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**Local government authority and autonomy in Canterbury's  
freshwater politics between 1989 and 2010.**

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A thesis  
submitted in partial fulfilment  
of the requirements for the Degree of  
Doctor of Philosophy

at  
Lincoln University  
by  
Nicholas Allan Kirk

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Lincoln University  
2015

Abstract of a thesis submitted in partial fulfilment of the  
requirements for the Degree of Doctor of Philosophy.

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Nicholas Allan Kirk

This thesis proposes a hybrid theory, informed by multiple clientelism and New Public Management, to examine local government authority and autonomy under interest group influence in a modern New Zealand context. Multiple clientelism theory suggests that a local government agency can establish authority and autonomy over natural resource use through selective and sequential patronage with competing interest groups. Multiple clientelism was devised during an examination of American federal lands politics in the 1970s, an era of big government. By contrast, this thesis examines multiple clientelism in the context of New Zealand's New Public Management reforms during which central government retreated somewhat from natural resource management. During New Zealand's New Public Management reform era, natural resource management responsibilities were transferred from a collection of central and local government agencies to regional councils. Also during this period, the Resource Management Act was introduced which required regional councils to manage and regulate the environmental effects of resource use.

The predictions of the hybrid theory are examined through analysis of the Canterbury Regional Council's freshwater management between 1989 and 2010. The Council was created in 1989 as an amalgamation of various government agencies. The Canterbury Regional Council navigated between pro-development and pro-conservation interest groups who desired contrasting policy over freshwater use. Three case studies were investigated using qualitative methods to examine how the Council pursued authority and autonomy over Canterbury's freshwater management.

In the three case studies, the Canterbury Regional Council struggled in its pursuit of authority and autonomy despite attempting selective and sequential patronage as multiple clientelism predicted. In response, the Council initiated collaborative governance arrangements to regain some authority over freshwater management. I propose that collaborative governance arrangements risk becoming

captured by powerful interest groups. New Public Management reforms for freshwater policy were initiated, in part, to limit the potential capture of policy by interest groups. As a result, I propose the counterintuitive conclusion of a cycle between policy capture and policy stagnation in Canterbury's freshwater politics.

**Keywords:** multiple clientelism; New Public Management; collaborative governance; freshwater management; Canterbury Regional Council; Environment Canterbury; Resource Management Act; interest groups; environmental policy; natural resource management.

## Preface and Acknowledgements

My interest in Canterbury's freshwater management began after the removal of regional councillors through the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act in April 2010. At the time, I was working as a research assistant for Professor Ali Memon who gave me some insight into the controversies that had plagued the Canterbury Regional Council. The Canterbury Regional Council had struggled to issue consents for freshwater use within statutory timeframes which angered its farming constituents. The Regional Council had also struggled to create a regional plan which angered environmentalist constituents who wanted limits to be established to freshwater abstraction in the region.

I mentioned to Professor Memon that we should research why the Canterbury Regional Council had struggled to adequately manage freshwater to analyse if the central government intervention was justified. Professor Memon agreed and encouraged me to apply for a Lincoln University PhD scholarship to study the topic. Unfortunately, I submitted my PhD scholarship application to a secretary who was about to go on maternity leave. My scholarship application was subsequently left in a to-do-bin and I learnt a few weeks later that my application had not been processed on time. Thankfully, Professor Memon appealed to the PhD scholarship committee that I had not been given a fair hearing. He argued that they ought to reconsider my application, and after this lobbying I was lucky enough to receive a scholarship.

This thesis is a continuation of the research I started with Professor Memon in 2008. During this period, I was able to contribute to several co-authored papers which were published in local and international journals. I am indebted to Professor Memon for his tutelage as well as his efforts in helping me obtain a PhD scholarship. I dedicate this thesis to him.

I would also like to acknowledge my supervision team for this thesis which consisted of Associate Professor Ton Bührs, Dr Ann Brower and Dr Ronlyn Duncan. Professor Bührs helped me a lot after the retirement of Professor Memon and shepherded this thesis during its early stages. I would like to acknowledge the substantial efforts of Dr Ann Brower, who after Ton's retirement helped me shape the thesis. Ann encouraged me to seek greater precision with my writing and my research. Ann spent many hours reading drafts of this thesis and taught me how to craft these early drafts into a clear and concise manuscript. I would also like to acknowledge the efforts of Dr Ronlyn Duncan. Ronlyn has always encouraged me to explore alternative theoretical avenues and was also of great assistance when discussing the content of my case studies.

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# 1. Chapter One

## Introduction

### 1.1 Introduction

The Canterbury region of New Zealand's South Island contains 23 per cent of the nation's agricultural land (Creech, Jenkins, Hill & Low, 2010, p.5). Following the European colonisation of New Zealand, this land has been integral to New Zealand's export-based economy. Early colonists noted that access to freshwater would be necessary to farm Canterbury's land (Cameron, 2009). In response, colonists in the 19<sup>th</sup> century built water races to quench the thirst of imported stock animals (Scotter, 1965b; Pawson, 2001). In the 20<sup>th</sup> century New Zealand's government used public money to build irrigation schemes in Canterbury (Roche, 1994). However, by 1984 New Zealand's Treasury argued that the benefits of public investment in irrigation infrastructure had been "captured entirely by private landowners within the schemes" (Treasury, 1984, p.46). New Zealand's government responded by selling irrigation schemes to users in the hope that freshwater policy would not be captured in the future (Farley, 1994). During the 1990s and 2000s, farmers in Canterbury requested access to more irrigable freshwater to farm their land profitably, while environmental interest groups lobbied for the conservation of Canterbury's freshwater resources. A new local government agency – the Canterbury Regional Council (abbreviated throughout to Environment Canterbury or ECan) - became responsible for managing and regulating the competing demands for freshwater use and conservation from 1989. This thesis investigates ECan's vexed management of freshwater from its amalgamation in 1989 until its restructuring in 2010. This investigation produced some unexpected results. The research findings suggest that Canterbury's freshwater policy could become captured by interest groups in the future despite the efforts of reformers in the 1980s to eliminate capture of freshwater policy. As a result of this counterintuitive conclusion, I propose a cycle between policy capture and policy stagnation in Canterbury's freshwater politics.

The Canterbury region in New Zealand's South Island is the setting for this research. 58 per cent of freshwater allocated for consumptive purposes in New Zealand is abstracted from Canterbury's streams, rivers, lakes, and underground aquifers (Mayoral Forum 2009: 23). As seen in Figure 1, Canterbury's rivers either originate from the Southern Alps – such as the braided Rangitata, Rakaia, and Waimakariri Rivers – or from the eastern foothills – such as the Orari, Hinds, Selwyn, and Ashley Rivers (Hayward & Ackley, 1983, p.43; Winterbourn, 2008). Rivers are fed by groundwater, rain, and snow. Rainfall on the eastern foothills infiltrates through the soil to recharge underground aquifers (Hayward & Ackley, 1983, p.46). Canterbury's groundwater is of high enough quality that

Canterbury's urban centre Christchurch pumps all of its drinking water from untreated underground aquifers (Hoben, 1914; Chilton, 1924; Hercus, 1948; Dicker, 1993). Canterbury receives less rainfall than most areas of New Zealand, however, the Southern Alps on Canterbury's western boundary ensures rivers and aquifers carry ample freshwater downhill towards the Pacific Ocean.



**Figure 1 Canterbury's rivers –MfE (2015).**

These diverse sources of freshwater are managed and regulated by the Canterbury Regional Council. New Zealand is a constitutional monarchy with a unicameral Parliamentary system (Jackson, 2003), and local government agencies – such as ECan – are given legal rights and responsibilities by Parliament. For example, local governments in New Zealand can own property, employ staff, and enter into contracts (Bush, 2003, p.161). Nonetheless, local governments in New Zealand do not have legislative sovereignty. Only New Zealand's Parliament has the sovereignty to enact law, and Parliament cannot be bound by the laws enacted by previous Parliaments (Jackson, 2003, p.78). The

structures, authorities, and responsibilities of New Zealand's local governments are established by laws enacted by Parliament.

New Zealand's local government agencies struggled to exercise autonomy during the 1960s and 1970s (Bush, 1980). These agencies were confronted by new demands as well as financial and functional inadequacies (Bush 1980, pp. 44-5). Regional united council responsibilities were poorly defined and overlapped with older road boards, country towns, and county boroughs. Graham Bush (1980, p.45) argued that "it was not a stable, placid era where each component had its station and was guaranteed immunity from interference". Because New Zealand does not have a federal system of government, New Zealand's local governments will never gain full autonomy from Parliament.

Given this context, authority is defined in this research as a local government agency having "the right or capacity, or both, to have proposals or prescriptions or instructions accepted without recourse to persuasion...or force"(Reeve, 2009)<sup>1</sup>. This follows contemporary political philosophers who argue that for a state to have authority its rules and commands must be followed by its citizens (Christiano, 2013). A citizen obeys state rules and commands because state officials exercise normative (morally justified) authority rather than non-normative (*de facto*) authority (ibid).

There are several concepts of legitimate state authority. There is legitimate political authority as justified coercion, or legitimate political authority as the ability to impose duties on citizens (Christiano, 2013). However, I have chosen to use legitimate political authority as the right to rule. This means that citizens do not have a duty to comply with rules, however, an authority might offer a justification for its right to rule (Ladenson 1980). Therefore, the state has permission to issue commands as well as to coerce citizens into following them, but citizens can argue against these rules or choose to not comply and face the consequences.

Autonomy is defined in this thesis as a local government agency having independence from non-governmental groups (interest groups, business groups, etc.) to set proposals, prescriptions, and/or instructions. Michael Mann (1984) has argued that states have autonomous power. Mann's argument is that the state is autonomous of civil society actors such as interest groups and business associations. Because civil society actors' desire that some activities – for example, water use and allocation – are regulated by a central agency, they willingly cede resources to the state. A state is unique because, unlike the civil society actors, it's centralized and territorially bound. Thus, the state

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<sup>1</sup> In Andrew Reeve's original definition of state authority, he argues that authority is the capacity to "have proposals or prescriptions or instructions accepted without recourse to persuasion, *bargaining*, or force". Bargaining was removed from the definition for its use in this research. This is because multiple clientelism theory, which will be introduced later in this chapter, argues that bargaining with interest groups enhances the authority of local government agencies. Thus, bargaining helps local governments to attain, rather than lose, authority.

can be influenced by civil society actors – and frequently is – but it occupies a space, and obtains a power which is unique from civil society. Mann (1984) concludes that the power and autonomy of states has varied greatly throughout history.

The context in which New Zealand's local governments exercise authority and autonomy changed in the 1980s. New Zealand's Labour Party campaigned during the 1987 national election to reform local government functions and boundaries (Bush, 1990, p. 326). Labour was successfully elected and passed the Local Government Amendment Act (no. 2) in 1989. This Amendment merged an estimated 850 single and multi-purpose local government agencies into 86 multi-purpose agencies (Cheyne, 2002, p. 127). The Local Government Amendment Act established directly elected regional councils. The *Statement on Reform of Local Government* argued that "regional councils will have a primary role in resource management" and that the boundaries of regional councils should conform to one or more freshwater catchments (Bassett, 1988, p. 5). The *Statement* also proposed a "separation of regulatory and service delivery responsibilities" (Bassett, 1988, p. 8). Central government<sup>2</sup> envisioned that new regional councils would exercise regulatory responsibilities whereas territorial authorities<sup>3</sup> would exercise service delivery responsibilities.

Two united councils – Canterbury and Aorangi – amalgamated to create the Canterbury Regional Council on 9<sup>th</sup> June 1989 (Douglass, 2004a, p. 3). United councils exercised limited responsibilities and often had no independent source of income (Bush, 1980, pp. 69-70). United councillors were appointed by the territorial authorities within its boundaries (ibid). The election of regional councillors, and the expansion of the council's mandate to include regulation of natural resource use, was a significant restructuring of New Zealand's local government.

The Resource Management Act (RMA) was enacted by Parliament during the first term of the Canterbury Regional Council on the 22<sup>nd</sup> July 1991. The RMA revolutionised environmental management in New Zealand by integrating the management of land, air, coastal, and freshwater resources in one piece of legislation for the first time. The purpose of the RMA was to "promote the sustainable management" of natural and physical resources (RMA, 1991, p. 68 [sec.5 (1)]). Regional councils were now responsible for regulating the use of natural and physical resources to ensure its sustainable management.

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<sup>2</sup> Central government refers to the executive branch of New Zealand's unicameral Parliament. Central government propose the majority of laws that are passed by Parliament. New Zealand introduced a Mixed Member Proportional (MMP) electoral system in 1996 which means that it is unlikely that the executive will be made up of members of one political party. However, prior to MMP this occurred frequently.

<sup>3</sup> Territorial authorities are the second tier of local government in New Zealand. Territorial authorities are responsible for local roads, sewerage, building consents, and land use. The term local government agency is used throughout this research as a broad term encapsulating New Zealand's regional councils, territorial authorities, and unitary authorities.

Prior to the RMA, planning legislation sanctioned activities in particular permitted areas (Peart, 2007, p. 15). By contrast, the RMA promoted sustainable management through regulating the effects of activities (ibid). Under the RMA, entrepreneurs determine the location of resource use while regional councils regulate and manage the effects of resource use (Berke, Crawford, Dixon, & Ericksen, 1999, p. 450).

Local government and resource management reform were part of a broader project of state sector reform (Boston & Dalziel, 1992; Boston, Martin, Pallot, & Walsh, 1996). New Zealand faced a fiscal debt crisis following the election of the fourth Labour government in 1984 (James, 1986, p. 171). This crisis provided the impetus for reform. Labour's reforms substituted Keynesian economic policies, which had prevailed in New Zealand since 1935, with a more market-based *laissez faire* approach (James, 1986; Roper, 1993; Kelsey, 1997). These reforms reduced central government control over New Zealand's economy.

By 1991 the new Canterbury Regional Council was in a state of flux. The elected regional councillors were now responsible for the regulation of natural resources in New Zealand's largest regional council. I examine how the new regional council - created through an amalgamation of local government agencies that struggled to make autonomous decisions - pursued authority and autonomy given state sector reforms. I use the lens of multiple clientelism to examine how ECan pursued authority and autonomy over freshwater management in Canterbury between 1989 and 2010.

## 1.2 Multiple clientelism

Multiple clientelism is a theory of natural resource management which analyses governmental authority and autonomy under interest group influence (Culhane, 1981). Multiple clientelism argues that governmental agencies establish relationships of patronage with interest groups to gain authority and autonomy over contentious natural resource management issues (Culhane, 1981, p. 334). Multiple clientelism predicts that a governmental agency will be influenced by multiple customers. In Paul Culhane's research, these customers included pro-development and pro-conservation interest groups (Culhane, 1981, pp. 294-5). Culhane concluded that an agency will be influenced by multiple customers, and in response, chooses to establish relationships of patronage with both pro-development and pro-conservation interest groups at different times (Culhane, 1981; Mohai, 1987). Policy capture<sup>4</sup> will be avoided because the agency is "variably captured" by different

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<sup>4</sup> Policy capture is also referred to as "agency capture" or "regulatory capture". I have chosen to use the term policy capture in this research. Policy capture occurs if a "government agency...vests its operators with much discretion", and as a result, "the tasks of these operators [become] define[d] by the pressures of external organized interests" (Wilson, 1989, p. 73).

interest groups (Culhane, 1981, p. 334). The agency will reach decisions that reflect the diversity of its interest group clientele.

In sum, multiple clientelism offers an explanation of how ECan can establish authority and autonomy when influenced by multiple competing interest groups. ECan, by establishing relationships of selective and sequential patronage with interest groups, can reach diverse decisions over freshwater policy. ECan's authority and autonomy will be strengthened through gaining the support of multiple interest groups. Multiple clientelism is an influential theory of natural resource management, however, it was devised in 1981 during the era of big government (Walker & Vatter, 1997, pp. 109-110). By contrast, ECan was amalgamated during an era typified by the retreat of the regulatory state (Gunningham, 2009, p. 158). The New Public Management reforms, introduced to New Zealand between 1984 and 1999, affected the relationship between the government, bureaucracy, and interest groups. This research examines multiple clientelism in this context.

### **1.3 New Public Management**

New Public Management (NPM) refers to the managerial reforms undertaken by consecutive New Zealand governments between 1984 and 1999. Christopher Hood (2001, p. 12553) defined NPM as "a new (or renewed) stress on the importance of management ... in public service delivery, often linked to doctrines of economic rationalism". New Zealand's NPM reforms received international acclaim because of their speed, depth, and the extent to which they created an "innovative, sophisticated and coherent" framework (Halligan, 2007, p. 48). It is claimed that NPM reforms shifted "the emphasis from process accountability towards accountability for results" (Bach & Bordogna, 2011, p. 2284). Under this regime, a government ensures accountability for results by establishing goals and specifying outputs to meet these goals. The government then decides which type of organisation – public, non-profit, or private – can best deliver the outputs (Klijn, 2012, p.205). This process is concluded by testing "with well-defined output performance indicators" to determine whether the strategy taken was successful or not (ibid).

New Public Management reforms will be described in greater detail during the third chapter. Three points should be noted here. First, ECan was amalgamated during the NPM reform era. Second, the RMA – which regulated the use of freshwater in New Zealand after 1991 – was enacted during the NPM reform era. Third, ECan's freshwater regulation was guided by the RMA, and the methods the RMA promoted to achieve sustainable management – such as focusing on the effects of activities on the environment – were influenced by NPM.

## 1.4 The Resource Management Act and sustainable development

The Resource Management Act 1991 (RMA) regulates freshwater use, allocation, and management in New Zealand. Section 5 of the RMA states the intention of the legislation:

*(1) The purpose of this Act is to promote the sustainable management of natural and physical resources;*

*(2) In this Act, 'sustainable management' means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while-*

*a) Sustaining the potential 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 environment (RMA, 1991, p. 68 [sec.5 (1)(2)]).*

The RMA's definition of sustainable management and what is meant by the word "promote" has been interpreted in a variety of ways since the RMA's enactment (Grundy, 2000). For example, New Zealand's Environment Court observed in the 1990s that the RMA's goal of sustainable management was so broad it had led to "an accumulation of words verging in places on turgidity" (as cited in Grundy, 2000, p. 67). Some argued that the authors of the RMA had created a deliberately ambiguous definition of sustainable management (Harris, 1993, pp. 67-8). This ambiguity allowed the Courts to interpret sustainable management through evolving case law. Peter Skelton and Ali Memon (2002, p. 2) agreed. They argued that defining sustainable management was difficult due to "the spectrum of values different groups accord to the environment in a plural social setting" (ibid). In response, the Courts adopted an "overall broad judgment" approach whereby no primacy was given to biophysical effects (Skelton & Memon, 2002, p. 7). The Courts assessed ecological, economic, social, and cultural effects equally when using an overall broad judgment approach to reach decisions. Upton, Atkins, & Willis (2002), reflecting on the RMA eleven years after its enactment, agreed with Skelton and Memon's review of the case law. Simon Upton, who was the Minister for the Environment during the RMA's enactment in 1991 and his co-authors, argued the sustainable management clause was designed to give the Courts reasonable latitude when making decisions (Upton *et al.*, 2002).

Freshwater ought to be regulated and allocated under the RMA in a way that promotes sustainable management. Regional policy statements, regional plans, and individual resource consents are the tools available to regional councils under the RMA to regulate and allocate freshwater. Regional

policy statements set the objectives for resource management in a region. Regional plans establish rules and limits to resource use (Gunningham, 2011, p.43). Policy statements and regional plans reconcile the demands of pro-development and pro-conservation interest groups while simultaneously promoting the sustainable management of natural resources. Consents are permits for resource use that require an effects-based assessment (ibid).

In sum, ECan's statutory mandate to promote sustainable management is ambiguous. As a result, pro-development and pro-conservation interest groups can lobby ECan through public submissions on regional plans, resource consent hearings, and other mechanisms like personal contacts or media presence. Walker, Brower, Clarkson, Lee, Myers, Shaw, & Stephens (2008) noted pro-development and pro-conservation lobbying in their examination of indigenous biodiversity protection under the RMA. As in Walker *et al.*, both pro-development and pro-conservation interest groups can argue that their preferred policy outcome will help achieve sustainable management due to the RMA's ambiguous mandate. Due to this ambiguity, ECan should be able to establish patronage with competing pro-development and pro-conservation interest groups as multiple clientelism predicts.

## **1.5 Research Question**

ECan was created in 1989 through an amalgamation of local government agencies that had previously struggled to exercise autonomy. ECan was given responsibility for promoting the sustainable management of freshwater use in the region after the enactment of the Resource Management Act in 1991. Given this context, the research question I pose is:

*How did Environment Canterbury pursue authority and autonomy over freshwater management between 1989 and 2010?*

To answer this question, I will examine three case studies in-depth using qualitative methods (described in chapter four). The cases were chosen because competing interest groups attempted to influence ECan's freshwater policy decisions. This thesis will examine multiple clientelism in a different context to Paul Culhane's research in the late 1970s and early 1980s (Culhane, 1981). In response, a hybrid theory of multiple clientelism and New Public Management theory (MC-NPM) will be created to help guide the case study analysis (see end of chapter three).

## **1.6 Organisation of the thesis**

Chapter 2 examines the theory of multiple clientelism. A description of the growth of environmental interest groups in New Zealand from the 1960s onwards follows. Multiple clientelism only becomes possible after the emergence of environmental interest groups in New Zealand's freshwater management. Chapter 3 examines the state sector reform period in New Zealand with a focus on

New Public Management reform. It is argued that NPM reforms affected freshwater management as well as New Zealand's interest group politics. The hybrid MC-NPM theory is introduced at the end of this chapter. Chapter 4 describes the research methods used to answer the research question.

The next three chapters present the case studies. The first case study, Chapter 5, investigates ECan's management of the Rangitata River in South-Canterbury and an attempt to halt damming of the river through application of a Water Conservation Order. The second case study, Chapter 6, examines ECan's groundwater zoning policy. The third case study, Chapter 7, evaluates the Canterbury Water Management Strategy, a collaborative non-statutory plan that establishes targets, principles, and priorities for Canterbury's future freshwater management. Chapter 8 discusses the case study findings in reference to the thesis' research question. Chapter 9 concludes the thesis.

The research findings suggest that an unintended consequence of new collaborative governance arrangements is a return to capture of freshwater policy. The counterintuitive conclusion is that a cycle exists between policy capture and policy stagnation Canterbury's freshwater politics. The interest group cycle I propose contributes to research on collaborative freshwater governance internationally (Leach, Pelkey, & Sabatier, 2002; Singleton, 2002; Sabatier, Focht, Lubell, Ratchenberg, Veditz, & Matlock 2005; Benson, Jordan, Cook, & Smith, 2013; Anada & Procter, 2013) and in New Zealand (Lomax, Memon, & Painter, 2010; Holley & Gunningham, 2011; Land and Water Forum, 2012; Duncan, 2013; MfE, 2013). The interest group cycle also provides an alternative explanation for ECan's freshwater management between 1989 and 2010 that goes beyond accusations of a farming conspiracy (Mahon, 2006; 2011) or ECan's inability to fund regional planning (Douglass, 2004b; Williams, 2010a; G. McFadden, personal communication, April 17, 2013; K. Burke, personal communication, March 16, 2012.).

## 2. Chapter Two

# Multiple clientelism and the corporatist era of interest group politics in New Zealand

### 2.1. Introduction

An observer in 1938 noted that New Zealand's politics had a rural bias (Graham, 1963). Rural farmers were considered "the backbone of the country", whereas urban New Zealanders were "parasitical in that they depend for their very existence on the lifeblood of the farmer" (as cited in Graham, 1963, pp. 197-8). Given this rural bias, it is not surprising that New Zealand's early freshwater policy was shaped to favour rural industry, and later on, government managed hydro-electricity projects. It was not until the 1960s, with the emergence of environmentalism, that the prevailing logic of using New Zealand's freshwater for economic development was challenged.

This research focuses on freshwater management while highlighting the connection between freshwater management and land use. As Jonet Ward and Frank Scarf (1993, p. 60) argued "management of water resources cannot take place in isolation from the land". Land uses for primary industries – such as wool, meat, and dairying – have been integral to New Zealand's export-based economy (Smallfield, 1970; Easton, 1987; Greasley & Oxley, 2008; Pawson & Brooking, 2011; Lattimore & Equb, 2011). In 1921 93 per cent of New Zealand's export produce was sourced from grassland products (Pawson & Brooking, 2011, p. 2). Since the 1920s, the use of New Zealand's grasslands has changed in response to fluctuating international demand for commodities and adjustments in central government policy. For example, Table 1 highlights the growth of dairying in Canterbury during the 1990s and 2000s. The growth of dairying in Canterbury was a response to rising prices for dairy produce internationally as well as the removal of farming subsidies in the 1980s (see third chapter).

**Table 1 Dairy Cattle in Canterbury – 1995 to 2009 –Statistics New Zealand Agricultural Census (1995; 1999; 2002; 2003; 2007; 2009)**

	Total Dairy cattle in Canterbury	Total Dairy cattle in New Zealand	Canterbury's percentage of total New Zealand herd
1995	228,114	4,089,817	5.5 per cent
1999	275,305	4,316,409	6 per cent
2002	533, 673	5,161,589	10 per cent
2003	556,339	5,101,603	11 per cent
2007	754,937	5,260,850	14 per cent
2009	918,000	5,861,000	15 per cent

This chapter examines the establishment of multiple interest group influence over freshwater management in New Zealand. It also examines in greater detail Paul Culhane's theory of multiple clientelism. Multiple clientelism is an influential theory of natural resource management which argues that government agencies can establish authority and autonomy under multiple interest group influence. Farmers were the predominant interest group with influence over New Zealand's freshwater management prior to the 1960s. Countervailing environmental interest groups emerged following the Lake Manapouri Dam protests. The chapter begins by discussing the theoretical roots of multiple clientelism before examining the quantitative model Paul Culhane devised to investigate interest group influence over US public lands policy. The chapter then examines the context of New Zealand's freshwater management in the 1960s. The chapter concludes by describing the corporatist era of interest group politics in New Zealand.

## **2.2. Roots of multiple clientelism**

Paul Culhane examined the two dominant explanations of US public lands politics – policy capture and conformity to professional norms – to see which one best fit the US Forest Service and the Bureau of Land Management (BLM). Political science, when investigating the influence of interest groups on policy, had traditionally focused on national politics. Culhane argued this was because rule

making authority and policy decisions often result from national politics (Culhane, 1981, p. 135). Regardless, Culhane argued that “local administrators play a critical role in agency decision making” (ibid). Thus, Culhane’s research focused on the “consequences of group influence on local administrators” representing the US Forest Service and Bureau of Land Management (Culhane, 1981, p. 30). Following Culhane, this research examines group influence over local government agencies and administrators.

Culhane (1981, p. 335) argued that policy capture “is a degenerate form of clientelism”. Clientelism is a theory of politics which framed the relationship between a government agency and interest groups as one of patron and client. Susan Stokes (2007, p. 605) defined clientelism as “the proffering of material goods in return for electoral support, where the criterion of distribution that the patron uses is simply: did you (will you) support me”? A patron (e.g. a politician, political party, bureaucracy, or elected government) distributes goods and service to a client (e.g. interest groups, stakeholders, or citizens) in return for their support. Stokes (2007, p. 604) argued that clientelism will slow economic growth, weaken democratic institutions, and allow politicians to hold onto power for longer than they should. For these reasons, clientelism is often associated with policy capture.

Policy capture occurs when an individual or interest group seeks “to control the distribution of discrete benefits by government”, for example, farmers influencing state funded irrigation policy (McFarland, 2004, p. 33). A captured governmental agency will only respond to a narrow clientele, such as irrigators, rather than the variety of different groups and individuals affected. Policy capture undermines the democratic process because private interests gain influence over public policy. In sum, clientelism assumes that a governmental agency will use patronage to gain the support of individuals and interest groups. Clientelism will result in policy capture if the agency establishes patronage with only a few select individuals and interest groups.

Culhane also investigated the conformity thesis which argued that US Forest Service officers followed apolitical professional norms despite attempts to capture the service by interest groups (Culhane, 1981, p. 65). The conformity thesis proclaimed that administrative decisions were an exertion of technical expertise (Culhane, 1981, p. 28). The conformity thesis explained how formal and informal practices were used by managers to gain a high level of compliance from subordinate field officers (Culhane, 1981, p. 29). The conformity thesis presented a challenge to those who argued that the US Forest Service and BLM had been captured by interest groups.

### **2.3. Multiple clientelism**

Culhane created a quantitative model to examine interest group influence over the US Forest Service and BLM. Culhane hoped this model would help answer if US public lands policy was captured by

interest groups or if employees conformed to professional judgment and statutory law (Culhane, 1981, p. 1). The quantitative model first defined the properties that give interest groups the ability to influence policy: (1) a group's interest or preference; (2) a group's organisational power; (3) a group's size, relation to members who share its interest, financial resources, and/or the skills of their leaders; and (4) a group's access to decision makers (Culhane, 1981, pp. 290-1). Culhane argued "a model of group influence would thus be a mathematical representation of the group theorists' contention that any policy is a function of the power, value preferences, and access of the groups involved in the policy process" (Culhane, 1981, p. 291). Culhane's model is presented in Figure 2 below.

$$O = i_1APV_1 + i_2APV_2 + i_3APV_3 + i_4APV_4 + \dots + i_NAPV_N$$

O = a policy output

*i* = the particular group's relative influence index

A = the group's access to decision makers<sup>5</sup>

P = the group's power,

V = the group's value preferences<sup>6</sup>, and;

N = the total number of groups in the policy process

**Figure 2 A general group influence model (Culhane, 1981, p.291).**

Culhane argued that five interest groups could influence the BLM and Forest Service: including (1) the livestock industry, (2) the forest products industry, (3) conservationists and recreationists, (4) economic interests other than livestock or forest product industries (e.g. the mining industry), and (5) other local contacts or entities (Culhane, 1981, pp. 294-5). Culhane also included state administrators in his model. Culhane argued that a "persistent criticism of group theory has been that it assigns government decision makers too neutral and passive a role" (Culhane, 1981, pp. 295-6). To address this criticism, local administrators and their superiors (e.g. district managers) are the sixth and seventh groups with potential influence over BLM and Forest Service policy.

Culhane then measured the influence of these groups over four quantifiable policy decisions: including (1) the total amount of timber sold in a year; (2) the amount of permits given to graze

<sup>5</sup> A group's access to decision makers was calculated by tallying the number of interactions between an interest group and a local ranger or administrator.

<sup>6</sup> Culhane determined values by asking the groups a series of questions on public lands policy issues. He then put their answers into a scale from most-environmental to most-utilitarian. In this scale, conservationists were considered to be the most environmental, the Forest Service and BLM in the middle, with stockmen and the forest products industry the most utilitarian (Culhane, 1981, pp. 177-9).

animals in a year; (3) the number of permits granted in relation to mining, oil, and gas exploration; and (4) the amount of area designated for preservation (Culhane, 1981, pp. 291-2). Figure 3 presents these policy decisions as the output with interest groups included together to calculate their relative influence over policy.

$$\begin{aligned} \text{AUMs}^7\% &= a^8_1 + i^9_{11}\text{Stock}^{10}\text{RNVP} + i_{12}\text{ForPr}^{11}\text{RNVP} + i_{13}\text{CnRc}^{12}\text{RNPV} + i_{14}\text{Eco}^{13}\text{RNPV} + i_{15}\text{Oth}^{14}\text{RNVP} \\ &+ i_{16}\text{SAdm}^{15}\text{RPV} + i_{17}\text{DAdm}^{16}\text{PV}^{17} + e_1 \\ \text{MBF}^{18}\% &= a_2 + i_{21}\text{StockRNVP} + i_{22}\text{ForPrRNVP} + i_{23}\text{CnRcRNPV} + i_{24}\text{EcoRNPV} + i_{25}\text{OthRNVP} + \\ &i_{26}\text{SAdmRPV} + i_{27}\text{DAdmPV} + e_2 \\ \text{Wild-Prim}^{19}\% &= a_3 + i_{31}\text{StockRNVP} + i_{32}\text{ForPrRNVP} + i_{33}\text{CnRcRNPV} + i_{34}\text{EcoRNPV} + i_{35}\text{OthRNVP} + \\ &i_{36}\text{SAdmRPV} + i_{37}\text{DAdmPV} + e_3 \\ \text{Min/O\&G}^{20}\% &= a_4 + i_{41}\text{StockRNVP} + i_{42}\text{ForPrRNVP} + i_{43}\text{CnRcRNPV} + i_{44}\text{EcoRNPV} + i_{45}\text{OthRNVP} + \\ &i_{46}\text{SAdmRPV} + i_{47}\text{DAdmPV} + e_4 \end{aligned}$$

**Figure 3 The public lands group influence model (Culhane, 1981, p.297).**

Culhane’s model confirmed that public participation access, interaction with decision makers, and organisational resources were not equally important for the different groups (Culhane, 1981, p. 305). For example, public participation access was important for conservationists and recreationists seeking to influence policy but less so for economic groups (Culhane, 1981, p. 306). The forest products industry had the highest influence over the four policy areas (Culhane, 1981, p. 307). The forest products industry achieved influence by having a high number of contacts within the Forest Service and BLM, however, frequency of contact was low. The four remaining non-governmental groups had relatively even influence. By contrast, administrators had the least influence (ibid). Culhane (1981, p. 309) noted that “the absence of individual administrators’ effects in the model does not mean that administrators as a whole – as part of the complicated structure of agency

<sup>7</sup> AUMs% is grazing use, in animal-unit months, as proportion of carrying capacity.

<sup>8</sup> a is intercepts.

<sup>9</sup> i is influence indices.

<sup>10</sup> Stock is livestock industry.

<sup>11</sup> ForPr is forest products industry.

<sup>12</sup> CnRc is conservationists and recreationists.

<sup>13</sup> Eco is economic users other than the livestock and timber industries.

<sup>14</sup> Oth is other interest group contacts.

<sup>15</sup> SAdm is forest supervisors and BLM district managers.

<sup>16</sup> DAdm is forest rangers and BLM area managers.

<sup>17</sup> RNPV, RPV, PV are products of power, values, and access, as defined previously.

<sup>18</sup> MBF% is timber sold, in 1,000 board-feet, as proportion of allowable cut.

<sup>19</sup> Wild-Prim% is wilderness, primitive, and other areas approved, as proportion of areas considered.

<sup>20</sup> Min/O&G% is mining or oil and gas leases/permits approved, as proportion of allocations.

polycymaking – are unimportant in the policy-making process”. Significantly, administrators did not reconcile their own values with conservationist demands, but used conservationist demands to legitimate their own policies and professional norms (ibid). Culhane concluded there was “fairly strong evidence of group influence at even the lowest levels of public management” (Culhane, 1981, p. 311).

Culhane’s research reinvigorated the debate between capture and conformity. Culhane argued that policy capture would occur if an agency only established patronage with one interest group (Culhane, 1981, p. 325). Culhane found that policy capture was avoided because the Forest Service and BLM are required to engage with a variety of interest groups. The Forest Service and BLM’s multiple-use mandate encouraged these agencies to provide as many uses of public land for as many users as possible (Culhane, 1981, p. 327; BLM, n.d.). Culhane highlighted a flaw in the debate between capture and conformity. Culhane’s research discovered that groups influence public land managers:

...but because local constituencies are not composed solely of commodity users, as the capture thesis assumes, the resulting pattern of influence is quite different from that posited by thesis adherents. The Service and Bureau are neither uniformly captured nor uncaptured, but variably captured (Culhane, 1981, p. 334).

Variable capture was Culhane’s contribution to interest group theory. Variable capture allowed economic interests and conservationists to attain their policy goals at different times. Decisions appeal to both groups because the agencies in Culhane’s research represent a number of different constituencies. I refer to the process of variable capture throughout this research as the *selective and sequential patronage* of interest groups by a local government agency.

Culhane argued that policy capture is a matter of perception, and “when environmentalists...look to the right...they see the Service and Bureau aligned with consumptive user industries, and when industry users look to the left, they see the agency aligned with environmentalists” (Culhane, 1981, p. 338). Interest groups typically interact with a local government agency in one-on-one situations. Thus, only government officers fully appreciate the tension between competing interest groups (ibid). An agency relies “on their own experience” in anticipating tension between interest groups and responds in a way that avoids future conflict (Culhane, 1981, p. 281). This is known as the “rule of anticipated reactions” (Culhane, 1981, pp. 279-83; Mohai, 1987, pp. 124-5).

The multiple-use doctrine also helps local government agencies mediate conflict between interest groups. According to Culhane, multiple-use was the key technical and political doctrine of the Forest Service and BLM (Culhane, 1981, p. 331). Multiple-use was defined by the American Federal Land Policy and Management Act of 1967 as the “management of the public lands and their various

resource values so that they are utilized in the combination that will best meet the present and future needs of the American people (BLM, n.d.) The multiple-use doctrine is broad enough to justify the use or conservation of natural resources. Thus, local government agencies used the doctrine to resolve the political pressures placed on them by competing interest groups (Culhane, 1981, p.331).

An agency, using selective and sequential patronage and the rule of anticipated reactions, can “play their more extreme constituents off against each other to reinforce the agencies’ preferred middle course” (Culhane, 1981, p. 336). Furthermore, “by using both extreme elements in their constituencies, the bureau and service generate a multiple clientele for their multiple-use mission” (ibid). Culhane concluded that the agencies in his research “have so arranged matters that the political necessity of responding to their multiple clienteles reinforces the dictates of their professional expertise and statutory mandates” (Culhane, 1981, p. 341).

In sum, multiple clientelism proclaimed that a local government agency can establish authority and autonomy if multiple interest groups lobby for competing policies. Culhane devised this theory in response to the contextual changes in America’s public lands policy he observed during his research. An important aspect of this contextual change was the emergence of conservationist and environmentalist interest groups. The next section will examine the growth of environmental interest groups in New Zealand’s freshwater policy following the Lake Manapouri Dam protests.

#### **2.4. The emergence of environmental interest groups – the Lake Manapouri dam protests**

Appendix 1 details the pre-colonial management of freshwater in Canterbury by Māori. This appendix demonstrates that freshwater was actively managed by Māori prior to the arrival of European settlers. Despite this, European settlers were of the opinion that no legal mechanisms existed for management of freshwater prior to their colonisation. This misjudgement permitted transition from existing Māori law, which overlay physical and metaphysical realms, with English common law (Wheen, 2002, p. 261). English common law established riparian ownership rights for freshwater. Riparian rights permitted landowners to use freshwater for domestic and stock watering purposes as long as the flow of water through their property was not diminished in quality or quantity (Roche 1994, p.16).

Appendix 2 details the drainage of Te Waihora/Lake Ellesmere in Canterbury. This appendix demonstrates that European freshwater management was used to establish productive farming in Canterbury through lake drainage and protection of land from water bodies. This occurred despite protests from local Māori that they did not sell Te Waihora to the settlers.

Appendix 3 details the establishment of Canterbury's farming industry between 1850 and 1960. This appendix shows that farmers were the prevailing interest group in Canterbury's freshwater management from 1850. During this period, the Farmers Union (Cleveland, 1972) and Federated Farmers (Perry, 1992) established themselves as the voice of farmers in New Zealand. New Zealand's politics exhibited a rural bias and farming interest groups and local booster organisations used their influence to lobby central government to construct irrigation schemes during this period, for example, the Rangitata Diversion Race (RDR) in Mid-Canterbury. Irrigation test farms were also established with the help of central government funding (Evans & Cant, 1981, p. 59; Hopkinson, 1997; Wood & Brooking, 2001, p. 90).

Federated Farmers were New Zealand's prevailing farming interest group by the 1960s. In this same decade, countervailing environmental interest groups established themselves in response to the proposed damming of Lake Manapouri in the Fiordland region of New Zealand's South Island (Bührs & Bartlett, 1993; Memon, 1993). Ecologists, hunters, and urban citizens were concerned about the effect of the proposed dam on the local landscape. Two factors led to the Lake Manapouri dam protests. First, there was a growing public awareness of the risks of human activity on the natural environment. For example, Rachel Carson's popular book *Silent Spring* (1962) highlighted the effect of pesticides on birdlife. Second, the New Zealand public was increasingly angered by the second National government's secret negotiations with international corporations. The government planned to build the Lake Manapouri dam to generate power for an aluminium smelter run by international company Comalco (Young, 2004, p. 170).

Investigation into a hydro-electric dam on Lake Manapouri began in 1959 (ibid). Construction started after the election of the second National government in 1960. The Lake Manapouri dam was far more controversial than previous hydro-electric dam projects, such as Lake Coleridge in Canterbury (Peat, 1995, p. 3; Britten, 2000), because the government proposed to raise the lake's level to supply the hydro-electricity station. The public were repulsed that a lake as aesthetically beautiful as Manapouri could be destroyed for economic gain (Peat, 1995, p. 3). Economic development conflicted with growing environmental awareness (Wheen, 2002, p. 265).

The Save Manapouri Campaign began in 1959 but did not flourish until early 1970 (Young, 2004, p. 174). The campaign was successful due to its ability to assemble different groups – such as the aforementioned hunters, ecologists, and urban citizens – into a coalition focused on saving the lake. The Royal Forest and Bird Protection Society's petition to save the lake was signed by 264,907 New Zealanders (Young, 2004, p. 170). The third Labour government was elected in 1972 and committed during the election campaign to halt raising lake levels. Botanist and conservationist Alan Mark argued that the Lake Manapouri protests transitioned New Zealand's economy from a focus on

resource exploitation for economic gain towards a new era that integrated conservation of natural resources with economic development (Peat, 1995, p. vii). This transition is highlighted by institutional concessions granted to environmentalists during this period, such as the establishment of a Nature Conservation Council in 1962 as well as a Commission for the Environment in 1971 (Wells, 1998, pp. 6-7).

#### **2.4.1. The corporatist era of interest group politics in New Zealand – 1949 to 1984**

The Manapouri Dam debate coincided with the corporatist era of interest group politics in New Zealand. Corporatism is a form of government in which public policy is written in cooperation with specific interest groups (Mulgan, 1989, pp. 104-5). In a corporatist government “power lies with organised interest groups rather than with elected political leaders or public servants” (ibid). The government recognises some interest groups as the legitimate representatives of their sector, for example, the Engineering, Printing, and Manufacturing Union for workers or Federated Farmers for farmers. The government selects certain interest groups to help write policy.

Corporatism began in New Zealand after the election of the first National government in 1949 (Westrate, 1959; Cleveland, 1972). The previous Labour government had insisted on direct control of the economy. An example of corporatism was the co-operative Meat and Dairy export boards. Under National, these boards received greater autonomy for marketing their produce overseas (Westrate, 1959, pp. 60-1). Farming policy subsequently became a bargaining exercise between the government, Federated Farmers, and the Meat and Dairy boards.

Richard Mulgan (1989, p. 109) described the various techniques marketing boards or Federated Farmers used to influence New Zealand’s government during the corporatist era. These techniques included making submissions to the Minister of Finance before the government budget, discussing taxation and broader economic policy, as well as the development of farming policy. Mulgan argued that “[b]ecause Federated Farmers is so effective both in articulating the differing viewpoints of the farming industry and in forming an acceptable consensus between them, ministers of agriculture tend to rely on its advice as representative of farming opinion” (ibid). Nick Perry (1987; 1992) concurred with Mulgan. Farmers, according to Perry (1987, p. 117), influenced government policy during the corporatist era by actively engaging with government bureaucracies and politicians.

#### **2.4.2. Strengthening corporatism – the Water and Soil Conservation Act 1967**

During the Manapouri Dam debate, Parliament rewrote and passed a new law governing the use, allocation, conservation, and quality of freshwater in New Zealand. The Water and Soil Conservation

Act 1967 (WSCA) gave central government ownership<sup>21</sup> of freshwater, as well as the authority to use, allocate, and manage freshwater in New Zealand (ibid). The WSCA replaced the riparian rights regime that had existed for freshwater use since European colonisation (Roche, 1994, p. 107). Under the WSCA, businesses and government bureaucracies (such as the Electricity Department) would have to apply to Regional Water Boards for the right to use water (Roche, 1994, p. 106). Negotiation between the government and business over the use of freshwater was now mandatory. This strengthened the New Zealand government's authority over freshwater management and reflected its corporatist style of decision making.

New Zealand's previous freshwater legislation, the Soil Conservation and Rivers Control Act (SCRCA) 1941, focused primarily on soil erosion (Dick, 1969; McCaskill, 1973). The SCRCA established Catchment Boards that under the WSCA became Regional Water Boards. The SCRCA also established the national Soil Conservation and Rivers Control Council (SCRCC), which would remain influential after the passing of the WSCA (Roche, 1994, p. 106). Freshwater management issues became more complex between 1941 and 1967. The Manapouri dam protests highlighted the growing desire for conservation of freshwater bodies. Furthermore, a government report released in 1959 noted imminent conflict over the allocation of freshwater for irrigation in Canterbury (Roche, 1994, p. 98). The report argued that the SCRCA was unable to resolve these conflicts because no governmental agency had been designated with the task of allocating freshwater between competing uses (ibid). New Zealand's freshwater legislation subsequently shifted from a focus on soil erosion to a focus on "allocation of water amongst competing agricultural, industrial, domestic and subsequently recreational and scenic uses" (Roche, 1994, p. 97).

The Water and Soil Conservation Act (1967, p. 1) stated its goal:

*to promote a national policy in respect of natural water, and to make better provision for the conservation, allocation, use, and quality of natural water, and for promoting soil conservation and preventing damage by flood and erosion, and for promoting and controlling multiple uses of natural water.*

The WSCA focused on the multiple uses of freshwater in New Zealand (Dick, 1969, pp. 9-10). Freshwater allocation was now the responsibility of the National Water and Soil Conservation Authority (NWASCA). NWASCA was responsible for advising government Ministers about freshwater issues of national importance, co-ordinating matters relating to the erosion and pollution of freshwater, controlling the damming of water bodies, guiding research efforts, as well as creating minimum standards for freshwater quality (Roche, 1994, pp. 106-7). In retrospect, NWASCA and the Regional Water Boards struggled to achieve the goals of the WSCA. For example, freshwater pollution targets were not met. The Water Pollution Council, established after the enactment of the

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<sup>21</sup> With the exception of domestic water, stock water, and water for firefighting purposes (Roche, 1994, p. 105).

Water Pollution Act 1953 (Ward & Scarf, 1993, p. 65), was limited to an advisory role following lobbying from New Zealand's meat and dairy industries (Roche, 1994, p. 120). This is one explanation for the failure to achieve water pollution targets during the 1950s, 1960s, and 1970s.

In response, the Water Resources Council (WRC) was established to manage water pollution following an amendment to WSCA in 1972 (Roche, 1994, p. 119). The WRC's role was to classify water bodies due to their quality, carry out surveys into the deterioration of water quality, and spread information as to how water quality could be improved in New Zealand (Roche, 1994, p. 121). Regional Water Boards were responsible for granting rights to discharge pollution into waterways, and thus, they pressured the WRC to classify water bodies as quickly as possible so that minimum water quality standards in New Zealand could be established (Roche, 1994, pp. 121-2). Despite this, a report released by the WRC in 1974 noted that only half of the dairy farms and factories they monitored had satisfactory effluent disposal systems (Roche, 1994, pp. 122-3).

The WSCA struggled to achieve freshwater quality targets. The WSCA also struggled when calculating the benefits of competing freshwater uses. The WSCA proposed that the potential benefits of water use had to be weighed against anticipated ecological losses (Wheen, 2002, p. 265). This balancing approach was tested during an Appeal Board hearing over hydro-electricity development on the Rangitaiki and Whaeo Rivers in 1978. The potential benefit was electricity development; the anticipated ecological loss was an outstanding fishery and the habitats of endangered duck species. The Appeal Board argued that they lacked the statutory guidelines to determine the relative importance of economic development, scenic values, and wildlife (Roche, 1994, pp. 132). According to lawyer Tony Black, the subsequent decision to allow hydro electricity development exhibited a clear bias:

*...towards resource development as opposed to environmental conservation...For in the process of balancing tangible economic benefits and tangible social benefits against intangible and generally misunderstood environmental benefits the tangible wins out every time (Black, 1978,p. 153).*

Use of freshwater for economic development persisted despite the WSCA's attempt to balance economic and environmental goals. This highlights the power of economic users of freshwater during New Zealand's corporatist era of government. For example, rural districts dominated by farmers successfully lobbied for an increase in government spending on irrigation development throughout the 1970s (Roche, 1994, p. 124). Following an amendment to the WSCA in 1971, the WRC was given the authority to approve the construction of irrigation schemes costing less than \$50,000. By 1974 the WRC had subsidised nine new irrigation schemes costing a total of \$185,000 (Roche, 1994, p.

125). Freshwater management in the corporatist era remained dominated by commercial concerns despite attempts to balance economic and environmental goals.

### **2.4.3. Environmental concessions – the 1981 Wild and Scenic Rivers Amendment**

The WSCA's balancing approach, when applied in Appeal Board hearings, favoured the economic use of water over preservation of freshwater ecosystems. In response, environmental interest groups pressured politicians to protect freshwater bodies in New Zealand. The third National government – influenced by the American Wild and Scenic Rivers Act (Tarlock & Tippy, 1970) – succumbed to pressure and proposed protection of wild rivers through an amendment to the WSCA. This highlighted the increasing influence of environmental interest groups during the corporatist era of interest group politics in New Zealand.

The 1981 Wild and Scenic Rivers Amendment established a framework to protect freshwater bodies in New Zealand. The object of the Amendment was “to recognise and sustain the amenity afforded by waters in their natural state”, through “the preservation and protection of the wild, scenic and other natural characteristics of rivers, streams and lakes” (WSCA, 1981, p.1). Water Conservation Orders (WCOs) were the legal mechanism provided by the Amendment to protect freshwater bodies. A WCO can protect a water body by four methods: (1) providing for the quantity or rate of flow of water in its natural state, (2) preventing the building of dams along water bodies, (3) preventing the building of dams outside of the water body which will subsequently effect that water body, and (4) setting maximum and minimum levels of water flow (WSCA, 1981, p. 20D [sec. 3 (a) (b) (c) (d)]).

Some environmentalists opposed the Amendment. Opponents argued the changes were a “farce” while others saw it as an “unhappy compromise” (Oldham, 1989, pp. 75-6). Acclimatisation societies<sup>22</sup> were not entirely satisfied with the Amendment but recognised its importance. Conservationists criticised the Amendment because it did not regulate land use. Conservationists argued land use was integral in determining the “outstanding qualities” of water bodies (Oldham, 1989, p.80). Despite criticism, three WCOs were successfully enacted in Canterbury during the 1980s on Te Waihora/Lake Ellesmere, the Ahuriri River, and the Rakaia River (Hughey, Rennie, & Williams, 2014). The Rakaia River was protected despite hydro-electricity and irrigation companies lobbying for a dam (Young, 2004). The Rakaia River WCO illustrated that WCOs could affect land use through restricting the amount of freshwater available for irrigation (Oldham, 1989, pp. 104-5). The Rakaia River WCO thus hinted at the challenge WCOs would pose to prevailing farming interest groups during future freshwater allocation debates<sup>23</sup>.

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<sup>22</sup> Acclimatisation societies became what are now known as the Fish and Game Councils of New Zealand.

<sup>23</sup> This will be investigated in further depth during the fifth chapter.

In sum, during the corporatist era between 1950 and 1984 the government offered a variety of concessions to farmers and environmental groups. Farmers lobbied successfully for subsidised irrigation schemes. Environmental interest groups were able to protect wild freshwater bodies through an amendment to the WSCA. The ability of the government to set policy without recourse to persuasion or force exhibited its authority over freshwater management during this period<sup>24</sup>. However, the government was not able to set policy without first bargaining with interest groups, exhibiting a low level of autonomy over freshwater management. During the NPM era, the proliferation of local government agencies with authority over freshwater use in New Zealand – such as regional water boards, catchment boards, and the water resources council – were amalgamated, and the legislation governing the use of New Zealand’s freshwater was re-written.

## **2.5. Conclusion**

This chapter introduced Paul Culhane’s theory of multiple clientelism. Multiple clientelism argued that a local government agency can gain authority over natural resource management despite pressure from multiple and competing interest groups. An agency can establish patronage with different interest groups at different times. Despite bargaining with interest groups, the local government agency establishes autonomy by playing each group off against each others in order so that the agency can pursue its preferred policy.

Paul Culhane devised multiple clientelism after investigating interest group influence over the US Forest Service and BLM in the 1970s. These agencies were responsible for planning, regulating, and allocating natural resources such as forests and grasslands for multiple users. In New Zealand, a variety of regional, sub-regional, and local agencies were responsible for planning, regulating, and allocating freshwater under the Water and Soil Conservation Act.

The WSCA also noted the need to address multiple uses of freshwater. Comparable to Culhane’s research, more than two groups desired influence over New Zealand’s freshwater management – for example, hydro-electricity generators, fishers, and water-sports enthusiasts – however, as this chapter illustrates, farmers and environmentalists were the most organised and influential groupings. As a result, economic users of freshwater and environmentalists had to negotiate with agencies over the use or protection of freshwater bodies in New Zealand. Thus, the corporatist era of freshwater management described in this chapter led local government agencies to negotiate policy with interest groups in a method that was reminiscent of multiple clientelism.

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<sup>24</sup> A noted exception is the Clutha Development (Clyde Dam Empowering) Act of 1982. The Act allowed the Clyde Dam to be built despite an earlier court decision against the dam’s construction. Nicola Wheen (2002, p. 268) argued that this broke an important constitutional convention. As such, the Act exhibited central government’s use of authority above and beyond the law.

The next chapter examines the reforms which were introduced after the election of the fourth Labour government in 1984. This government was elected during a fiscal debt crisis that led them to introduce economic, managerial, and state sector reforms. The chapter examines these reforms with a particular focus on New Public Management reforms. The chapter examines the effect NPM reforms had on interest group politics and freshwater management in New Zealand. These reforms might have an effect on the way a new local government agency pursues authority and autonomy over freshwater management, especially given the shift from the big government corporatist approach of the WSCA towards the hands-off effects-based approach of the Resource Management Act.

## 3. Chapter Three

### New Public Management in New Zealand

#### 3.1. Introduction

New Zealand's government was radically reformed between 1984 and 1999. During this period the public service was reshaped, subsidies for farmers were removed, and the economy was reformed to reflect the principles of *laissez-faire* free market economics. Internationally, the scope of New Zealand's reforms was unique. For example, *The Economist* magazine noted in November 1990 that "New Zealand is the only rich country in the world which does not protect its farmers at all. They are paid only a quarter of the price received by EC [European Community] farmers for their butter and milk" (as quoted in McGill, 2004, p. 85). The state sector reform period affected farmers, and as a result, also affected land use and freshwater management in New Zealand. This chapter examines this period of economic, managerial, and state sector reform in New Zealand. I hypothesise that these reforms will have an effect on the way ECan pursues authority and autonomy over freshwater management.

Prior to these reforms, New Zealand's public service was a "unified, lifetime career [public] service" with "monolithic sector-based departments" (Gill, Pride, Gilbert, Norman, & Mladenovic, 2011, p.32). These monolithic departments were often "preoccupied with due process, rules and equity of treatment" (Ryan & Gill, 2011, p. 13). In response to this environment, New Public Management reforms promoted new administrative principles for the public service that were influenced by private sector management techniques (Hood, 1991; 2001).

This chapter reviews New Zealand's New Public Management (NPM) reform era. The chapter begins by describing the general features of NPM reform. The chapter then analyses the New Zealand model of public management that became a global exemplar of NPM reform (Halligan, 2007, p. 48; Whitcombe, 2008, p. 7). Following this, the effect of NPM on freshwater management in New Zealand and Canterbury is examined. A discussion of the influence of interest groups over public policy during the NPM era is then presented. The chapter is concluded by acknowledging the trend towards collaborative governance post-NPM. The hybrid MC-NPM theory is introduced at the end of this chapter.

#### 3.2. New Public Management – a new reform agenda

Public management is defined in this thesis as "the arrangements for governing a country, including the means by which policies are developed and implemented by public sector organisations and the

processes for funding managing and monitoring those organisations” (Gill *et al.*, 2011, p.30). NPM was a global reform project that encouraged governments to reduce or eliminate “the differences between the public and the private sectors” by focusing on results over process (Bach & Bordogna, 2011, p. 2284). NPM reformed governments achieved this shift by establishing policy goals (such as maximizing irrigated land space) and specifying outputs to meet these goals (such as the amount of freshwater consents granted).

NPM scholars have argued that the reform agenda was influenced by economic-based theories of politics as well as private sector managerial practices (Aucoin, 1990; Boston *et al.*, 1996). Public Choice Theory (PCT) is the most widely cited economic-based theory of politics that influenced NPM reform (Boston *et al.*, 1996, p. 17; Whitcombe 2008, p.8). PCT is a theory of politics that uses “economic tools to deal with the traditional problems of political science” (Tullock, 2008). PCT reframes the relationship between the voter and politician as one of customer and entrepreneur (Tullock, 2008). PCT assumes that politicians, bureaucrats, and voters are all self-interested. Through this assumption, PCT can use tools of analysis derived from economics and statistics to understand (and potentially predict) political behaviour.

PCT scholars argued that “politicians will pursue their own particular objectives at the expense of many of their constituents”, that “interest groups will engage in rent-seeking behaviour to the disadvantage of the wider community”, and finally that “government officials, in their attempts to expand their budgets, will acquire an ever increasing quantity of resources” (Niskanen 1971, as cited Boston *et al.*, 1996, p. 18). These predictions assumed that the state will expand to address the unique desires of politicians, interest groups, and bureaucracies. The result is that interest groups or bureaucrats will capture policy (*ibid*). As Boston *et al.* (1996, p. 27) argued, PCT’s “emphasis on [the] budget-maximising behaviour of bureaucrats, its suspicion of politicians’ motives, and its concern over provider capture...undoubtedly influenced the climate of opinion” during New Zealand’s NPM reform period. Whitcombe (2008) agreed with Boston *et al.* and added that NPM reformers perceived PCT as a solution to the problem of provider capture, in which policy is captured by self-interested bureaucrats who do not respond to government ministers.

NPM reforms were also influenced by private sector managerialism. Managerialism is reminiscent of scientific management and the work of Frederick Winslow Taylor (cf. Painter, 2011). Reformers assumed that the differences between the public and private sectors were insignificant, and thus the public service ought to adopt private sector managerial practices (Boston *et al.*, 1996, p. 26). Private sector management techniques such as short term contracts with tightly specified details (Put & Bouckart, 2011), performance linked pay, and the development of strategic and corporate plans (Hood, 1995, p. 97), were subsequently introduced to the public sector.

Christopher Pollitt and Geert Bouckaert (2004, p. 280), in a comparative analysis of NPM reforms in thirteen different jurisdictions, concluded that New Zealand's reforms were "probably the most comprehensive and radical set of public management reforms of any OECD country". New Zealand's NPM reforms are analysed in the next section.

### **3.3. New Zealand's New Public Management reforms**

New Zealand's Treasury promoted the adoption of NPM in New Zealand. Treasury preached the benefits of NPM in two influential documents. The first document, *Economic Management*, was Treasury's briefing to the incoming Labour government in 1984 (Treasury, 1984). The second document, *Government Management*, was published as a briefing to the returning Labour government in 1987 (Treasury, 1987). Treasury argued that public management in New Zealand ought to be reformed: Treasury suggested (1) clear objectives for managers that are then monitored for performance, (2) transparency in setting performance objectives, (3) a structure that limits the capture of policy by people who are providing public services, (4) a structure that ensures contestability of policy advice and delivery, (5) the gathering of good information from which to gauge public sector performance, and (6) incentives for managers to achieve the goals of government rather than their own personal goals (Scott, 2001, p. 4).

Treasury's suggestions for public management reform influenced the NPM reforms initiated by consecutive governments between 1984 and 1999. Boston *et al.* (1996) is the authoritative source on the New Zealand model of NPM. Boston *et al.* note that not all of the aspects of global NPM reform were adopted in New Zealand. Below are some of New Zealand's NPM reforms recounted by Boston *et al.* (1996, pp. 27-8).

#### 1) Attempts to limit the role of interest groups in New Zealand

Treasury (1987, pp. 44-5) argued that central and local government, when addressing conflicts over public policy, will either pursue general social goals or be diverted into addressing certain vested interest groups. For this reason, Treasury argued that "the mechanisms of policy capture" – either from external sources such as interest groups or internal sources such as a bureaucracy – "need to be continually reviewed" (Treasury, 1987, p. 44). Reforms were initiated to limit future policy capture. For example, the funding of governmental goods and services (such as irrigation schemes) was separated from providers (such as bureaucracies) to avoid interest group capture (Duncan & Chapman, 2010, p. 301). Secondly, separate bureaucratic institutions were created to draft and implement policy. It was envisioned this would protect against bureaucratic capture of policy (McDermott, 2000).

## 2) A shift to output accountability.

NPM reforms highlighted the difference between public sector outputs and outcomes. Graham Scott (2001, p. 169) defined public sector outputs as “the goods and services produced for an external party, such as ministers or consumers”. Public sector outcomes are “the impacts of those goods and services on the communities” (ibid). Scott argued that a government will be judged on their ability to produce high level outcomes, for example, reducing road fatalities. Public sector organisations, such as the New Zealand Police, ought to pursue strategically defined quantifiable outputs (such as number of road users fined for speeding) to achieve the broader outcome (reducing road fatalities). In sum, NPM reform ensured bureaucracies were accountable for quantifiable outputs while government ministers were responsible for delivering outcomes (Halligan, 2007, p.53). As Hood (1995, p. 97) argued, NPM reform moved “towards *more explicit and measurable* (at least checkable) *standards of performance* for public sector organisations”.

## 3) Devolution of managerial control.

Christensen and Lægried (2001, p. 79) defined devolution in a NPM context as strengthening “the discretionary power of managers” and giving “subordinate levels and agencies more autonomy”. James and van Thiel (2011) concurred that devolution to smaller authorities is a feature of NPM reform. Boston *et al.* (1996, pp. 167-8) cited local government reforms in New Zealand, and the reduction in regional, territorial, and special purpose agencies following 1988’s Local Government Amendment Act (no.2) as an example. Boston *et al.* also cited the transfer of resource management, transport, and crime prevention responsibilities from central to local government during this period.

## 4) A separation of policy advice from policy implementation.

Graham Scott (2001, p. 21) argued that policy advice should be separated from policy implementation to “avoid domination of policy advice” by those who have to implement it. Scott cited the separation between New Zealand’s Ministry of Justice, which provides court services, and the Department of Corrections, which provides prison services, as an example. McDermott (2000, p. 54) cited the separation of “environmental responsibilities between regional and local councils” in New Zealand as another example.

## 5) The splitting of large bureaucracies

New Zealand’s government established 26 new departments between 1984 and 1995; 23 departments were abolished, corporatisted, or privatised. Many of these new departments were smaller sector-based policy ministries. For example, the Ministry of Agriculture and Fisheries was split into the Ministry of Agriculture and the Ministry of Fisheries.

## 6) A preference for private ownership of previously publicly owned infrastructures

NPM promoted private ownership of infrastructure. This will be examined later in this chapter with the sale of New Zealand's state-owned irrigation schemes.

#### 7) The emulation of private sector management practices in the public service

NPM introduced private sector management techniques to New Zealand's public service. Boston *et al.* (1996, p. 26) cited "the use of short-term labour contracts, the development of strategic plans, corporate plans, performance agreements, and mission statements, the introduction of performance-linked remuneration systems, the development of new management information systems, and a greater concern for corporate image" as examples.

Allen Schick was commissioned by New Zealand's State Services Commission and the Treasury to review New Zealand's NPM reforms in 1996. Schick (1996, p. a) proclaimed that New Zealand's public management had been transformed since 1984 through "new methods of managerial accountability, including the shift from input to output appropriation, reliance on contracting, and monitoring of results". Schick was complimentary of the reforms, but the New Zealand experience highlighted problems with NPM. First, Schick argued that NPM reforms had emphasised outputs to such an extent that medium- to long-term planning had been neglected (Schick, 1996, p. b). Second, Schick argued that "something may be lost when responsibility is reduced to a set of contract-like documents and auditable statements" (Schick, 1996, p. 85). Schick warned that pursuing accountability through contractual duties could potentially result in a reduction of employee responsibility, or in other words, a commitment to do one's best for the public service. Schick concluded that "it is urgent to uphold the old-fashioned tenets of managerial responsibility, while strengthening the modern instruments of managerial accountability" (*ibid.*).

The State Services Commission (SSC) reviewed New Zealand's public management in 2001 (SSC, 2001). SSC's *Review of the Centre* identified similar issues with New Zealand's public management to Allen Schick's report. The *Review of the Centre* argued for greater alignment between bureaucratic departments, a citizen focused bureaucracy that meets broad outcomes, as well as enhancing the core values of the public sector (SSC 2001, p. 6). Jonathan Boston and Chris Eichbaum (2007, p. 136 as quoted in Gill *et al.* 2011, p. 13) were more complimentary. These authors argued that NPM had improved New Zealand's public management.

*[The cited benefits included] [g]reater productive efficiency (especially in the commercial parts of the public sector), improvements in the quality of certain services (e.g. the time taken to process applications for passports and welfare benefits has been drastically reduced), better expenditure control, better management of departmental budgets, greater managerial accountability, and major improvements in the quality of information available to policy makers.*

Grant Duncan and Jeff Chapman (2010, p. 303) argued that NPM reforms were slowly modified after the election of the fifth Labour government in 1999. Duncan and Chapman argued that many of the reforms now remain only in a “*revised form*” (Duncan & Chapman, 2010, p. 304). As evidence, the authors cited the growth of the public sector under the Labour government as well as a coordinated “*outcome-oriented approach*”, which replaced the focus on quantifiable outputs criticised by Allen Schick in 1996 (Duncan & Chapman, 2010, p. 310). Jong Jun (2009) agreed with Duncan and Chapman. Jun argued that a “*post-New Public Management*” reform agenda is being initiated globally. Post-NPM reform addressed several problems that stemmed from earlier NPM reforms, for example, the fragmentation of roles and responsibilities between bureaucracies, the expansion of single purpose organisations, and lack of co-operation between agencies (Jun, 2009, pp. 162-3). By contrast, post-NPM reform promoted a whole-of-government approach utilising public-private partnerships, re-centralization, and clear role relationships between different agencies and bureaucracies (ibid).

This illustrates that NPM is not a static project in New Zealand. Between 1989 and 2010 NPM reforms influenced New Zealand’s public management, however, its adoption was contested and questioned. Much like the United Kingdom’s public management system, New Zealand’s has been in a constant state of reform. However, the changes initiated between 1984 and 1993 were far more significant than the subsequent reforms between 1993 and 2010. I argue that despite NPM being a flexible project which has morphed since 1989, there were structural reforms which had a significant effect on freshwater management. For example, a preference for private ownership of infrastructure encouraged the sale of state-owned irrigation schemes to users. The Resource Management Act focused on output accountability and the management of effects rather than planning for long-term outcomes. The establishment of regional councils illustrated the devolution of managerial control as well as the separation of policy advice from implementation. Furthermore, the removal of farming subsidies had an impact on land use and freshwater quality in Canterbury. These developments are examined in the following sections.

### **3.3.1. Privatization of irrigation schemes**

The Ministry of Works and Development (MWD) constructed and managed state-owned irrigation schemes in New Zealand between 1912 to 1987 (Farley, 1994, p. 4). MWD was disbanded in 1987 and the irrigation schemes were sold to users. The Irrigation Schemes Act 1990 facilitated the sale of forty-nine state-owned irrigation schemes (Farley, 1994). The rationale provided was that transfer of ownership to users would improve efficiency and eliminate maintenance costs incurred by government (Lewthwaite & Martin 1987, as cited in Collins, Kearns, & Le Heron, 1998, p. 10). The

sale did not produce a large profit<sup>25</sup> (Farley, 1994, p. 8). Despite this, Farley concluded that “government involvement in irrigation has not been shown to produce any net national benefit” and the “privatization of irrigation schemes in New Zealand has produced very large efficiency gains” (Farley, 1994, p. 11).

### **3.3.2. The Resource Management Act**

The Resource Management Act 1991 (RMA) replaced New Zealand’s town planning and resource management legislation. The WSCA had previously allocated use of freshwater by weighing the benefits of resource use against the benefits of conservation. By contrast, the RMA allocated freshwater through assessment of the potential effects of freshwater use on the environment (Peart, 2007, p. 15).

Regional councils are responsible for managing and regulating the effects of resource use under the RMA. Central government issues national policy statements that bind all regions in New Zealand to meet collective standards (McDermott, 2000; Gunningham, 2008, pp.15-6). Regional councils then use outputs such as resource consents, regional policy statements, and regional plans to achieve the envisioned national outcomes. In sum, central government offer policy advice to achieve broad outcomes (through national policy statements) whereas regional councils are responsible for policy delivery through quantifiable outputs (consents, policy statements, plans). The RMA thus reflects the NPM principles of output accountability, devolution, and the separation of policy advice from policy implementation.

Use of freshwater is prohibited under the RMA unless there is a rule in a regional plan that permits its use or if consent is granted for its use (Gunningham, 2008, p. 17). In other words, it is prohibited unless expressly granted. Section 5 c) of the RMA stipulated that resource use can occur if it enables people and communities to provide for their social, economic, and cultural wellbeing while avoiding, remedying, or mitigating any adverse effects of the proposed activity on the environment (RMA, 1991, p. 68 [sec.5 (1)]). Granting resource consent for freshwater use will be determined on the effect it might have on the environment, and whether these effects are prohibited, non-complying, discretionary, controlled, or permitted in the planning process. By contrast, regional plans establish limits to control the cumulative effect of individual resource uses that pollute the environment. However, with a few notable exceptions (e.g. McKenzie, 2004), using plans to regulate cumulative

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<sup>25</sup> According to Farley (1994, p. 13), 49 state-owned irrigation schemes were sold to users under the Irrigation Schemes Act 1990, producing a profit of \$3,274.924.

effects appeared politically unacceptable and therefore difficult for regional councils to implement during the 1990s (Memon, 1997, p. 313)<sup>26</sup>.

Neil Gunningham (2008) was critical of the RMA in his review of Canterbury's water governance arrangements in 2008. Gunningham (2008, p. 5) argued that neither regional plans nor consents were "capable of effectively constraining water takings or of ensuring allocation to its highest value". Furthermore, the Court's "narrow interpretation" of cumulative effects from individual uses (*ibid*), and the RMA's ethos that intervention in land use should only occur if there are significant environmental effects (Upton, 1991, p. 3018), obstructed planning for long-term outcomes. Freshwater planning also stalled because central government did not create a national policy statement for freshwater between 1989 and 2010 (Gunningham, 2011, p. 42; Logan, 2013, pp. 139-164).

The RMA was also criticised for an over-emphasis on environmental protection. The McShane Report (McShane, Tremaine, Nixon, & Salmon, 1998) argued that RMA planning processes led to excessive regulation of land use, placed unrealistic costs on private developers, and created lengthy delays in the processing of consents by councils. Mairi Jay (1999, p. 470) argued "[p]lanners have been...subjected to criticism from all directions in relation to RMA implementation". Planners were either environmentally conservative or not conservative enough depending on one's perspective. This is an example of the RMA's ambiguity, and the efforts interest groups would go to lobby regional councils for recognition of their values in policy.

### **3.3.3. The creation of regional councils in New Zealand**

The amount of local government agencies in New Zealand was significantly reduced by the Local Government Amendment Act (no.2) in 1989. Arguably, these reforms differ from the principles of NPM. For example, freshwater management responsibilities shifted from catchment scaled Regional Water Boards to larger regional authorities. Land drainage boards and pest destruction boards were amalgamated with Regional Water Boards into regional councils. This re-centralisation of freshwater and natural resource management functions defies the NPM trends of decentralisation and the disaggregation of bureaucratic functions.

Prior to NPM reform, environmentalists had perceived state-led resource-developments, such as the building of hydro-electric dams, as the newest threat to freshwater ecosystems (Bührs & Bartlett, 1993, 90). According to Berke *et al.* (1999, 450), local government reform in conjunction with the RMA permitted the private sector to investigate resource-development opportunities that were

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<sup>26</sup> It should be noted this situation has now changed with the operational National Policy Statement for Freshwater in 2011 (MfE 2011) and the subsequent 2014 (MfE 2014b) amendment requiring all regional councils to set limits for pollutants, such as nitrates, within freshwater bodies.

previously undertaken by the public sector<sup>27</sup>. Regional councils were now responsible for controlling “the effects of use and development of resources” by the private sector through the RMA (ibid). The cumulative effect of these private individual resource uses, rather than large state-sponsored projects, became the biggest threat to the health of New Zealand’s freshwater ecosystems following NPM reform.

### 3.3.4. The removal of subsidies

The Labour government eliminated the majority of financial subsidies for farmers between June 1984 and December 1985 (Clope, 1989). These reforms significantly effected Canterbury’s farming community. The elimination of subsidies forced farmers to change land use which would subsequently have an effect on freshwater quality during the 1990s and 2000s. For example, William Smith and Lindsay Saunders (1996, p. 24) argued that the removal of subsidies had a distinctly biophysical effect:

*[with] farmers [now] respond[ing] to changes in market signals after 1984, by changing their production system and input mix. Unable to control costs or income they ran down their non-market capital – the land ... [This in turn] ...significantly reduced New Zealand’s environmental capital and imposed an enormous if unquantifiable cost on all New Zealanders.*

The income of sheep and beef farmers in New Zealand fell by an average of 39 per cent between 1983 and 1985 (Galt 1989, as cited in Smith & Saunders, 1996, p. 21). Federated Farmers supported the removal of subsidies despite the effect on farmers’ income. A handbook published by Federated Farmers in 1996 argued that the government should continue to reduce its involvement in commercial areas while improving the efficiency of its own expenditure (Federated Farmers 1996, as cited in Liepins & Bradshaw, 1999, p. 576). According to the reformers, resource use should be determined by farmers and the price for their produce should be determined by the international free market.

Canterbury’s dairy herd grew by 302 per cent between 1995 and 2009 (Statistics New Zealand, 1995; 2009). Farmers profited from dairying without the need for government subsidies. Concurrently, a decline in Canterbury’s freshwater quality – which was predicted by ECan employees in the early 1990s (Talbot, 1991; Douglass, 1993) – was confirmed by the mid-2000s (Parkyn, Matheson, Cook, & Quinn, 2002; Bell & van Voorthuysen, 2008). The growth of dairying and other intensive land uses following the removal of subsidies was blamed for this decline in freshwater quality (PCE, 2004: 21). Furthermore, demand for irrigable water was driven by the growth of intensive land uses. ECan was given responsibility for ensuring the sustainable management of freshwater in this context. The

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<sup>27</sup> For example, the construction of the Opuha Dam in South-Canterbury during the 1990s and 2000s was a private venture (see Worrall, 2007).

competing demands of farmers, who were still affected by the removal of subsidies, and environmentalists, who perceived the decline in Canterbury's freshwater quality during this period as evidence of ECan wavering on its statutory mandate, exerted influence on ECan's freshwater policy. In sum, the removal of subsidies, the privatization of irrigation schemes, the enactment of the RMA, and the creation of regional councils affected the relationship between the regulators (ECan), environmentalists, and farmers. The next section will examine in greater detail the relationship between interest groups and the government during the NPM reform era.

### **3.4. New Public Management – the second interest group era**

NPM and state sector reforms effected the relationship between interest groups, local government, and central government. The exchange of policy between chosen interest groups and the government seen during the corporatist era receded. For example, Michael Roche, Tim Johnston, and Richard Le Heron (Roche, Johnston, & Le Heron, 1992) noted the waning influence of traditional farming interest groups in the early 1990s. They argued that farming interest groups' "political mechanisms are often ineffective channels; they usually occupy a structurally subordinate position, relative to agribusiness and other interests; and agricultural politics are increasingly being driven by consumption and not production issues" (Roche *et al.*, 1992, p. 1762).

The government disengaged with interest groups during the NPM reform era in an attempt to avoid the policy capture that was exposed during the corporatist era (Wood & Rudd 2004, p. 164). For example, Treasury argued in 1984 that publicly funded irrigation projects had been entirely captured by users:

*Unlike other projects traditionally undertaken as public works, such as roads, flood controls, etc., the benefits from community irrigation are captured entirely by private landowners within the schemes. There is no evidence to indicate that the benefits from irrigation investment are of anymore value to the nation than the benefits of other types of investment. Put simply, the 'public good' aspect of investment in irrigation schemes are the same as those of any other private investment. Indeed, it is more correctly stated that a social cost is involved in those instances where irrigation schemes use scarce water resources for which they are not charged (Treasury, 1984, p. 46).*

Tenbenschel argued that the NPM era "generated a concerted attempt by governments to reduce and constrain the influence of interest groups in politics" (Tenbenschel, 2003, p. 352; see also Goldfinch, 2003, p. 553; Tenbenschel, 2010). NPM reformers were of the attitude that "all interest groups, regardless of whether they claimed to be representing sectional or non-sectional interests, were really in the business of securing benefits for their members at the expense of the rest of society" (Tenbenschel, 2003, p. 352). In sum, the NPM era saw a "concerted attempt" by local and central government to reduce the influence of interest groups over policy.

During the NPM era, regional councils were asked not to exercise their full authority to set rules for natural resource use (Upton, 1991). Rather, the RMA and its proponents argued that regional councils should adopt a hands-off approach to management of natural resources. For example, Minister for the Environment Simon Upton argued in Parliament that the RMA “should be seen as legitimising intervention only to achieve its purpose”. According to Upton, regional councils should only intervene “to achieve sustainability of natural resources” or to “facilitate matters for those who seek consents” (Upton, 1991. p. 3018). As a result, regional councils were often indecisive when setting rules for the cumulative use of resources such as freshwater.

In sum, regional councils did not exercise full authority over natural resource use and were simultaneously discouraged from interacting with interest groups during the NPM reform era. This led regional councils to exercise a low amount of authority over freshwater policy while maintaining a high level of autonomy over decisions made. Tenbenschel (2003, p. 353) argued that these trends softened after the election of the fifth Labour government in 1999. The fifth Labour government were more receptive to interest group negotiation than its predecessors. According to Tenbenschel (ibid), the Labour government recognised the capacity interest groups still had to mobilise political power (c.f. Wood & Rudd, 2004, 174). Thus, renewed negotiation with interest groups over policy was a pragmatic rather than an ideological move.

### **3.5. Collaboration – an emergent third interest group era**

New Zealand’s economic, managerial, and state sector reform period ended following the election of the fifth Labour government in 1999. Jun (2009) noted a trend in post-NPM reform globally from the early 2000s, concurrently Duncan and Chapman (2010, pp. 303-4) observed a similar trend in New Zealand. During this period interest groups were reintegrated into the policy process. This reintegration often occurred through participatory or collaborative governance arrangements. The shift to collaborative governance in New Zealand reflected Paul Schumaker’s (2013, p. 256) observation that “a new pluralism is emerging that de-emphasizes a politics of group power and that emphasizes the role of diverse ethical and political principles in community politics”. Bronwyn Hayward (1995), Wendy Larner and David Craig (2005), Ali Memon and Gavin Thomas (2006), Adrienne Lomax, Ali Memon, and Brett Painter (2010), Claire Charters and Dean Knight (2011), Cameron Holley and Neil Gunnigham (2011), James Lennox, Wendy Proctor, and Shona Russel (2011), and Elizabeth Eppel (2013) have all witnessed this trend in New Zealand.

Collaboration between government agencies, industry, and the public has been encouraged by the passing of the Local Government Act (2002) (Gunningham 2008; Reid *et al.* 2006; Thomas and Memon 2007). Section 20 of the LGA asked local government agencies to “promote the social, economic, cultural and environmental well-being of communities now and for the future” (LGA,

2002). Agencies produce long-term plans which outline how they will achieve these goals. Bryan Jenkins (2011a; 2011b) argues that because the LGA requires community involvement in the creation of long-term plans, it “represents a shift from representative democracy towards participative democracy”. By contrast, Larner and Craig (2005) argued that debates on the Treaty of Waitangi<sup>28</sup> – and the relationship between the New Zealand government and Māori – provided impetus to develop partnerships between the government and community groups (Larner and Craig 2005, p. 408). For example, the *Statement of Government Intentions for Improved Community-Government Relationships* (New Zealand Government, 2001) actively sought to improve the relationship between central government, local government, and communities.

Elizabeth Eppel (2013) examined the New Zealand experience with collaborative governance in a recent overview article. Eppel (2013, pp. 40-1) argued that the fragmentation of government agencies in the 1990s (a feature of NPM reform) made it more difficult to deal with “wicked” policy issues that have neither one cause nor one solution (see Rittel & Webber, 1973). Eppel (2013, p. 46) concluded that collaborative governance offers a potential solution to wicked policy problems, and that “effective collaborative governance is contingent on the nature of the problem to be solved, the processes suitable for working with complex problems, and the governance structures to be created which must also be compatible with the complexity of the problems to be solved”.

Government agencies in New Zealand believe that the complex problems presented by freshwater management can be solved through collaborative governance. For example, the Ministry for the Environment proposed collaboration as an alternative to RMA processes (MfE, 2013). In MfE’s opinion, collaborative governance will help set limits and standards for freshwater quantity and quality while actively involving iwi and Māori in freshwater decisions (MfE, 2013, p. 24). The Land and Water Forum (2012, p. x) concurred, stating that governance of freshwater under “collaborative plan and policy making process[es] will be generally faster...more efficient and more equitable than the status quo”.

In sum, collaboration is an emergent third era in New Zealand’s interest group politics. Collaboration emerged in the early 21<sup>st</sup> century in response to the exclusion of interest groups from the policy process during the NPM reform era. The period between 1989 and 2010 analysed during this research is a juncture between the remnants of corporatism, the NPM reform era, and the emergent trend of collaboration.

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<sup>28</sup> The Treaty of Waitangi was signed between the British Crown and a selection of Māori chiefs in 1840. The Treaty permitted British settlement of New Zealand, established a British Governor, while subsequently giving Māori the rights of British subjects while recognizing the ownership of their lands and properties. The Treaty of Waitangi has subsequently taken on constitutional importance as the founding document of modern New Zealand.

### 3.6. MC-NPM hybrid theory

The second chapter suggested that multiple clientelism provides a method for local government agencies wishing to establish authority and autonomy over natural resource management. This chapter noted that New Zealand’s natural resource management regime in the 1990s and 2000s, which is typified by the shift towards an effects-based approach through the RMA, might affect the way ECan will pursue authority and autonomy. Therefore, I propose a hybrid MC-NPM theory to predict ECan’s pursuit of authority and autonomy in the three case studies.

Given the definitions of authority and autonomy in the first chapter, the table below explains the criteria which determine whether a local government agency such as ECan establishes high or low authority and autonomy.

**Table 2 Criteria for high and low authority and autonomy.**

High Authority	A local government agency has high authority if it is able to set rules, prescriptions, or instructions which are followed without recourse to persuasion <sup>29</sup> or force <sup>30</sup> .
Low Authority	A local government agency has low authority if it has to resort to the use of persuasion or force in order for its rules, prescriptions, or instructions to be followed.
High Autonomy	A local government agency has high autonomy if it has the ability to set rules, prescriptions, or instructions with full independence from interest group influence.
Low Autonomy	A local government agency has low autonomy if it is unable to set rules, prescriptions, or instruction without first bargaining with interest groups.

<sup>29</sup> An example of persuasion could include when someone does not want to follow a rule or instruction, but is encouraged to follow it due to the threat of force.

<sup>30</sup> Examples of force could include fines or criminal prosecutions.

If a local government agency successfully engages in selective and sequential patronage with interest groups, as multiple clientelism suggests, the agency will establish high authority with low autonomy. Authority is high because the agency's rules, prescriptions, and instructions are respected by interest groups. However, the agency will have low autonomy because it has actively bargained with interest groups over policy through selective and sequential patronage. If an agency has high authority and autonomy it ought to be able to set rules, prescriptions, and instructions for freshwater use autonomously. If an agency has low authority and autonomy its freshwater policies will stagnate, and the agency will be unable to set rules, prescriptions, and instructions that will be followed.

MC-NPM hybrid theory suggests a local government agency will exercise a high level of autonomy with low authority for the following reasons:

- 1) As multiple clientelism suggests, a local government agency will attempt to establish relationships of selective and sequential patronage with interest groups. However, NPM reforms attempted to constrain the influence of interest groups to avoid policy capture. For example, NPM reforms split policy delivery from implementation and separated the funding of governmental goods and services from bureaucratic providers. As such, MC-NPM theory predicts that a local government agency will seek patronage with interest groups. Despite seeking patronage, the local government agency will be unwilling to cede autonomy over policy decisions.
- 2) NPM reforms argued that local government agencies ought to focus on meeting quantifiable outputs rather than planning for long-term outcomes. As such, the MC-NPM hybrid theory predicts that a local government agency will choose to exercise authority through rules, prescriptions, and/or instructions to meet quantifiable outputs (such as consents, policy statements and plans) rather than through planning for long-term outcomes.
- 3) NPM reforms argued that a local government agency ought to adopt a hands-off approach to natural resource management. In particular, the RMA directs regional councils to ensure sustainable management of natural resources by managing environmental effects. As such, MC-NPM theory predicts that a local government agency will choose to exercise authority through rules, prescriptions, and/or instructions only if the environmental effects of resource use are clear.

In sum, the MC-NPM hybrid theory suggests that a local government agency will attempt to establish relationships of patronage but not to the detriment of its autonomous decision making. The hybrid theory also suggests that a local government agency will take a hands-off approach to resource

management, only intervening in resource use to ensure outputs are met and the environmental effects of resource use are minimised. Table 3 below represents the different resource management outcomes from local government agencies exercising high and low authority and autonomy.

**Table 3 Local government authority and autonomy in natural resource management.**

Local Government Authority	High	High	Low	Low
Local Government Autonomy	High	Low	High	Low
Suggested Outcome	Full Autonomy	Multiple Clientelism	MC-NPM	Policy Stagnation

### 3.7. MC-NPM hybrid theory and competing theories of policy

In this section, I discuss competing theories of policy analysis and why the MC-NPM hybrid theory was chosen over these theories. The first competing theory is Institutional Analysis and Development (IAD), a framework which analyses public policy and institutions. The framework was developed by Elinor Ostrom and her colleagues at Indiana University (Blomquist and deLeon 2011, p.1). The IAD framework first aims to define a policy question or problem (Polski and Ostrom 1999). Once the policy issue is determined, the framework analyses external variables – such as biophysical conditions, attributes of a community, as well as formal and informal rules – against actors in an action situation (Ostrom 2011, p.10). Scholars then work to identify the interactions between the external variables and actors to determine how the policy issue was resolved or modified.

The IAD framework is a thorough method of analysing public policy and institutions which uses specialized analytic techniques borrowed from the physical and social sciences (Polski and Ostrom 1999). Despite the framework’s strengths, I argue that the predictive NPM-MC hybrid framework is more suitable for this thesis. IAD is an analytical framework which works backwards to discover how policy was created. The MC-NPM hybrid is a predictive theory which is more suitable for this thesis.

Another alternative method of analysing public policy is the Advocacy Coalition Framework (ACF). ACF was devised by Paul Sabatier and Hank Jenkins-Smith to explain policy changes over a long

period of time (Sabatier, 1988). An advocacy coalition is a coalition which includes various types of political actors in a policy network which has existed for at least ten years (McFarland 2004, p.53). ACF argues that policy change ought to be evaluated over a decade of decisions, and that scholars ought to focus on the coalitions of political actors who are advocating for policy (Sabatier 1988, p.131). Finally, ACF argues that policy ought to be conceptualized in the same way as belief systems, because actors in the policy coalition will see policy as a personal value. Policy coalitions then align their values with causal assumptions about how to put public policy into practice (ibid).

Although ACF is a well-established method of analysing public policy, it will struggle to answer the thesis' research question. Because ACF focuses on a wide range of actors, local government agencies are just one of many important actors. The authority and autonomy of local government agencies will be a secondary concern, rather than a primary concern, of scholars using the ACF framework. For this reason, I argue that the MC-NPM hybrid is more suited to answering the thesis' research question.

Network governance has recently emerged as a competing method for analysing public policy. Eva Sørensen and Jacob Torfing (2005, p.197) argue that network governance is typified by independent and autonomous actors who interact when bargaining over public policy. These actors bargain within a self-regulating institutionalized framework of rules and norms. Ultimately, the process of bargaining between actors results in new ideas and regulations for society. These governance networks create flexible public policy where information is shared freely between participants. Furthermore, network governance can help to establish a consensus among stakeholders which reduces the risk of resistance to public policy (Sørensen and Torfing 2005, p.199).

Network governance was devised in the late-1990s and early-2000s (Rhodes 1997; Sørensen and Torfing 2007; Davies 2011). As an approach to policy analysis, network governance erodes the boundaries between governmental and non-governmental actors, focusing on how these actors influenced policy. As my research question focuses on local government, in particular, I argue that the MC-NPM hybrid framework is more suited to answering the research question. Network governance is more suitable for analysing who devised policy, and the relative influence of governmental and non-governmental actors over policy.

Collaboration as a method of public policy creation emerged in the 1990s. Collaboration is a method of policy creation where local government agencies offer non-governmental groups the chance to assist in the creation of policy (Ansell and Gash 2008). Elinor Ostrom's (1990) *Governing the Commons: the Evolution of Institutions for Collective Action* was one of the first scholarly works to

promote the adoption of collaborative governance. Since Ostrom's book, collaborative governance has been promoted by scholars and adopted by authorities struggling to cope with wicked policy problems.

However, collaboration has only recently been adopted in practice in New Zealand. Examples include the Land and Water Forum and the Canterbury Water Management Strategy (see chapter 7). Both of these collaborations began in the late 2000s, and were the earliest examples of collaborative governance in New Zealand. For this reason, using collaboration as an analytical framework to analyse local government authority and autonomy is difficult.

The MC-NPM hybrid framework is therefore more appropriate than competing theories. However, there are some weaknesses of the MC-NPM hybrid that ought to be discussed. First, the MC-NPM framework simplifies the relationship between local government agencies and non-governmental groups. By focusing on governmental authority over policy, as well as governmental autonomy from interest group influence, it does not analyse the relationships between government and interest groups that often play a large part in policy formation. The IAD and ACF frameworks focus explicitly on these connections, and thus they offer better analyses of governmental and non-governmental relationships than the MC-NPM hybrid.

Second, multiple clientelism was devised as a theory to examine natural resource management. Thus, the MC-NPM hybrid theory is not appropriate for analysing policy outside of natural resource management. The MC-NPM theory is also more suited to analysing distributive policy, and how government negotiates with groups over distribution, rather than regulatory policy. Therefore, the hybrid theory only ought to be used to analyse distributive natural resource policy.

Third, the propositions made by the MC-NPM theory are static over the 21 year analysis period. The thesis has recognised that NPM was not a fixed project, and that it was in a constant state of reform over the analysis period. Despite this, I argue that the NPM reforms which initiated a split of policy delivering from implementation, a focus on quantifiable outputs, and the hands-off approach to natural resource management, were so significant that they ought to have had an effect on freshwater management between 1989 and 2010.

### **3.8. Conclusion**

This chapter argued that New Public Management reform affected freshwater management as well as local and central government interaction with interest groups in New Zealand. The previous chapter argued that multiple clientelism is a powerful explanation of local government authority and

autonomy over natural resource management. This research combines multiple clientelism's predictions with New Public Management reforms through a hybrid MC-NPM theory.

The composite lens of MC-NPM hybrid theory will be used to examine ECan's pursuit of authority and autonomy over freshwater management in three case studies. These case studies will confirm what action ECan pursued, what effect NPM reform had, and to what degree the predictions of multiple clientelism are confirmed. The next chapter will describe the research methods used during the three case studies.

## 4. Chapter Four

### Methods

#### 4.1. Introduction

This research uses a qualitative case study method to investigate ECan's authority and autonomy.

Pamela Baxter and Susan Jack highlight the benefits of qualitative case study research:

*[t]he qualitative case study is an approach to research that facilitates exploration of a phenomenon within its context using a variety of data sources. This ensures that the issue is not explored through one lens, but rather a variety of lenses which allows for multiple facets of the phenomenon to be revealed and understood (Baxter & Jack, 2008, p. 544).*

Three in-depth case studies examine ECan's authority and autonomy over Canterbury's freshwater management. These case studies will analyse a variety of data sources with a focus on the decisions made by human beings and institutions, as well as the context in which these decisions were made. These events require a methodological means to explain why people and institutions take the action they do. However, I acknowledge that method is limited by the fact that "[s]ocial science is, of necessity, an interpretive act" (Gerring, 2007, p. 70). Given this, the results of the case studies will be my own interpretation of events influenced by the hybrid MC-NPM theory and derived from the multiple data sources collected. The following sections will describe the methods used to collect and analyse this data.

Case studies are useful in social science research when asking how and why questions (Baxter & Jack, 2008, pp. 550-1). This research poses a how question, and thus, case studies will be helpful in answering the overarching research question. The interpretive approach adopted by this research is to use the MC-NPM hybrid theory and the case studies to gauge how ECan pursued authority and autonomy over freshwater management. This chapter begins with a discussion of the case study method. The methods of primary and secondary data collection and analysis are then described. The chapter concludes by introducing the chosen case studies.

#### 4.2. Case study method

Case studies are helpful when interpreting the decisions of humans and human institutions. Wilbur Schramm (1971, as quoted in Yin, 2009, p. 17) argued that "the essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a *decision* or set of decisions, why they were taken, how they were implemented, and with what result". To reduce case study bias, Robert Yin (2009) promoted the use of a case study protocol. Yin argued a protocol will increase the

reliability of case study research. It will also guide the researcher during data collection. A case study protocol should contain four features: “(1) an overview of the case study project (project objectives and auspices, case study issues, and relevant readings about the topic being investigated), (2) field procedures (presentation of credentials, access to the case study ‘sites’, language pertaining to the protection of human subjects, sources of data, and procedural reminders), (3) case study questions (the specific questions that the case study investigator must keep in mind in collecting data, “table shells” for specific arrays of data, and the potential sources of information for answering each question...), and (4) a guide for the case study report (outline, format for the data, use and presentation of other documentation, and bibliographic information)” (Yin, 2009, p. 81). This protocol was followed throughout the data collection.

A criticism of case studies is that they provide little basis for generalisation. The question, how can you generalise from a single case, is a valid query. However, this question can also be asked of a single scientific experiment. As Yin (2009, p. 15) explained, “scientific facts are rarely based on single experiments; they are usually based on a multiple set of experiments that have replicated the same phenomenon under different conditions”. The same can be said of case studies. Furthermore, statistical generalisation is impossible when using case studies because the cases were not chosen as a random sample. In this research, multiple cases resemble multiple experiments which have been chosen to answer my research question.

#### **4.2.1. Case study data collection**

What types of data should be collected during case studies and how should this data be analysed? Yin (2009, p. 101) provides three tips for case study data collection: (1) use multiple rather than single sources of evidence to provide triangulation, (2) create a case study database to store information, and (3) maintain a clear chain of evidence. Yin then presents the six types of data that can be sourced for case study analysis: (1) archival records, (2) direct observations, (3) documentation, (4) interviews, (5) participant observations, and (6) physical artefacts (Yin, 2009, pp. 103-13). Some of these data sources cannot be collected for this research project. Direct observations and physical observations, for example, cannot be obtained as this research is a historical analysis.

Physical artefacts were not analysed in this research. However, the remaining forms of data – interviews, documentation, and archives – have all been collected. Interviews provided the majority of the primary data used in this research. Below, I describe the interview methods I used.

### 4.3. Interview methods

Eleanor and Nathan Macooby (1954, p. 499) define an interview as a “face-to-face verbal interchange in which one person, the interviewer, attempts to elicit information or expressions of opinion or belief from another person or persons”. Interviewing is a data gathering method in which the researcher comes face-to-face with the information source. Kevin Dunn (2005, p. 80) suggests four reasons a researcher would use interviews: (1) to fill a gap in knowledge; (2) to investigate behaviours and motivations; (3) to collect a diversity of meanings, opinions, or experiences; and (4) to empower the interviewee in a way that does not occur with other data collection methods. Yin (2009, p. 106) argues that guided conversations are more useful than rigidly structured interviews when using interviews as a method of data collection for case studies. For these reasons, I have chosen to undertake in-depth semi-structured interviews for this research (Minichiello, Aroni, Timewell, & Alexander, 1990). Semi-structured interviews place “emphasis ... on discovering new ideas, thoughts, and social processes that the interviewer is not aware of, in an inductive fashion” (Friesen, 2010, p. 82). A semi-structured interview also empowers the interviewee by asking them to tell their own story in their own words. Bill Gillham (2005, p. 70) argues that “the semi-structured interview is the most important way of conducting a research interview because of its flexibility balanced by structure, and the quality of the data so obtained”.

Interviews must be conducted in an ethical manner due to the intimacy between the researcher and the data source. Gillham (2005, p. 13) provides five methods to ensure an ethical interview: (1) maintain confidentiality and restrict the information gathered for specific purposes, (2) maintain interviewee anonymity if they desire, (3) keep the data gathered securely locked, (4) inform the participants that the data gathered could be used for publication, and (5) keep the data for a specific period of time before ensuring its routine destruction. This research followed this protocol and subsequently obtained human ethics approval for all interviews.

For this research I interviewed citizens who are politically, economically, and culturally powerful in Canterbury. As Gill Valentine (1997, p. 114) notes, the interviewer is normally in a dominant position over the interviewee. However, this role is often reversed when interviewing political, economic, and cultural elites, as these interviewees often control access to information, knowledge, and informants. The interview is a social encounter, and thus, it is important what the interviewer and the interviewee think of each other. This could be pronounced during this research as the topic is controversial and divisive. Teresa Odendahl and Eileen Shaw (2002, p. 313) argue that “confidentiality is especially important in the interviewing of high-profile subjects”. All interviewees for this research were asked if they would like to remain anonymous. Two interviewees initially

remained anonymous, however, after reading through the transcript notes and selected quotes to be used in this research, one of the interviewees removed anonymity.

Kevin Dunn (2005, p. 54) argues that interviewing powerful members of society is helpful when studying social or political issues because the interviewees have gained their position of authority from expert knowledge within the particular area being researched. Table 4 lists the thesis research interviewees for each case study and notes their specific expertise. Because of the interviewees' authority, quoted statements from the interviews were carefully chosen and selected to not put the interviewees at risk of controversy or embarrassment. All interviewees were asked to read through selected quotes to ensure they were happy with the statements attributed to them before publication.

**Table 4 List of research interviewees.**

General	Rangitata River	Groundwater	CWMS
David Carter (Minister of Agriculture (at time of interview), Member of Parliament)	John Young (Former RDR manager)	Colin Glass (Chief Executive of Dairy Holdings Ltd who own Lynton and Pine Grove farms)	Alex Familton (Mayor of the Waitaki District)
Jim Sutton (Former Minister of Agriculture)	John Waugh (Former South Canterbury Catchment Board member)	Matthew Bubb (Aqualinc hydrologist)	Kelvin Coe (Mayor of Selwyn District)
	Bryce Johnson (Fish and Game Chief Executive)	Leo Fietje (ECan Principal Planning Advisor)	Eugenie Sage (Former ECan councillor, current Member of Parliament)
	Frank Scarf (Fish and Game WCO applicant)	John Donkers (Irrigator)	Winston Dalley (Mayor of Hurunui District)
	John Wilkie (Arowhenua rūnanga representative)	John Keast (Journalist)	Kerry Burke (Former ECan Chairman)

	Angus McKay (Former ECan councillor, current Ashburton District mayor)	Ian McIndoe (Aqualinc hydrologist)	Mike Jebson (Ministry of Agriculture)
	Ken Hughey (Professor of Environmental Management, DOC representative at WCO hearing)	Christina Robb (Former Aqualinc consultant, Ministry for the Environment employee, currently Programme Manager for Water and Land at ECan)	Glen Innes (Mackenzie District Chief Executive)
	(Anonymous)	Howard Williams (ECan hydrologist)	Bryan Jenkins (Former ECan Chief Executive)
	Jay Graybill (Fish and Game WCO applicant)		Ken Taylor (Director of Investigations and Monitoring at ECan)
			John Coles (Mayor of Waimate)
			David O' Connell (Ngai Tahu)
			Grant McFadden (Former Ministry of Agriculture policy analyst)

Potential interviewees were selected after an early literature review. The literature review identified key actors in the chosen case studies. The key actors were then approached for an interview. A majority of the people identified through the literature review were willing to be interviewed, however some refused. Canterbury's water management was politically divisive during the examination period, and I believe some of the people I contacted were not willing to be interviewed due to political sensitivities. Furthermore, some interviewees chose to have quotes amended or

deleted due to potential political conflicts. Thus, the interviews I conducted were not comprehensive, but were the best possible under the circumstances.

## **4.4. Secondary material**

### **4.4.1. Documentary evidence**

Martyn Denscombe (2007, p. 227) states that “documents can be treated as a source of data in their own right – in effect an alternative to questionnaires, interviews or observations”. Documentary evidence will be used in this research as a supplementary source to provide data triangulation. A variety of documentary sources were available for use in this study. These included government publications and official statistics that have been collected into a table in appendix 6. Denscombe (2007) argues these data sources provide information that is authoritative and factual. Government publications and statistics are more likely to have been robustly researched and peer reviewed than competing documentary sources. In reference to Canterbury freshwater politics there is a wealth of publications and statistics, for example, ECan publicly release hydrological information and policy documents. Central government departments like the Ministry for the Environment also offer policy documents as well as information on national and global trends.

Newspapers and magazines sources were also analysed. Newspapers, such as Christchurch’s *Press* and Timaru’s *Herald*, provide an account of the political debates leading to certain policy decisions. Although the credibility of these sources can be affected by the expertise and perspective of the journalists, the specialisation of the publication, and the amount of insider information journalists can uncover (or publish), they remain an important data resource.

### **4.4.2. Archival evidence**

Archival evidence includes Official Information Act requests, council meeting minutes, Water Conservation Order hearings (including expert witness testimonies), and public submissions on planning documents. Denscombe (2007) argues that archival records need to have two qualities. First, “they need to contain a fairly *systematic picture of things that have happened*” and second, “they should be *publicly available*” (Denscombe, 2007, p. 228, italics in original). Gaining access to archival evidence has been difficult due to the recent sequence of earthquakes in Canterbury. Damage to buildings where evidence is located has made some of it inaccessible. Despite this, all effort has been made to ensure relevant archival evidence was analysed.

## **4.5. Data analysis**

A case study method promotes the use of multiple sources of information to enhance validity. This section describes the methods used to analyse primary and secondary data in this research.

#### **4.5.1. Interview data**

Auerbach and Silverstein (2003, p. 50) remind researchers that when coding interview material there is an inescapable element of interpretation which cannot be solved through any method. The coder must ensure their interpretation is as transparent and understandable as possible. The qualitative data analysis software NVivo was used to code and analyse the interview transcripts. NVivo was favoured *in lieu* of physical coding. Coding was conducted to align the primary data with the MC-NPM hybrid theory. These codes were then analysed in reference to the overarching thesis research question.

#### **4.5.2. Secondary data**

David Silverman (2005) argues that secondary data analysis should consist of data reduction, display, and conclusion drawing. This is an especially helpful method when using case studies as the amount of data collected can be overwhelming. The method used in this research was to once again refer to the research question and hybrid theory for guidance in data reduction, display, and conclusion drawing. I ask to what extent the secondary data highlights ECan's pursuit of policy authority and autonomy and the factors affecting that pursuit.

### **4.6. Selected case studies**

The scope of a case study can often be too large. To avoid this, case study researchers suggest selecting cases specific to a time, place, and activity (Baxter & Jack, 2008, p. 546). As such, I have chosen the case studies in this research because they were completed between 1989 and 2010 and multiple interest groups were present. Furthermore, cases were chosen because they had a significant effect on Canterbury's freshwater management and governance.

The first case study examines the management of the Rangitata River. Farmers south of the river wanted a dam to provide irrigation water. Environmentalists sought to protect the river from damming to ensure the quality of the river's fishery remained intact. ECan pursued a planning document to mediate between these two groups. This case had a significant effect on Canterbury's freshwater management because the Fish and Game council challenged ECan's planning process by applying for a Water Conservation Order.

The second case study examines Canterbury's groundwater resources. Farmers and environmentalists were concerned about the potential over-allocation of permits for groundwater abstraction in the early 2000s. By the mid-2000s, ECan attempted to manage groundwater abstraction through zoning. Farmers questioned ECan's calculation of sustainable abstraction limits within certain zones. Environmentalists supported ECan's precautionary approach to groundwater

abstraction. This case was significant because it highlighted ECan's attempt to manage freshwater without a notified regional plan.

The third case study examines the Canterbury Water Management Strategy (CWMS). The CWMS began<sup>31</sup> after a series of droughts in 1997 and 1998 and the realisation that a plan did not exist to manage the long-term effects of drought in Canterbury. Farmers supported the CWMS because it promoted the expansion of irrigation as a solution to future droughts. Environmentalists supported the CWMS' ecological and environmental goals. The CWMS was significant in its ability to bring farming and environmental interest groups together in the creation of a plan, vision statement, and targets for Canterbury's future freshwater management.

#### **4.7. Conclusion**

Interview, documentary, and archival data collected during three case studies will be used to answer the thesis' research question. The next chapter presents the first case study. In this case, ECan's pursuit of authority and autonomy over the Rangitata River's management will be examined.

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<sup>31</sup> The CWMS evolved from the Canterbury Strategic Water Study which was prompted by Canterbury's successive droughts in 1997 and 1998,

## **5. Chapter Five**

### **Case Study 1 – the Rangitata River Water Conservation Order**

#### **5.1. Introduction**

The Rangitata River is one of Canterbury's largest braided rivers. The Rangitata is valued by fishers for its Chinook salmon fishery, whereas farmers north of the river benefit from the irrigable water which is abstracted by the Rangitata Diversion Race (RDR). From 1996 onwards ECan did not have an operative plan which set rules for the use of Rangitata River water. Following a severe drought in 1997 and 1998, a dam was proposed for the Rangitata River to provide farmers south of the river with freshwater for irrigation. Fishers argued the proposed dam would have a detrimental effect on the river's ecosystem. ECan devised its own management plan for the Rangitata River in the midst of these arguments.

This case study begins by giving a brief history of the Rangitata River. The chapter then describes the attributes of a Water Conservation Order. A discussion of the river's management prior to the Water Conservation Order Tribunal follows. The chapter then examines the Water Conservation Order Tribunal hearing and a subsequent Environment Court appeal.

#### **5.2. Rangitata River – a brief history**

The Rangitata River flows from the Southern Alps into the Pacific Ocean 30 kilometres north of the South-Canterbury township of Timaru. The river is 140km in length and has a 1600 km<sup>2</sup> catchment with four distinct sections. The alpine headwaters form into a braided river on the upper Rangitata River plain. The river then passes through a narrow gorge cut into greywacke-argillite rock before exiting the gorge and becoming fully braided once again (Rangitata River Water Conservation Order tribunal, 2002, p.15). In the 1930s, politicians proposed using the Rangitata River to help grow the economies of Mid- and South-Canterbury. These economies had been sustained by wool and wheat booms during the 19<sup>th</sup> century, but by the early 20<sup>th</sup> century the regional economy experienced a decline in agricultural production (Evans & Cant, 1981, pp. 58-9). In response, the Canterbury Progress League and the Ashburton Country Council lobbied central government for the necessary funds to build a local irrigation scheme (Evans & Cant, 1981, p. 59; Hopkinson, 1997; Wood & Brooking, 2001, p. 90). The Rangitata Diversion Race was built between 1937 and 1945 (Evans & Cant, 1981; Hopkinson, 1997). The RDR delivered irrigable water to farmers north of the Rangitata River in the Ashburton District.

The South Canterbury Catchment Board created a management plan for the river in 1977. The plan's objective was to balance the needs of irrigators, fisheries, recreational users, and environmental users during times of low flow (SCCB, 1977). The plan was updated in 1986. This plan operated until 1996. John Waugh, a former Catchment Board member, helped develop the plan. Feedback was sought from the public during community meetings. According to Waugh, the public believed the plan was equitable. It established a one-for-one flow sharing arrangement<sup>32</sup>. Waugh noted that the Catchment Board did not seek a cap on allocation<sup>33</sup>, which he argued in retrospect was a mistake (J. Waugh, personal communication, March 9, 2012).

### 5.3. What is a Water Conservation Order?

This case study includes an application for a Water Conservation Order. Water Conservation Orders were an outcome of the Wild and Scenic Rivers Amendment to the Water and Soil Conservation Act in 1981. As discussed in the second chapter, the aim of the amendment was to “recognise and sustain” the amenity provide by freshwater bodies in their natural state” (WSCA, 1981). WCOs were the legislative tool to recognise and sustain outstanding water bodies in New Zealand. Seven water bodies were protected by WCOs under the Water and Soil Conservation Act including the Rakaia River and Te Waihora / Lake Ellesmere in Canterbury (Hughey *et al.*, 2014, p. 25). Water Conservation Orders were subsequently included in the 1991 Resource Management Act. Under the RMA, a WCO can be applied to a water body to protect its outstanding qualities: such as its (1) fishery; (2) wild, scenic, or other natural characteristics; (3) outstanding habitat for terrestrial or aquatic organisms; (4) scientific and ecological values; (5) recreational, historical, spiritual or cultural significance, or; (6) characteristics which are considered to be of outstanding significance in accordance with tikanga Māori (RMA, 1991, p. 448 [sec. 199 (2)]).

The RMA asks regional councils to manage the abstraction, use, damming, and diversion of water, as well as to control the quantity, level, and flow of water bodies in its region (RMA, 1991, p. 103 [sec 30 (e)]). If deemed appropriate, regional councils are also given the ability to establish rules for freshwater allocation through a regional plan (RMA, 1991, p. 103 [sec 30. (fa) (i)]). However, a successful WCO will replace these regional council rules (RMA, 1991, p. 448 [sec 200 (a) (b) (c) (d)]). A successful WCO strips authority for management of a water body from the regional council and gives it to the Minister for the Environment. The Minister for the Environment is ultimately responsible for implementing the WCO and accepting the draft WCO rules for flow rates, abstraction volumes, and

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<sup>32</sup> One-for-one flow sharing is a principle of freshwater management. It requires that for every cumec of water abstracted from the river one should remain in-stream. This allows the river to mimic natural variability (such as in times of flood) despite abstraction.

<sup>33</sup> An allocation cap limits how much can be taken out of the river for out-of-stream use. The failure to place an allocation cap framed conflict in the late 1990s and early 2000s as Ruapuna Irrigation and Rangitata South desired further abstraction from the river for irrigation use.

the acceptable contamination levels of a water body. In sum, applicants for a WCO must justify the conservation of the water body based on its “outstanding amenity or intrinsic values” to the Minister for the Environment, and if successful, these WCO rules will replace existing regional council rules.

#### **5.4. The Rangitata River debate**

Environment Canterbury councillor Angus McKay stated in June 1998 that the Rangitata River “has vital social, economic, and environmental values” that should not be compromised (NZPA 1998, p.7). Under McKay’s guidance, ECan researched the Rangitata’s flows, the frequency of low-flow conditions, the relationship between local groundwater and the river, as well as how much could be abstracted for out-of-stream use (Aitchison-Earl, 2001; Ingles, 2000; Miskell, 2001; Mosley, 2001). ECan hoped this research would provide greater understanding of the social, economic, and environmental values of the Rangitata River.

In December 1999 it was revealed that up to 1,000 spawning salmon were lost down the RDR each year (NZPA, 1999, p.1). This concerned the local Fish and Game Council. The Fish and Game Council represent anglers and hunters in New Zealand. The 1987 Conservation Act grants the Council the mandate to “advocate generally and in any statutory planning process the interests of the New Zealand Fish and Game Council” in regard to management of fish, game, and habitats (Conservation Act, 1987, p. 118 [sec 26C (g)]).

In late 1999, two new irrigation companies - Rangitata South Irrigation and Rupanua Irrigation - applied for consent from ECan to dam, abstract, and divert freshwater from the Rangitata River (Pickering, 1999, p.2). Rangitata South applied for consent to irrigate 18,000 hectares of land south of the Rangitata River into the Timaru District. Ruapuna Irrigation sought consent to divert freshwater over 16,500 hectares of Mid-Canterbury land. In response, the Fish and Game council applied for a WCO to be established on the Rangitata River in order to protect the habitat of sport fishing species (Worrall, 1999, p.1). The WCO, if successfully established, would set minimum flow rates and rules for future abstraction from the river. A successful WCO would strip ECan of its responsibility for managing the river’s flows. In justifying the WCO application, Fish and Game’s Jay Graybill argued that the Rangitata River has a high quality fishery of native and introduced species (ibid). Graybill argued that the abstractions proposed by Rangitata South and Ruapuna Irrigation threatened this outstanding fishery, furthermore, amenity values for recreational activities such as rafting would be lost (ibid).

Fish and Game applied for a WCO on the Rangitata River to ensure the river’s fisheries were not compromised by future damming. Fish and Game officers Frank Scarf, Jay Graybill, and Mark Webb – all from Central South Island Fish and Game – wrote the conservation order application that was

submitted to the Ministry for the Environment (MfE) in December 1999 (F. Scarf, personal communication, April 13, 2012). The conservation order application presented Fish and Game's rationale for protecting the river. Fish and Game argued the river had outstanding values: including (1) a nationally important and outstanding sports fish resource; (2) a habitat for native fish; (3) extensive recreational opportunities, such as rafting, canoeing, kayaking, jetboating, whitebaiting, floundering, picknicking, and sightseeing; (4) a native bird habitat; and (5) a high level of accessibility (Rangitata River Water Conservation Order tribunal, 2002, p.1). Fish and Game then noted the attributes of the river that enabled these outstanding values: these attributes included (1) water temperature coupled with the incidence of fresh flows, (2) frequency and duration of fresh flows, (3) sufficient flow to ensure the river mouth remains open, (4) sufficient flow to provide adequate fish passage, (5) the absence of damming, and (6) pristine water quality (ibid). Fish and Game then presented draft rules that would allow these natural features to flourish: such as (1) a restriction on damming the Rangitata River; (2) a restriction on altering the river flow in order to maintain its braided characteristics; (3) limiting total abstraction to a maximum of 33 cumecs; (4) a minimum flow regime of 15 cumecs between April and July (winter), and 20 cumecs from August to March (summer); (5) a restriction on ECan granting consent for resource use that would have a negative effect on water quality; and (6) the maintenance of fish passages (New Zealand Fish and Game Council, 1999, pp. 7-8 [sec. 17; 18; 19; 21; 22]).

MfE accepted the WCO application on 22<sup>nd</sup> March 2000 and established a Tribunal to receive submissions for and against the river's protection. Territorial authorities were initially disappointed that a WCO process, rather than an ECan-led RMA process, had been endorsed (Keast, 2000, p.4). The Mayoral Forum<sup>34</sup> was concerned at the high cost a WCO process could impose on the community (ibid). Local Māori supported the WCO application. The Rangitata River Water Conservation Order tribunal report (2002, p.1) stated that the Rangitata River is significant to Ngāi Tahu. Research interviewee and Fish and Game's national director, Bryce Johnson, noted that Fish and Game received a brief letter from Ngāi Tahu outlining their support (B. Johnson, personal communication, March 27, 2012). According to Johnson, this "had the effect of signalling to government that it's a joint application" (ibid).

Interest group alliances formed before the first Tribunal hearing. Those who supported the WCO included the Fish and Game Council, local Māori tribe Ngāi Tahu, the Ashburton and Rangitata Instream Users Group, the Canterbury-Aoraki Conservation Board, and the New Zealand Recreational Canoeing Association Inc. Groups opposed to the WCO included Rangitata South Irrigation, Ruapuna Irrigation, the Mid-Canterbury Irrigation Enhancement Society, and Federated Farmers. The RDR

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<sup>34</sup> The Mayoral Forum is an umbrella group with membership from all the mayors and chief executives of Canterbury's Territorial Authorities. ECan's chairperson and chief executive are also members.

remained neutral. The RDR wanted assurance their current abstraction rate would not be threatened by either the proposed WCO or an ECan-led RMA plan. John Waugh argued that the *status quo* rules for the river suited the RDR as it preserved their rate of abstraction (J. Waugh, personal communication, March 9, 2012). RDR's abstraction rate had been approved by the South Canterbury Catchment Board's 1986 Rangitata River Plan. This plan was designed to operate until 1996. There was no operative plan for the Rangitata River between 1996 and the WCO application in late 1999.

ECan released a draft plan for the management of the Rangitata River on the 9<sup>th</sup> September 2001 (Worrall, 2001, p.2; McKinlay, 2001a, p.3). The draft plan was released after Fish and Game submitted their WCO application, but before the WCO Tribunal hearing had commenced. ECan's draft plan proposed rules for the river's use that it hoped would substitute the WCO. ECan's plan could replace the WCO if the WCO applicants were not able to justify the conservation of the river at the WCO Tribunal, or if the WCO applicants decided to withdraw their application in favour of ECan's draft plan. ECan's draft rules were similar to the draft WCO rules. It recognised the outstanding qualities of the river, forbid future damming, and established higher minimum flows for the river during winter and summer. It differed from the WCO by not placing a cap on abstraction (Worrall, 2001, p.2; McKinlay, 2001a, p.3). Under ECan's draft rules, Rangitata South and Ruapuna irrigation would not be able to gain irrigable water through a dam, but they would still be able to apply for rights to abstract water because ECan's plan did not include a cap on allocation. ECan's plan also proposed a higher minimum flow rate to protect the river's ecosystem from over abstraction (Worrall, 2001, p.2).

#### **5.4.1. ECan's justification for a management plan rather than a WCO**

Why did ECan oppose the WCO given the similarities between the draft WCO and ECan's draft plan? One explanation given was the "adversarial" WCO process. ECan's water portfolio chairman Mark Oldfield argued the WCO process was "adversarial" and "combative" in contrast to ECan's "consultive" RMA planning process (ibid). Another explanation is that a WCO would remove ECan's authority to set rules and limits for the Rangitata River in the future. ECan opposed the WCO because a successful WCO application would weaken its authority in the region.

Why did ECan propose a higher minimum flow rate than the WCO? ECan argued for a higher minimum flow rate because they did not plan to cap abstraction from the river, thereby providing opportunities for new irrigators (such as Rangitata South and Ruapuna Irrigation) to abstract water when the river was at high flow. ECan Chairman Richard Johnson argued the higher minimum flow rate would protect "the river's ecological values" as well as the "existing water users" (NZPA, 2001a, p.8). Despite ECan's argument, existing water users – such as the RDR – were the losers from ECan's plan. ECan's plan contained higher minimum flow rates, which meant less would be available for

abstraction, and thus less water would be available to the RDR during the dry summer months. Furthermore, ECan’s plan - by not placing a cap on abstraction - would enable southern Rangitata irrigators to apply for consent to ECan for irrigable water to travel south. This would mean greater competition for water on the Rangitata, in combination with less water being available for abstraction due to higher minimum flow rates. This threatened the reliability of RDR’s irrigation scheme. As Table 5 illustrates, the RDR took most of the abstracted water north prior to the WCO hearing. As Table 6 illustrates, the proposed abstractions south of the river amounted to an extra 14 cumecs of freshwater for out-of-stream use.

**Table 5 Surface water abstraction from the Rangitata River (circa May 2001) (Rangitata River Water Conservation Order tribunal, 2002, p.79).**

Rangitata Diversion Race	30.70 cumecs
Non RDR stockwater	1.007 cumecs
Non RDR irrigation	0.263 cumecs

**Table 6 Proposed surface water abstraction from the Rangitata River into the Timaru District (Jenkins, 2013; NZRCA, 2000).**

Rangitata South Irrigation Proposal	5.94 cumecs
Ruapuna Irrigation Proposal	8.00 Cumecs

ECan’s draft plan angered the Ashburton District Council who own 40 per cent of the RDR. Ashburton Mayor Murray Anderson argued that if ECan’s plan for the Rangitata River proceeded it “would have a disastrous effect on this district” (McKinlay, 2001b, p.6) due to the likely reduction in RDR abstraction volume. Mayor Anderson also criticised ECan’s inability to draft a plan for the river between 1996 and 2001. In sum, ECan’s plan sought to help new irrigators establish themselves while simultaneously protecting the river from damming. This required existing users, such as the RDR, to limit their abstraction to extend use of the resource. By contrast, the proposed WCO would lock in the *status quo* flows and abstraction rates established by the South Canterbury Catchment Board’s 1986 plan.

## 5.5. The Water Conservation Order Tribunal hearing and Environment Court appeal

The WCO was debated in two legal forums. The first forum was the WCO Tribunal hearing<sup>35</sup>. The Minister for the Environment, Marian Hobbes, was given advice by the Tribunal commissioners to implement the draft WCO. A month after this decision, ECan councillors voted to appeal the draft WCO at the Environment Court. The second forum of debate was the Environment Court appeal<sup>36</sup>.

### 5.5.1. WCO tribunal hearing

The Tribunal hearing began with Fish and Game's argument for a WCO. Fish and Game's Bryce Johnson argued that the Rangitata River was in a superior condition to the neighbouring Orari and Pareora Rivers. Johnson used these rivers to highlight the effects of abstraction and the need to protect the Rangitata River from similar deterioration (Pickering, 2001a, p.1). Ngāi Tahu's local rūnanga,<sup>37</sup> Arowhenua, argued the WCO would protect the cultural and spiritual significance of the waterway (Pickering, 2001b, p.2). The Department of Conservation (DOC) argued the Rangitata River was a significant habitat for rare birdlife and bat species. DOC's expert witness, Professor Kenneth Hughey, supported a high minimum flow level that would protect the habitats of these rare species (NZPA, 2001b, p.12). Fish and Game hired a variety of expert witnesses during the WCO Tribunal hearing<sup>38</sup>. In 2010 it was reported that Fish and Game had spent \$500,000 trying to establish the WCO (Littlewood, 2010, p.2).

Those opposed to the WCO argued it would restrict economic growth in the region. Rangitata South Irrigation argued their 16,000 hectare development south of the river, when applying the economic "benefit multiplier for intensive farming", would result in \$120 to \$240 million dollars of economic activity in the region (Pickering, 2001f, p.2). Economist Geoff Butcher argued a WCO would restrict agricultural earnings by a potential \$438 million a year (Pickering, 2001g, p.5). Stan Scorringe, Mackenzie District Mayor, argued the economic success of the Opuha Dam (Worrall, 2007) – a recently built irrigation dam in his district – could be replicated through damming the Rangitata River. Tony Howey, an irrigator from the Opuha scheme, cited a \$3 million onion and potato pack-house in the Mackenzie District as an example of the economic benefits of irrigation (NZPA, 2001d, p.15). A social argument was put forward by Grant McFadden. McFadden, on behalf of the Ministry of Agriculture and Forestry, argued that irrigation development was shown to lower the age of rural

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<sup>35</sup> The WCO Tribunal began on the 3<sup>rd</sup> October 2001, with the applicant Fish and Game closing the hearings on the 20<sup>th</sup> December 2001. The Tribunal was chaired by Dr Jonet Ward, a senior Lecturer in resource management at Lincoln University. She was joined by Claire Mulcock and Dr Murray Parsons.

<sup>36</sup> The Environment Court hearing began on the 13<sup>th</sup> October 2003 and concluded in December 2003.

<sup>37</sup> Tribal council.

<sup>38</sup> Fish and Game's expert witnesses included Keith Hovell, Frank Scarf, Mark Webb, Martin Unwin, Ian Jowett, Bruce Digby (hydrologist), Basil Sharp (economist), Geoff Kerr (economist), Bryan Strange, Gordon Glova, and John Stark.

populations, rejuvenate schools, and place greater demand on rural facilities (Pickering, 2001d, p.12). According to research interviewee John Young (pers.comm), the RDR company “spent upwards of a million dollars trying to get the *status quo*”. Trustpower, who presented alongside the RDR company, spent upwards of \$2 million during the Tribunal and Environment Court hearings (Keast, 2004, p.4).

#### **5.5.1.1. Off-river storage**

The Timaru *Herald* reported on the 22<sup>nd</sup> October 2001 that “behind the scenes manoeuvring” during the WCO Tribunal hearing had resulted in an off-river storage compromise (Pickering, 2001c, p. 3). The compromise permitted abstraction from the river at high flows (above 110 cumecs). These flows would then be diverted into irrigation storage ponds (ibid). Angus McKay (ECan councillor), John Young (RDR manager), and Frank Scarf (Fish and Game) all agreed that the river does not provide good fishing conditions when flowing above 110 cumecs (A. McKay, personal communication, May 3, 2012). During a research interview, Frank Scarf argued that “over 110 cumecs the water is getting too milky for anglers to go fishing. Not only that, fish tend to hole up and not move, and so above 110 cumecs the turbidity of the water is such that it is no longer a recreational resource” (F. Scarf, personal communication, April 13, 2012). The off-river storage plan would enable farmers south of the Rangitata to gain access to irrigable water without a dam or a reduction in RDR’s abstraction rate. This compromise, created through bargaining between Frank Scarf, Angus McKay and John Young, became a means by which the environmental goals of a WCO and further development of irrigation through use of the Rangitata River could both be achieved.

#### **5.5.1.2. Regional council and territorial authority evidence.**

ECan, the Timaru District Council, and the Ashburton District Council all presented evidence at the WCO Tribunal. ECan wanted to enact its draft plan for the river. This draft plan concurred with the WCO that the river was outstanding and deserved protection. ECan promoted the planning process over the WCO because, in its opinion, the planning process would provide for better “community consultation” (Pickering, 2001e, p.15). The Timaru District council opposed the WCO and desired a more equitable allocation of water from the Rangitata so that farmers in its district could develop irrigation. Thus, the Timaru District Council argued the river was not outstanding and that Fish and Game had been emotive rather than scientific during the Tribunal hearing (Pickering, 2001h, p.7). The Ashburton District Council, as 40 per cent owner of the RDR, presented evidence that supported the maintenance of the RDR’s abstraction levels.

On the 30<sup>th</sup> October 2002, the WCO Tribunal recommended to the Minister for the Environment that a Water Conservation Order be placed on the Rangitata River. The draft order maintained Fish and Game’s proposed 20 cumec minimum flow in summer and 15 cumec minimum flow in winter. Abstraction was capped at 33 cumecs, 28 of which would be available for the RDR (MfE, 2002, p.138

[sec.7]). The Tribunal also recommended one-for-one flow sharing and the abstraction of flows above 110 cumecs for off-river irrigation storage. This would allow farmers south of the river to abstract freshwater for irrigation.

### **5.5.2. Environment Court appeal**

Farmers south of the river were unhappy with the recommended WCO despite the off-river storage compromise (Pickering, 2002, p.1). Regardless, it was ECan that initially appealed the Tribunal's ruling at the Environment Court<sup>39</sup>. ECan Chairman Richard Johnson justified the appeal by arguing that the Rangitata River is of great importance to the Canterbury region (Keast, 2002, p.4). For this reason, ECan supported the WCO but maintained that a higher minimum flow regime and the removal of one-to-one flow sharing (both features of ECan's draft plan) would improve the river's management (ibid).

The Environment Court appeal began in Christchurch on 13<sup>th</sup> October 2003<sup>40</sup>. The debate and expert testimonies followed a similar pattern to the WCO Tribunal. The ecological benefits of conservation were presented by those in favour of the WCO, and the economic benefits of irrigation were presented by those opposed. ECan presented evidence in the middle. During the appeal, ECan's director of policy and planning, John Talbot (2003, p.4), noted that ECan supported the WCO but "wishes to ensure the terms of any Order made do not unnecessarily compromise the ability of Environment Canterbury to maximise the well-being obtained from Canterbury's water resources". A successful WCO would strip ECan of its authority over the river's management and its autonomy to utilise the resource as it saw fit. As a result, ECan would be unable to alter minimum flow levels or abstraction rates to help "maximise the well-being obtained" from the river in the future. This explains why ECan intervened with its own draft plan, and appealed the WCO at the Environment Court while simultaneously supporting the principles of the WCO.

### **5.5.3. Decision and reaction**

Nearly five years after the initial application was lodged, on 9<sup>th</sup> August 2004, the Environment Court recommended the establishment of the Water Conservation Order for the Rangitata River. The Court maintained Fish and Game's proposed WCO rules. According to Fish and Game's Jay Graybill, the WCO stopped the deterioration of a major river, highlighted the value of the Resource Management Act, and gave the Rangitata River a "virtual national park status" (NZPA, 2004, p.1). Ian Morten of Rangitata South Irrigation supported the WCO's endorsement for an extra irrigation abstraction point

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<sup>39</sup> ECan was joined by Rangitata South Irrigation, the Timaru District Council, Trustpower Limited, the Rangitata Diversion Race, and Federated Farmers in this appeal. See Rangitata South Irrigation Limited v New Zealand and Central South Island Fish and Game Council – Decision No. C109/2004.

<sup>40</sup> Judge Jon Jackson was appointed alongside commissioners Robyn Grigg and Charles Manning.

on the southern bank of the river. However, Morten argued that irrigators presented a good case to take an extra five or six cumecs from the river. The Environment Court Judge, according to Morten, went into the hearing with the opinion that the river was already degraded, and thus, the Judge denied irrigators new abstractions unless the river's flow was above 110 cumecs (ibid).

The Environment Court expressed concern at the inequitable flow of water between the north and south sides of the river. They placed blame on ECan's allocation of water permits on a first-come-first-served basis. According to the Environment Court, this system leads "to possible unfairness and to political inefficiency", and although this could be resolved through a regional water plan, the Court noted the ongoing "potential for highly politicized decision[s] and across-the-river animosities" (ibid). ECan welcomed the Environment Court's decision despite the fact that WCO rules now replaced ECan's draft plan rules. ECan Chairman Richard Johnson stated that the WCO aligned with ECan's proposed Natural Resources Regional Plan (Keast, 2004, p.4). The Minister for the Environment enacted the Water Conservation Order on the 13<sup>th</sup> July 2006.

## 5.6. Conclusion

In this case study, farmers applied for consent to dam the Rangitata River to provide irrigable water to South-Canterbury farmers who had suffered through consecutive droughts. In response, the Fish and Game council applied for a Water Conservation Order to halt the dam. ECan pursued the authority to set rules for freshwater use through a draft plan. ECan also pursued the autonomy to allocate freshwater resources through an appeal to the Environment Court over the proposed WCO.

ECan failed to set rules for the Rangitata River's use between 1996 and 2001. ECan's failure to plan, in conjunction with the first-come-first-served consents process, encouraged farmers to apply to ECan for consent to dam the river for irrigation use. In response, Fish and Game applied for a WCO that became a *de facto* plan in the absence of an ECan led RMA plan.

The MC-NPM hybrid theory predicted: 1), that ECan would establish patronage with interest groups but would maintain decision making autonomy, 2) that ECan would focus on outputs over outcomes and 3), that ECan would adopt a hands-off approach to freshwater management unless the cumulative environmental effects of resource use became clear. In this case, ECan's draft plan attempted to mediate the interests of environmentalists, northern Rangitata irrigators, and southern Rangitata irrigators. However, interviews, archival evidence, and documents all highlight ECan's inability to create a plan that set rules acceptable to all interest groups. Because ECan was not able to establish a close relationship of patronage with any interest group, its draft plan was not supported. ECan focused on an output, a draft plan, to establish authority over the Rangitata River. However, as the MC-NPM hybrid theory predicted ECan wavered in planning for the river between

1996 and 2001. This hands-off approach was reversed only after ECan's decision making autonomy was threatened by a WCO.

The MC-NPM hybrid theory suggested that ECan would struggle to establish authority over freshwater but that it would maintain some decision making autonomy. In this case study, ECan was unable to establish authority or autonomy over freshwater use, resulting in policy stagnation. Policy stagnation was only resolved by the Ministry for the Environment's decision to implement a WCO on the river. In sum, ECan was unable to establish authority through a draft plan. ECan was also unable to maintain decision making autonomy because of the Fish and Game council's successful WCO application.

The next case study will investigate ECan's attempt to establish rules for groundwater abstraction. Groundwater abstraction became a popular means of accessing irrigable water following the conservation of the Rangitata River. The popularity of groundwater abstraction forced ECan into a planning process for groundwater use.

## 6. Chapter Six

### Case Study 2 – Groundwater zoning in Canterbury

#### 6.1. Introduction

By the mid-2000s, the Rakaia, Rangitata, and Ahuriri Rivers in Canterbury were protected by Water Conservation Orders. The Waitaki River was used exclusively for hydro-electricity generation. Farmers were unable to abstract freshwater from these rivers for irrigation use. In response, farmers pursued groundwater abstraction as an alternative to surface water abstraction to irrigate their land.

ECan noted a growth in groundwater abstraction as early as 2003. In 2003, ECan received up to 30 new applications a week for groundwater consents (Hayman, 2003, p.4). This was double the number of consents received in the previous year. ECan's consent manager Leo Fietje surmised that applications for groundwater consents were being made to secure future irrigation supplies as farmers were concerned that some areas were reaching abstraction limits (ibid). In this same year, ECan granted 84 per cent of water consents for the maximum allowable period of 35 years. This was the largest percentage of water consent approvals out of any regional council in New Zealand (NZPA, 2003b, p.5). ECan's first-come-first-served consenting process encouraged farmers to apply for consent as quickly as possible, and ECan's willingness to grant long-term consents locked-in these allocations for up to 35 years. Farmers and environmentalists were both concerned that this consents process would result in over-allocation of the resource.

Given these circumstances, this case study examines ECan's attempt to manage groundwater abstraction in Canterbury. The chapter begins with a brief history of groundwater use in Canterbury. It then continues by examining the pressures that led to groundwater zoning in Canterbury. The high profile Lynton Dairy Environment Court appeal is then described. ECan's response through the Restorative Programme for Lowland Streams is then recounted.

#### 6.2. Groundwater use in Canterbury – a history

Māori use of groundwater predated the arrival of European settlers (Weeber, Brown, White, Russell, & Thorpe, 2001, p.5). Upon arrival, European settlers believed Canterbury's groundwater had the potential for irrigation use. For example, the Lyttelton *Times* enthusiastically proclaimed in 1867 that artesian wells should be used to irrigate the Canterbury Plains (as cited in Weeber *et al.*, 2001, pp.14-5). Monitoring of Canterbury's aquifers began in 1945 and focused on areas with high demand for irrigation (Weeber *et al.*, 2001, p.26).

Local farmer and irrigator Brian Cameron argued “from the earliest days of settlement, there was the realisation that lack of water was the limiting factor in agricultural production” (Cameron, 2009, p.17). Government funded irrigation schemes such as the Rangitata Diversion Race ensured that many parts of rural Canterbury had an adequate water supply by the mid-20<sup>th</sup> century. Farmers in coastal areas began to sink wells for irrigation purposes by the 1970s. According to Cameron, farmers argued “there should be distinct groundwater and river supply areas” and “there was considerable debate as to exactly where the boundar[ies] should be” (Cameron, 2009, pp.48-49).

Hydrologists Hugh Thorpe and David Scott investigated the depth and flow rates of aquifers in Canterbury during the late 1970s (Thorpe & Scott, 1979). They examined recharge from rainfall and river leakage. Their research illustrated that with full irrigation development some bores would drop by as much as 20 metres (Thorpe & Scott, 1979; Cameron, 2009, p.71). Farmers believed abstraction from coastal aquifers was threatened by new wells in the upper-plains (Cameron, 2009, p.75). A solution proposed by farmers was for upper-plains irrigators to abstract from surface water sources exclusively (ibid). However, Water Conservation Orders – such as those on the Ahuriri, Rakaia and Rangitata Rivers – and the exclusive use of other water bodies for hydro-electricity generation meant that surface water sources were unavailable for many upper-plains farmers. In response, upper-plains farmers were forced to pursue groundwater abstraction if they desired irrigation.

ECan’s resource management manager John Talbot outlined the negative effects of groundwater abstraction in 1991. Talbot presented a paper to the *Irrigation in the New Environment* conference in which he argued that groundwater abstraction would become more contested in Canterbury over the coming decades (Talbot, 1991). Issues included some wells being unusable at times of low water levels, conflict between water users, deterioration of groundwater quality due to land use intensification, an increase in the risk of sea water contamination, and a decrease in river flow due to groundwater abstraction (Talbot, 1991, p.2). These trends prompted ECan to investigate groundwater management in the late 1990s and early 2000s.

### **6.3. The Environment Court, resource consents, and regional plans**

In New Zealand, resource consent decisions authorised by regional councils can be appealed to the Environment Court. New Zealand’s Environment Court replaced the Appeal Board that was created under the 1953 Town and Country Planning Act (Palmer, 2010, p.70). Two features of the Appeal Board remain in the modern day Environment Court. The first is the membership of the Court, with one legally qualified chairperson (the Environment Court Judge) alongside two commissioners. The Environment Court is perceived as a Court of expertise because commissioners are appointed for their knowledge (e.g. the employment of hydrologists as commissioners for freshwater hearings) (Palmer, 2010, p.78). Secondly, the Environment Court asks for a full rehearing of evidence (*a de*

*novus* hearing). A *de novo* hearing means that no legal authority is given to the previous decision. The Environment Court therefore has the power to change decisions made by local authorities (Palmer, 2010).

The Environment Court is guided by the Resource Management Act when making decisions on freshwater consent appeals. As noted in the introduction chapter, the “purpose of this Act [the RMA] is to promote the sustainable management of natural and physical resources” such as freshwater (RMA, 1991, p.68 [sec5. (1)]). The Act defines sustainable management as:

*[t]he use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being 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 environment (RMA, 1991, p.68 [sec5. (2) (a) (b) (c)]).*

Therefore, consent for an activity – such as abstracting groundwater for irrigation – can be granted if its use does not effect the needs of future generations; if its use does not threaten the life-supporting capacity of ecosystems; and if the effects of its use can be avoided, remedied, or mitigated (Jay, 1999, p.468).

The RMA asks regional councils to establish, implement, and review “objectives, policies, and methods to achieve integrated management of the natural and physical resources of their region” (RMA, 1991, p.101 [sec 30 (1) (a)]). The previous chapter noted that regional councils are also asked to control the abstraction, damming, and diversion of freshwater in its jurisdiction while controlling the levels of flow in water bodies (RMA, 1991, p.103 [sec 30 (e)]). Furthermore, regional councils are able to establish rules for freshwater allocation through a regional plan (RMA, 1991, p.103 [sec 30. (fa) (i)]). A regional plan will be prepared to help a regional council exercise the functions above (RMA, 1991, p.173 [sec 66 (1)]). Regional plans must state the objectives for the region, the policies to meet these objectives, and the rules to implement the policies (RMA, 1991, p.175 [sec 67 (1) (a) (b) (c)]). Regional plans must give effect to national policy statements issued by central government and ought to be consistent with Water Conservation Orders (RMA, 1991, p.175 [sec 67 (3) (4)]). Importantly, every rule for resource use in a regional plan “shall have the force and effect of a regulation” (RMA, 1991, p.176 [sec 68 (2)]). In sum, resource consent decisions made by regional councils can be appealed to the Environment Court. Regional councils can create a regional plan with rules for freshwater use that guide, constrain, and facilitate resource consent decisions.

Therefore a regional plan, such as ECan's proposed Natural Resources Regional Plan (NRRP), can establish rules that limit the cumulative effects of individual abstractions. If a request for consent does not comply with the objectives, policies, and rules of a plan, it potentially requires public notification and a public hearing process (Jay, 1999, p.470). ECan began the NRRP process in the late 1990s, however, ECan was still completing the document by the end of the thesis analysis period in 2010 (Williams, 2011, p.4). In the absence of planning rules, the allocation of a resource is determined by individual consents and whether or not the individual consent affects the needs of future generations, threatens the life-supporting capacity of ecosystems, or if consent applicants can demonstrate the effect of resource use can be avoided, remedied, or mitigated.

#### **6.4. Groundwater Zoning Case Study – creation of groundwater zones**

Farmers and environmentalists were both concerned about the effect of changing land use on Canterbury's groundwater by the early 2000s (Cameron, 2009, p.120). For example, 6,319 hectares of new land was irrigated in the Te Pirita district west of Ashburton between 1993 and 2002 (NZPA, 2003a, p.8). To irrigate this land, farmers abstracted from an aquifer 90 to 120 metres below the surface. However, a deeper aquifer between 140 and 200 metres underground was increasingly being used (ibid). In response, the Dunsandel Groundwater Users Association applied for a grant to study groundwater in Mid-Canterbury with the desire to know how much water could be allocated for farming (ibid). This research - funded by the Dunsandel Groundwater Users Association in partnership with Sustainable Farming Fund, MAF Policy, and ECan - was the first phase of the Aqualinc Canterbury groundwater model (Aqualinc, 2005).

Aqualinc aimed to develop a groundwater model that would "predict the response of the groundwater system to changes in land use and groundwater abstraction" (Weir 2007: 1). Aqualinc hoped the model would aid the development of a long-term strategy for use of groundwater in Canterbury. Aqualinc's Canterbury groundwater model was the result of an extra \$200,000 of research funded by the Ministry for Agriculture and Forestry (\$62,000), ECan (\$60,000), the Mackenzie Charitable Foundation (\$20,000), and the Ashburton Community Water Trust (\$58,000) (NZPA, 2002, p.4; Aqualinc 2007).

Findings from the Canterbury Strategic Water Study (CSWS) (Morgan, Bidwell, Bright, McIndoe, & Robb, 2002) were fed into Aqualinc's Canterbury groundwater model. The CSWS was a quantitative survey of Canterbury's freshwater resources and it confirmed that "approximately one million hectares of land could potentially be irrigated in Canterbury" (Morgan *et al.*, 2002, p.2).

Aqualinc's Canterbury groundwater model differed from ECan's bathtub model in its conception of Canterbury's groundwater (Weber, Memon, & Painter, 2011). Aqualinc's Canterbury groundwater

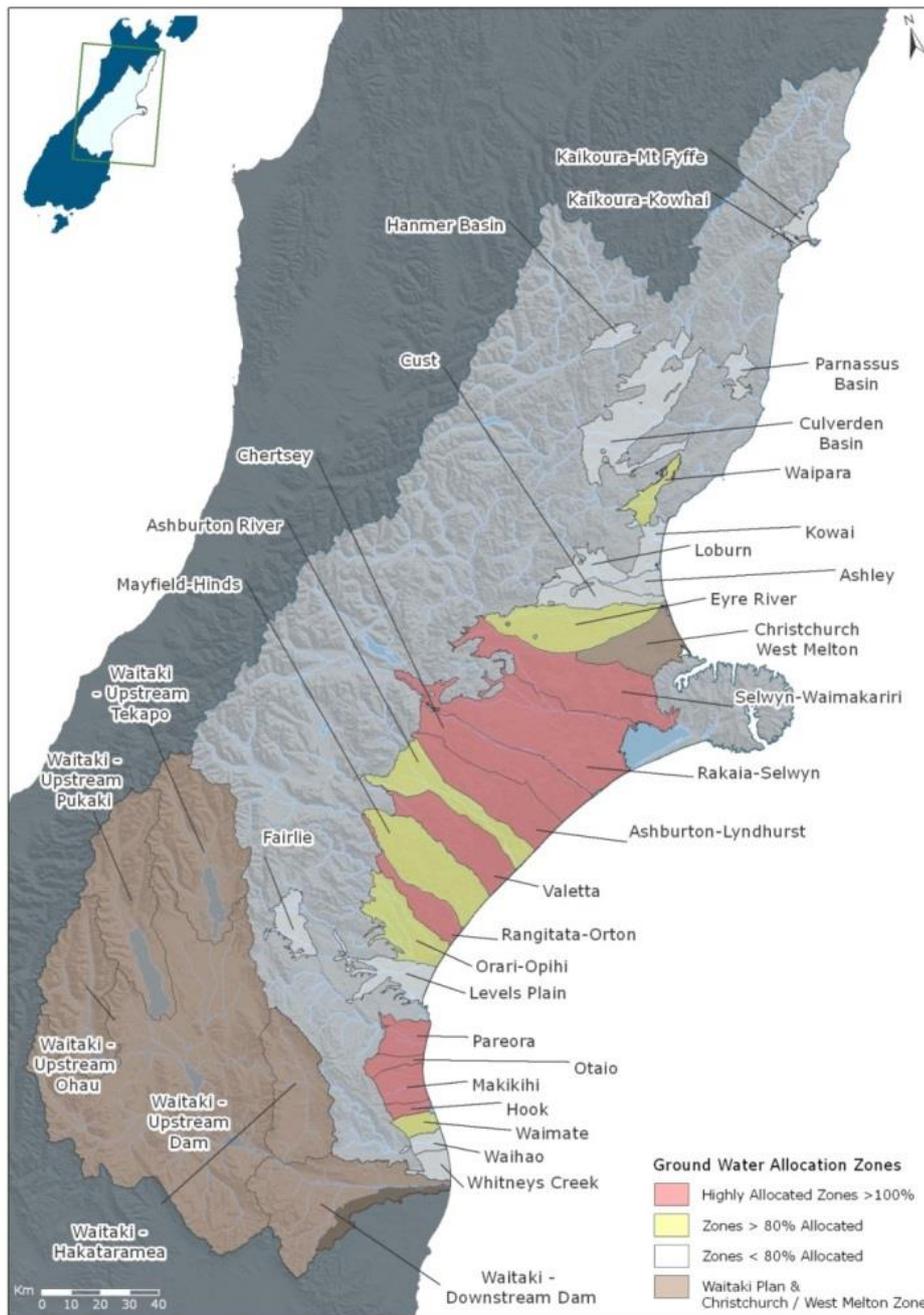
model conceived of Canterbury's aquifers as semi-permeable layers, and thus supported the continued abstraction of water from deep aquifers. By contrast, ECan's bathtub model conceived of a relatively continuous flow of water between deep and shallow aquifers (Weber *et al.*, 2011). ECan concluded through use of its bathtub model that abstracting water from deep aquifers would have an impact on shallow aquifers that are directly connected to lowland streams. ECan's bathtub model was preferred by environmentalists who believed that abstraction from deep aquifers explained reductions in lowland stream flows, whereas Aqualinc's Canterbury groundwater model was preferred by farmers who desired abstraction from deep aquifers (Weber *et al.*, 2011, p.50).

ECan published a report on Canterbury's groundwater resources on the 18<sup>th</sup> February 2004 (Aitchison Earl, Scott, & Sanders, 2004; Hayman, 2004a, p.1). This report promoted the management of groundwater resources through calculating sustainable abstraction limits and restricting abstraction if these limits were exceeded. The report split Canterbury into 29 groundwater zones (see Figure 4) and the sustainable abstraction limits of these zones were calculated against estimated use (Aitchison Earl *et al.*, 2004, p.14). The report calculated that groundwater was being abstracted faster than the estimated recharge rate in seven zones<sup>41</sup>. ECan's regional planning committee recommended that no new groundwater consents be granted in these zones unless it was proven by the consent applicant that the effect of the abstraction would be minor (Hayman, 2004a, p.1).

The zones were included in ECan's draft NRRP water chapter (ECan, 2004; Veltman, Miller, Glennie, & Talbot, 2004). The NRRP reached first schedule status in 2004. However, as already noted, the NRRP was not completed until 2011. Thus, the draft groundwater limits in the NRRP did not have the force of fully authorised planning rules. Despite this, the new limits would have an effect on resource consent applications for groundwater bores in Canterbury. ECan's groundwater report was published five days before a resource consent hearing for groundwater abstraction by two large dairying operations – Lynton and Pine Grove farms – was due to begin (Holden, 2004, p.8). The new draft limits and zones effected how ECan assessed Lynton and Pine Grove farms application.

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<sup>41</sup> These zones were Ashburton-Lyndhurst, Ashley, Levels Plain, Rangitata-Orton, Valetta, Waimakariri, and the Rakaia-Selwyn.

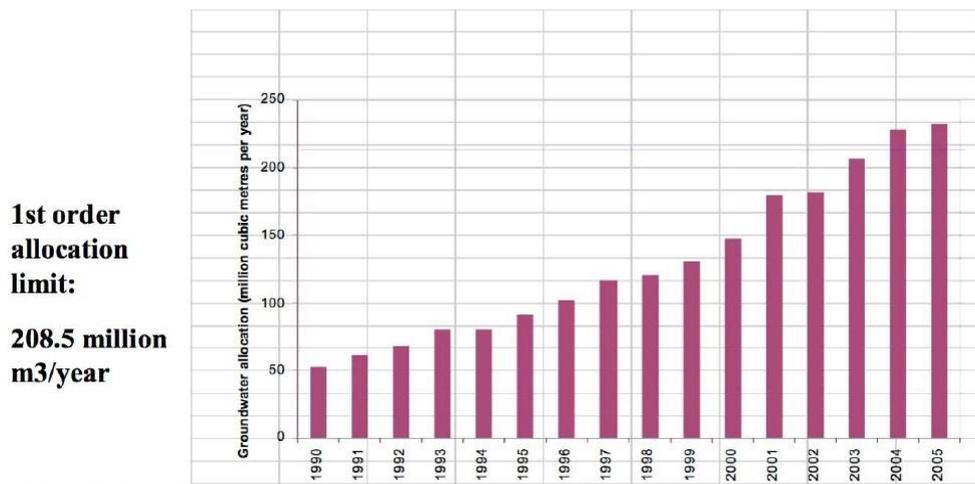


**Figure 4 Groundwater allocation zones in Canterbury (Source Environment Canterbury).**

ECan’s allocation limits were tallied by calculating 50 per cent of annual land-surface recharge and 15 per cent of average annual rainfall. The report acknowledged this was a “conservative approach to highlight areas of high allocation” (Aitchison Earl *et al.*, 2004, p.1). Groundwater had traditionally been allocated on the basis of how much water is annually recharged to aquifers. However, this calculation did not take into account the extra groundwater required to sustain “groundwater dependent ecosystems such as streams, springs and wetlands” (Aitchison-Earl *et al.*, 2004, p.7). ECan’s calculations were designed to protect these groundwater dependent ecosystems.

ECan justified its 50 per cent annual land-surface recharge calculation due to concern over the health of lowland streams, springs, and wetlands in the Rakaia-Selwyn zone (Aitchison Earl *et al.*, 2004, p.11). Figure 5 highlights the growth of groundwater abstraction in this zone since 1990, and the CSWS (published in 2002) calculated that the Rakaia-Selwyn zone had allocated up to 46 per cent of annual land-surface recharge (ibid). Thus, because the “Selwyn Zone is highly allocated, with streams already under stress...an alternative limit of 50 per cent of land-surface recharge” was proposed (ibid). ECan justified the allocation of 15 per cent of average annual rainfall to groundwater abstraction through the research of White, Hong, Murray, Scott, and Thorpe (2003). White *et al.* argued “that approximately 30% of mean annual rainfall becomes recharged to groundwater” (as quoted in Aitchison-Earl *et al.*, 2004, p.12). ECan halved this figure to 15 per cent because in “zones where soil and other relevant data are not available it is appropriate to adopt a conservative approach to setting allocation limits and to consider only the rainfall recharge component of land-surface recharge” (Aitchison Earl *et al.*, 2004, p.12).

## Development in the Rakaia-Selwyn Groundwater Allocation Zone Since 1990



**Figure 5** Development in the Rakaia-Selwyn groundwater allocation zone since 1990 (Jenkins, 2007, p.5).

ECan argued that all limits “should be considered as interim, [and] open to refinement depending on the hydrogeological understanding, and the completeness of use data” (Aitchison-Earl *et al.*, 2004, p.26). The 50 per cent annual land-surface recharge calculation would be strengthened in the short-term by introducing variables specific to each zone, such as land use, soil types, and rainfall (Aitchison-Earl *et al.*, 2004, p.24). In the long-term, abstraction capacity would be clarified by calculating non-rainfall recharge such as irrigation leakage (ibid). This sequential method of setting limits was called the “zonal order regime”. ECan envisioned that knowledge of groundwater would improve through three zonal orders (Veltman *et al.*, 2004). Leo Fietje (personal communication,

March 1, 2012) explained in a research interview that the first order was based on land-surface recharge. The second order calculated rainfall, soil types, and crops. The third order approached each zone uniquely.

Research interviewees differed when asked who was responsible for the creation of the groundwater zones, who decided where to draw the boundaries, and how the allocation rates and zonal order regimes were devised. ECan hydrologist Dr Howard Williams said that ECan's groundwater section made the technical decisions regarding the most appropriate boundaries for the groundwater allocation zones (H. Williams, personal communication, October 4, 2012). ECan's Christina Robb maintained that ECan's Chief Executive Bryan Jenkins, in partnership with the Water Rights Trust environmental interest group, influenced the zonal management system (C. Robb, personal communication, May 24, 2012). ECan's Leo Fietje credited hydrologist Philippa Aitchison-Earl for the development of the zonal boundary concept (L. Fietje, personal communication, March 1, 2012). Aqualinc consultant Ian McIndoe believed the need for limits was first established by the Canterbury Strategic Water Study (I. McIndoe, personal communication, April 17, 2012).

ECan denied Lynton and Pine Grove farms application for a 35 year groundwater consent on 29<sup>th</sup> June 2004. ECan noted that the applications were in the over-allocated Selwyn-Rakaia red zone. ECan denied the consents due to the effects abstraction would have on existing consent holders (Scott, 2004b, p.1). According to Federated Farmers, the decision highlighted the seriousness of ECan's zonal management system (ibid). Water Rights Trust chairman Murray Rodgers welcomed the news. Rodgers stated "[w]e were opposed to the consent on the grounds that the volume of water intended for abstraction was not a sustainable use of the resource" (ibid). Lynton and Pine Grove appealed the decision to the Environment Court.

## **6.5. Challenges to the groundwater zones**

Lynton and Pine Grove Environment Court appeal illustrated the different assumptions made by ECan and the applicants regarding Canterbury's groundwater resources. The Environment Court examined four issues in its judgment: (1) possible draw-down effects on nearby wells, (2) possible nitrification effects, (3) cumulative effects relating to groundwater levels generally, and (4) the efficiency and effectiveness of the proposed abstraction. ECan rejected the original consent application due to the possible draw-down effects on nearby wells. However, during the Environment Court appeal Lynton and Pine Grove came to an agreement with their neighbour, Synlait's Robindale Dairies, which established special conditions on Lynton and Pine Grove's abstraction (C. Glass, personal communication, February 24, 2012). The agreement established a monitoring well. Lynton and Pine Grove would have to cease abstraction if water levels fell below 147.7 metres in the monitoring well (Lynton Dairy Env. Court, 2005, pp. 3-4 [sec. 10]).

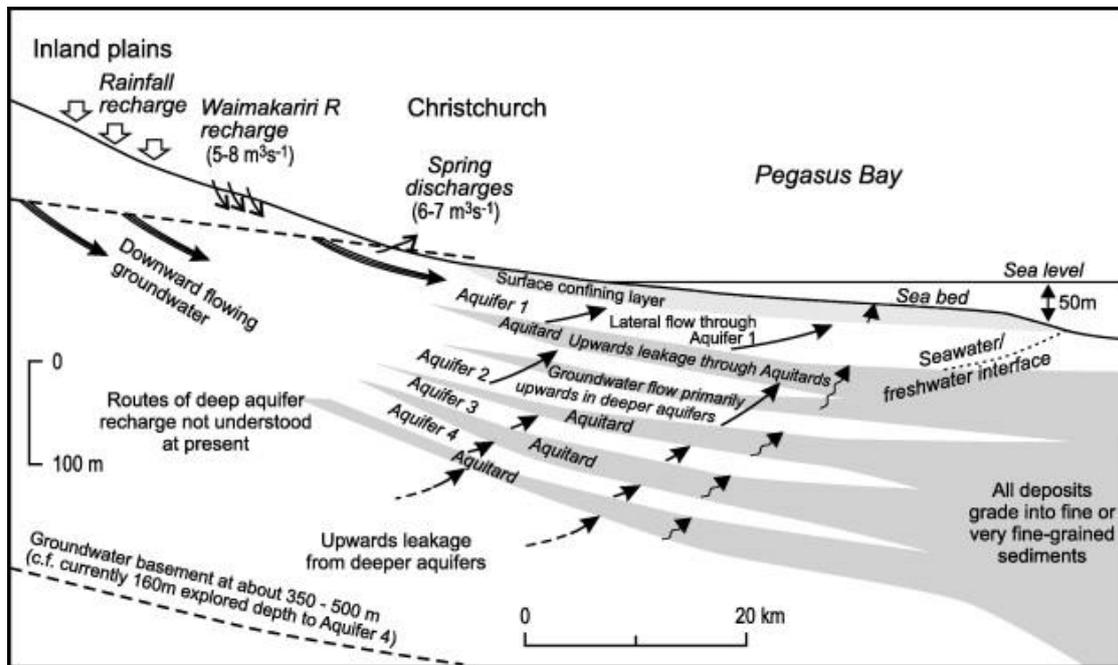
The second issue was groundwater nitrification. The Environment Court noted “there is a concern that the nitrates introduced to the soil by fertiliser, cow urine and dairy shed wash-down could lead to increased nitrification beneath the site and thus in the aquifer system generally” (Lynton Dairy Env Court, 2005, p.5 [sec 15]). The Court argued that ECan had originally assessed nitrification effects incorrectly by comparing dry-land sheep farming to irrigated dairying (Lynton Dairy Env Court, 2005, p.34 [sec 121]). Lynton and Pine Grove were already farming dairy cattle and would continue dry-land dairying if unsuccessful in gaining groundwater consent. In response, the Court assessed the effects of increased nitrification between irrigated and dry-land dairying. The Court calculated that stocking rates could increase by a maximum of 20 per cent with irrigation (Lynton Dairy Env Court, 2005, p.33 [sec 118]). Given this, the Court concluded that there would be a “no more than minimal” increase in nitrification as a result of the groundwater abstraction (Lynton Dairy Env Court, 2005, p.34 [sec 121]). To limit nitrification, the Court asked Lynton and Pine Grove dairies to reduce their nitrogen fertiliser use and to apply best practice fertiliser use (Lynton Dairy Env Court, 2005, p.34 [sec 122]).

The third issue was cumulative effects. The Court recognised that growth in groundwater abstraction was explained by the lack of controls, such as planning rules, making it more attractive to farmers (Lynton Dairy Env Court, 2005, p.9 [sec 29]). Lynton and Pine Grove’s proposed abstraction was from aquifer four. Table 7 and Figure 6 indicate that aquifer four was considered, at the time, to be one of the deeper local aquifers.

**Table 7 Aquifer depths in the Rakaia-Selwyn groundwater zone (Lynton Dairy Env Court, 2005, p.12 [sec 39.])**

	<u>Inland</u>	<u>Coastal</u>
Aquifer 1		<10m
	<20m	
Aquifer 2		30-40m
Aquifer 3	80-120m	Unknown
Aquifer 4		Unknown
	>160m	
Aquifer 5		Unknown

The Court criticised ECan’s management of groundwater abstraction because it had failed “to control allocations on a seasonal or annual basis ... [t]his lack of precision in the consents is at the heart of the issue. There is no real allocation given in the consent” (Lynton Dairy Env Court, 2005, pp. 7-8 [sec. 24]). The Court instructed ECan to review its groundwater consents to ensure the total allocation of the resource is known on an annual basis so that each consent holder knows their portion of the total allocation (Lynton Dairy Env Court, 2005, p.8 [sec. 27]).



**Figure 6 Cross-section of aquifers underneath Christchurch (Stewart, 2012).**

Two cumulative effects were considered by the Court. The first effect was the “lowering of groundwater levels on a regional scale that may occur as a result of the proposed extraction” (Lynton Dairy Env Court, 2005, p.34 [sec 123]). It was concluded that historical fluctuations in well levels could be attributed to rainfall (Lynton Dairy Env Court, 2005, p.35 [sec 127]). The Court then used Aqualinc’s Canterbury groundwater model to assess the effects of Lynton and Pine Grove’s proposed abstraction on local groundwater levels. The results indicated a lowering of water levels in aquifer 4 but a rise in the level of the shallowest aquifer due to recharge from the extra irrigation (Lynton Dairy Env Court, 2005, p.36 [sec 132]). Using this evidence, the Court concluded that the effects of Lynton’s proposal “would be minimal everywhere except possibly in the immediate vicinity of the wells where local draw-down effects may be evident” (Lynton Dairy Env Court, 2005, p.37 [sec 134]). These effects had been resolved through the well monitoring agreement between the applicants and Robindale dairies.

The second cumulative effect to be assessed was lowland stream flow. The Court was concerned with lowland stream flow in the Rakaia-Selwyn groundwater zone (Lynton Dairy Env Court, 2005,

p.37 [sec 135]). The Court argued “that the major contributor to lower lowland flows is increased abstraction” (Lynton Dairy Env Court, 2005, p.38 [sec 138]). However, the Court accepted that “aquifer buffering” between the proposed wells and lowland streams would lessen the effect of the abstraction on lowland streams (Lynton Dairy Env Court, 2005, p.38 [sec 139]). The Court accepted that “there would be a time delay before the effects of any increase in abstractions would be realised and that the time delay would increase while the magnitude of the effect would decrease with the distance from the lowland streams” (Lynton Dairy Env Court, 2005, p.38 [sec 141]). The Court concluded, using Aqualinc’s Canterbury groundwater model, that “the addition of the proposed Lynton take would not have any significant or observable effect on flow in the lowland streams<sup>42</sup>” (Lynton Dairy Env Court, 2005, p.39 [sec. 144]).

The Court concluded that the location of an abstraction, rather than the total amount abstracted, was the most critical factor in determining the effects on lowland stream flows. The Court used the lowland Irwell River to illustrate this point. Local groundwater users, in an attempt to increase irrigation reliability during summer, had started sinking deeper wells close to the Irwell River. Between 1997 and 2005 there were only four applications for new shallow wells near the Irwell River (up to 22m), whereas there were 40 applications for deeper wells (below 22m) (Lynton Dairy Env Court, 2005, pp. 49-50 [sec 180]). The Court argued these new abstractions below 22m in the vicinity of the Irwell, rather than the upper-plains abstractions proposed by Lynton and Pine Grove farms, were to blame for declining lowland stream flows.

The Court subsequently criticised ECan for assessing consents in the upper-plains Te Pirita area differently from those in the lowland areas near the coast. The Court disapproved of consents being granted for groundwater abstraction in lowland areas while simultaneously being refused in Te Pirita, and subsequently concluded:

*...there is no probative evidence to support the alleged link between abstractions in the Te Pirita area and the effect on lowland streams. We have concluded that there is a direct correlation between abstractions from bores surrounding the Irwell, particularly within two kilometres of the Irwell River [takes from Aquifer 1], and the other tributaries and drains leading to Lake Ellesmere (Lynton Dairy Env Court, 2005, p.53 [sec. 194]).*

The Court argued that abstractions from the shallowest aquifer had led to an ecological crisis at Te Waihora / Lake Ellesmere (Lynton Dairy Env Court, 2005, p.53 [sec. 195]). In conclusion, the Court

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<sup>42</sup> The Court was presented with reports which indicated that Birdlings Brooks, Harts Creek, and Boggy Creek flows would decrease by an average of 2.3 per cent to 18 per cent, including one or two sites at Birdlings Brook that would decrease by up to 50 per cent (p. 39, [sec 143]).

disagreed with ECan's initial decision to reject Lynton Dairy and Pine Grove's application, permitting them consent to abstract groundwater for ten years<sup>43</sup>.

### **6.5.1. Explaining the success of Lynton and Pine Grove dairies at the Environment Court**

The Environment Court case exposed issues with ECan's groundwater management. First, the Court's use of Aqualinc's Canterbury groundwater model suggested that the effects of abstraction from deep upper-plains aquifers would be negligible in comparison to abstractions from aquifers geographically closer to the lowland streams. Second, the Court's decision illustrated that consents for abstraction did not contain an actual volume that a consent holder could abstract. This meant that ECan could not calculate how much water was currently being abstracted through tallying existing consents. Furthermore, ECan was setting limits to groundwater abstraction without knowing how much was actually being used. Third, ECan's tiered system of calculating groundwater availability was open to scientific challenge. New models, such as Aqualinc's Canterbury groundwater model, could calculate the effects of variables – such as soil type, land use, and irrigation recharge – to challenge ECan's first zonal order calculations. ECan's persistence in granting consents for groundwater abstraction in lowland areas despite not knowing how much groundwater was annually abstracted was also criticised by the Court.

According to ECan's Christina Robb, this outcome had a significant effect on how the council would operate in the future:

*[Lynton and Pine Grove] brought into question the whole ability of regional councils to manage to limits. The view at the time was that ECan did not know what it was doing. And that has led to a whole lot of stuff at central government level, including ultimately the dismissal of Environment Canterbury councillors<sup>44</sup> (C.Robb, personal communication, May 24, 2012).*

### **6.5.2. The Restorative Programme for Lowland Streams**

In response to the Lynton and Pine Grove decision, ECan created an adaptive management<sup>45</sup> programme to address uncertainties with groundwater management in the Rakaia-Selwyn zone. *The Restorative Programme for Lowland Streams* first aimed to establish “clear annual limits on the amount of water every consent holder in red zones can abstract...[and] to vary those limits year-by-year depending on how much water is in the groundwater system”. It would also require every “consent holder to measure how much water they are taking by metering their wells”. The

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<sup>43</sup> The original consent application was for 5.1Mm<sup>3</sup> of abstraction. The Court reduced the amount Lynton and Pine Grove dairy could abstract to 3.64Mm<sup>3</sup> (pp. 54-55 [sec 200-203]).

<sup>44</sup> This will be discussed in the next case study.

<sup>45</sup> Adaptive management was defined by Sara Singleton (2002, p.58) as a strategy “that allows for continual adjustment and fine-tuning as more is learned about the environmental effects of particular policies”.

Programme also aimed to “control the rate of abstraction from wells that directly affect lowland stream flows to ensure abstraction does not cause streams to go below minimum environmental flows” (ECan, 2006, p.1).

Shortly after the announcement of *The Restorative Programme for Lowland Streams*, a bulk application for 71 groundwater consents in the Rakaia-Selwyn zone was assessed by ECan commissioners (Claridge, 2006, p.4)<sup>46</sup>. The appointed commissioners decided to grant 69 of the 71 consents for a ten year period against the wishes of ECan (Eleven, 2007a, p.3). The commissioners decided to reject applications for groundwater consent from the shallowest aquifer<sup>47</sup> because they believed these abstractions would affect lowland stream flows greater than abstractions from deeper aquifers (ECan, 2007). This decision was influenced by Aqualinc’s Canterbury groundwater model, which assumed that deeper aquifers are separated from lowland streams by several semi-permeable layers. ECan’s Chief Executive Bryan Jenkins was disappointed with the decision. Commissioners advocated *The Restorative Programme for Lowland Streams* by describing it as a “suck it and see approach” (Eleven, 2007b, p.2). The “suck it and see approach” refers to the adaptive management rules set on the consents, which meant that abstraction could continue while the effects of this abstraction were being monitored. By contrast, Bryan Jenkins argued the commissioners should have employed an “anticipate and avoid” strategy by restricting further abstraction until all the cumulative effects of existing consents were known.

#### **6.5.2.1. Explaining the success of the Rakaia-Selwyn 69.**

ECan officers attempted to justify zonal limits during the Rakaia-Selwyn hearing which ultimately led to the granting of 69 of 71 consents. Matthew Bubb (personal communication, February 29, 2012) and Ian McIndoe (personal communication, April 17, 2012) both reported in research interviews that ECan officers refused to accept the possibility that ECan’s figures for sustainable allocation of groundwater could be challenged. The resource consent commissioners concurred with Bubb and McIndoe. The commissioners argued that ECan adopted an advocacy role by attempting to decline all of the consent applications (Milne, Russell, & Ryder, 2007, p.6 [para 24]). In the commissioners’ view, there was insufficient monitoring data to support ECan’s conclusion that deeper aquifers were already fully allocated and that further allocation would affect lowland streams (Milne *et al.*, 2007, p.56 [para 263]).

The decision to grant 69 extra consents in the Rakaia-Selwyn red zone confirmed the weakness of ECan’s groundwater management system. ECan responded by hiring hydrologist Paul White to review the case (White, 2009). White argued that ECan’s approach was “suitably conservative” but

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<sup>46</sup> ECan appointed commissioners Philip Milne (environmental lawyer), Wayne Russell (hydrogeologists), and Dr Greg Ryder (aquatic ecologist) to hear the case

<sup>47</sup> There were two exceptions in which groundwater consents were granted in the shallowest aquifer.

ultimately unsuccessful (White, 2009, pp. i-ii). Why was ECan unable to justify its groundwater limits to the commissioners? White noted the debate between consent applicants and ECan over the effect of abstracting from deep aquifers on lowland streams. Consent applicants, using Aqualinc's Canterbury groundwater model, argued the effect of abstracting from deeper aquifers would be negligible on lowland streams. By contrast, White argued that groundwater abstraction in deeper aquifers could cause decline in shallow aquifer flows (that feed lowland streams), but that the pathway of flows between shallow and deeper aquifers was still unknown (White, 2009, p. i). Given this, why did the commissioners allow the abstraction?

White offered several explanations. First, aquifer identification is relatively easy near the coast, but in the upper-plains aquifer identification is more difficult and the "hydraulic boundaries between aquifers are not well defined" (White, 2009, p.60). Hydrologists therefore experienced difficulty in identifying the flow of water between deep and shallow aquifers, whereas identifying the flow between shallow coastal aquifers and lowland streams was easier. Despite this, research by Bruce Hunt and David Scott (2007) confirmed in layered aquifer systems abstraction from deeper aquifers will lead to flow changes in shallower aquifers. Second, White (2009, p.61) argued that ECan's bathtub model, which assumed that aquifers were connected, was "not suitable for assessing local effects of groundwater use, for example the effects of pumping on neighbouring wells". White noted that bathtub models are commonly used in hydrogeology when the geological structures of aquifers are unknown. However, bathtub models are only suitable at assessing the effects of groundwater use at certain scales. The sub-regional scale of the Rakaia-Selwyn hearing suited Aqualinc's Canterbury groundwater model over ECan's regional bathtub model. In the words of the commissioners, ECan's use of the bathtub model did not differentiate "between the [consent] applications on the basis that some would have less impact than others depending upon their location and the size of take involved" (Milne *et al.*, 2007, p.11 [para 52]).

ECan expected the commissioners to conclude that abstractions from all aquifers will affect levels of the shallowest aquifer and thus levels in lowland streams. The commissioners decided there was a degree of uncertainty with this claim. As a result, commissioners were happy that the effects of new abstractions could be assessed and mitigated through ten year consents, metering the abstractions, and placing adaptive management rules on the consents. In sum, Aqualinc's Canterbury groundwater model, by conceiving of Canterbury's upper-plains aquifers as semi-permeable, was able to justify some abstractions (such as those in deeper aquifers) over others. Furthermore, unlike ECan's bathtub model, the Canterbury groundwater model was able to assess the effects of singular abstractions.

Aqualinc’s Canterbury groundwater model also identified greater recharge into the Rakaia-Selwyn groundwater zone from the Selwyn River. Thus, the applicants argued there was more groundwater available for abstraction than ECan was aware of (see Table 8).

**Table 8 Water inputs to the Rakaia – Selwyn Groundwater Zone (White, 2009, p.67, as reported by Anthony Davoren during the Rakaia-Selwyn hearings).**

Component	ECan (million m <sup>3</sup> /yr)	Applicant’s assessment (million m <sup>3</sup> /yr)
Dryland rainfall recharge	370	370
Irrigation recharge	55	55
Rakaia surface water irrigation recharge	5	24
Selwyn River	0	100
Total	430	549
50 per cent of land-based recharge for allocation	215	274

It would appear that Aqualinc’s Canterbury groundwater model was more compatible with the requirements of the RMA than ECan’s bathtub model. First, the RMA requires regional councils to measure the effects of activities on the environment. When resource consents are granted with certain conditions – such as a limited time period, water metering, adaptive management (limiting abstractions during low flow years), and pumping tests to monitor levels between aquifers – the effect of upper-plains abstractions on lowland streams can be identified, calculated, and mitigated. By contrast, ECan’s bathtub model argued that because aquifers were interconnected the effect of abstractions were all similar. Due to the scientific uncertainty of this claim, commissioners chose to monitor the effects of abstraction rather than to restrict abstraction. Second, ECan can establish limits to cumulative abstraction under the RMA through regional planning documents (such as the proposed NRRP). However, ECan acknowledged that its groundwater rules were interim (despite

being included in the draft NRRP water chapter), and this allowed applicants to use the Aqualinc groundwater model to investigate variables (for example, Selwyn river recharge) to stretch ECan's interim limits. Applicants had gone beyond the variables of ECan's first zonal order and concluded that the effects of extra abstraction from deep upper-plains aquifers would be negligible on lowland streams. In conclusion, Aqualinc's Canterbury groundwater model provided commissioners with a means to make decisions on individual consents in accordance with the RMA's effects-based mandate. The result was that commissioners granted consent for groundwater abstraction despite ECan's zonal limits regime.

## **6.6. RMA processes without a plan – management of cumulative effects**

This case study highlighted the difficulty ECan experienced in managing the cumulative effects of resource use without a completed regional plan. ECan's Chief Executive Bryan Jenkins noted these difficulties in 2007:

*[a]s sustainability limits are approached, there is the potential for cumulative effects. Management of cumulative effects requires a catchment wide approach. However, with [the] RMA designed for managing the adverse effects of individual applications there are shortcomings in the legislative framework for the management of cumulative effects... (as quoted in Milne, 2008, p.2).*

Philip Milne disagreed with Jenkins. Milne argued that cumulative effects of individual consents can be managed through the RMA without a regional plan (Milne, 2008). Milne cited Peter Salmon, who argued that calculating cumulative effects required "identifying the resource, determining its capacity and then limiting its use" (as quoted in Milne, 2008, p.9). If ECan had been able to identify the groundwater resource and determine its capacity for use then hypothetically its limits for groundwater abstraction should have had the strength to withstand Environment Court appeals. Milne used his experience as an ECan commissioner to highlight how difficult it was to identify the resource and determine its capacity for use. Milne argued that Canterbury's groundwater zones are complicated:

*...[because they] comprise multiple layered aquifers (up to 6 deep in places). The effect of a particular proposal will depend upon its location in two dimensions (lateral and vertical). Then one must add a third dimension; time. The deeper aquifers respond more slowly to recharge and abstraction than the shallower aquifers, and surface effects (on lowland streams) take longer to emerge. Even the "over allocated" shallower aquifer has sufficient capacity in some locations most years (because of river recharge) and in most locations in some years (when there has been sufficient winter recharge and moderated irrigation demand) (Milne, 2008, p.9).*

Thus, determining the abstraction capacity of an aquifer is very difficult. It requires knowledge of the cumulative effect of existing abstractions and the point at which these cumulative effects become

unacceptable. It requires reliable evidence on the effect of current and potential abstractions, and whether there will be times, locations, or depths in which additional abstractions can be accommodated. For these reasons, Milne argued that “*only in clear cases will there be a case for a total prohibition on further activity*” (Milne, 2008, p.12 italics added).

Restricting groundwater use on the basis of cumulative effects without a notified regional plan is very difficult but not impossible. Milne argued that the failure to manage cumulative effects is not because of regional council incompetence, but due to “insufficient information upon which to base limits; uncertainty about the cause of particular effects; reluctance by some politics to severely constrain resource use and thereby curtail economic development” and “the lesser weight which can be given to ‘untested’ limits in proposed plans” (Milne, 2008, p.19). In conclusion, Aqualinc’s Canterbury groundwater model highlighted deficiencies in ECan’s identification of the resource. This provided enough uncertainty for consent applicants to successfully challenge ECan’s interim groundwater limits. Commissioners rejected ECan’s limits because there was uncertainty regarding the resource (in terms of aquifer identification and the flow of water between aquifers) and its capacity for further use (in terms of to what extent river runoff, soil type, and irrigation leakage affect aquifer flow), as well as uncertainty over how much groundwater was being abstracted through existing consents.

## **6.7. Conclusion**

ECan pursued interim limits to groundwater abstraction in an attempt to establish authority over groundwater use in this case study. Consent applicants challenged these limits in resource consent hearings and through appeals to the Environment Court. Consent applicants, when using Aqualinc’s Canterbury groundwater model, were able to highlight uncertainties with ECan’s identification of the resource while illustrating the capacity of aquifers for more abstraction.

The MC-NPM hybrid theory predicted: 1), that ECan would establish patronage with interest groups but would maintain decision making autonomy, 2) that ECan would focus on outputs over outcomes and 3), that ECan would adopt a hands-off approach to freshwater management unless the cumulative environmental effects of resource use became clear. In this case study, ECan established a close relationship of patronage with environmental interest groups, such as the Water Rights Trust, who supported ECan’s (self-proclaimed) “conservative” approach to groundwater limits (Aitchison Earl *et al.*, 2004, p.12). ECan also chose to pursue authority through an interim plan output, as in the first case study. ECan also adopted a hands-off approach to groundwater planning until the environmental effects of groundwater abstraction (for example, lowland stream flow in the Rakaia-Selwyn groundwater zone) became clear.

Thus, this case study provides evidence that concurs with the predictions of the MC-NPM hybrid theory. However, ECan was not able to maintain autonomy over decision making as the MC-NPM hybrid theory suggested. Consent applicants, through use of the Aqualinc Canterbury groundwater model, successfully challenged ECan's groundwater limits through Environment Court appeals and resource consent hearings. The Aqualinc Canterbury groundwater model highlighted scientific uncertainties with ECan's identification of the groundwater resource, and as a result, the Environment Court and resource consent commissioners chose to allow abstraction with adaptive management techniques, rather than restricting all abstractions as ECan desired.

ECan's inability to establish authority or autonomy over freshwater use led to policy stagnation. ECan's policy stagnation concerned New Zealand's central Government. The Minister for the Environment, Trevor Mallard, met with ECan chairman Kerry Burke and Chief Executive Bryan Jenkins after 69 applicants were given resource consent in the Rakaia-Selwyn red zone. The Ministry for the Environment believed ECan was experiencing difficulties in managing freshwater (Gorman, 2010c, p.5). Mr Mallard was concerned with ECan's shortage of appropriately skilled staff as well as backlogs of resource consents.

ECan's failure to produce a notified regional plan, as well as the policy stagnation seen in the first two case studies, led the organisation to examine alternative methods of establishing authority and autonomy over freshwater management. In response, ECan helped create the non-statutory collaborative Canterbury Water Management Strategy. The next chapter examines the creation of the Canterbury Water Management Strategy. The CWMS established new principles, priorities, and targets for Canterbury's freshwater management. The chapter examines ECan's role in the creation of the CWMS, the CSWS' early research into Canterbury's freshwater resources, as well as the later expansion of the strategy to include environmental interest groups.

## 7. Chapter Seven

### Case Study 3 – the Canterbury Water Management Strategy

#### 7.1. Introduction

ECan's inability to establish authority over freshwater management in the first two case studies exacerbated tensions between farming and environmental interest groups in Canterbury. Both groups successfully challenged ECan's autonomy as freshwater decision makers in the first two case studies. In the first case study, environmental interest groups usurped ECan's autonomy through a successful Water Conservation Order application. In the second case study, farmers successfully challenged ECan's groundwater limits at the Environment Court and at resource consent hearings. The Canterbury Mayoral Forum blamed the "adversarial" and "lawyer-heavy" consents and planning process for the tension between the two groups (Gorman, 2009a, p.8). The Canterbury Water Management Strategy (CWMS) was an attempt to mediate these tensions, whereby the adversarial and litigious RMA processes were replaced by "collaborative" engagement between consent applicants, the community, and government (ibid).

To achieve this transformation, the CWMS promoted new governance arrangements for Canterbury's freshwater. The CWMS endorsed rescaling freshwater management from the regional council, splitting planning responsibility between zonal, regional, and national scales. Catchment sized zonal committees would be guided by the targets and principles of the CWMS which were devised through public consultation processes. The CWMS' targets promoted new water storage facilities for irrigation while simultaneously establishing tougher environmental standards to ensure the health of freshwater ecosystems was maintained.

This case study examines the creation of the CWMS. The CWMS was an extension of the Canterbury Strategic Water Study (CSWS). The chapter will recall ECan's role in the creation of the CSWS and the CWMS, as well as ECan's simultaneous development of the NRRP regional plan. The chapter will conclude by describing events after the publication of the CWMS which included Parliamentary intervention in Canterbury's freshwater management.

#### 7.2. Problems with ECan's management and governance

ECan's ability to plan for long-term freshwater outcomes, as well as its ability to process resource consents, was questioned given the organisation's struggle to establish authority during the 2000s (NZPA, 2000a, p.3; Hughey, 2001, p.5; Warren, 2002, p.4; Creech *et al.*, 2010). For example, Professor Kenneth Hughey argued in 2001 that "the biggest drought over the last 10 years has been the lack of

planning and action for the sustainable use of Canterbury's precious water resources", and as a result there is "a backlash from instream users (led by frustrated and angry trout anglers) which will ultimately threaten the irrigation proposals that farmers and local government are promoting to offset the impacts of future water shortage" (Hughey, 2001, p.5). By contrast, farmers were concerned with ECan's ability to process resource consents. ECan achieved only 29 per cent compliance with statutory timeframes for processing resource consents between 2007 and 2008 (Creech *et al.*, 2010, p.25). ECan was the worst performing council in New Zealand in terms of resource consent processing during this period (*ibid*).

ECan needed a regional plan to establish authority and autonomy over Canterbury's freshwater management. Fish and Game's WCO application for the Rangitata River demonstrated that rules for freshwater use and allocation could be applied without using the authority of a regional council (Hughey, 2001, p.5). It was in this context that policy analyst Grant McFadden was asked by the then Minister of Agriculture and Forestry to assist in the creation of a plan for Canterbury's freshwater use in 2000. McFadden sourced funding for the plan from ECan, MAF, MfE, the Ashburton Community Water Trust, and the Dunsandel Water User Group (Morgan *et al.*, 2002, p. i). The plan needed to mediate the tension between farmers and environmentalists in Canterbury. This required quantitative information of Canterbury's freshwater resources to determine how much irrigation could be developed in the region. The plan also required a social mechanism in which farmers and environmentalists could negotiate targets, principles, and governance structures for future freshwater management. The Canterbury Strategic Water Study provided the quantitative data and the Canterbury Water Management Strategy provided the social mechanism.

### **7.3. The Canterbury Strategic Water Study**

The Canterbury Strategic Water Study was written in four stages to guide Canterbury's freshwater management. The first stage published quantitative data on long-term demand for freshwater in Canterbury. The second stage examined the consequences of proposed irrigation storage. The third stage discussed the implications of irrigation storage with a number of interest group representatives, and the fourth stage split Canterbury into hypothetical groundwater and surface water supplied irrigation zones. The CSWS was written for the Ministry of Agriculture and Forestry, ECan, and the Ministry for the Environment. The CSWS provided crucial knowledge of Canterbury's freshwater resources and suggested ways to boost irrigation in the region.

The first stage of the CSWS was published in August 2002 (Morgan *et al.*, 2002)<sup>48</sup>. The CSWS was prompted by concerns from central, regional, and local government in Canterbury regarding the

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<sup>48</sup> The report was written by Lincoln Environmental researchers Matthew Morgan, Vince Bidwell, John Bright, Ian McIndoe, and Christina Robb.

absence of a regional plan for management of land and freshwater resources<sup>49</sup> (Morgan *et al.*, 2002, p.1). These authorities “were concerned that ad hoc actions by one group might foreclose on protection or development options that provided greater benefits over the long-term to the environment and to the community” (ibid). However, it was difficult for ECan to judge the benefits or disadvantages of conserving or developing certain freshwater bodies due to a lack of information on the amount of freshwater resources in Canterbury as well as future demand. Thus, the first stage of the CSWS focused on providing quantitative information on Canterbury’s freshwater resources, the ability of these resources to meet demand for irrigation, the resources that would come under the most stress, as well as the reliability of natural systems to meet increasing demand for freshwater (ibid). Stage 1 proclaimed that “approximately one million hectares of land could potentially be irrigated in Canterbury” (Morgan *et al.*, 2002, p.2).

Bryan Jenkins was employed as ECan’s chief executive between 2003 and 2011. Jenkins recalled in a research interview that some stakeholders<sup>50</sup> had “major reservations [about] the strategy’s scope being confined to quantity” (B. Jenkins, personal communication, April 11, 2012). Subsequently, there was a shift from the supply-and-demand calculations of the first stage to the second stage examining the consequences of recommended irrigation storage projects (Dark, Bright, & Sigle 2008). The Canterbury Mayoral Forum replaced ECan, MAF, and MfE as the lead agency for the CSWS between the first and second stages (A. McKay, personal communication, May 3, 2012). The Canterbury Mayoral Forum is an informal group of mayors and chief executives from Canterbury’s territorial authorities and ECan. Even though ECan was involved, the Canterbury Mayoral Forum’s leadership over the strategy reinforced the perception that ECan was unable to plan for freshwater in Canterbury (K. Burke, personal communication, March 16, 2012). Former ECan councillor Angus McKay (personal communication, May 3, 2012) argued that it was a pragmatic move because funding was easier to source from central government when the Mayoral Forum was the lead agency.

The Mayoral Forum established a steering committee to incorporate the views of environmental stakeholders into the CSWS. Grant McFadden (personal communication, April 17, 2013) revealed that he “selected most of the people” who were involved in the Stage 3 steering committee. This steering committee debated the merits of irrigation storage. McFadden (communication, April 17, 2013) argued that he “went to great lengths to get the people who could speak authoritatively for each of the interest groups, whether it be farming, or Fish and Game, or kayaking, or iwi”.

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<sup>49</sup> ECan was preparing the draft water chapter for the NRRP during this period.

<sup>50</sup> ECan councillor Eugenie Sage indicated scepticism at the scope and frame of the CSWS. In a research interview she stated “the Mayoral Forum had been so pro development and pro irrigation with the Strategic Water Study ... all of the research it commissioned was about whether storage schemes were technically feasible. There was no research about irrigation’s environmental impact on water quality ... all of the externalities were ignored” (Eugenie Sage, pers.comm).

Preliminary results of Stage 2<sup>51</sup> (Dark *et al.*, 2008) were given to the Stage 3 steering committee (see appendix 4 for steering committee membership)<sup>52</sup> (Whitehouse, Pearce, & McFadden, 2008). The steering committee discussed irrigation development and concluded that public and scientific considerations of land use intensification were required before major water storage infrastructure could be built (Whitehouse *et al.*, 2008, p.2). The steering committee noted the inequitable flow of water north and south of the Rangitata River. The steering committee also agreed that protection of lowland stream flows and major alpine river flows was important (Whitehouse *et al.*, 2008, p.4). Stage 4<sup>53</sup> expanded on the work of Stage 3 by dividing Canterbury into hypothetical zones supplied by groundwater and surface water (Dark, Bright, & Weir, 2009). The aim was to maximise irrigable land space while ensuring that lowland stream health and water quality was maintained.

#### **7.4. ECan's Natural Resources Regional Plan**

The Natural Resources Regional Plan (NRRP) was ECan's regional plan to determine rules for the long-term use of freshwater resources in Canterbury. The completed NRRP would give ECan greater authority over freshwater management because the rules established in the plan would have the force and effect of regulation. ECan began writing the NRRP in the late 1990s. Following droughts in 1997 and 1998 the Minister for the Environment urged ECan to accelerate its work on the NRRP (Robson, 1999a, p.9). During this period, ECan councillors were split on how to respond to the drought. Rural councillors wanted ECan to be more responsive. For example, councillor Robert Johnson argued that rural Cantabrians wanted ECan "to tap into water resources from snow fed rivers so that the water was available for irrigation during a drought" (Robson, 1999b, p.8).

ECan staff worked throughout 2000 and 2001 on preparing the NRRP's draft water chapter. ECan staff were criticised by councillors during this period for delaying the release of the chapter (Watson, 2001, p.4). ECan sought public submissions on the NRRP's draft water chapter from November 2001 (NZPA, 2001c, p.3). Despite ECan's appeal for public submissions, Federated Farmers provincial president, Stuart Wilson, argued the farming community had been ignored during the draft NRRP process (NZPA, 2001e, p.4). Federated Farmers were concerned with draft NRRP rules that would limit fertiliser application within 10 metres of a stream. The draft NRRP also banned nitrogen fertiliser application during May and June unless consent was gained from ECan (Keene, 2002, p.15).

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<sup>51</sup> Stage 2 of the CSWS was written by Andrew Dark, John Bright, and Shane Sigle.

<sup>52</sup> Stage 3 of the CSWS was written by Ian Whitehouse, Andy Pearce, and Grant McFadden for the Canterbury Mayoral Forum.

<sup>53</sup> Stage 4 of the CSWS was written by Andrew Dark, John Bright, and Julian Weir.

The NRRP's draft water chapter was once again delayed in September 2002 (Warren, 2002, p.4). ECan staff had taken longer than expected to input the data from 800 public submissions into the new draft. The draft water chapter was eventually published in May 2004 (Scott, 2004a, p.4). However, it was at this stage that progress on the NRRP stalled. The NRRP had reached first schedule status after the publication of the draft plan in 2004. First schedule status requires ECan to receive a second round of public submissions and to consult with iwi authorities. However, by 2010 the NRRP had still not passed through first schedule status, a situation which was "unprecedented in New Zealand" (Creech *et al.*, 2010, p.6). Between 2004 and 2010, when the NRRP was struggling to pass through this second phase of public submissions, the Canterbury Water Management Strategy was devised as a non-statutory planning document informed by the quantitative data of the CSWS.

## **7.5. The Canterbury Water Management Strategy**

The Canterbury Water Management Strategy is a collaborative planning document that promoted new priorities, principles, and targets for Canterbury's freshwater governance (Mayoral Forum, 2009; Lomax *et al.*, 2010). According to Bryan Jenkins (2011, p.54), the collaborative approach of the CWMS was adopted in response to amendments made to the Local Government Act (LGA) in 2002, which promoted closer partnerships between regional councils, the community, and industry. The LGA asks local government authorities to engage with the community when preparing ten year plans. According to Jenkins this encourages "a shift from representative democracy towards participative democracy" (*ibid.*). In effect, this process provided ECan with an alternative way to address the cumulative effects of freshwater use.

Research interviewees cited a number of people when asked who was responsible for the creation of the CWMS. As noted earlier, the Canterbury Mayoral Forum assumed responsibility for the CWMS and supervised the steering group who prepared the final document (Mayoral Forum, 2009, p.5). Despite this, research interviewees did not cite Mayoral Forum members as key actors despite their leadership role. ECan councillors (E. Sage, personal communication, March 12, 2012; K. Burke, personal communication, March 16, 2012.) and employees (K. Taylor, personal communication, April 12, 2012) argued that Chief Executive Bryan Jenkins was the "architect of the strategy". Jenkins, influenced by the scholarship of political economist Elinor Ostrom (Jenkins, 2011a, p.56), promoted the adoption of the collaborative approach for the CWMS. Communications consultant Geoff Henley was also cited as an important actor in the development of the CWMS (G. McFadden, personal communication, April 17, 2013; E. Sage, personal communication, March 12, 2012; K. Taylor, personal communication, April 12, 2012). Henley's role was to mediate between the CWMS steering group – who were responsible for collaboratively establishing the goals and principles of the strategy – and the central government agencies that were funding the strategy.

### 7.5.1. Creation of the CWMS

According to the CWMS, the collaborative approach was adopted in response to requests from stakeholders. These stakeholders “whether environment or production-given, repeatedly asked that they be given the opportunity to resolve their differences and find solutions together” (Mayoral Forum, 2009, p.40). Stakeholders were able to influence the CWMS through a variety of consultation processes. Consultation occurred in five systematic stages: (1) an initial stakeholder and community engagement to develop strategic options, (2) defining the strategic options, (3) re-consulting with the community on the preferred strategic options, (4) investigating the potential outcomes, and (5) undertaking a sustainability appraisal of all options (Jenkins & Henley, 2013, p.4). The CWMS Steering Group assisted with all five stages of consultation. The Steering Group included members from regional and territorial government, tangata whenua, farmers, environmentalists, as well as industry and recreational interests (see appendix 5 for steering group membership) (ibid). The Steering Group made recommendations directly to the Mayoral Forum.

Stakeholder meetings were held at eleven locations throughout Canterbury to help identify the uses and benefits of freshwater in the region (Jenkins & Henley, 2013, p.6). Stakeholders used the *Open Strategies* computer program to define strategic options for Canterbury’s freshwater and to link these strategic options to specific projects (e.g. water storage projects). Bryan Jenkins and Geoff Henley argued these stakeholder meetings were pivotal in establishing the CWMS’ vision statement, the definition of priorities and principles in the strategy, as well as the strategies and actions the CWMS promotes to achieve outcomes (ibid). The CWMS’ goals of expanding irrigated land while conserving freshwater ecosystems emerged from this process.

The next stage of the collaborative process was to re-consult with the community about the preferred options. The CWMS Steering Group was provided with four future scenarios to help achieve the twin goals of increased irrigation and ecosystem protection.

A – Business as usual.

B – Environmental protection before infrastructure development.

C – Integrate infrastructure development and protection side-by-side.

D – Development first; protection second (Mayoral Forum, 2009, p.35).

These future scenarios were then assessed by the Steering Group using a sustainability appraisal. Jenkins, Russel, Sadler, & Ward (2014, p.85) define sustainability appraisal as “a means of informing specific choices and framing policy and public discourse on issues of sustainable development”. A

sustainability appraisal requires an integrated analysis of environmental and social effects, as well as an evaluation of these effects against criteria for sustainable development. Jenkins *et al.* (2014, p.84) argued the CWMS' sustainability appraisal was a method that "bridged the effects-based RMA and the objectives focused LGA". The appraisal rated scenario A poorly in regards to environmental sustainability. Scenario B scored well on environmental criteria but poorly on economic criteria. Scenario C scored poorly on both environmental and economic criteria. Scenario D scored well on economic criteria but poorly on environmental criteria (Jenkins & Henley, 2013, p.9). ECan sent 150,000 households information on the four future scenarios to gain public feedback. Public submissions illustrated strong support for option B (which emphasised environmental protection) and D (which emphasised economic development).

The CWMS consultation process was far more extensive than the earlier CSWS consultation with farmers and environmentalists. The CWMS asked the public to offer feedback on the priorities and principles that ought to inform Canterbury's freshwater management. This resulted in public submissions that supported opposing strategies. Despite the consultation process, trade-offs between environmental and economic goals were still required because support for economic development and environmental protection appeared even.

### **7.5.2. Publication of the CWMS**

The CWMS was published on the 3<sup>rd</sup> September 2009. The CWMS announced a "new paradigm in the way water is allocated and managed" in Canterbury: which included (1) "a shift from effects-based management of individual consents to integrated management based on water management zones; (2) management of the cumulative effects of water abstraction and land use intensification; (3) water allocation decisions that address sustainable environmental limits and climate variability; and (4) actions to protect and restore freshwater biodiversity, amenity values, and natural character" (Mayoral Forum, 2009, p.7). The desired outcome of the CWMS was to "enable present and future generations to gain the greatest social, economic, recreational and cultural benefits from our water resources within an environmentally sustainable framework" (Mayoral Forum, 2009, p.6). To achieve this outcome, the CWMS set priorities and principles to guide freshwater management.

The CWMS' first-order priorities include the environment, customary use, community supply, and stock water. Second-order priorities include irrigation, hydro-electricity, recreation, and amenity. The principles of the CWMS were then ranked, with primary principles including sustainable management, regionalism, and tangata whenua values. Supporting principles included the natural character of the Canterbury landscape, indigenous biodiversity, access, drinking water standards, recreational opportunities, alongside community and commercial use (Mayoral Forum, 2009, p.8). Measurable and quantifiable targets were then set for drinking water, irrigated land area, energy

security and efficiency, ecosystem health and biodiversity, water use efficiency, kaitiakitanga; regional and national economic growth, the natural character of braided rivers, as well as recreational and amenity opportunities (Mayoral Forum, 2009, p.8). Water storage was cited as a “key incentive mechanism” in achieving the CWMS’ goals (ibid.).

#### **7.5.2.1. Devolved governance**

The CWMS proposed a new governance arrangement for Canterbury’s freshwater. Ten local zonal committees were promoted by the strategy. Each zonal committee would be comprised of seven to ten members from ECan, territorial authorities, local tangata whenua, consent holders, stakeholders, and informed citizens (Mayoral Forum, 2009, p.11). Zonal committees would be responsible for the creation of zone implementation programmes (ZIPs). The CWMS also proposed a regional scale of governance, which would be responsible for the creation of a regional implementation programme, and a national scale which would address national freshwater issues (Mayoral Forum, 2009, p.12). The CWMS stated that “planning activities will be carried out in “nested” zone/regional/national levels where issues can be allocated to the most appropriate level for consideration while ensuring coherence between the levels” (Mayoral Forum, 2009, p.15). ECan’s planning authority would be split between local, regional, and national scales. The CWMS authors hoped this system would result in a reduction of legal appeals and hearings (ibid).

ZIPs would address issues of land use intensification, wastewater discharge, infrastructure, water quality and quantity, recreational issues as well as commercial freshwater use (Mayoral Forum, 2009, p.43). Regional plans would address environmental limits, biodiversity issues that cross zones, as well as water allocation and consents issues (Mayoral Forum, 2009, p.44). ZIPs would be competing with RMA plans such as the NRRP, and thus, the CWMS argued that new legislation is needed that gives status to the ZIPs. Bryan Jenkins defined the geographical boundaries of the zonal committees as well as the composition of the zonal committee membership (B. Jenkins, personal communication, April 11, 2012). Jenkins wanted zonal committee members to be able to work together for community outcomes, as opposed to representatives of interest groups promoting a particular agenda (B. Jenkins, personal communication, April 11, 2012).

The research interviews revealed that ECan employees (B. Jenkins, personal communication, April 11, 2012; K. Taylor, personal communication, April 12, 2012) and territorial authority mayors (J. Coles, personal communication, April 13, 2012; A. Familton, personal communication, March 5, 2012; K. Coe, personal communication, March 6, 2012) supported the new zonal governance system. Former ECan councillors (E. Sage, personal communication, March 12, 2012; K. Burke, personal communication, March 16, 2012), were more sceptical. Eugenie Sage was concerned that environmental, public health, and scientific interests might be underrepresented on zonal

committees. Furthermore, the views of local landholders could potentially prevail over wider community interests. Kerry Burke argued that farmers could dominate zonal committees, and that he would only support zones if their authority was subordinate to regional plans and regional councillors. Sylvia Nissen's (2014, p.42) research quoted a regional councillor who told her "it was never intended that they [zonal committees] develop[ed] regional plans and policies ... that was the role of the council". Thus, ECan councillors perceived the CWMS plan to split planning authority between zonal, regional, and national scales as a threat to their authority and autonomy in the region.

#### **7.5.2.2. Opinion of interest groups on devolved governance**

Farming and environmental interest groups submitted a variety of opinions on the proposed CWMS zonal governance system. These opinions are sourced from the public submissions process for the draft CWMS. This archival evidence illustrates that farming interest groups were sceptical of zonal governance. For example, the South Canterbury Irrigation Trust argued that the area between the Rangitata and Waitaki Rivers should contain one zonal committee rather than the three that were proposed. The Trust believed that zonal committees needed to be strong in order to effectively negotiate with regional councillors. Dairy exporter Synlait agreed with the Trust and argued that the area between the Rangitata and Waitaki Rivers should be governed by one zone. However, Synlait had "serious concerns with the governance structure proposed by the Strategy" because it was too complex "to implement the vision". Synlait believed splitting authority between zonal, regional, and national scales would involve too many people, and coming to a consensus on planning decisions would be difficult. The Rangitata Diversion Race and Trust Power also argued that three scales of governance could result in tension and inconsistencies.

Environmental interest groups were also concerned with the zonal governance system. The Canterbury-Aoraki Conservation Board argued that the relative authority of zonal, regional, and national scales needed to be clear. The Conservation Board believed that significant decisions, such as the minimum flow level of a river, should be made at regional rather than zonal scale. South Canterbury Forest and Bird agreed with farmers that one zone would be sufficient between the Rangitata and Waitaki Rivers. Forest and Bird argued there was a lack of human resources to administer three zonal committees in South-Canterbury. Chris Todd of Forest and Bird argued that "the governance and management processes outlined in the *Draft Canterbury Water Management Strategy* may not result in effective and lasting decision making". Todd argued that the knowledge, commitment, and contribution of zonal committee members should be more important than where they live. Furthermore, any concept of self-governance "must include representatives of the regional and national interest".

### **7.5.3. The CWMS and targets for Canterbury's freshwater use**

The CWMS established targets to guide zonal committees when creating ZIPs. The targets were devised through stakeholder meetings and public submissions<sup>54</sup>. Targets are established for the years 2010, 2015, 2020, and 2040. These are aspirational targets rather than enforceable rules (Mayoral Forum, 2009, p.106). The CWMS argued these targets should be “viewed as a whole” and that “targets inform each other and are designed to build a whole picture” (ibid).

### **7.5.4. Water storage, land use, water quality and environmental protection**

The CWMS promoted the construction of new water storage infrastructure in North-, Mid-, and South-Canterbury<sup>55</sup> (Mayoral Forum, 2009, p.13). Water storage would result in increased irrigated land use that would lead to greater pollution in waterways. For example, nitrate levels in groundwater near Te Waihora/Lake Ellesmere were predicted to rise by as much as 37 per cent as a result of the CWMS' proposed water storage schemes (Harris Consulting, Aqualinc., Agribusiness Group., & Butcher Partners, 2009). Nitrification of groundwater is a threat to human health. ECan discovered in 2009 that 10 per cent of wells monitored in the region had nitrate levels that exceeded drinking water standards (Mayoral Forum, 2009, p.25). The CWMS responded with a number of initiatives to protect freshwater ecosystems in Canterbury. Tactics included pest and weed control, fencing streams and wetland areas, riparian planting, removing or modifying some in-stream structures, as well as the protection of freshwater fauna (Mayoral Forum, 2009, p.48). Supplementary projects included restoring the character of braided river system, maintaining the character of high country lakes, and returning flows to lowland streams (Mayoral Forum, 2009, pp.137-9).

In sum, the CWMS evolved from the quantitative research of the CSWS. The CSWS began with a focus on developing irrigation to mitigate the effects of drought. After environmental stakeholders were consulted, the CSWS noted that the environmental effects of land use intensification needed to be investigated before water infrastructure could be built. In response, the CWMS attempted to balance the goals of irrigation expansion and environmental protection by creating new priorities, principles, and targets for Canterbury's freshwater governance. A new zonal governance system was devised – despite scepticism from farming and environmental interest groups – to achieve these new

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<sup>54</sup> Eugenie Sage (personal communication, March 12, 2012) believed public consultation through the submissions process and consultation with stakeholder organisations were important in developing the environmental principles of the CWMS. She argued the themes that came through on submissions were directly responsible for the first-order and second-order hierarchy of principles, the commitment to immediate ecosystem restoration, and the way in which sustainable management appears in the document.

<sup>55</sup> The document suggests the use of Lake Coleridge for irrigation and efficiency improvements in the way water is used. Groundwater storage, options for the Hurunui River, Lees Valley storage, utilising the water of Lake Tekapo in South Canterbury, as well as extending South Canterbury's Hunter Downs irrigation scheme north, were also suggested (Mayoral Forum 2009: 13).

targets. The CWMS suggested that ECan's regional councillors cede some of its planning authority to zonal committees. The CWMS had no statutory authority upon its publication. Despite this, zonal committees would be established a year after its publication. The next section examines the developments in Canterbury's freshwater politics after the publication of the CWMS.

## 7.6. The Creech Report and the ECan Act

2009 was a tumultuous year for freshwater management in Canterbury. The CWMS was published in 2009 while several ECan councillors were also investigated for conflicts of interest when setting water charges (Provost, 2009). ECan Chairman Kerry Burke lost the confidence of the council and was replaced as Chairman by Alec Neill (Peter, 2009a, p.14). Given these controversies, territorial mayors were concerned with the future of Canterbury's freshwater management under ECan. Mike Jebson of the Ministry of Agriculture and Forestry argued in a research interview that territorial authorities and ECan worked relatively well together during this period (M. Jebson, personal communication, March 28, 2012). However, Jebson speculated that tensions between Canterbury's territorial authorities and ECan could have influenced the Creech Report (M. Jebson, personal communication, March 28, 2012).

The Creech Report was a critical review of ECan's resource management functions, governance, and policy (Creech *et al.*, 2010; Gorman, 2010a, p.8). The review was prompted after Canterbury's territorial mayors and chief executives sent a letter to the Minister of Local Government encapsulating their concerns that freshwater management issues were impacting on the future prosperity of Canterbury (Gorman, 2009b, p.1)<sup>56</sup>. Territorial mayors highlighted ECan's poor performance in meeting deadlines for resource consent applications between 2007 and 2008 (Peter, 2009b, p.9). In response, the Minister of Local Government and the Minister for the Environment established a review team to investigate Environment Canterbury's performance (Creech *et al.*, 2010). Canterbury's territorial mayors met with the review team in November 2009. During this meeting, Timaru Mayor Janie Annear claimed "there is not one area they [ECan] are doing well in" (Gorman, 2010b, p.3). Selwyn Mayor Kelvin Coe argued that "operationally it [ECan] is a rudderless ship" (*ibid*). Kaikoura District Chief Executive Stuart Grant summed up by stating "[w]hat do we want? ECan gone by lunchtime" (*ibid*).

The investigation undertaken by Wyatt Creech, Martin Jenkins, Greg Hill, and Morrison Low, which has become known as the Creech Report, was published on the 19<sup>th</sup> February 2010. It advocated the restructure of ECan's freshwater management and governance functions. The report proclaimed that

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<sup>56</sup> The Mayoral Forum included the Chairman and Chief Executive of Environment Canterbury. A 'no surprises' clause was agreed to by Mayoral Forum members, which ECan chairman Kerry Burke believed was broken by the decision to write a letter of concern to Rodney Hide without first telling ECan (Gorman, 2009b, p.1).

freshwater management was the most significant political and economic issue in Canterbury (Creech *et al.*, 2010, p. i). The Report argued that the scale of freshwater issues was greater in Canterbury than in any other region of New Zealand because Canterbury allocates 58 per cent of New Zealand's consumptive water (ibid; c.f. Mayoral Forum, 2009, p.23). Correspondingly, Canterbury's freshwater management is of much greater significance to national well-being. The Report argued that central government should act in Canterbury to "protect and enhance both regional and national well-being" (ibid).

The Creech report argued that ECan's failure to adequately manage freshwater in the region justified restructuring the organisation. The report cited ECan's failure to manage competing demands and interests effectively which led to costly delays when writing policy and issuing consents (Creech *et al.*, 2010, p. ii). The report cited ECan's failure to pass the NRRP through the full first schedule public submission phase (Creech *et al.*, 2010, p.6). The report authors interviewed stakeholders around Canterbury who argued that ECan focused too much on environmental values to the detriment of economic, social, and cultural values (Creech *et al.*, 2010, pp. 8-9). The report supported the CWMS. The Report argued that legislative changes are required to make the CWMS "workable", but that the vision and objectives of the CWMS should be a "core component of any future institutional change" (Creech *et al.*, 2010, pp. ii-iii). The report argued that elected regional councillors should be replaced by temporary commissioners under special legislation before any institutional changes.

Central government followed the advice of the Creech Report and intervened in Canterbury's freshwater management. The Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 initiated significant structural changes to Canterbury's freshwater management. The Act was passed under urgency, without the normal period of Parliamentary debate, on the 12<sup>th</sup> April 2010 (ECan Act, 2010). The Act substituted ECan's elected councillors with appointed commissioners. The Act gave the appointed commissioners new powers: such as the ability to (1) enforce moratoria over freshwater consents, (2) amend or remove Water Conservation Orders in Canterbury, and (3) restrict access to the Environment Court (ECan Act, 2010; Smith, 2010, p.11). The Act also instructed ECan and the Minister for the Environment to acknowledge the values and principles of the CWMS. ECan and the Minister are instructed to acknowledge the CWMS when amending a WCO or when considering new regional policy statements or plans (ECan Act, 2010, pp. 16, 23, 28). Nevertheless, the Act states that the "inclusion of the vision and principles of the CWMS ...does not accord to the CWMS or its vision and principles any status in law other than as provided in this Act" (ECan Act, 2010, p.7).

The ECan Act was controversial. For example, concern was raised about the new powers given to commissioners to amend WCOs (NZPA, 2010, p.4; Holden, 2010, p.22). Neil Deans of Fish and Game

argued that amendment of WCOs would permit “water currently meeting an outstanding test for protection” to be made available for irrigation use (Deans, 2010, p.13). Some argued that the removal of elected councillors was undemocratic (Dalziel, 2010, p.15; Matthews, 2010, p.3). The Act was also criticised for removing Cantabrians right to appeal decisions to the Environment Court (Deans, 2010). Farming interest groups – such as Irrigation New Zealand and Federated Farmers – supported the legislation (NZPA, 2010, p.4). Environmental interest groups – such as Forest and Bird and Fish and Game – were opposed (ibid). Ngāi Tahu “reluctantly” supported the Act by arguing that something needed to happen (ibid). Ngāi Tahu proclaimed seven months later that it was a “good move” (Gates, 2010, p.11).

Academics also criticised the ECan Act. Philip Joseph of the University of Canterbury argued it was *ad hominen*, applied retrospectively, denied individuals the right of access to the Environment Court, and suspended certain sections of the RMA (Joseph, 2010, p.193). Ann Brower of Lincoln University argued the ECan Act gave the Minister for the Environment “the power to disapply the empowering legislation (RMA) selectively and at will without recourse to Parliament” (Brower, 2010, p.312). Hamish Rennie, also of Lincoln University, noted that WCOs are modified under the ECan Act by requiring WCOs to have regard to the vision and principles of the CWMS (Rennie, 2010, p.20).

Appointed commissioners quickly implemented the zonal governance system promoted by the CWMS. The Canterbury Mayoral Forum was given \$242,000 from central government’s Community Irrigation Fund to help establish zonal committees (Williams, 2010b, p.5). The first zonal committee was established in North Canterbury a month after the ECan Act was passed (ibid).

In sum, the vision and principles of the CWMS are embedded in the ECan Act. Within a year, the CWMS had developed from a collaborative non-statutory planning document to a document that guides Canterbury’s freshwater governance within a new institutional setting. The CWMS’ legacy – through its adoption in the ECan Act - is that it has changed ECan’s statutory mandate, and as a result, altered how ECan now pursue authority over freshwater use.

## **7.7. Conclusion**

ECan pursued statutory and non-statutory planning processes to establish authority over freshwater management in this case study. The statutory RMA-led NRRP and the non-statutory CWMS are the two key planning documents relating to ECan’s freshwater management produced in the late-2000s. ECan had full autonomy over the NRRP, however, the plan was stuck in first schedule status from 2004 onwards. The CWMS was viewed as an alternative planning document to the rules based NRRP. ECan helped create the CWMS – through funding, technical support, and expertise (especially in the

work of Bryan Jenkins) – however, it did not have the same autonomy over the CWMS as it did over the NRRP.

The MC-NPM hybrid theory predicted: 1), that ECan would establish patronage with interest groups but would maintain decision making autonomy, 2) that ECan would focus on outputs over outcomes and 3), that ECan would adopt a hands-off approach to freshwater management unless the cumulative environmental effects of resource use became clear. In this case study, ECan willingly ceded some autonomy as freshwater managers in the region by supporting the CWMS (led by the Canterbury Mayoral Forum), a document which envisioned devolution of some planning authority to zonal committees. Capitalising on a legislative shift with the introduction of the LGA, ECan adopted the collaborative CWMS as an alternative planning document to the NRRP. The CWMS, contrary to the MC-NPM hybrid theory's predictions, also focused on long-term goals and targets for Canterbury's freshwater management. However, the CWMS was a direct response to the policy stagnation and hands-off approach to planning which dominated ECan's freshwater management between 1989 and 2010.

The MC-NPM hybrid theory predicted that ECan would struggle to exercise authority but would maintain some decision making autonomy. By contrast, this case study illustrated ECan's willingness to forgo autonomy over freshwater management in Canterbury in an attempt to regain some authority. ECan's authority was strengthened through the power given to appointed commissioners, such as moratoria on consents, amendments to WCOs, and restricting access to the Environment Court.

The situation of high authority with low autonomy is reminiscent of multiple clientelism. However, multiple clientelism argued that a local government agency would gain authority through the selective and sequential patronage of multiple interest groups. By contrast, in this case study ECan gained authority through the intervention of central government. The irony is that ECan required central government intervention in the form of controversial legal amendments to establish authority over freshwater management in the region. Furthermore, central government intervention was opposed by environmental interest groups but supported by farming interest groups.

In conclusion, the predictions of the MC-NPM hybrid theory were not confirmed by this case study. ECan was willing to forgo autonomy over freshwater management, and as a result, freshwater management in Canterbury was restructured through the authority of New Zealand's Parliament.

## 8. Chapter Eight

### A meta-analysis of the three case studies

#### 8.1. Introduction

Multiple clientelism proposes that a local government agency will establish selective and sequential patronage with competing interest groups over natural resource management decisions. The aim of this research was to examine multiple clientelism's proposition with a local government agency (ECan) created during New Zealand's New Public Management reform era. Did ECan pursue selective and sequential patronage with interest groups as multiple clientelism predicted? Or did ECan pursue other methods to establish authority and autonomy over freshwater management? Furthermore, did NPM reform affect the strategies pursued by ECan to establish authority and autonomy over freshwater management?

Three case studies investigated ECan's pursuit of authority and autonomy between 1989 and 2010. The case studies illustrated that ECan was active in the pursuit of authority and autonomy. ECan attempted to develop a plan in the Rangitata River case study, set interim abstraction limits in the groundwater case study, and assisted in the development of statutory and non-statutory planning documents in the CWMS case study.

Farming and environmental interest groups attempted to influence ECan in all three case studies. Farmers lobbied for an irrigation dam in the Rangitata River case study, helped fund a groundwater model in the groundwater case study, and were involved in the Steering Group and public submission phase of the CWMS. Environmentalists applied for a Water Conservation Order in the Rangitata River case study, supported ECan's precautionary groundwater limits in the groundwater case study, and were also involved in the Steering Group and public submission phase of the CWMS.

This chapter discusses the results of this research. First, the chapter recalls how ECan pursued authority and autonomy in the three case studies and asks how successful ECan was in achieving its goals. The chapter then examines the MC-NPM hybrid theory. Following this is a discussion of collaborative governance and the potential problems faced by collaborative governance regimes. The chapter is concluded by proposing a cycle between policy capture and policy stagnation in Canterbury's freshwater politics.

## **8.2. How did ECan pursue authority and autonomy in the three case studies?**

### **8.2.1. Rangitata River case study**

Between 1996 and 1999 there was no operative plan for use of the Rangitata River's water. In response, the New Zealand Fish and Game Council applied for a Water Conservation Order in late 1999. ECan's authority over the Rangitata River was threatened by Fish and Game's WCO application. In response, ECan pursued a draft plan and appealed Fish and Game's proposed WCO at the Environment Court in an attempt to establish authority over the Rangitata River.

Why did ECan not plan for the river prior to the WCO application? ECan councillors Diana Shand (Robson, 2001, p.7) and Kerry Burke (Burke, 2010, p.13) both argued that ECan had not devoted enough time and resources to planning in the early 1990s. ECan's first Chief Executive, Malcolm Douglass, argued that in the early 1990s ECan adopted an inadequate market-led first-come-first-served approach to planning (Douglass, 2006, p.28). Farmers noted it would be tactically prudent to apply for water consents as soon as possible because consents were granted to those who applied first. When farmers realised they were applying for water consents from catchments nearing sustainable allocation limits a rush for the remaining water consents occurred. The Environment Court criticised the first-come-first-served approach to freshwater management (NZPA, 2004, p.1). Consent applications were often challenged at the Environment Court which led to extra costs for applicants and objectors (K. Burke, personal communication, March 16, 2012.).

Malcolm Douglass agreed that first-come-first-served planning resulted in an "increased reliance on litigation" (Douglass, 2006, p.28). Writing in 2006, Douglass noted that over \$100 million had been spent in Canterbury appealing resource consent decisions to the Courts (ibid). Douglass argued that the Environment Court is "not the right place for high level strategies to be forged", and that if the money spent on litigation had gone into regional planning, freshwater management in Canterbury would be improved (ibid). In sum, ECan pursued a plan for the Rangitata River. This plan would resolve the first-come-first-served issuing of consents by placing conditions on future consents.

#### **8.2.1.1. How well did it work?**

ECan's Environment Court appeal failed to halt the implementation of a WCO for the Rangitata River. The WCO's rules for minimum flow, an allocation cap, one-for-one flow sharing, and the prevention of damming the Rangitata River's main stem, replaced ECan's proposed planning rules. ECan failed to gain authority over the river's management. ECan's autonomy as freshwater managers in Canterbury was weakened as the Fish and Game Council successfully used an external power (the Ministry for the Environment) to authorise the WCO.

ECan's pursuit of authority and autonomy through a draft plan was unsuccessful because it was unable to gain interest group support. ECan potentially could have established its draft plan as an alternative to the WCO if it had received support from farmers and environmentalists. The WCO process led to a compromise between the applicant (Fish and Game), northern Rangitata irrigators (the RDR), and southern Rangitata irrigators (Rangitata South/Ruapuna Irrigation). The off-river water storage compromise permitted southern Rangitata irrigators access to irrigation water without damming the main stem of the river, while northern Rangitata irrigators maintained their current rate of abstraction.

ECan's plan attempted to establish patronage with these interest groups. ECan addressed the environmental concerns of Fish and Game by setting higher minimum flows for the river. ECan's plan also permitted abstraction by southern Rangitata irrigators. Despite these attempts at patronage, ECan's plan received no support from interest groups. Higher minimum flows threatened the current abstraction rate of northern Rangitata irrigators. Fish and Game believed an allocation cap was the only way to prevent over abstraction occurring in the future. Southern Rangitata irrigators were disappointed that ECan's plan restricted damming of the river.

In conclusion, ECan's pursuit of policy authority and autonomy did not work well in this case study. ECan attempted to establish patronage with a variety of interest groups through compromises in its planning document. However, the compromises established by the WCO received greater interest group support. Thus, ECan was unable to establish authority and autonomy in this case study despite attempting to establish patronage with a variety of interest groups. ECan's inability to establish authority or autonomy led to policy stagnation which was only resolved through the application of WCO rules in 2006.

### **8.2.2. Groundwater case study**

ECan pursued authority and autonomy in the groundwater case study through the creation of groundwater zones. ECan separated Canterbury into different groundwater zones using hydro-geological information obtained from stage one of the Canterbury Strategic Water Study (Morgan *et al.*, 2002). ECan calculated how much would be available for abstraction in each zone by tallying 15 per cent of average annual rainfall and 50 per cent of annual land surface recharge. These were ECan's interim groundwater limits (ECan, 2004). ECan calculated that several zones' groundwater use exceeded sustainable allocation limits. In response, ECan did not issue new groundwater consents in these zones unless the applicants were able to prove their abstraction would only have a minor effect. Applicants subsequently tested ECan's limits during Environment Court appeals and resource consent hearings.

### **8.2.2.1. How well did it work?**

ECan's interim limits were not able to halt groundwater abstraction. In the Lynton and Pine Grove farms Environment Court case, the Court concluded that the farms should be able to abstract groundwater under certain conditions despite ECan's zonal limits. The Environment Court ruling asked ECan to establish how much a groundwater consent holder is allowed to abstract annually, to measure how much the consent holders were abstracting, and to control the rate of abstraction to ensure lowland stream flows were maintained. In response, ECan established an adaptive management scheme for groundwater consents in the Rakaia-Selwyn zone. This adaptive management programme was tested by a bulk application of 71 groundwater consents. ECan officers attempted to justify the groundwater limits by requesting the denial of all consents, despite this, the hearing commissioners decided that abstractions from certain aquifers could be justified.

Why were ECan unable to establish authority in this case study? The first explanation is that two competing scientific models yielded different hydrological responses to groundwater abstraction. ECan's bathtub model – preferred by environmental interest groups – argued that Canterbury's aquifers were interconnected. According to the bathtub model, abstraction from deep aquifers would affect flow in the shallow aquifers that fed lowland streams. By contrast, Aqualinc's Canterbury groundwater model – preferred by farmers – argued that Canterbury's aquifers were separated by semi-permeable layers. Aqualinc's model justified the abstraction of freshwater from deeper aquifers because it predicted a negligible effect on shallow aquifers that feed lowland streams. Aqualinc's model could also be used to assess the effects of individual abstractions. ECan's bathtub model was a regional model and was unhelpful in calculating the effects of individual abstractions. By contrast, Aqualinc's model was able to assess the effects of individual abstractions through pumping tests and well monitoring to gauge if the abstraction would have an effect on local groundwater levels.

Second, ECan's groundwater limits were unsuccessful because ECan adopted a precautionary approach to groundwater management. Philip Milne argued that ECan needed to identify the resource and then determine its capacity for abstraction before limiting its use. ECan, with the support of environmental interest groups, had taken a precautionary approach by setting limits first which in Milne's opinion was not supported by the RMA.

Third, interim planning rules – such as those proposed by ECan for groundwater use – do not have the same authority as planning rules that have passed through two public submissions processes. ECan's regional plan was stuck in the first stage of public submissions. Thus, the applicants for groundwater consent were able to challenge the assumptions and science underpinning ECan's limits because they did not have the strength of regional planning rules.

In conclusion, ECan pursued authority in this case study through interim planning limits. ECan established patronage with environmental interest groups who supported these limits. However, ECan's authority was weakened by farming interest groups who challenged ECan's interim limits in Environment Court appeals and resource consent hearings. During these appeals, ECan's inadequate knowledge of the groundwater system and the effects of existing consents was criticised by the Environment Court. Furthermore, ECan's groundwater model was not designed to assess the effects of individual abstractions. As a result, the Aqualinc model was used by the Environment Court and resource hearing commissioners to justify individual abstractions from deep aquifers. ECan was unable to establish authority or autonomy over groundwater policy and as a result policy stagnated.

### **8.2.3. Canterbury Water Management Strategy case study**

ECan pursued policy authority and autonomy in this case study through conventional RMA planning as well as non-statutory planning. The NRRP was a statutory regional plan written by ECan throughout the 2000s to help achieve integrated regional management of natural resources. However, the NRRP struggled to pass through the second phase of public submissions, and as such, its legal status remained that of a draft planning document until 2011 (Williams, 2011, p.4).

ECan also pursued authority and autonomy through the non-statutory CWMS. ECan was pivotal in the design and funding of the CWMS. Despite this, the Canterbury Mayoral Forum assumed responsibility for the CWMS, established the Steering Group for the CWMS, and arranged public meetings and a public submissions process to discuss draft versions of the document. Thus, ECan was an important actor in the CWMS, however, ECan was just one of many important actors involved. For example, farming interest groups helped fund the original quantitative data collection of the CSWS along with ECan, MAF, and MfE. Territorial authorities were also involved through the Mayoral Forum. Furthermore, the public submissions process allowed environmental and farming interest groups to influence the principles, priorities, and targets of the CWMS.

#### **8.2.3.1. How well did it work?**

ECan has re-established its authority following the publication of the CWMS but has lost some autonomy. How did this occur? Following the release of the CWMS, the ECan Act reshaped the institutional framework for freshwater management in Canterbury. This Act of Parliament removed ECan's elected councillors and installed commissioners who were given new powers. The new powers given to commissioners – such as the ability to amend WCOs and restrict Environment Court appeals – gave ECan greater authority over freshwater management in Canterbury. However, the devolution of some planning authority to zonal committees – whose members would include farming and environmental interest groups, local Māori, and territorial authorities - has dispersed ECan's autonomy for freshwater management and policy.

The concord established between farming and environmental interest groups during the collaborative CWMS process eroded after the enactment of the ECan Act. Environmental interest groups were opposed to the extra powers given to commissioners, especially the ability to amend WCOs. By contrast, farming interest groups supported the changes.

The CWMS had several advantages over ECan's NRRP as a planning document. First, the non-statutory CWMS could not be appealed to the Environment Court like the statutory NRRP. Second, the CWMS involved farming and environmental interest groups early in the process (from stage 3 of the CSWS). By contrast, farmers felt excluded from the NRRP process and perceived Environment Court appeals as the best way to express their opinion on the NRRP (NZPA, 2001e, p.4). In sum, ECan pursued authority and autonomy through statutory and non-statutory planning documents. ECan's governance structure was reshaped during this process whereupon ECan's autonomy was weakened but its authority was strengthened.

### **8.3. MC-NPM hybrid theory**

A hybrid theory of multiple clientelism and New Public Management predicted that ECan would maintain autonomy over freshwater management between 1989 and 2010 but that it would struggle to exercise authority. The MC-NPM hybrid theory predicted that ECan would attempt to establish patronage but not to the detriment of its autonomous decision making. However, the hybrid theory also predicted that ECan would only intervene in freshwater management to ensure quantifiable outputs (such as resource consents and plans) were met and the environmental effects of freshwater use was minimised.

The case studies highlighted ECan's attempt to establish patronage as well as the difficulty it experienced in establishing authority over freshwater use. As the MC-NPM hybrid theory suggested, ECan attempted to establish patronage throughout the three case studies but not to the detriment of its decision making autonomy. In the Rangitata River case study, ECan attempted to establish patronage by mediating the interests of environmentalists and farmers through a draft plan. In the groundwater case study, ECan established a close relationship with environmental interest groups who supported ECan's precautionary approach to groundwater management. In the CWMS case study, ECan encouraged environmental and farming interest groups to collaborate through the Steering Group phases of the CSWS and CWMS. Despite these attempts at patronage, ECan's autonomy was challenged several times, for example, through WCO applications and Environment Court appeals. The success of these appeals highlighted the inability of ECan to set autonomous policy throughout the three case studies.

As the MC-NPM hybrid theory suggested, ECan intervened in freshwater management when it perceived the negative environmental effects of freshwater use. This was illustrated in the groundwater case study. ECan set interim limits to groundwater use on the basis of declining lowland stream flows in the Rakaia-Selwyn zone. However, these limits were successfully challenged at the Environment Court and during resource consent hearings. These challenges illustrated that ECan was unable to manage the cumulative environmental effects of freshwater use despite its desire to do so.

ECan struggled to meet long-term outputs, like regional plans, however they were able to issue outputs like resource consents with ease. The issuing of consents without knowledge of how much would be abstracted per consent, and the cumulative effect of these consents, made long-term planning more difficult and exacerbated the cumulative effects of freshwater use.

The MC-NPM hybrid predicted that ECan would establish high autonomy but low authority over freshwater use in Canterbury between 1989 and 2010. The three case studies illustrated that ECan was unable to establish a high level of authority or autonomy over freshwater use. This resulted in policy stagnation, in which environmental interest groups sought WCOs on Canterbury's rivers to halt abstraction, and farmers sought resource consents before cumulative limits were put in place through fully notified plans.

Several factors contributed to ECan's inability to establish authority and autonomy over freshwater management. First, the relationships of patronage it established with interest groups were weak. For example, in the Rangitata River case study interest groups supported the competing WCO process over ECan's regional plan process. In the groundwater case study, the support of environmental interest groups did not help ECan justify its groundwater limits. Thus, despite establishing relationships of patronage ECan was unable to maintain autonomy over freshwater management in Canterbury due to the alternative policy mechanisms available to environmental and farming interest groups.

Secondly, the techniques available to ECan to manage freshwater through the RMA – such as regional plans and resource consents – were ineffective at constraining freshwater use. ECan's authority and autonomy was threatened by its inability to constrain water use. This finding concurs with the research of Neil Gunningham (Gunningham, 2008, p.5), who argued that neither regional plans nor consents could constrain water abstraction or ensure allocation of water use to its highest value in Canterbury.

NPM reform had three distinct effects on ECan's freshwater management between 1989 and 2010. First, ECan's failure to plan for freshwater use in the early 1990s exhibited the hands-off approach to natural resource management that typified NPM reform in New Zealand (Upton, 1991). ECan's

failure to plan in the early 1990s affected the organisation's ability to plan in the late 1990s and early 2000s when conflicts over freshwater management had already begun. Second, NPM reforms split regulatory and policy delivery responsibilities. ECan was responsible for regulating freshwater in Canterbury while the Ministry for the Environment was responsible for national freshwater policy. However, between 1989 and 2010 New Zealand's central government failed to create a national policy statement for freshwater use (Logan, 2013, pp. 139-164). ECan was thus forced to produce regional plans without the explicit guidance of a national policy statement. Third, the privatization of irrigation schemes and the removal of farming subsidies in the 1980s typified the retreat of central government during the NPM era. Farmers responded by searching for sources of freshwater (often groundwater) to help irrigate and intensify their land use. This led to conflict between farmers, who cited the economic benefits of irrigation development, and environmentalists, who perceived irrigation as the cause of declining freshwater quality and quantity in Canterbury. ECan struggled to manage the conflict between these interest groups due to the complexity of producing regional plans under the RMA, the difficulty of managing cumulative effects under the RMA, and the difficulty of constraining water use through interim plans and resource consents.

In sum, ECan pursued authority and autonomy in a way that was reminiscent of the MC-NPM hybrid theory. However, the MC-NPM hybrid predicted that ECan would be able to retain autonomy over freshwater management. The results of WCO applications, Environment Court appeals, and resource consent hearings illustrated that ECan was unable to set policy without first bargaining with interest groups. In response, ECan explored non-statutory methods of establishing authority and autonomy. ECan thus promoted the collaborative Canterbury Water Management Strategy as a guide for Canterbury's future freshwater management.

#### **8.4. Issues with collaborative governance**

The adoption of collaborative governance in Canterbury's freshwater politics was hastened by ECan's policy stagnation between 1989 and 2010. Policy stagnation led to prolonged legal hearings between farmers and environmentalists over resource consents. Chris Ansell and Alison Gash (2008, p. 544) noted these same trends in their own research:

*Collaborative governance has emerged as a response to the failure of downstream implementation and to the high cost and politicization of regulation. It has developed as an alternative to the adversarialism of interest group pluralism and to the accountability failures of managerialism, especially as the authority of experts is challenged.*

Collaborative governance offers a new method of resolving the policy stagnation and interest group adversarialism observed during this research. However, some researchers note that collaborative governance has a naïve conceptualisation of power (Susskind & Cruikshank, 1987; Gray, 1989; Short

& Winter, 1999; McCloskey, 2000; Warner, 2006). As a result, collaborative processes can be disrupted by power imbalances resulting in their capture. Furthermore, collaborative processes – by involving multiple stakeholders - often produce contradictory policy goals that cannot be met simultaneously. *Status quo* policy is likely to be maintained if contradictory policy goals are set.

#### **8.4.1. Collaboration and power**

Collaborative governance promotes the inclusion of multiple stakeholders when developing policy. According to proponents, collaboration can foster trust between stakeholder groups and government actors, can resolve political polarisation, and it can help address complex political problems with neither one cause nor solution (Leach *et al.*, 2002; Weber, 2003). Despite the potential benefits of collaboration listed above, power imbalances in collaborative governance processes can potentially undermine their success (Susskind & Cruikshank, 1987; Gray, 1989; Short & Winter, 1999; McCloskey, 2000; Warner, 2006). The concerns of these authors align with the critics of pluralism who argued that even if everyone’s voice is heard some voices will be heard louder than others (Lindblom, 1977).

Ansell and Gash (2008, pp.551-2) expand on this by arguing “if there are significant power/resource imbalances between stakeholders....then effective collaborative governance requires a commitment to a positive strategy of empowerment and representation of weaker or disadvantaged stakeholders”. In response to power imbalances, Schuckman (2001: 361) argued that local government agencies ought to provide assistance to local groups who do not have the resources to effectively engage in collaborative processes. Merkhofer, Conway & Anderson (1997) promoted the use of a multi-attribute utility analysis to help the public participate in collaborative processes which contained a high level of technical and scientific complexity.

Large environmental interest groups have also criticised collaborative governance arrangements by arguing that the negotiating power in these arrangements suits pro-development interest groups (Schuckman, 2001, p. 355). Furthermore, these environmental groups have feared that collaborative processes which promote consensus decision making will support the maintenance of *status quo* policy (ibid). I argue that if no commitment is made to restructure collaborative arrangements in recognition of power and resource imbalances these collaborative arrangements could potentially become captured by powerful interest groups.

The research of Sara Singleton (2000) and Thomas, Bradley, & Davis (2010) have noted this trend of policy capture in collaborative governance arrangements. Singleton (2000) investigated a Salmon fishery co-management regime between indigenous Indian tribes, federal government, and state government in the American Pacific Northwest. Singleton (2000, p.8) concluded that “the weakness

of accountability mechanisms and the lack of transparency in decision making has led to the perception among some nontribal fishing interests and environmental groups that the state agency is at least partly captured by the tribes". Thomas *et al.*, (2010) researched the voting behaviour of Fishery Management Councils over ten years. The researchers discovered that "at the state level, capture appears to have occurred in 10 of the 16 models" (Thomas *et al.*, 2010, p.461).

#### **8.4.2. Collaborations normative argument**

Collaboration offers a normative argument by proclaiming that policy ought to include the principles and rules agreed upon by a number of different stakeholders:

*...[the] essence of collaborative governance is a new level of social/political engagement between and among the several sectors of society that constitutes a more effective way to address many of modern societies' needs beyond anything that the several sectors have heretofore been able to achieve on their own (Weil and Weil, as quoted in Donahue, 2004, p.2)*

Collaborative policy processes are perceived to be more effective and democratic than managerial or technocratic processes. For example, New Zealand's Land and Water Forum (2012, p. x) argued that collaborative processes will be faster, more efficient, and more equitable than previous arrangements. The Ministry for the Environment's *Freshwater Reform 2013 and Beyond* document suggested reforming the RMA to include optional collaborative planning processes (MfE, 2013, p.10).

Will collaboration resolve the problems observed with Canterbury's freshwater management during this research? I note that the collaborative CWMS has resulted in contradictory policy goals, put forward by a variety of stakeholders – such as environmentalists lobbying stronger water quality standards alongside farmers lobbying for the expansion of irrigated land space – which cannot be achieved simultaneously. For example, studies into nitrate pollution of Canterbury's groundwater predict that with further water storage, and thus increased irrigated land use, nitrification of Canterbury's groundwater will increase (Harris *et al.* 2009). Nitrification affects several CWMS targets such as drinking water quality and ecosystem health. If nitrification to groundwater cannot be limited these targets cannot be met. The ECan Act enshrined the values of the CWMS, and thus, zonal committees will be responsible for both increasing irrigated land and maintaining water quality standards in their catchment.

The implementation of these goals through zonal committees relies heavily on funding from central government. For example, the Irrigation Acceleration Fund<sup>57</sup> has promised \$35 million in irrigation funding throughout New Zealand (MPI, 2014), including \$1.71 million<sup>58</sup> for the Central Plains Water

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<sup>57</sup> Previously known as the Community Irrigation Fund.

<sup>58</sup> With a further \$4.04 million if 'key milestones' can be met.

Scheme in Mid-Canterbury (MPI, 2014) and \$2.4 million for the Hurunui Water Project in North-Canterbury (MPI, 2013). This fund is a fraction of the \$400 million central government indicated it was willing to spend on irrigation infrastructure in January 2013 (Crown Irrigation, 2014). Cabinet agreed to spend \$80 million through the 2013 budget (Treasury, 2013). By contrast, a joint Ngāi Tahu and ECan ecological protection programme – Whakaora Te Waihora (Ngāi Tahu, 2014) – has been given \$6 million<sup>59</sup> in funding for two-to-five years from the Ministry for the Environment. The Wainono Lagoon restoration in South Canterbury has also received \$2.1 million in funding (MfE, 2014a).

Another challenge in meeting the collaborative CWMS targets is enforcing water quality standards on individual farmers. Ronlyn Duncan (2014) has highlighted the difficulties of using the Overseer nutrient budgeting model as a tool for farm scale management of nutrient pollution. Overseer's inaccuracy and the continued release of new versions that predict varying degrees of nutrient loss from the same data are just some of the problems with the model (Duncan 2014, pp.382-3). Duncan (2014, p.385) concluded that New Zealand's land use policy has "been built around the assumption that 'rule by numbers' would remove ambiguity and provide clarity and certainty for both governments and resource users", however, "it has been shown that the opposite is unfolding, and is likely to continue".

The targets of the CWMS, agreed upon by farming and environmental interest groups, give Canterbury's new zonal governance regime legitimacy in the absence of democratic elections. Central government spending to meet the targets of environmental protection and irrigation development appears even. However, the amount of money central government plans to spend on irrigation in the coming years will dwarf these environmental remediation projects. Regulating land use to achieve water quality targets will be difficult due to the difficulties of measuring nutrient pollution from single sources. The cumulative effect of farm pollution will result in greater nitrification of Canterbury's groundwater. The ability of collaborative governance arrangements to achieve multiple policy goals needs further investigation.

I can now offer some answers as to whether collaboration will resolve Canterbury's vexed freshwater management. First, collaboration offers a normative argument which states that public policy should be agreed upon by multiple stakeholders. However, this will potentially result in contradictory policy goals and targets. Contradictory policy targets might lead some interest groups to leave the collaborative process, and this could result in the capture of collaborative processes by the groups who choose to remain. Second, collaboration – as seen in the Canterbury case study - does not

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<sup>59</sup> Another \$5.6 million of combined funding from MfE, Ngai Tahu, Environment Canterbury and industry will support additional initiatives in tandem with Whakaora Te Waihora.

resolve the power imbalances held by members of a collaborative policy process. Unless effort is made to resolve these power imbalances, collaborative arrangements could become captured by the more powerful interest groups involved.

These issues highlight the complexity of managing freshwater when interest groups demand contrasting policy. For example, central government's recent decision to promote a mixed appointed and elected governance model for ECan from 2016 is justified by citing the "multi-dimensional nature of water issues in Canterbury", and the work still needed to achieve the goals and targets of the CWMS (MfE, 2015, p.20). I argue that the collaborative governance processes initiated in Canterbury's freshwater management have struggled, by themselves, to resolve the complex issues surrounding the management of Canterbury's freshwater. This struggle has justified central government's decision to not replace the appointed commissioners with a fully elected council in 2016.

In sum, I argue that contradictory policy goals and power imbalances threaten the viability of collaborative arrangements in Canterbury's freshwater management. I propose that these factors could result in the capture of collaborative governance processes. Collaborative governance will not resolve Canterbury's vexed freshwater management, but rather, will create new problems for ECan to resolve in the future.

## **8.5. Authority, Autonomy, and Interest Group influence**

Collaborative governance was promoted as a solution to ECan's failure to establish authority and autonomy between 1989 and 2010. However, I contend that collaborative governance processes could potentially become captured by powerful interest groups. Policy capture will have an effect on local government authority and autonomy. This next section analyses the relationships between local government authority, autonomy and interest groups during New Zealand's three interest groups eras.

### **8.5.1. Authority, Autonomy, and Interest Groups in the Corporatist era**

In the corporatist era, policy was written by bureaucrats and specific interest groups side-by-side. As a result, bureaucracies held a lot of authority over freshwater management in Canterbury because rules, prescriptions, and instructions were followed without recourse to persuasion or force. However, autonomy was low because authorities could not establish policy without first bargaining with interest groups.

During this era, interest groups like Federated Farmers were seen as legitimate representatives of farmers across New Zealand. Relationships of clientelism were established between government

departments such as the Ministry of Agriculture and interest groups like Federated Farmers. Government irrigation schemes were “entirely captured” by a small group of users during this period (Treasury, 1984, p.47). Capture was sustained because no countervailing interest group contested the accommodations given to farmers over freshwater policy. New Public Management reforms sought to end policy capture by separating the funding of goods and services from providers, and through creating distinct bureaucracies to draft and implement policy.

### **8.5.2. Authority, Autonomy, and Interest Groups in the New Public Management era**

In the NPM era, local government agencies were given a high level of autonomy over freshwater management but authority receded. NPM reforms noted the capture of irrigation schemes by farmers, and in response, central government sold irrigation schemes to users. Devolution of freshwater management to regional councils, and the its sale of irrigation schemes, illustrated central government’s ceding of authority as the dominant user and regulator of natural resources during this period. During the NPM era, entrepreneurs were encouraged to develop natural resources for economic gain and regional councils were asked to manage the effects of resource use. Local government authority was ensured because both environmentalists and farmers initially supported the NPM era’s hands-off approach to natural resource management (Bührs & Bartlett, 1993, p.90; Liepins & Bradshaw, 1999, p.576).

The NPM era resulted in policy stagnation. The first two case studies highlighted the difficulty ECan experienced in establishing authority through conventional RMA processes during the NPM era. As a result, freshwater consents were granted while rules and regulations for freshwater use were still being formulated. In response, farming and environmental interest groups challenged ECan’s autonomy by pursuing freshwater consents and WCOs against the wishes of ECan. The third emergent era of interest group politics, collaboration, was promoted as a solution to the policy stagnation of the NPM era.

### **8.5.3. Authority, Autonomy and Interest Groups in the Collaboration era**

In the collaboration era, I predict that authority will be strengthened while autonomy will be weakened. In Canterbury’s freshwater management, collaboration was promoted as a solution to the policy stagnation that emerged during the NPM era. ECan and other actors created the Canterbury Water Management Strategy as a collaborative planning document with mutually agreed upon principles, targets, and governance arrangements for Canterbury’s freshwater management. The ECan Act that followed gave new commissioners greater authority over freshwater management in Canterbury to enact the goals of the CWMS. The ability to amend WCOs, set moratoria for consents,

and to halt Environment Court appeals, permits ECan to exercise greater authority over Canterbury's freshwater management.

The collaborative approach continues in Canterbury through the establishment of catchment sized zonal committees. I propose that ECan's autonomy will weaken during the collaborative era due to the dispersal of its planning authority across zonal, regional, and national scales. Farming and environmental interest groups will potentially become members of these new authorities. If these authorities continue the collaborative approach, this will give interest groups greater freedom to lobby and bargain over policy at zonal, regional, and national scales. The increased influence of environmental and farming interest groups in collaborative governance processes will weaken ECan's autonomy over freshwater management.

In sum, during the corporatist era of interest group politics government autonomy was weakened as interest groups entered into the political process. The corporatist era resulted in the capture of freshwater policy by interest groups. In response to capture, during the second NPM era, central government ceded authority and local governments adopted a hands-off approach to natural resource management. The NPM era resulted in policy stagnation. In response to policy stagnation, during the third collaborative era ECan relinquished some autonomy to new zonal and national authorities while its authority was strengthened by the ECan Act.

## **8.6. Cycle of interest group politics in Canterbury**

I propose that collaborative governance arrangements for Canterbury's freshwater politics will become captured by interest groups. I propose a counterintuitive conclusion that a cycle between policy capture and policy stagnation exists in Canterbury's freshwater politics. Table 9 details the cycle between policy capture and policy stagnation.

**Table 9 Proposed cycle of policy capture and policy stagnation in Canterbury’s freshwater politics.**

	<b>Colonial era (1840 – 1950)</b>	<b>Corporatist era (1950 – 1984)</b>	<b>New Public Management era (1984 – 2010)</b>	<b>Collaborative era (2010 - )</b>
Local Government Authority	High	High	Low	High
Local Government Autonomy	High	Low	Low	Low
Outcome	Full Autonomy	Policy Capture	Policy Stagnation	Predicted Policy Capture

The interest group cycle highlights the trends between the corporatist and collaborative eras. Local government autonomy is weakened through the growing influence of interest groups while authority over policy is strengthened. The corporatist era illustrated the same trends, and during this era policy became captured by interest groups. In the collaborative era, powerful interest groups – such as resource users or nationally organized environmental groups – could use their organisational capacity, money, experience, and legal knowledge, to dominant collaborative arrangements (such as zonal committees) or to demand maintenance of status quo policy. International research has discovered that resource-development interest groups have exercised greater influence than environmental interest groups in some collaborative governance arrangements (Echeverria, 2001; Schuckman, 2001).

The interest group cycle provides insight into why ECan struggled to establish authority and autonomy over freshwater management between 1989 and 2010. ECan was given authority under the RMA to regulate freshwater during the NPM era. During the NPM era, central government retreated from active regulation of natural resources and gave this responsibility to regional councils.

ECan exhibited this same hands-off approach to freshwater management by failing to plan for freshwater throughout the 1990s. By the early 2000s, ECan's failure to plan led interest groups to challenge its autonomy (see first two case studies). ECan's inability to establish authority after these challenges to its autonomy led to policy stagnation and eventually to ECan being restructured by central government.

The solution to policy stagnation was collaboration. My conclusion is that collaboration could result in the policy capture last seen during the corporatist era. Policy capture is likely to occur when regulators and the regulated industry share common policy goals (McFarland, 2004, p.33), for example, farmers capturing collaborative processes to ensure the expansion of irrigated land space in Canterbury or environmentalists capturing the process to ensure conservation of freshwater bodies in Canterbury. The targets of the CWMS were designed so that the regulator, ECan, had to meet both farming and ecological targets. However, ECan will experience difficulty in meeting incompatible policy goals, especially when freshwater resources continue to be allocated and water quality is projected to get worse in the decades to come (PCE, 2004; PCE, 2013).

Scholars, bureaucrats, and interest groups are likely to agree that policy capture and policy stagnation are both undesirable outcomes for freshwater management. The question remains whether the proposed interest group cycle can be broken. To break this cycle, a local government agency requires the authority and autonomy to set policy that has been influenced by multiple interest groups. Multiple clientelism offers a method – selective and sequential patronage – of achieving this. However, ECan's attempts at selective and sequential patronage during the three case studies were unsuccessful.

As argued earlier, ECan was able to establish relationships of patronage but the overarching RMA made it difficult for ECan to constrain water use. The RMA's cumbersome planning process, the ambiguity of its definition of sustainable management, the failure of central government to produce a national policy statement, and the effects-based consenting system also restricted ECan's ability to manage freshwater use in Canterbury. Furthermore, interest groups were able to appeal to national policy processes, such as WCOs, or to challenge planning and consent decisions at the Environment Court. The ECan Act – by restricting Environment Court appeals, permitting moratoria on consents, and by allowing commissioners to amend WCOs – has granted ECan's commissioners far greater authority than that held by the previously elected councillors.

## **8.7. Conclusion**

In conclusion, the three case studies confirmed that ECan pursued authority and autonomy over freshwater management through regional plans, non-statutory plans, interim plans, consents, and

Environment Court appeals. ECan's pursuit of authority and autonomy only came after a period of inactivity in the early 1990s in which ECan adopted a hands-off approach to freshwater management influenced by NPM reforms. This approach led to conflict between farming and environmental interest groups in Canterbury. ECan responded to the conflict by establishing relationships of patronage with these interest groups as the theory of multiple clientelism suggested, however, patronage alone was not enough to grant ECan authority over freshwater management. As a result, policy stagnated and ECan was forced into pursuing non-statutory collaborative methods to resolve the conflict and to gain authority over freshwater management. This research, and the scholarly literature, suggests that collaborative governance – as a solution to ECan's policy stagnation between 1989 and 2010 – risks becoming captured by powerful interest groups.

## 9. Chapter Nine

### Conclusion

#### 9.1. Introduction

This research investigated ECan's pursuit of authority and autonomy over freshwater management in Canterbury between 1989 and 2010. The research discovered that ECan was active in pursuing authority and autonomy through a variety of statutory and non-statutory techniques. ECan established relationships of selective and sequential patronage as multiple clientelism predicted. However, ECan was unable to establish authority and autonomy. ECan's failure to establish authority and autonomy led to policy stagnation which justified the adoption of collaborative governance.

This chapter concludes the thesis. It begins by noting the research's contribution to knowledge. The chapter then raises questions for future researchers before noting the implications of the research findings for public policy.

#### 9.2. Contribution to knowledge

This thesis provides a unique analysis of Canterbury's freshwater politics. The proposed interest group cycle offers an alternative to conspiratorial explanations of Canterbury's freshwater politics. For example, Sam Mahon, a Cantabrian artist and freshwater activist, argued that ECan's failure to plan for freshwater was part of a broad conspiracy for control of the resource by farming interest groups and the ECan council<sup>60</sup>. Mahon's argument was that ECan did not plan for freshwater use to allow for its continued abstraction by commercial farming interest groups. By contrast, this research noted that ECan's failure to plan was not due to a lack of effort. ECan did fail to plan for freshwater in the early 1990s, preferring a hands-off approach to planning, which was supported by government ministers who argued that intervention in land use should only occur if there are significant environmental effects (Upton, 1991, p.3018). However, once the cumulative environmental effects of land and freshwater use became apparent in the early 2000s, ECan attempted to plan, manage and regulate freshwater use through a variety of techniques.

Others argued that ECan's failure to plan for freshwater can be explained by the organisation's competing planning priorities and its lack of infrastructure ownership. For example, research interviewees<sup>61</sup> observed that urban air pollution planning had taken precedent over freshwater

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<sup>60</sup> He makes these arguments over the course of two books entitled *Water Thieves* (2006) and *Franzi & The Great Terrain Robbery* (2011).

<sup>61</sup> Grant McFadden (personal communication, April 17, 2013) argued there was a lack of central Government guidance following the introduction of the RMA. This is supported by the first ECan chairman, Richard Johnson,

planning in the 1990s. It was also argued that ECan had not been granted trading enterprises, infrastructure, or ports that were bestowed to other regional councils in New Zealand during local government reform (Douglass, 2004b, p.6). According to the argument, this restricted ECan's income and its ability to fund freshwater planning. However, this research illustrated that ECan put a lot of effort into freshwater planning and scientific analysis of Canterbury's freshwater resources. I argue that ECan's failure to plan is better explained by the difficulty of producing a fully notified plan under the RMA. The RMA framework, which allows for Environment Court appeals on two phases of public submissions, significantly slowed regional planning.

### **9.3. Contribution to theory**

Some of the predictions of the MC-NPM hybrid theory were confirmed in this research. As the MC-NPM hybrid theory predicted, ECan attempted to establish patronage but not to the detriment of its decision making autonomy. Furthermore, as the MC-NPM hybrid theory predicted, ECan intervened in freshwater management when it perceived the negative environmental effects of freshwater use. The MC-NPM hybrid predicted that ECan would choose to deliver quantifiable outputs over long-term planning outcomes. The case studies discovered that ECan delivered some outputs with ease, such as consents, but struggled on more difficult outputs like regional plans. The MC-NPM hybrid predicted that ECan would establish autonomy but would struggle to exercise authority. However, as the case studies illustrated, ECan was unable to establish autonomy and its freshwater management decisions were successfully challenged by non-governmental interest groups. ECan's struggle to establish authority and autonomy led to policy stagnation and the subsequent adoption of collaborative governance.

The MC-NPM hybrid theory contributes to the theory of multiple clientelism by examining it in a modern context. This research highlighted that the context of Canterbury's freshwater management in the 1990s and 2000s differed from Culhane's research in the 1970s. Furthermore, the recent trend towards collaborative governance threatens the ongoing relevance of multiple clientelism. A local government agency needs to mediate between interest groups to establish selective and sequential patronage. In a collaborative governance arrangement, the agency loses this unique bargaining position as interest groups are actively engaged at all stages of policy making.

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who argued that "successive government had failed to provide regional councils with a clear direction on natural resources policy and standards since the Resource Management Act was created in 1991" (Williams, 2010a, p.4) . By contrast, Kerry Burke (personal communication, March 16, 2012) argues a focus on air pollution in the 1990s led the council to delay production of water plans.

#### **9.4. Questions for further research**

The question remains whether ECan can avoid the sequence of policy stagnation and capture observed in this thesis. Both policy stagnation and capture are undesirable results for Canterbury's freshwater management. Thus, continued investigation of appropriate freshwater governance arrangements is needed. This raises a further question of whether there are methods other than multiple clientelism or collaboration that will grant a local government agency authority while remaining influenced by interest groups. Research is needed on governance arrangements that enable local government agencies to exercise appropriate authority and autonomy while remaining open to interest groups and other stakeholders.

Further research into the legacy of New Public Management reforms in New Zealand will help clarify the extent to which it still influences New Zealand's public management. Is NPM still the dominant paradigm in New Zealand's public management or has New Zealand entered a phase of post-NPM reform (e.g. Duncan and Chapman 2010)? If New Zealand has entered a phase of post-NPM reform, what are the implications for freshwater and natural resource management? Are there other public management philosophies beyond NPM or post-NPM that temporarily influence New Zealand's bureaucracy?

Further research is needed on the recent institutional changes in ECan. Are the collaborative zonal committees becoming captured as the interest group cycle proposes? Are zonal committees achieving the aspirational targets of the CWMS? What relative authority will the regional council and zonal committees exercise once democratically elected councillors return to ECan (MfE, 2015)? How will the transition to democracy occur, and will this transition reignite tensions between farming and environmental interest groups? How will commissioners, zonal committee members, or regional councillors address emergent social and biophysical freshwater values? How will ECan manage land use for water quality given the problems with tools, such as Overseer, that are currently available? Canterbury's freshwater managers will have to address these issues in the coming years.

#### **9.5. Implications for policy**

Collaborative governance has been enthusiastically embraced as a solution to the problems of freshwater management in New Zealand (Land and Water Forum 2012; MfE 2013). A significant implication for policy highlighted by this research is the potential capture of collaborative arrangements by powerful interest groups. Researchers and policy makers must critically engage with the benefits and drawbacks of collaborative governance. For example, Ansell and Gash (2008: 549) have noted a trend in measuring the social and procedural outcomes of collaborative governance rather than ecological outcomes. In a Canterbury context, the research of Lomax *et al.*,

(2010) focused on the social and procedural benefits of the collaborative approach during the writing of the CWMS. Auditing of the ecological outcomes of collaborative governance is also required in Canterbury.

This research also highlighted flaws with the RMA's consenting and planning processes. The RMA has been in a constant state of reform since its enactment in 1991. However, unlike critics who have argued that the RMA has been too restrictive of natural resource use (McShane *et al.*, 1999), I argue that it has permitted the deterioration of New Zealand's natural resources through the cumulative effects of individual resource uses. New Zealand's natural resource management needs to progress from a narrow focus on the effects of activities – whether singular or cumulative – towards a more holistic focus on the urban, rural, wild and scenic environments New Zealanders collectively desire.

## **9.6. Conclusion**

The introduction chapter noted that New Zealand's local government agencies struggled to exercise autonomy during the 1960s and 1970s. The third chapter noted that the 1980s was a period of significant local government restructuring. I conclude that the Canterbury Regional Council still struggled to exercise autonomy as well as authority following the 1980s reforms. In response, Canterbury's local government was once again reformed through the Environment Canterbury (Temporary Commissioners and Improved Water Management Act) in 2010.

In the future, policy capture will be the biggest threat to an efficient and equitable freshwater management regime in Canterbury. New collaborative governance arrangements have the positive effect of engaging a wide range of stakeholders in the management of Canterbury's freshwater resources. However, new collaborative governance arrangements will struggle to avoid capture due to the disproportionate power held by stakeholders and the difficulty of addressing the plurality of social, ecological, and economic values in society. Given this, local government agencies in Canterbury with responsibility for freshwater management will continue to struggle in the pursuit of authority and autonomy.

## Appendix One

### The pre-colonial management of freshwater in Canterbury

According to Canterbury's Ngāi Tahu tribe "water is central to all Māori life" (Te Rūnanga o Ngāi Tahu, 1999, p.5). Freshwater is a *taonga* (gift) left by ancestors to provide and sustain life for the next generation. Thus, Māori give freshwater prominence in their creation stories. Ngāi Tahu asserts freshwater is "the promoter of all life" and that the condition of freshwater is "a reflection on the health of Papatūānuku"<sup>62</sup> (Garven *et al.*, 1997, p. 36).

Māori creation stories recited the relationship between gods – representative of natural resources such as the forest (*tāne-mahuta*), the sea (*tangaroa*), and cultivated food (*rongo-hīrea*) - as a family structure. According to Hong-Key Yoon the environment is modified by the relative strengths and weaknesses of the resource family structure (Yoon, 1994). Creation is therefore not a single event but "an evolutionary process in which people played a part" (Yoon, 1994, p.163). Protocols on how to use natural resources, such as freshwater, come from the stories told about these personified deities.

Fish were an important food for Māori communities. Freshwater's life-giving force (*mauri*) was recognised. Freshwater was managed through a variety of practices to ensure its life giving force was maintained, for example, restrictions (*rāhui*) were placed on stretches of water to maintain food stocks.

*Mana* is the energy and consciousness of all things, and *tapu* reflects the sacred nature of a vessel (say a person, or natural object) which contains *mana* (Young, 2004, p.49). As David Young (2004, p.50) explains, *rāhui* were proclaimed by someone with *mana*, usually through the erection of a pole. This was "a substitute for civil law" over freshwater areas of significance (ibid). Thus, Māori managed freshwater through practices which protected food stocks and the sacred qualities of freshwater.

European settlers were of the opinion that no legal mechanism for management of freshwater existed prior to their colonisation. This can be explained, in part, by Māori management of freshwater overlying physical and metaphysical realms. In the case of *Wi Parata v Bishop of Wellington* (1877) it was recorded that "[o]n the foundation of this colony, the Aborigines were found without...any settled system of law" (as quoted in Wheen, 2002, p.261). This misjudgement permitted transition from existing Māori law to English common law.

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<sup>62</sup> Papatūānuku is the female Māori deity of 'the land'.

## Appendix Two

### The drainage of Te Waihora/Lake Ellesmere

English common law in colonial New Zealand focused on defining rights to resources based on land ownership (Wheen, 2002, p.261). English common law supplanted Māori law and introduced riparian rights for landowners. Riparian rights accorded landowners the right to use water for domestic and stock watering purposes as long as the flow of water through their property was not diminished in quality or quantity (Roche, 1994, p.16). The drainage of Te Waihora / Lake Ellesmere revealed a conflict between colonial property law and Māori customary law. Of importance to this thesis, the draining demonstrated that the settlers' freshwater management was designed to encourage the growth of commercial farming in Canterbury. New government agencies gained authority by enforcing colonial management over freshwater bodies not sold by Māori, and thus, were able to establish productive farming around the lake's margin.

Te Waihora is located along Canterbury's eastern shoreline south of Banks Peninsula. It is a broad and shallow lagoon with an artificial outlet on the southern shore of the lake which affects its size at different times of the year (Varona, 2012). The outlet was established by local Māori to ensure the maintenance of food supply (*mahinga kai*) by regulating the amount of freshwater in the lake.

The Kemp Purchase (1848) was an agreement between Ngāi Tahu and the Crown to sell South Island land. According to Waitangi Tribunal reports (1991, p.459), Māori made it clear the sale was to omit Te Waihora (*ibid*). However, in 1868, a European farmer, Charles Chapman, opened Te Waihora's outlet himself in order to maximise the amount of productive land around the lakes shoreline (Singleton, 2007). Crown Representative Walter Mantell was informed by Ngāi Tahu that erosion of the purchase's eastern border by European settlers was unacceptable. Mantell deliberately disregarded the rights of Ngāi Tahu by failing to comply with terms of Kemp Purchase which preserved their access to Te Waihora (Waitangi Tribunal, 1991, p.466).

The Ellesmere Lands Drainage Board held authority for controlling lake levels from 1906 to 1947 (Douglass, 2004b, p.31). This ensured the priority of commercial land users to lower the lake levels despite the Kemp Purchase agreement. Failure to comply with the terms of the Kemp Purchase guaranteed the New Zealand government decision making authority over all freshwater bodies in Canterbury.

Freshwater management, through the drainage of lakes and the construction of stop-banks along rivers to prevent flooding (Ward & Scarf, 1993, p.64), encouraged the expansion of commercial land use. Riparian rights granted landowners use of freshwater which passed through their property.

These two developments helped establish farming in Canterbury, and farmers would go on to hold prevailing influence over freshwater management in the region for the next 140 years.

## Appendix Three

### The political power of farmers in Canterbury between 1850 – 1960

Farmer prominence in Canterbury was evident in freshwater management as well as the land sale and distribution debates. Land regulation was considered the biggest political issue of the early colonial period (Hawke, 1985, p.22; Brooking, 1996, p.79). Stevan Eldred-Grigg (1977; 1980) examined Canterbury's unequal distribution of land, wealth, and political power during the colonial period. He described Canterbury's dominant landowners as *the Southern Gentry*. Eldred-Grigg argued these landowners were able to play a "heavily disproportionate role in the social, political and economic life of New Zealand" (Eldred-Grigg, 1977, p.3).

Canterbury was described as being more "aristocratic" than other regions in New Zealand (Jourdain, 1925, p.15), with land owners "a favoured race who (sic)...had been elevated into a position of boundless wealth and disgraceful monopoly" (Scotter, 1965, p.25). Canterbury's land and animal stocks were owned by a few powerful individuals during the global economic crisis which lasted from the late 1870s to the 1890s (Eldred-Grigg, 1977, p.4; Sutch, 1966). In response, the John Balance led Liberal government passed a series of important land reforms designed to address this inequality (Gardner, 1992; Brooking, 1996).

The 1894 Land for Settlements Act gave government the authority to purchase private land in order to subdivide it into small farming plots. W.J. Gardner (1992) examined the sale of "Ready Money" Robinson's Canterbury estate through the Land for Settlements Act, and argued it was a political success for the Liberal government. The reforms increased land ownership. Increased land ownership, in combination with the introduction of refrigeration technology which expanded the range of produce New Zealand could export, laid the foundation for New Zealand's primary produce industries in the 20<sup>th</sup> century. Jim McAloon argued "the primacy of agricultural cultivation was something which few dared to challenge" during this period (McAloon, 2002, p.101).

Farmers were political supporters of the Liberal government. The Liberals were described as being "literally, government of farmers, by farmers, for farmers" (Bremer & Brooking, 1993, p.110). William Scotter (1965a, p.352) argued that examination of the colonial period leaves no doubt that the state heavily assisted the farming community. During the early 20<sup>th</sup> century the Liberal introduced freshwater policy which addressed public utilities<sup>63</sup> and flood control<sup>64</sup>. (Ward & Scarf, 1993, p.64)

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<sup>63</sup> The 1920 Counties Act; the 1920 Municipal Corporations Act; the 1928 Public Works Act.

<sup>64</sup> The 1908 Land Drainage Act.

Farming interest groups formed in New Zealand during the early 20<sup>th</sup> century. A pamphlet written by James Glenny Wilson in April 1903 promoted national farmer organisation in the face of countervailing trade union organisation. There were already a variety of organised interest groups in New Zealand – formed by employers, manufacturers, teachers, and doctors – but farming organisation was more difficult due to the distance between members and ideological differences over land tenure (Cleveland, 1972, p.69). Organisation was initially pushed by North Island dairy farmers (Cleveland, 1972, p.72).

By October 1906 Wilson's Farmers' Union had introduced eight bills of recommendation to Parliament and had been recognised by the Prime Minister as representative of farmers' throughout the nation. The Union produced the influential *Farmers' Union Advocate* newspaper. The newspaper engaged in an early "public relations" campaign (Cleveland, 1972, p.74). The newspaper and the Farmers Union were able to relay information to politicians about farmers' opinions through telegraph communication.

The Union were internally divided between small and large landowners. Small landowners, often supporters of the Liberals due to their land reforms in the 1890s, feared that large landowners could gain monopolies if allowed to purchase an unlimited amount of freehold land. The Farmers Union were divided over the 1906 Land Amendment Act which established a limit on how much unimproved land one person could own, addressing the monopoly fears of small landowners (Cleveland, 1972, p.79).

The Union unified against the common threat of trade unions. Port strikes threatened agricultural exports which were crucial to farmer's income. In 1913, the Farmers' Union members were recruited as a port strike breakers – Massey's Cossacks<sup>65</sup> - which Les Cleveland argued "was to dispose finally of the myth of its political neutrality" (Cleveland, 1972, p.82). Left wing commentator Chris Trotter (2007, pp.122-3) believed the strike breaking secured the economic future of New Zealand's agricultural exports.

William Massey – Prime Minister during the port strike – had "become the symbol of the farmer militant" (Graham, 1963, p.178). "Farmer Bill" represented the man on the land and illustrated the power of farming interests during the early 20<sup>th</sup> century. This popularity was not maintained as farmers became increasingly disillusioned with Massey. This led to the creation of the Country Party, which although short lived, succeeded in getting several Members of Parliament elected (Graham, 1963).

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<sup>65</sup> Named after the contemporary Prime Minister William Massey (Trotter, 2007).

An observer in 1938 noted the rural bias in New Zealand politics (Graham, 1963, pp.197-198). Farmers were the “backbone of the country”, a fact accepted by rural and urban citizens alike. Urban industry was “parasitical in that they depend for their very existence” on the output of the farmer (ibid). Urban New Zealanders accepted that the prosperity of New Zealand relied on grasslands production.

Federated Farmers – New Zealand’s influential farming interest group – was formed in 1946. Federated Farmers evolved from the Farmers Union and was “an amalgamation of a number of primary producer organisations” (Cleveland, 1972, p.83; cf. Perry, 1992, p.43). Federated Farmers constitution was designed to overcome the problems which had prevented a cohesive farming voice in the past. These problems – provincial sentiments, diverse political attitudes, and conflicting interests between different types of farming – were resolved by distinguishing between dairying, meat, wool, and horticultural production, while allowing these groupings to be represented at sub-provincial, provincial, and national levels (Bremer & Brooking, 1993, p.112). Federated Farmers, by creating a structure which provided autonomy for a variety of different farming types within geographically diverse areas with some coordinated central control, held the power and flexibility necessary to mobilise a farming voice in New Zealand.

The Farmers’ Union and Federated Farmers highlighted the emergence of interest group influence over land use and freshwater policy. For example, farming interest groups and local booster groups such as the Canterbury Progress League lobbied government to construct the Rangitata Diversion Race irrigation system in Mid-Canterbury during the 1940s as well as the establishment of irrigation test farms (Evans & Cant, 1981, p.59; Hopkinson, 1997; Wood & Brooking, 2001, p.90). The era of corporatism in New Zealand interest group politics – between 1950 and 1984 (Cleveland, 1972; Perry, 1992; Bremer & Brooking, 1993) - ensured that farmers captured freshwater policy, such as irrigation, for their own private needs. However, during the corporatist period, countervailing environmental interest groups emerged to challenge the dominant ethos of freshwater policy and management. The emergence of multiple interest group influence over freshwater policy in the late 20<sup>th</sup> century suggests a weakening of government autonomy over freshwater policy.

## Appendix Four

### Canterbury Strategic Water Study multi-stakeholder steering committee (Whitehouse *et al.*, 2008, p.60). .

Andy Pearce	Chairman
Graeme Sutton	Irrigation New Zealand
Mike Hodgen	Hurunui Community Water Development Working Group
Ross Millichamp	Fish and Game
Norm Williamson	Amuri Irrigation Scheme
Murray Lane	Water Rights Trust
Eddie Glass	Ashburton Community Water Trust
Kelvin Coe	Federated Farmers, Selwyn District Council
David O' Connell	Ngāi Tahu
Bill Hood	Forest and Bird
Bob Frame	Landcare Research
Ken Hughey	Lincoln University
Bob McDowall	NIWA
Ian Mackenzie	Ashburton Community Water Trust, Eifelton Irrigation Scheme
Ann Jarman	Selwyn District Community Development
Roger Sutton	Orion Group
Tony Howey	Opuha Water Company
Nick Brown	Economist
Don McFarlane	South Canterbury Water Trust

## Appendix Five

### Canterbury Water Management Strategy steering group members (Mayoral Forum, 2009, p.66).

Bede O'Malley	Chair and Mayoral Forum representatives
Mike Jebson	Central government agencies
Brian Lester and Bryan Jenkins	Chief Executive representatives
Peter Townsend	Industry representative / regional economic
David O'Connell	Ngāi Tahu
Murray Rodgers	Water Rights Trust
Grant McFadden	Historical knowledge of water management in Canterbury
Angus McKay and Eugenie Sage	Environment Canterbury councillors
Graeme Sutton	Irrigation New Zealand
Peter Scott	Opuha Water Supply Partnership and southern region representative
Martin Clements	Fish and Game
Hugh Canard	Kayaking, recreation, and tourism representative
Alastair James	Canterbury District Health Board
Edith Smith	Forest and Bird

## Appendix Six

### List of government publications cited in the thesis.

Central Government Publications	ECan Publications	Other Publications
<p>Crown Irrigation, 2014.</p> <p>Land and Water Forum, 2012.</p> <p>Ministry for Primary Industries (MPI), 2013; 2014.</p> <p>Ministry for the Environment (MfE), 2002; 2011; 2013; 2014a; 2014b; 2015.</p> <p>New Zealand Government, 2001.</p> <p>Parliamentary Commissioner for the Environment (PCE), 2004; 2013.</p> <p>State Services Commission, (SSC) 2001.</p> <p>Statistics New Zealand, 1995; 1999; 2002; 2003; 2007; 2009.</p> <p>Treasury, 1984; 1987; 2013.</p>	<p><i>Hydrology</i></p> <p>Ingles, 2000; Aitchison-Earl, 2001; Miskell, 2001; Mosley, 2001; Hunt &amp; Scott, 2007; Bell &amp; van Voorthuysen, 2008; Harris <i>et al.</i>, 2009.</p> <p><i>Policy</i></p> <p>Aitchison Earl <i>et al.</i>, 2004; ECan, 2004; 2006; 2007; Veltman <i>et al.</i>, 2004; White, 2009.</p>	<p><i>Environment Court cases</i></p> <p>Rangitata South Irrigation Limited v New Zealand and Central South Island Fish and Game Council – Decision No. C109/2004</p> <p>Lynton Dairy Limited v the Canterbury Regional Council – Decision No.C108/2005</p> <p><i>Resource consent hearings and court submissions.</i></p> <p>Talbot, 2003; Milne <i>et al.</i>, 2007.</p> <p><i>Non-statutory plans</i></p> <p>Canterbury Strategic Water Study</p> <p>Morgan <i>et al.</i>, 2002; Dark <i>et al.</i>, 2008; Whitehouse <i>et al.</i>, 2008; Dark <i>et al.</i>, 2009.</p> <p>Canterbury Water Management Strategy</p> <p>Mayoral Forum, 2009.</p>

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