficiaries of cleaner air.

The programme commenced in 2003 with a target of 26,000 conversions to be achieved by 2012 which was the target for achieving the air quality standard in the Air Plan of one exceedence of 50  $\mu\text{g}/\text{m}^3$  of particulate averaged over 24 hours (measured as  $\text{PM}_{10}$  – particles smaller than 10 microns). More than half the targeted conversions have been achieved with measurable improvements in air quality.

Figure 1 shows the number of heating conversions (green line) and measured air quality (red diamonds) – the second highest particulate value during a winter period. The figure also shows the air quality target (blue line). The second highest reading was in the range 130 to 180  $\mu\text{g}/\text{m}^3$  from 1999 to 2006. Since then it has been in the range 80 to 100  $\mu\text{g}/\text{m}^3$ .

These improvements in air quality have resulted from the Clean Heat incentives programme while waiting for the Air Plan to progress through the Resource Management Act hearing and court processes.

**Figure 1**



## Pahau Catchment

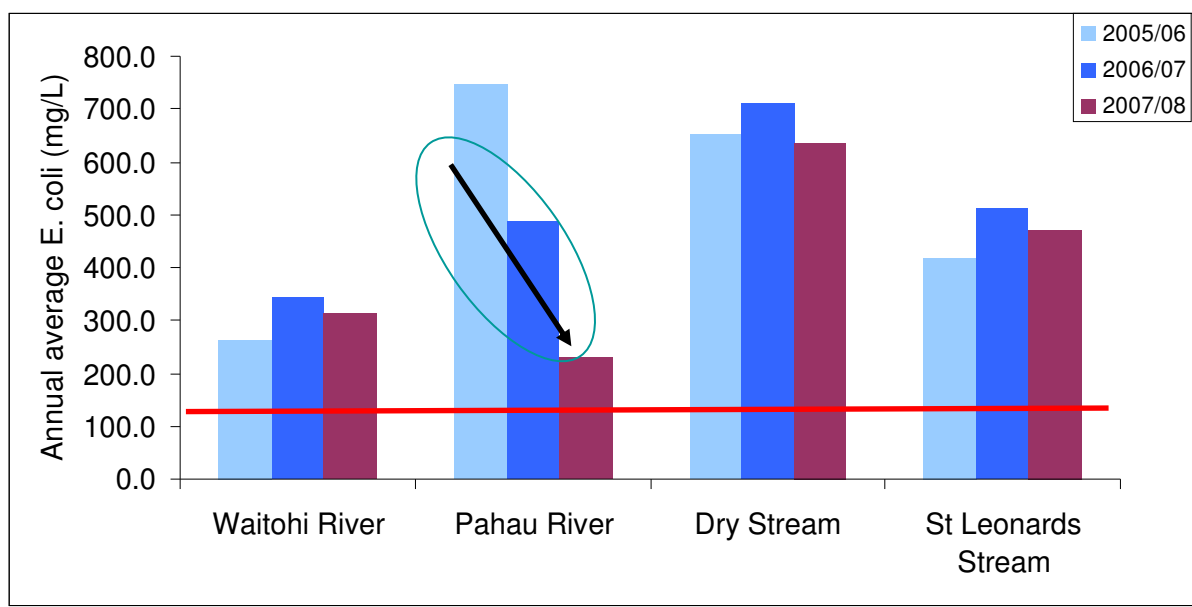
Concerns about water quality at the mouth of the Hurunui River led to investigations of the source of nutrients and bacterial contamination within the Hurunui catchment. The Pahau catchment was found to be the major contributor primarily associated with diffuse sources of surface runoff and groundwater seepage. Although the effluent disposal systems had been consented, management of diffuse sources associated with land use practices is more problematic.

Environment Canterbury launched a 'resource care' programme with the farmers in the Pahau catchment to address nutrient and bacterial contamination of water quality. After several meetings and discussions the catchment community committed to taking actions to improve water quality. Environment Canterbury committed to providing technical advice and water quality monitoring.

Examples of the voluntary changes included farmers changing irrigation practices to reduce runoff and seepage, farmers installing dams to catch runoff, groups of farmers along stream reaches putting in stock fences and riparian plantings along streams and building stock crossings, and, the irrigation company adjusting distribution and managing volume more closely.

Figure 2 shows the results of the monitoring for bacterial contamination for the Pahau and adjacent catchments over the last three years. It can be seen that there has been a threefold reduction in bacterial contamination due to the voluntary and collaborative approach in the Pahau catchment. There has been no change in the other catchments. The success of the Pahau catchment collaborative approach has led to similar programmes being put in place in other catchments.

**Figure 2 Impact of Community Programme on *E.Coli* Bacteria**



## **Christchurch Bus System Performance**

While resource management is a primary function of regional councils, it is not the only function. Regional management functions include pest management, civil defence, regional land transport and public passenger transport (Environment Canterbury, 2009).

A survey by the Ministry of Transport (2006) of public passenger transport systems in cities in Australia and New Zealand, the Christchurch Bus System performance was evaluated as follows:

- the greatest relative increase in number of bus boardings;
- significant increases in bus boardings per person;
- the greatest relative increase in vehicle kilometres;
- low average bus fares;
- the lowest public bus funding per boarding;
- the most competitive market;
- integrated planning, integrated ticketing and real-time information systems;
- the lowest average fleet age;
- the highest percentage of wheelchair accessible buses.

## **3 ISSUES RELATED TO WATER MANAGEMENT IN THE CANTERBURY REGION**

This section describes the significance of water in Canterbury and the pressures that current demand is placing on the sustainability of the resource. Shortcomings of the RMA in managing a constrained resource and the need for a paradigm shift in water management are identified.

### **Significance of Water in Canterbury**

Water is a critical ingredient for the Canterbury region, which allocates 54% of New Zealand's water, has 67% of the country's irrigated land, generates 24% of the nation's power through hydroelectricity, has 65% of the country's hydro storage and provides a high quality water supply to its major city without the need for treatment. Water also creates and sustains Canterbury's world-famous braided rivers, high country and coastal lakes, as well as lowland streams and wetlands. Canterbury is also the driest region in New Zealand in terms of potential evapotranspiration deficit. Thus both the region's economy and its environmental sustainability are highly dependent on water (Jenkins, 2007).

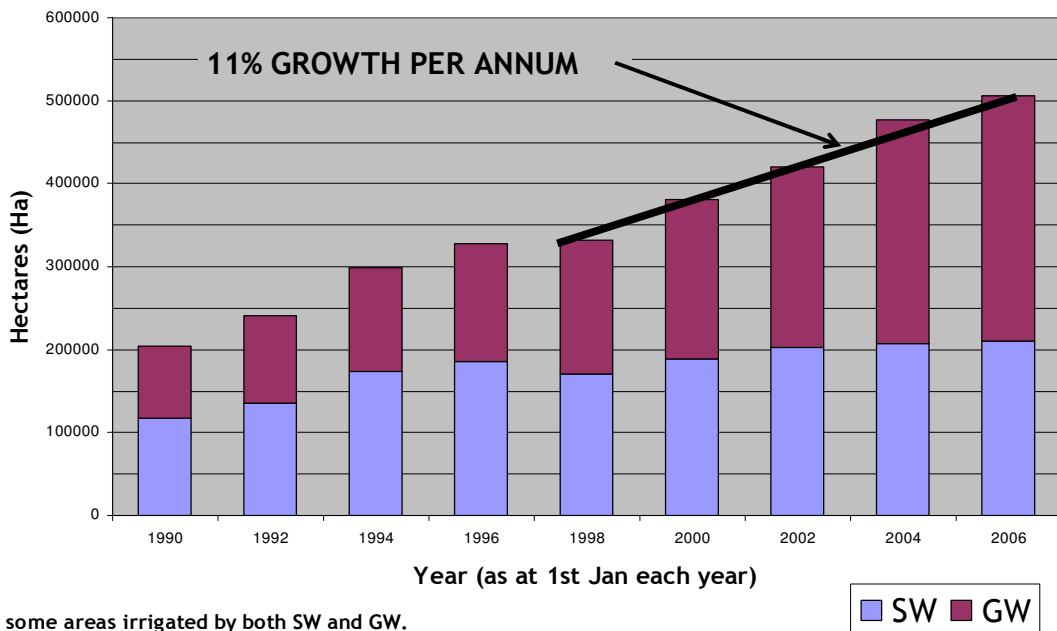
There has been a significant increase in irrigation in Canterbury in the last 20 years. Based on Environment Canterbury's consent records, in 1985 there were about 150,000 hectares of land consented for irrigation in the region. In 2006, this has increased to 560,000 hectares – a 270% increase in those 21 years. In recent years there has been an 11% growth per annum in consented irrigated area (refer Figure 3).

## Pressure on Aquifer Systems

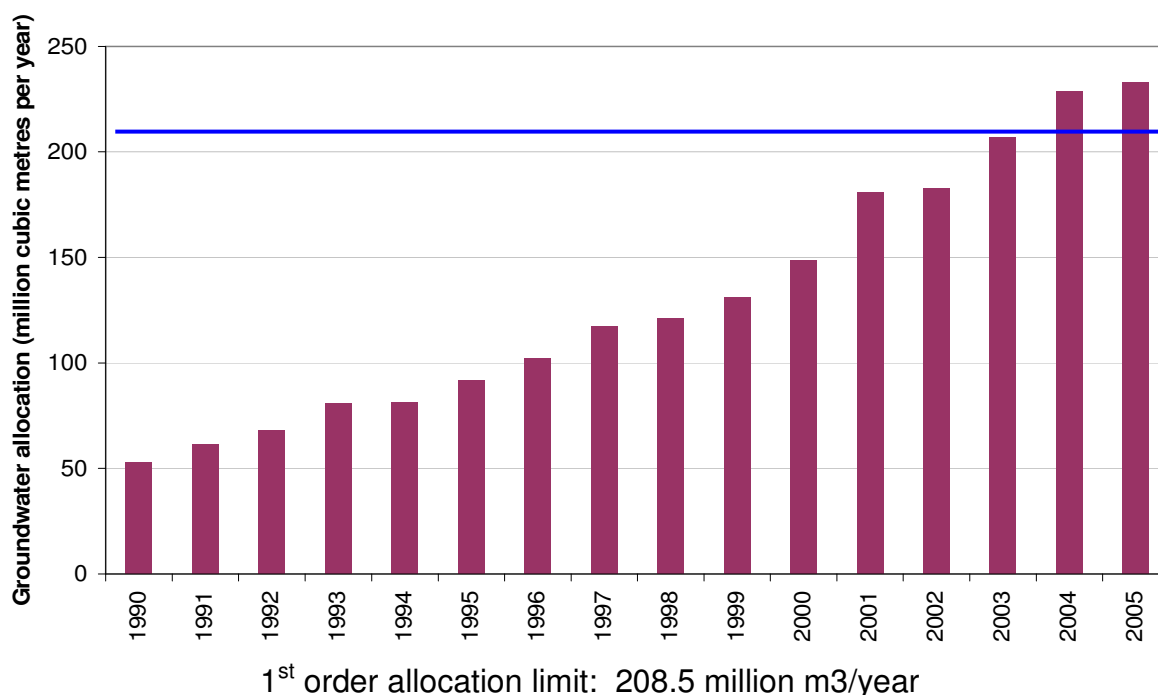
Groundwater allocation limits and effective groundwater allocations were estimated for groundwater zones in the Canterbury region. These estimates were undertaken on a precautionary basis where uncertainty of information the benefit of doubt was given in favour of protection of the resource. When the effective allocation exceeded the allocation limit, the zone was considered to be fully allocated and defined as a “red zone”. Unless better information was made available to indicate additional availability of water, it was recommended that no further allocations be granted in that zone. Figure 4 shows the growth in groundwater allocated in the Rakaia/Selwyn zone in mid Canterbury. This zone was declared a red zone in 2004 when the first order allocation limit had been reached.

**Figure 3**

### Increase in Consented Irrigated Area



**Figure 4 Development in the Rakaia-Selwyn Groundwater Allocation Zone Since 1990**



### Environment Court Decision

The first recommendation for decline of consents because the sustainability limits of the groundwater zone had been reached was accepted by commissioners but appealed in the Environment Court. Of particular significance in the Rakaia Selwyn zone was the cumulative impact of all withdrawals from the zone on the aquatic health of spring-fed lowland streams on the coastal margins of the zone.

The Court's conclusion on whether abstractions in the upper part of the Rakaia Selwyn groundwater zone will affect groundwater-fed lowland streams was:

“We have concluded that there is no probative evidence to support the alleged link between abstractions in the Te Pirita area and the effect on lowland streams”<sup>1</sup>

The Court considered the precautionary approach as too conservative and granted the applicant a substantial proportion of the volume sought.

With the uncertainty of streamflow measurement of 8% and the time delays in groundwater movement it is not possible to provide probative evidence of contribution to cumulative effects of an individual take that represents 2% of the total take. In the absence of a precautionary principle in the Resource Management Act,

<sup>1</sup> Source: Decision – Lynton Dairy Ltd v Canterbury Regional Council

management of cumulative effects to meet a court test of “probative evidence” is problematic.

## **Allocation of Water**

The current method for allocating water under the provisions of the Resource Management Act is on the basis of first-come first-served. Where there is an unlimited supply of water available for allocation, then this is a reasonable basis for allocation so long as potential adverse effects are avoided or mitigated. However where water availability is becoming constrained then allocation based on first-come first-served does not ensure that water is allocated to most productive use. Also it is leading to increasing legal battles over what constitutes “first-come”.

In a recent Court of Appeal case the decision commenced with the statement:

“This case concerns competing resource consent applications to take water from the limited free volume available from the Waimakariri River.

The RMA says nothing specific about the priority of competing claims to take from a natural source.”<sup>2</sup>

## **Paradigm shift needed in Water Management**

For the management of water in Canterbury there is a need for a paradigm shift in water management. Some of the key changes needed are:

- Water allocation and availability which addresses sustainability limits and climate variability.
- Management of cumulative effects of water takes and land use intensification.
- Shift from effects management of individual consents to integrated management based on water management zones.

The need for such a shift has been reinforced by recent comments of one the principal architects of the RMA, Sir Geoffrey Palmer, who stated:

“The provisions of the RMA relating to water haven’t actually worked out very well. They need revision. In many ways, New Zealand had a lot of water, we thought, when the act was designed, but now we realise it’s a scarce and valuable resource. The boom in dairying has certainly exacerbated that.”<sup>3</sup>

A similar view on the inadequacies of the RMA for managing Canterbury’s water management issues was expressed by Professor Gunningham in a review of governance arrangements for water in Canterbury:

“...neither of the principal options through which water can be allocated under the RMA – regional plans and consents – is capable of effectively constraining water takings or of ensuring allocation to its highest value use.

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<sup>2</sup> Source: Court of Appeal decision – *Central Plains Water v Ngai Tahu Properties Limited*, 19 March 2008

<sup>3</sup> Source: *The Press*, 9 June 2008

Moreover, the RMA does not protect the environment by invoking the precautionary principle and the courts' narrow interpretation of cumulative 'environmental effects' has further limited the reach of the Act."<sup>4</sup>

## **4 TRENDS IN ENVIRONMENTAL GOVERNANCE**

Approaches to environmental governance of natural resources have evolved since the RMA was first introduced. With the government policy of establishing an Environmental Protection Authority the issue of improving environmental governance is getting some attention. This section of the paper considers the functions that were traditionally given to EPAs and then examines how the EPA model has evolved in Australia since its introduction. There have also been developments in thinking on environmental governance and environmental regulation that have relevance to New Zealand. These developments are also described.

### **Typical EPA Functions**

When EPAs were established in many jurisdictions in the 1970s and 1980s they were typically given the following roles:

- **Setting environmental policy and standards:** this involved the definition of policies for environmental issues such as water and air quality and management of waste, and, the setting of environmental quality standards to protect human and ecological health.
- **Assessing effects of proposals:** EPAs were introduced with legislation requiring the assessment of the environmental effects of new development proposals. EPAs were typically given the role of administering the assessment process, assessing the acceptability of development proposals and defining conditions on development relating to managing or mitigating adverse effects of these developments.
- **Compliance monitoring and enforcement:** legislative requirements for controlling discharges to the environment were also introduced at this time. EPAs were also given the responsibility for monitoring the compliance with discharge licences and the conditions imposed on new developments.
- **Environmental science and investigations:** to support the policy making, standards setting, impact assessment and compliance monitoring functions, EPAs undertook investigations. This introduced an environmental science capability into EPAs.

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<sup>4</sup> *Source: Innovative Governance and Regulatory Design: Managing Water Resources, N Gunningham, Australian National University*

## **Current EPA Models in Australia**

Since the establishment of EPAs in Australia as separate agencies there have been a number of developments in organisational arrangements. There are now three broad types of organisations involved in the traditional EPA functions. These types are:

- Multi-functional agency including EPA functions.

These agencies have a much broader role than just environmental responsibilities and include conservation and biodiversity management, natural resources management, climate change and energy efficiency policy, management of culture and heritage. This organisational model characterises the Commonwealth, NSW, Queensland agencies with environmental responsibilities.

- Environmental Unit reporting to independent Board as part of multi-functional agency.

In this model, the environmental functions are within a multi-functional agency but the components of the multi-functional agency dealing with the traditional EPA functions report to an independent Board which is termed the Environmental Protection Authority. This model characterises the arrangements in Western Australia and Tasmania.

- Separate Environmental Protection Agency.

There are two states that still retain an EPA as a separate agency with its own board – Victoria and South Australia. These agencies focus mainly on the pollution control functions of the traditional EPA.

## **Shifts to Multi-Functional Agencies**

The changes in organisational arrangements reflect the changes that have been occurring in concepts of environmental and sustainability management since the 1980s when New Zealand's Resource Management Act was written. These changes to multi-functional agencies reflects the shift of environmental management from an emphasis on mitigating adverse effects of economic development, to sustainable development where environmental considerations are one of the multiple objectives relating to the achievement of economics, social, cultural and environmental outcomes.

These shifts in Australian agencies can be characterised as:

- Shift to sustainability development strategies rather than effects-based management
- Linking environmental management with natural resource management
- Linking environmental management with conservation park and biodiversity management
- Linking environmental management with climate change and energy efficiency
- Linking environmental management with cultural and heritage management
- The addition of incentives and voluntary programmes to environmental regulation to achieve environmental outcomes
- The addition of community-based programmes for sustainability to government regulation for environmental protection.

## European Developments

Concepts being advanced in Europe are the need for government approaches to environmental management and governance need to co-evolve with corporate changes to environmental management (Bleischwitz, 2007). As industry evolves corporate governance of environmental issues the government needs to evolve as well. The changes seen for government include:

- An increasing emphasis on eco-efficiency and resource productivity rather than just compliance with environmental quality standards
- Provision of incentives to rationalise use of nature rather than a reliance on regulation to achieve environmental requirements
- Government involvement in networks and multi-actor coalitions rather than controls on individual enterprises
- Technological innovation for efficiency gains not just pollution reduction
- Institutional innovation for system gains rather than a reliance on environmental policies.

Four stages of co-evolution have been identified as set out in Table 1. The first stage is the use of regulations to get industry to add on pollution reduction equipment. The second stage is the use of policy instruments and standards to achieve end-of-pipe pollution control in design of developments. The third stage is the use of integrated approaches with multiple government agencies working together on sustainability strategies and industry looking beyond their own operations to the management of the environmental integrity of its supply chain. The fourth stage is a shift to collaborative governance where government has a broader role of enabling society to achieve sustainability and industry is focussed eco-efficient products and services.

**TABLE 1: CO-EVOLUTION OF CORPORATE AND POLITICAL GOVERNANCE**

	<b>POLITICAL GOVERNANCE</b>	<b>INSTRUMENTS</b>	<b>CORPORATE GOVERNANCE</b>
1	Environmental problem solving through regulation	Project mitigation Pollution control	Environmental add-on cost to business
2	Environmental policy through ministries	Environmental policies and standards	End-of-pipe pollution control
3	Integrated management through agency coordination	Government sustainability strategies	Supply chain management
4	Enabling of civil society	Collaborative governance	Eco-efficient products and services

Adapted from Bleischwitz (2007).

This shift in government's role to facilitate sustainable development is being reflected elsewhere. In the Water Initiative of the World Economic Forum (2009), one of the key recommendations is that:

“Management of water needs stands out as an urgent, tangible and fully resolvable issue, which can only be improved by a multi-stakeholder effort led by government.

Governments can bring business and civil society together to help address a commonly (and often locally) felt challenge.”<sup>5</sup>

## **Post-Regulatory State**

There is also been a shift in thinking about the role of government from the 1980s. The concept then was the role of government was to define through regulation the boundaries in which civil society could operate. Development would then occur by private development within the regulatory constraints set by government. This is consistent with the effects based model of environmental management that underpins the Resource Management Act and the traditional role of EPAs.

There are three major trends away from this purely regulatory role of government:

- **Legal theory of Autopoiesis**

This approach relies on the coupling of legal system with other systems. One example is “audited self management” which involves companies developing their own policies and plans to achieve environmental outcomes rather a reliance on prescribed rules and involves auditing of the outcomes to ensure compliance.

- **Governmentality**

This approach depends on social controls to complement legal controls. The concepts of self governing communities and stakeholder-based management plans are examples of the application of this approach.

- **Responsive Regulation**

This approach is based attempting to keep regulatory intervention to the minimum level necessary to achieve the desired outcomes, while retaining the capacity to intervene with more stringent measures. One example is the “enforcement pyramid” which involves using low level sanctions such as advice and warnings at the base of the pyramid and only escalating to more drastic remedies in the event that those who are being regulated are unresponsive (Scott, 2005).

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<sup>5</sup> *Source: World Economic Forum Water Initiative, WEF 2009*

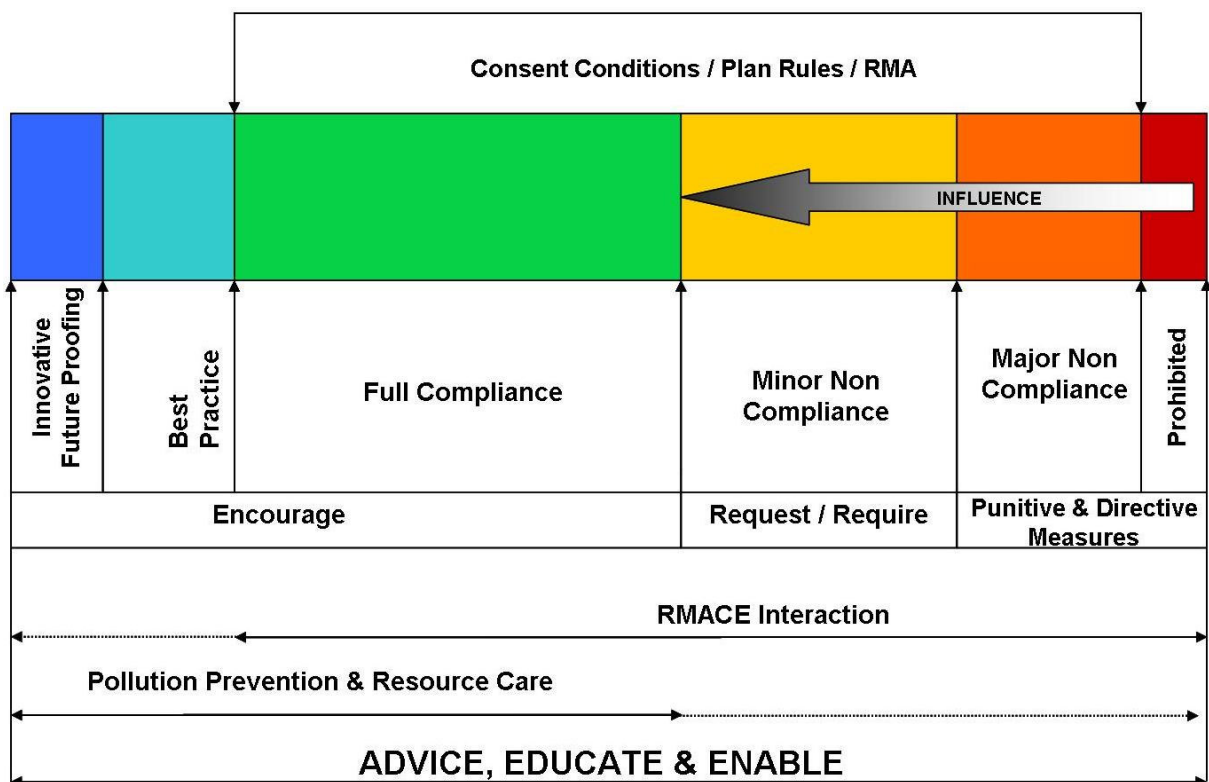
## The Regulatory Spectrum

One of the ways that Environment Canterbury has implemented these new approaches to regulation is to develop a spectrum of responses in order to achieve compliance. This regulatory spectrum is shown in Figure 5.

The right hand side of the spectrum shows the traditional enforcement tools associated with EPAs. Enforcement action is taken against prohibited activities and major non-compliance with consent conditions. This includes prosecution, abatement notices and enforcement orders. Minor non-compliance typically results in warnings or, where repeated minor non-compliance occurs, enforcement action.

However this regulatory approach does not encourage better-than-requirement performance. It does not include the encouragement of improved performance such as the approach in the Pahau catchment noted above. Stakeholder and community engagement for achieving best practice and innovative approaches that are beyond best practice are not part of the EPA-style enforcement functions.

**Figure 5 Regulatory Spectrum**



## Achievement of Sustainability

There are also new approaches being developed on how to achieve sustainability rather than management of adverse effects. The US National Research Council in a major study on the transition to sustainability for the Johannesburg Summit concluded:

“Developing an integrated and place-based understanding of threats [arising from multiple, cumulative and interactive stresses] and the options for dealing with them is a central challenge for promoting a transition toward sustainability”

“The Board therefore proposes integrated approaches to research and actions at the regional scale related to water, atmosphere and climate, and species and ecosystems.”<sup>6</sup>

In an international review of water policy for sustainable development, Feldman identified the following characteristics to making sustainability a policy anchor:

- Physical attributes, such as hydrology, water quality or aquifer capacity, constrain carrying capacity
- The common denominator of protecting ecological resources is the importance of managing cumulative effects
- Political boundaries are to conform to hydrologic and ecological boundaries
- Institutions need to be more open, inclusive and stakeholder driven.<sup>7</sup>

In a systematic analysis of the management of “common pool resources”, Ostrom also emphasised the value of collaborative governance approaches compared to other governance options. She advised:

“If this study does nothing more than shatter the convictions of many policy analysts that the *only* way to solve Common-Pool Resource problems is for external authorities to impose full private property rights or centralised regulation, it will have accomplished one major purpose.”<sup>8</sup>

This increased emphasis on collaborative approaches was also Gunningham’s recommendation for managing water resources in Canterbury. He concluded:

“...that (in terms of governance) combining hierarchy and collaboration has particular attractions in addressing wicked problems such as water management.”<sup>9</sup>

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<sup>6</sup> Source: *Our Common Journey: Transition Towards Sustainability*, US National Research Council 2000

<sup>7</sup> Source: *Feldman – Water Policy for Sustainable Development*

<sup>8</sup> Source: *Governing the Commons: The Evolution of Institutions for Collective Action*, E Ostrom

<sup>9</sup> Source: *Innovative Governance and Regulatory Design: Managing Water Resources*, N Gunningham, Australian National University

## **5 GOVERNANCE ASPECTS THAT ARE PAST THEIR USE-BY DATE AND WHERE IS THE FUTURE OF RESOURCE MANAGEMENT**

This review of regional council performance, the changing role of EPAs and the international trends in environmental governance indicate that regional governance for resource management is still a preferred component of a desirable future governance model. However there are other components of the governance model incorporated in the RMA and the effects-based approach of traditional EPAs that have past their use-by date for management of constrained resources. These components include:

- Effects based management
- Reliance on regulation alone
- Focus on environmental Issues alone
- Development pattern based on applicant driven proposals
- First-come/First-served allocation
- Absence of provisions for sustainability limits and cumulative effects
- Reliance on adversarial court-based decision making.

This review also highlights where the likely future is for management of constrained resources such as water in Canterbury. Some of the key aspects are:

- Regional governance of resources based on natural resource boundaries
- Post-regulatory approaches: audited self management, self governing communities and regulatory spectrums
- Integration of environment with economics, social and cultural management
- Development guided by regional strategies
- Multi-stakeholder collaborative approaches.

A key message for the role of Regional Councils to remain current is to be adding the role of facilitator of sustainable development to the statutory role as regulator for environmental protection.

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