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Title of Thesis:

Would a water market system coupled with a beneficial use doctrine similar to that of the western United States help foster sustainability of water resource allocation in New Zealand?

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Abstract

In New Zealand, water supply has historically been a given. There is a perception that the country is well-watered and up to a point this is true, or at least has been true. However water is not always available at the right time or at the right place. In addition there are problems brought on by climate change, which will result in more frequent and more severe droughts in certain parts of the country. Climate variability is coupled with a drive for the agricultural sector to increase production. The question is whether our current water allocation system can operate effectively under these conditions. The notion of sustainability has gained much traction in the last few years and this is a concept which we in New Zealand need to embrace in the matter of water allocation. This thesis will examine the state of New Zealand's water allocation situation and suggest improvement. To this end this thesis will study the experience of the western United States where scarcity makes water precious.

New Zealand has not adopted a sustainable approach to the allocation of water resources, arguably because it was never envisioned that the allocation of a resource considered abundant could become a problem. As a result we have adopted a first-in-first-served process almost by default. As such the process does not address the dictates of sustainability, but more importantly as pressure is brought to bear on water supplies, as there will be no more spare water to appropriate, further allocations will need to be an exercise in division, not multiplication. Re-allocation of existing water rights through a market system will be essential to sustain the demand not only of a still more intensive agriculture but also for ecological requirements.

There are certain requirements of a successful market system. In the first instance the relative infrastructure is essential to deliver the water to its required destination. The Government is in the process of addressing this issue which indicates it regards a water market system with a certain degree of affection.

Once the delivery (and storage) systems are in place, provided transaction costs are low enough to address opportunity cost issues there is no reason why a market system should not be successful once the structure becomes generally acceptable, given a market system for water rights is somewhat novel in New Zealand.

While the recycling of unused or unneeded water rights is a sustainability narrative, it will be vital as a matter of policy to complement market transfers with a western United States-style beneficial use requirement which is likewise a sustainability discourse. Such a measure will endeavour to audit water use and ensure that usufructory water rights are used wisely, are not unnecessarily wasted but more importantly these rights are actually used and not left unproductive or speculated. As such, the doctrine will aim to stretch a finite resource to satisfy as many users as is feasible.

A re-allocation system for existing water rights coupled with a domestic beneficial use doctrine is a sustainability narrative and has the potential to justify New Zealand's currently undeserved reputation as a "clean green" country and to define us as New Zealanders.

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1 Chapter 1.

1.1 Introduction

The Earth's natural resources, especially water, are finite but are expected to continue to satisfy the needs of an ever-growing human demand. Clearly then, the mathematics suggest an on-going process of division rather than multiplication when managing water resources. Limited resources such as water will need to be competently regulated to determine a fair and equitable distribution among a growing number of people.

Water has a special place in the resource inventory: it is critical to life itself and has no substitute. Moreover, farmers are no longer content with nor financially able to rely on unpredictable rainfall for grass growth. Some New Zealand farmers are intensifying their dairy-farming efforts in areas with very little rainfall. Greater production requires greater grass and stock-feed growth which, in turn, requires water. Hence, the demand for irrigation has risen and sustainable management of our water resources has become vital.

“Sustainability” has become a key issue in discussions about the world's natural resources, especially water. The problem of sustainability of water resources has been exacerbated in New Zealand by the adoption of the first-in-first-served system of water allocation. While western United States' jurisdictions adopted the rubric of prior appropriation, and its essential doctrine of beneficial use, as a matter of practical necessity,¹ this research will show that no such circumstances warranted the adoption of the “first-in-first-served” water allocation regime in New Zealand; a system which has been adopted by the courts. This will be discussed in chapters 2 and 3. In point of fact, water

¹ This approach amounted to an outright rejection of the riparian doctrine, whereas the water-rich eastern region of the continent retained the European doctrine, or a blend of both riparianism and prior appropriation.

allocation issues have not become a real point of debate in New Zealand until quite recently.

1.2 Background

1.2.1 Water and Soil Conservation Act 1967

Currently New Zealand's water allocation mechanism is embodied in the Resource Management Act 1991. Prior to that, water allocation in New Zealand was entrusted to various administering tribunals - largely through the regional water boards and thereafter the Planning Tribunal. Indeed the Water and Soil Conservation Act 1967 made direct reference to the matter of water allocation: "An Act 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..."² and, significantly the beneficial use of water.³

More importantly, the Act vested the rights to use, divert, take, or make discharges into natural water, and to dam any river or stream, solely in the Crown.⁴ This had the effect of extinguishing almost all if not the entire common (riparian) law in New Zealand (subject to certain existing rights provisions) which has now been replaced by a new regime of statutory water allocation provisions under the Resource Management Act 1991. However, there are no explicit criteria given in the new Act to form a procedure for deciding the basis for allocation; but the courts, as is their function, stepped in to fill any statutory hiatus. Cooke P in *Keam v Minister of Works and Development* had earlier put it thus:

² Water and Soil Conservation Act 1967, extract from the long title.

³ Water and Soil Conservation Act 1967, section 20 (5) (c).

⁴ Section 21, but with certain exceptions.

Parliament has pointedly refrained from tying the hands of the administering tribunals by hard and fast requirements. Clearly it would be wrong for the Courts to do so. But to give effect to the broad purposes of the legislation, general working rules or guidelines can be evolved, as long as they are not elevated into something inflexible. It is as a useful general test of that kind that I understand the Planning Tribunal's proposition in its decision in this case that any proposed use of natural water should be a beneficial use, and that the loss which might follow from the taking of the water should be weighed against the benefit which will result from its use.⁵

His Honour pointed out "...the [old Planning] Tribunal acted properly in setting out to weigh competing interests."⁶ It is noteworthy that his Honour made direct reference to both the idea of "beneficial use" as contained in the old Act, and also to the concept of weighing up "competing interests" as this goes to the nub of the Water and Soil Conservation Act. This approach will be discussed again in chapters 2 and 3 in relation to the Resource Management Act and the leading case of *Fleetwing Farms Ltd v Marlborough District Council*.

1.2.2 *Keam v Minister of Works and Development*

The Court of Appeal in *Keam's* case confirmed a balancing test to be exercised by the issuing authorities under the Water and Soil Conservation Act. The Court had obviously directed its mind specifically to the matter, and actually embraced the spirit of the Act, but it is fair to say the approach was not without its problems. The allocation criteria were somewhat confused.⁷ The issuing authorities had to balance two extremes; on the one hand to allocate water to so many users that its utility becomes virtually worthless, and, on the other, to surrender to an impulse simply to allocate on the basis of first-in-first served. Of this particular priority

⁵ *Keam v Minister of Works and Development* [1982] NZLR 319 at 322 per Cooke P (Court of Appeal). This case confirmed the Planning Tribunal's approach.

⁶ *Ibid*, at 324. See also s 20 (5) (c) of the Act.

⁷ At times the Tribunal took a somewhat *ad hoc* approach: *Napier City Council v Hawkes Bay Catchment Board* (1978) 6 NZTPA 426.

system, Barker J was of the opinion that a first-come-first-served system was not desirable:

It may well be that the Act does implement a system of ‘first-come-first-served’, which has the side effect of making more difficult the task facing those who apply for a water right later. It may well be that such a system is the antithesis of orderly planning.⁸

1.2.3 Brundtland notion of sustainability

Philip Milne⁹ considers that in general the Planning Tribunal executed its functions extremely well. However it was faced with difficulties:

The water rights system by itself is an inadequate and inappropriate tool for the equitable and efficient allocation of our increasingly scarce water resources. The vagueness of existing allocation criteria, the lack of priorities or guidelines to aid Tribunals and a frequent lack of baseline data about the resource, make the task of those allocating water a difficult one. In the absence of comprehensive water allocation planning, tribunals are forced to make policy decisions and value judgments in a vacuum.¹⁰

The potential to fill, or at least partially fill, that vacuum appeared in the form of the general Brundtland notion of sustainability, incorporated into our Resource Management Act in 1991. This Act repealed the Water and Soil Conservation Act, along with over 50 others. From giving no “hard and fast requirements” under previous legislation, the Parliament set out a specific purpose of “sustainable management” under the new Act when it is required to deal with natural and physical resources. There is no “magic wand” however and allocating

⁸ *Auckland Acclimatisation Society v Waikato Valley Authority* (1983) 9 NZTPA 225 at 234.

⁹ P Milne “Water Allocation and Management in New Zealand: Recent Developments” (1985) 11 NZULR 245.

¹⁰ *Ibid*, at 261.

authorities cannot create new water sources to meet demand, so a serviceable system of reallocation of existing water rights is essential.

1.3 Structure of this Research

This thesis will argue a two-pronged approach to water management. First, New Zealand needs to introduce a system whereby existing water permits may be tradable (in whole or in part, temporarily or permanently) to ensure a system of division may succeed. Secondly, an American-type beneficial use doctrine should be introduced to discourage speculation and compel those who have the use of water do so to a reasonably efficient standard. Those who do not should forfeit their permits and that water made available to those who will. The universal cry for sustainability in the consumption of natural resources has steadily grown and the introduction of tradable water permits in New Zealand and the introduction of a requirement to use the water efficiently in conformity with a beneficial use doctrine is simply a necessary step in the sustainability argument, and in conformity with the spirit of the Resource Management Act 1991.

1.4 Methodology

This thesis undertakes a conventional legal analysis of primary and secondary sources. The analysis involves examining legislation (and Constitutional matters in the instance of the United States), as well as case law. Legal issues are identified as well as consideration of relevant rules over a period of time to produce a clear understanding of law and its current status. Reference to the informative experience in Chile will also be made.

1.5 New Zealand Water Situation

Despite an abundance of good intentions, New Zealand's situation in the matter of water allocation is somewhat precarious. In historical terms, New Zealand has been well-placed in its provision of water. We receive about 560,000 million cubic metres of water as either water or snow each year – enough to fill Lake Taupo nine times over.¹¹ The difficulty is the distribution of this precipitation is not even throughout the country, nor is it consistent from season to season, nor from year to year. Traditionally there has been ample water for all water permit applicants. The situation however is rapidly changing. The first of the Land and Water Forum Reports¹² tell us that the total water allocation in New Zealand had increased by 50% between 1999 and 2006 and nearly doubled in the ten years from 1999-2010, and is increasing.¹³ The report also tells us irrigation is by far the biggest driver of this demand,¹⁴ and our demand is 2-3 times higher than most OECD countries.

Water is currently allocated at a rate of some 680 cubic metres per second, and over half of this water is allocated by the Canterbury region. Some catchments are already over-allocated, and the rest are close to full allocation.¹⁵ Full allocation does not mean that all allocated water is used: on the contrary between 20% and 80% of water allocated for commercial use (including municipal water supply) in some waterways is not being used at any one point in

¹¹ Ministry for the Environment “Environment Aotearoa 2015” (2015) <mfe.govt.nz/publications/environmental-reporting/environment-aotearoa-2015> at page 55.

¹² Report of the Land and Water Forum: “A Fresh Start for Fresh Water”, (2010). <www.landandwater.org.nz>. (See page 9, *post*). The Forum has produced a total of four reports to date.

¹³ Ministry for the Environment “Freshwater Availability and Use” (2014) <www.mfe.govt.nz/issues/water/freshwater>.

¹⁴ Over three-quarters of the 20,000 individual consented takes is for irrigation. The Manapouri power station itself however consumes 41% of all the water used in New Zealand as it discharges directly into the sea at Deep Cove.

¹⁵ Land and Water Forum “Report of the Land and Water Forum: A Fresh Start for Freshwater” (2010) Land and Water Forum page 16 para 54 <www.landandwater.org.nz>.

time,¹⁶ but currently there is an inflexible system to transfer consents, either permanently or temporarily, totally or partially. An inflexible system such as this reduces the availability of unused water for other uses, or indeed more importantly, for future users.

Some national consistency in local water management has been driven by the two National Policy Statements on Freshwater Management issued by the Ministry for the Environment. Two Statements have been issued, the first in 2011 which has been superseded by the Statement of 2014. Significantly both Statements reiterate the responsibilities on regional councils under section 30(1)(e)(i) relating to the establishment of maximum or minimum levels of flows of water. This, of course, is vital for proper planning of water allocation.

Currently consents are often issued as a joint “take and use” package which creates a problem when only the take fraction of the consent needs to be transferred. A system needs to be introduced to minister to the aspirations of future users, and to address and advance the transfer of water consents from one commercial user to another; especially to more high-value end users, and, importantly, to manage and contain the way water is used by those who have the authority to do so.

1.6 A Māori perspective

A Maori dimension to the water management dialogue is critical. Whilst an in-depth analysis of Maori approaches to water is beyond the scope of this thesis, integral to any discussion of water allocation is the perspective of Maori as Treaty of Waitangi partners with the Crown. European and Maori views on water are not necessarily in accord.

¹⁶ New Zealand Business Council for Sustainable Development *A Best Use Solution to Solve New Zealand's Major Water Problems*, (2008) <www.sbc.org.nz/_data/assets/pdf_file/0009/56>.

The general European view is that water is a common, owned by nobody but managed by the Crown through various agencies. Importantly though European attitude now is that water is a commodity which may be traded commercially. Maori do not necessarily see water in this way, but to be fair neither do some Europeans. There is also a large amount of Maori scholarship which suggests proprietorship of water remains with them,¹⁷ a view outside the scope of this thesis, but which when resolved might have a fundamental impact on the way New Zealand's water rights are managed.

In 2009 the Government set up the Land and Water Forum to investigate and report on the condition of water quality in New Zealand. The Forum has broadened its horizons to include water quantity as this inevitably affects overall quality. To date, the Forum has issued four reports, all recommending the introduction of water markets to make supply more efficient and flexible. This has become government policy. Notwithstanding the Forum's recommendations in this respect, Maori have contributed significantly to all four reports.

Article Two of the Maori version of the Treaty of Waitangi guarantees Maori rangitiratanga (sovereignty) over their lands and taonga (treasures, for example water) for so long as they wished to retain them.¹⁸ Maori also traditionally have a special relationship with water and exercise kaitiakitanga or guardianship over it. This has been recognised by statute and policy.¹⁹

¹⁷ For example Jacinta Ruru "Māori Legal Rights to Water: Ownership, Management, or just Consultation" 2011 Resource Management Theory and Practice at 119, 119-123. See also Rachel Kennard "The Potential for Māori Customary Claims to Freshwater" ((LLB (Hons) Dissertation, University of Otago, date unknown). Also Maia Wikaira "Māori Ownership of Freshwater: Legal Paradox or Potential?" (LLB (Hons) Dissertation, University of Otago, 2010).

¹⁸ See discussion at Waitangi Tribunal Claim Wai 2358, available at <www.waitangitribunal.govt.nz>.

¹⁹ For example sections 6 (e) and 7 Resource Management Act 1991.

Without being too dogmatic, one Maori view is that they may have a traditional difficulty in approaching water in a purely commercial sense.²⁰ In the words of Maori Marsden:

[Maori] think of themselves as holding a special relationship to Mother Earth and her resources: as an integral part of the natural order, recipients of her bounty rather than controllers and exploiters of their environment. Therefore Mother Earth is to be treated with reverence, love, and responsibility rather than abuse and misuse.²¹

The introduction of a water management tool in the form of a western United States “beneficial use” doctrine in conjunction with water markets would be expected to find resonance within Maoridom in the sense that it encompasses the idea of stewardship and prudent management, as well as responsibility as mentioned by Maori Marsden.

1.7 Historic Attitudes to the Earth’s Resources have not always been Sound.

On the 7th December 1972, the crew of Apollo 17 took a photograph of the Earth from over 40,000 kilometres in space. This photograph is called “The Blue Marble” – the Earth is predominantly water²² – and has become one of the most circulated photographs in history, although there had been earlier photographs of the Earth from space. It is largely responsible for a sea-change in ecological attitudes on Earth. Previously humankind had only looked outward from Earth to the vault of space, a type of universal cultural impercipience, with a resultant sense of enormity and infinity. For the first time, humans looked inward from

²⁰ See Durette M, Nesus C, Nesus G, and Barcham M “Maori Perspectives on Water Allocation” (2009) www.mfe.govt.nz/assets/Uploads/Maori-Perspectives-on-Water-Allocation-FINAL.pdf.

²¹ Maori Marsden, in Te Ahukarama Charles Boyd (ed) *The Woven Universe: Selected Writings of Reversed Maori Marsden* (The Estate of Maori Marsden, 2003), at 35.

²² About 70%, but only about 2.5% of this is fresh water: www.globalchange.umich.edu/globalchange2/.

space to Earth. A process of reflective introspection unavoidably and unequivocally led humans to rationalize in a way they had not in the past, ushering in a fresh way of seeing our place in the universe, a realisation that we are, all of us, literally in the same boat, which can indeed be likened to a lifeboat.

The photograph was released at an opportune time in world history during which there was a growing tide of environmental awareness. Of the huge water resource on Earth, only a tiny amount is available for use by living creatures as well as human societies, and consequently it is obligatory that this resource be protected by proper management. The powerful image projected by The Blue Marble is one of the Earth as an isolated, vulnerable, and somewhat delicate entity.²³ Importantly, the image was that of only “one world”, a little planet on its own with its own physical finiteness, but at the same time suspended in the infinity of the universe. As an inevitable consequence of this image, human beings found a new sense of self. The Earth’s attributes must as a matter of logic also apply to its inhabitants. The consequence is that humans, despite their many internal differences, are really unified by a common interest, a concern for the health of our planet since the well-being of the planet will ultimately impact on the well-being of its inhabitants.

1.7.1 “Spaceship Earth”

The notion of the Earth as a limited self-contained unit – an organism if you will – was not new in 1972,²⁴ but the concept was not predominant in collective thought. Barbara Ward²⁵ and Kenneth E. Boulding²⁶ for instance, in 1966 both used the

²³ The medium is indeed the message: Marshall McLuhan *Understanding Media: The Extensions of Man* (Mentor, London, 1964). As André Malraux explains, the camera has freed canvas from a combination of anecdote and narrative to become not simply a vehicle, but sheer expression itself.

²⁴ Henry George referred to the earth as a “well-provisioned ship” travelling through space: *Progress and Poverty* (WM Hinton & Co, San Francisco, 1879) at 245.

²⁵ *Space Ship Earth* (Hamish Hamilton, London, 1966).

expression “Spaceship Earth” in their publications. Barbara Ward’s work is an admirable presage of *Our Common Future* and discusses the worldwide imbalance of power, wealth, and ideology but accurately identifies Earth’s position in the cosmos, and our place on it:

Our planet is not much more than the capsule within which we have to live as human beings if we are to survive the vast space voyage upon which we have been engaged for hundreds of millennia – but without noticing yet our condition²⁷

Boulding’s broad (and complementary) thesis was that the inhabitants of Earth needed to mature from what he described as a “cowboy” economy to a “spaceman” economy thereby recognising the planet’s limited resources. The cowboy approach is dramatically portrayed by Charles F. Wilkinson with his description of the profligate plundering of the virgin North American continent by European settlers.

Expansionists during the past century [the nineteenth century] commonly invoked God’s name, arguing that He had placed the abundant resources there for a reason and that it was contrary to divine will not to put water, minerals, and land to productive use²⁸

This “productive use” involved uncontrolled extraction of royalty-free minerals leading to dramatic contamination of water and soil; the butchering of millions of bison, almost to the point of extinction; the clearing by axe and fire of some of the then most valuable commercial timber in the world despite an 1831 prohibition; the plundering of fish for canning, for example those salmon and

²⁶ Kenneth Boulding “The Economics of the Coming Spaceship Earth” in H Jarrett (ed) *Environmental Quality in a Growing Economy* (Resources for the Future/Johns Hopkins University Press, Baltimore, 1966) at 3.

²⁷ *Space Ship Earth*, p 18.

²⁸ *Crossing the Next Meridian* (Island Press, Washington, 1992) at 16.

steelhead trout not killed by water pollution or water-course deviation; the diversion and ultimate dissipation of unimaginable volumes of water from rivers and aquifers which were simply acquired on the basis of *qui prior est in tempore potior est in jure*.²⁹

Boulding suggested humans historically regarded themselves as living on a virtually limitless plane, and when matters became too difficult in one spot, for whatever reason, they could usually expand beyond their frontiers, a theory possibly demonstrated by colonialism. In the case of a cowboy economy (which is exploitative), humans simply helped themselves to nature's boons without any thought to management or sustainability. This he referred to as an open economy which, as a result of the startling realisation that the Earth's resources are not in fact limitless, will need to be replaced by a "spaceman" economy which recognises that the Earth does not have an unlimited supply of anything. Boulding referred to this as a closed economy, reflecting the fact that humans are, despite earlier Christian dogma, really an integral part of a continuous cyclical ecological system.³⁰ The difference between the two systems is stark in terms of consumption. The cowboy economy regards consumption as a good thing - the progenitor of naked consumerism - and that such an economy is assessed in terms of production and therefore is seen in terms of the depletion of resources. A spaceman economy on the other hand is concerned rather with the quality and complexity of capital stock (including human minds and bodies); and is primarily concerned with the maintenance of that stock and the development of technology.

²⁹ Basically a first-in-first served system, an unsophisticated but practical allocation system employed in a region with little or no legal infrastructure by determined and self-reliant individuals.

³⁰ See generally James Lovelock "Gaia as Seen Through the Atmosphere" (1972) 6 Atmospheric Environment 579. This theory was actually first postulated by Pythagoras. Also Barry Commoner *The Closing Circle: Nature, Man, and Technology* (Knopf, New York 1971). Commoner suggested the American economy should be remodelled to comply with immutable laws of ecology. He was the first to suggest the idea of sustainability to a mass audience.

1.8 A Change in Perspective – A Brief Introduction to the Idea of Sustainability.

Introspective dialogue of this nature illustrates the type of discourse following the Apollo 17 photograph. However concern for the ecology of the Earth as a “system” had been discussed for many years. The idea of “sustainable development” had its birth in forestry management of the 12th to 16th centuries, but the notion has broadened a great deal since then. As early as 1908, forty-four American State and Territorial governors attended an environmental conservation conference called by Theodore Roosevelt at the White House. Environmental awareness increased during the twentieth century: several National Parks were created in the United States; Rachel Carson’s seminal work *Silent Spring* was published in 1963;³¹ the *Biosphere Conference* was held in Paris in 1968; and the Club of Rome’s report *The Limits to Growth*³² was published in 1972, anticipating the *Brundtland Report* by some 15 years. The Club of Rome’s report employed the term “sustainable” as a contemporary discussion. Greenpeace was founded in 1971 initially to protest American nuclear testing in Alaska, and was to become the visible (but radical) cheerleader for ecological concern.

1.8.1 Post-World War II Concerns About the Environment

Much of this concern had arisen from the Bretton Woods Conference of July 1944 which induced globalised economic growth. United States President Truman’s clarion call in 1949 for global “development” was also cause for environmental concern. Both calls were borne by the need for wide-spread reconstruction after World War II, and were the motivating factor behind the establishment of the post-war economic system – a system which, it became clear, has led to

³¹ Rachel Carson *Silent Spring* (Hamish Hamilton Limited, London, 1963).

³² D Meadows, D Meadows, and J Randers *Limits to Growth* (2nded Universe Books, New York, 1972).

accelerated environmental degradation and has eventually demonstrated that it is not sustainable.

1.8.2 United Nations Support for Environmental Sustainability

Prior to 1971 there were various environmental ginger-groups, for example the Club of Rome was founded in 1968 (which deals with a variety of international issues, not just environmental matters). The environmental movement was finally endowed with some degree of official sanction when the United Nations became involved in ecological matters. That body initiated the United Nations Conference on the Human Environment in Stockholm in 1972, and subsequently its branch, an independent body named as the World Commission on Environment and Development' as a response to economic globalisation and environmental degradation published its report *Our Common Future*,³³ delivered in 1987 and which laid the groundwork for a subsequent series of consequential "Earth Summits" beginning in 1992.

1.9 Commission on Sustainable Development

Subsequent to the 1992 Summit at Rio de Janeiro, the United Nations General Assembly established the Commission on Sustainable Development (in December 1992) and which is directly responsible for reviewing the progress of the implementation of "Agenda 21" of which New Zealand was a foundation signatory. This initiative was introduced at the Rio Summit, and is largely responsible for the establishment of the growing worldwide agitation towards

³³ World Commission on Environment and Development *Our Common Future* (Oxford University Press, Oxford, 1987) also known as the *Brundtland Report* after Gro Harlem Brundtland, the chairwoman of the Commission and former Labour Party Leader (and later Prime Minister) of Norway. It is probably fair to argue that the Brundtland report, like the Apollo 17 photograph, is a unifying force but a unity which has blossomed as a defence to a threat – a worldwide threat of ecological (and therefore ultimately social and economic) disaster.

sustainability. The focus of the Rio Summit was the drive to introduce to the world the paradigm of “sustainable development”. This notion stresses the reflection that equitable social and economic development – not the least of which is the needs of future generations which must be factored into the equation – relies on the protection and preservation of our natural resources with effective proposals to prevent ecological damage. “Sustainability” has since become an accepted but urgent concept in environmental matters. It is seen as a matter of survival:

Amidst the wailing sirens of the rescue operations undertaken in the name of some lifeboat ethics, the pressure on peoples and countries to conform to an emergency discipline will be high. As soon as worldwide strategies are launched to prevent the boat from capsizing, things like political autonomy or cultural diversity will disappear as the luxuries of yesteryear. In the face of the overriding imperative to secure the survival of the planet, autonomy easily becomes an anti-social value, and diversity turns into an obstacle to collective action. Can one imagine a more powerful motive for forcing the world into line than that of saving the planet?³⁴

Our Common Future (the very title reflects the unity suggested by the Blue Marble photograph) makes for extremely thought-provoking reading. Its very clear message is that humankind as a species – by virtue of its rate of expansion and consumption of natural resources – is living an unsustainable lifestyle, similar to some countries of late borrowing money beyond their capacity to repay. The Report examines a sad list of catastrophes threatening the global ecosystem. Both rich and poor nations are over-drawing their environmental bank accounts which will leave an uncertain legacy for future generations. The planet Earth is simply not capable of sustaining the current rate of consumption of resources, especially non-fungible resources like water.

³⁴ Wolfgang Sachs *The Development Dictionary* (Zed Books Limited, London, 1992) at 108.

In essential terms the Report drew a nexus between the conspicuous inequalities among nations and environmental damage: wealthy nations are somewhat shielded from the ecological impact of their lifestyles, and the poor nations are simply unable to take care of their environment. Moreover the citizens of poorer nations tend to do whatever is required to subsist, let alone develop, and thereby degrade their environment more than do the citizens of rich ones. Therefore a dramatic redistribution of wealth is a vital component in the Brundtland tool-box; it is an unashamedly Socialist discourse.

The report urged a return to multilateralism, with the pronouncement that a combination of population control, new technology, and sustainable development will stem the tide of destruction.³⁵ The creed of “sustainable development” is specified as development by which humanity can meet the needs of the present generation without needlessly compromising the ability of future generations to meet their own needs.³⁶ It is touted as a general panacea for the world’s resource management challenges; it is not a palliative measure.

The challenge facing the Commission was simply to win the hearts and minds of the world, but the on-going challenge for “sustainability” as a principle is more practical, that is to ensure resource renewal and substitution, together with new technology (although it is noteworthy that American technology was unable to save New Orleans in 2005, despite the fact the risks to the city had been well identified) and to ensure economic growth outstrips population growth, resource consumption, contingencies – and unplanned aberrations.³⁷

³⁵ *The Limits to Growth* had been criticised for assuming an exponential growth in population and consumption, but an incremental development of technology.

³⁶ *Our Common Future*, p 8. The report is silent on what constitutes “needs”, but does talk about essential needs – food, clothing, shelter, and jobs.

³⁷ Barbara Ward in *Space Ship Earth* maintains during World War II the USA added the equivalent growth of a century to her economy (p 10).

1.10 Brundtland Report

Despite a plurality of epistemological and normative perspectives on what actually constitutes “sustainability”, and various interpretations on the concept of “development”, the general objectives of the *Brundtland Report* were fundamentally embraced worldwide.³⁸ New Zealand in particular had already included the notion of sustainability into legislation:

An Act to –

(c) Ensure that, in the management of natural and physical resources, full and balanced account is taken of –

(iv) the sustainability of natural and physical resources...³⁹

Issues of recycling and renewable energy (wind power, photovoltaics, and hydro-electricity) entered the discussion in the late 20th century, and currently in the 21st century concerns of greater global awareness of climate change and human activities accelerating the same together with discussions about ecological economics expand the debate beyond the scope of this discussion. The doctrine of sustainability was initially intended to relate to the management of all natural and physical resources, including the allocation of water, and the Brundtland Commission’s primary argument was that human economies and social systems should reflect the capacity of the environment to accommodate these human organisations, and this is the thrust of this research.

With this background, New Zealand embarked in 1991 on legislative reform of its management of natural resources.

³⁸ Switzerland, Canada, Norway, Australia, the Netherlands, and especially New Zealand were all out of the stalls very quickly in embracing the Report.

³⁹ Environment Act 1986, title. This Act came into force some 4 months before *Our Common Future* was published.

1.11 The Resource Management Act 1991.

Sustainability of water resources was in fact a matter of constraint for the arid American west. In historical terms and speaking generally, pre-colonial New Zealand and pre-colonial America were geographically remarkably similar: an essentially unspoiled territory rich in natural resources and fertile soils, thinly populated by self-sufficient and self-reliant locals, but colonised by invasive and acquisitive outsiders. The obvious exception is the parched western states of America.

1.11.1 Contrast with the Western United States of America

The startling difference between New Zealand and the western United States is the amount of water resources available. New Zealand had abundant supplies; the western United States did not. For the most part the western United States' water policy has been focussed on supply initiatives (both delivery and allocation), but an important deduction of this research is that the American notion of "beneficial use" was a remarkably sensible home-grown system intended to promote the sustainability of a natural resource recognised for its critical importance at a time when such a notion was not accepted for other resources.

New Zealand's initiatives on the other hand have traditionally taken supply as a given, and focussed variously on flood control in the 1940s,⁴⁰ pollution control in the 1950s,⁴¹ irrigation and power development in the 1960s and 1970s and early 1980s,⁴² all largely reactive resolutions to specific problems,

⁴⁰ For example Soil Conservation and Rivers Control Act 1941.

⁴¹ For example Waters Pollution Act 1953.

⁴² For example Water & Soil Conservation Act 1967; National Development Act 1979; Clutha Development (Clyde Dam) Empowering Act 1983.

but focussed on environmental aspects since the 1980s⁴³ (an avoidance, or sustainability approach). The environmental approach culminated in the Resource Management Act 1991.

1.11.2 1980s Reforms

The fourth Labour Government took office in New Zealand in 1984 fired with a general reformative zeal. The environment was a major plank. Several major legislative initiatives reflected this idealism. The Environment Act was passed in 1986 with the expressed purpose *inter alia* of taking a “full and balanced account of ... the intrinsic value of ecosystems; and ... the sustainability of natural and physical resources; and the needs of future generations”.⁴⁴ The Act also established the office of Parliamentary Commissioner for the Environment.

The Conservation Act was passed the following year and again the Minister for Conservation was charged with environmental husbandry. The Act established the Department of Conservation with the objectives of *inter alia* of managing “... for conservation purposes, all land, and all other natural and historic resources...” as well as promoting “...the benefits to present and future generations of ... the conservation of natural and historic resources generally...”⁴⁵

Both of these statutes recognise the importance of protecting ecosystems, and the interests of future generations, a notion central to the *Brundtland Report* published the same time (April 1987) as the Conservation Act came into force (the Royal assent was given on the 31 March 1987 and the Act came into effect the next day).

⁴³ For example, the Water and Soil Conservation Amendment Act 1981; Environment Act 1986; Conservation Act 1987; Resource Management Act 1991.

⁴⁴ Environment Act 1986, title.

⁴⁵ Conservation Act 1987, s6.

The subsequent major reform was the passing of the Resource Management Act in 1991. This Act adopted the overarching principle of “sustainable management” intended to pilot the use of water, and other environmental activities.

1.11.3 Legislative History of the Resource Management Act

The Resource Management Act was a significant undertaking – it was probably the largest piece of legislation to come before the House as a single measure – and while the general public of New Zealand may not have been well acquainted with the *Brundtland Report*; evidently some constituents were familiar with the general thrust of the Resource Management Bill, as there were over 3,500 submissions received, more than 50 public meetings were held, and many hui, over a two-year Resource Management Law Reform period. In short, the Act was a national undertaking of some consequence⁴⁶ with spirited participation from a public well aware of the stakes, possibly as a consequence of the furore created by the introduction of the National Development Act in 1979, which tended for economic reasons to ride rough-shod over environmental concerns.

The Bill was introduced by the Honourable Geoffrey Palmer (as he then was), then-Minister for the Environment. New Zealand was the first country in the world to write the Brundtland principle of sustainable management⁴⁷ as the guiding principle to environmental matters. The Act significantly replaced many *ad hoc* statutory provisions that lacked any unifying approach or principle.

⁴⁶ The Bill developed over a total of 4 years’ consultation involving two Governments of different persuasions.

⁴⁷ The *Brundtland Report* actually refers to “sustainable development” which is a somewhat different concept than “sustainable management”. The former appears anthropocentric and the latter biocentric in nature.

In his speech the Minister stated “[The] new system will promote sustainable management of natural and physical resources, and with that will provide for considerably greater efficiency in the planning and consent processes.”⁴⁸ This obviously includes water allocation. The Minister noted: “The system it establishes will ensure that all relevant values are taken into account in reaching resource management decisions, and that it is done in a fair, consistent, and efficient manner.”⁴⁹

Before the Bill could be passed, a new government was elected. In the third reading, the new Minister for the Environment, the Honourable Simon Upton, went to some trouble to discuss the Purpose clause and to explain the thrust of the new concept: “It has only one purpose – to promote the sustainable management of natural and physical resources.”⁵⁰ He added: “The Bill should be seen as legitimising intervention only to achieve its purpose.”⁵¹ He also said that the courts would take Parliament’s intentions into account:

Given that the purpose clause of a major code such as this will inevitably invite judicial consideration ... it is important that certainty is quickly established on this point. To the extent that judicial notice is taken of *Hansard* – and I hope that it will be in this case – I should like to take the trouble to make a carefully considered assessment of the Parliament on this occasion.⁵²

The Minister was afforded the opportunity to reinforce his message in 1995 when he was invited to deliver the Stace Hammond Grace Lecture (the Minister’s former employers) at the Waikato University Law School. In his lecture the Minister delivered a lucid and perspicacious consideration of the role

⁴⁸ (December 11989) 503 NZPD 14166.

⁴⁹ *Ibid*, at 14166

⁵⁰ (July 1991) 516 NZPD 3018.

⁵¹ *Ibid*, at 3018.

⁵² *Ibid*, at 3019.

of purpose clauses in general, and that of the Resource Management Act in particular. It is worthwhile reciting the purpose section of the Act in full:

5 Purpose

The purpose of this Act is to promote the sustainable management of natural and physical resources.

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 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.

The section describes a theoretical integrated management approach to environmental husbandry and clearly describes the outcome sought by Parliament. Upton states that by proceeding to provide a detailed definition of “sustainable management”, the Act goes further than to articulate a desired “end” but rather elevates “sustainable management” to the status of a principle. To this extent, Parliament has acknowledged the Department of Scientific and Industrial Research opinion in the resource management law reform debate that “sustainability” as a concept “should be applied in law in much the same way as other general concepts such as liberty, equality and justice.”⁵³ By giving a statutory definition to the term, the legislature avoids the continental approach to statute-drafting which employs the use of abstract notions and which differs from

⁵³ DSIR comments, appendix to Cronin, K. “The Relationship Between Sustainability and other Objectives for Resource Management” Resource Management Law Reform Core Group, *Sustainability, Intrinsic Values and the Needs of Future Generations*, Working Paper No.24 (Wellington, Ministry for the Environment, July 1989).

the common law system of specific definitions. The intention is to try to elevate the expression from a vague general and abstract social/political notion (which is really a doctrine for political analysis rather than legal definition) to something the common law may get its teeth into.

1.12 The Resource Management Act and Matters of Water Allocation.

An examination of the genesis of the Resource Management Act assists in a determination as to whether or not its principles have been correctly applied in relation to water allocation in New Zealand. As already noted, a problem in New Zealand is the adoption of a first-in-first-served system of water allocation. Given that the Resource Management Act did not directly address the question of methods of distribution, those rules have been promulgated by the court system notably the Court of Appeal in *Fleetwing Farms Ltd v Marlborough District Council*,⁵⁴ and the High Court in *Aoraki Water Trust v Meridian Energy Limited*.⁵⁵

It follows that significant matters to be addressed in this research in terms of the sustainability precept in the Resource Management Act are to examine first whether the first-come-first-served system is the best system to meet the sustainability requirements of section 5 of the Act, and secondly how the principle became dominant in New Zealand law. These examinations will involve an enquiry into the principles of the Resource Management Act, and whether the *ratio* of the consequential cases is indeed in conformity with those principles.

⁵⁴ *Fleetwing Farms Ltd v Marlborough District Council* [1997] NZLR 257.

⁵⁵ *Aoraki Water Trust v Meridian Energy Ltd* [2005] 2 NZLR 268. The High Court was, of course, bound by the earlier Court of Appeal ruling.

Further, perhaps consideration should be given to augment the instruction for efficiency contained in section 7(b) of the Resource Management Act by the introduction into the allocative process of some notion of “beneficial use” as mentioned by Cooke P in *Keam’s Case*,⁵⁶ but developed along the lines of western United States’ thinking. An approach of this nature can also be justified on the simple grounds of the proper husbandry of a strategic and non-fungible natural resource. Given the parlous state of our catchments it could be argued that the mere system of allocation is only part of the problem; once the catchments are fully allocated (under whatever system) there will be no provision for future generations. Some appropriate mechanism like a system allowing effective transfer of water rights will need to be included in the bureaucratic structure to enable the effective and efficient transfer of allocated water, either partially or temporarily that is to say a reallocation system. Such a system might provide a way for new users to gain access to water, and is one of the options canvassed in all four Land and Water Forum reports.

The New Zealand Institute of Economic Research also favours the idea of the trading of water rights.⁵⁷ Therefore a critical question is whether it might be better as a matter of policy for New Zealand to adopt a regime of water markets complemented by the principles of a western United States-type doctrine of beneficial use in an attempt to protect the integrity of the market system and to ensure the resource is not simply squandered as were so many other natural resources in nineteenth century America.

As we shall see there is a large volume of literature discussing sustainability as a construct both in New Zealand and overseas prior to the passing of the

⁵⁶ See note 30, *supra*.

⁵⁷ See “Flowing on from the NPS” (July 2011) NZIER Insight No 38; “Water Management in New Zealand: A Road Map for Understanding Water Value” March 2014, NZIER Public Discussion Paper 2014/01 <www.nzier.org.nz/publications/water-management>.

Resource Management Act, and much since. Before a discussion of the cases can be undertaken, we need in the next chapter to discuss the principle of sustainability and its location within the architecture of the Act. This research will conclude that a reform of the process of the reallocation of water rights in New Zealand is essential. Reform will actually be ultimately obligatory as the effects of current allocative inefficiencies are compounded by growth in economic development and population, and the harm of climate change. “Sustainability” and the place of a limited and non-fungible resource like water within its construct is therefore a pertinent discussion in the next chapter.

2 Chapter 2

2.1 A Brief Introduction to the Notion of Sustainability.

Chapter 1 has demonstrated that the drive for sustainability in administering natural resources including water is as clear in New Zealand as it is overseas. The objects of the Environment Act 1986 state that account must be taken of the sustainability of natural and physical resources.

The Resource Management Act 1991 has as its principal object the promotion of the sustainable management of natural and physical resources. An alteration to New Zealand's allocative (or more likely re-allocative) processes to accommodate the needs of future generations will require an analysis of the sustainability construct. Further, the first-come-first-served method of allocation of these resources as established by the leading case of *Fleetwing Farms Ltd v Marlborough District Council*,¹ needs to be examined to decide whether it is an appropriate model for sustainable management. The detrimental effect of the consumption of Mother Earth's resources may be lessened by the adoption of a sustainability approach.

2.2 Literature Review

Cornucopian and Promethean discourse suggest that resource yield is not a problem, but rather shortages will galvanise human ingenuity to discover alternatives and solutions.² Given that there is no known substitute for water, such a position in that case may seem somewhat naïve. Dryzek points out that by and large the cost of some natural resources had fallen in real terms over the last decade up to 1997 (suggesting a greater supply had a downward influence on

¹ *Fleetwing Farms Ltd v Marlborough District Council* [1997] NZLR 257.

² See John S Dryzek *The Politics of the Earth* (Oxford University Press, Oxford, 1997) at 44-60.

price);³ however, the fact that the trend had persisted then for some time is no guarantee it would persist into the future.⁴ A more mainstream view is to regard the Earth's resources as a capital sum steadily reduced by expenditure.

Philip Elder makes the point that “sustainable growth” is an oxymoron; population expansion will ultimately reach a point beyond where the earth's ecosystems are able to support it.⁵ He goes on to make the point:

Past conflicts over distribution have been simpler because a growing economy improved the lot of the poor without sacrifice by the rich. But when the pie is no longer growing, only significant redistribution will work.⁶

Elder is suggesting that the allocation of a finite resource will require meaningful future management. The unpalatable truth is that at the mercy of consumption, conspicuous or otherwise, all non-renewing resources will sooner or later disappear – as well as those renewing resources consumed beyond their rate of replenishment occurring through natural processes.

This reality has become generally recognised and, as a result, the notion of “sustainability” has become an important catchphrase and somewhat over-used,⁷ so before the idea of sustainability can be discussed it is necessary to define exactly what it is that is being considered. Interestingly the verb “sustain” and the adjective “sustainable” do not necessarily share exactly the same sentiment. The verb has a number of meanings, mostly related to the concept of keeping going

³ Ibid, at 47.

⁴ In fact it didn't: see Tim Worstall “But Why did Julian Simon Win the Paul Ehrlich Bet?” (2013) Forbes <www.forbes.com/sites/timworstall/2013/01/13/>.

⁵ P Elder “Sustainability” (1990) 36 McGill L J 831 at 835-6.

⁶ Ibid, at 852.

⁷ Reference has even been made of the concept of “sustainable warfare”: “green” explosives which produce ammonia as a by-product rather than the more polluting nitrogen oxide. See <<http://io9.gizmodo.com/393679/green-explosives-save-the-world-through-sustainable-warfare/>>.

and carrying on,⁸ and has been in English since about the late 14th century. The adjective, however, means⁹ “capable of being upheld or defended; maintainable” and did not enter English until the mid-19th century. One of the various meanings of “sustain” is in the sense of “providing sustenance”¹⁰ and it from this meaning the word “sustainable” has come. However, the variable notion of ‘sustainability’ is an army marching to many different drumbeats. It may be seen in ecological terms:

Sustainability is simply a term to describe a rate of resource throughput which can be maintained within the threshold – or carrying capacity – of biological and physical systems. It requires recognition of the limits of ecological systems, and adjustment of the rate of resource use and waste disposal within those limits.¹¹

The Brundtland Committee worked an anthropological viewpoint of sustainability: “...to ensure that [humanity] meets the needs of the present without compromising the ability of future generations to meet their own needs”¹², and it is from this proposition that its Report is referenced. The United Kingdom government is using a more platitudinous definition: “Sustainable development is about ensuring a better quality of life for everyone, now and for generations to come”.¹³

Justice Peter Salmon stated:

⁸ It derives from the Latin *tenere* to hold, keep.

⁹ These meanings are those to be found in the *Oxford English Dictionary*. (1st Edition Oxford University Press, Oxford 1933).

¹⁰ See section 5(2) (a) Resource Management Act 1991.

¹¹ Cronin, K “Practical Implementations of the Sustainability Objective” in Resource Management Law Reform Core Group. *Sustainability, Intrinsic Values and the needs of Future Generations* Working paper No 24 (1989) Ministry for the Environment p 3.

¹² “Needs” in the context of the Report, it must be argued, refers to basic human needs like food, shelter, clean water. (See p 8). However what of a refrigerator, television, and car in every household in extremely populated countries like China and India?

¹³ HM Government “Securing the Future” (2005) www.govt.uk/government/uploads/system The UK Government Sustainable Development Strategy. Such a definition is long on virtue but short on precision.

Most definitions of sustainable development reflect this dual goal of **intra-** and **inter-**generational justice and the means of integrating environmental, social, and economic policies. For example, Judge Weeramantry, Vice President, International Court of Justice and one of the world's leading jurists has said:

‘In the first place, what is sustainable development? It represents a delicate balancing of competing interests. It represents the balance between the concept of development and the concept of environmental protection. The concept of development is a human right.¹⁴ There is no room any longer for denying it this legal status. The concept of environmental protection is likewise a very important foundation of various human rights, such as the right to life, the right to an adequate standard of living and the right to health.’¹⁵

Justice Salmon is suggesting sustainability is a matter of juggling the interests of the biosphere, human culture and human economics.

Economist Herman Daly's general rule of consumption of renewable resources was simply that the sustainable rate of use can be no greater than the rate of regeneration of its source, which is somewhat self-evident.¹⁶

Molly Melhuish provides a more expanded definition:

Sustainable management of renewable resource systems maintains and supports their capacity to renew themselves, so they can withstand stress and shock, and continue to yield natural resources for human use [an unabashed anthropocentric construct] over the long term (although shorter-term cyclic decrease followed by increase in harvestable resource stocks may be allowable).¹⁷

¹⁴ As defined by humans however and therefore imbued with a conflict of interest.

¹⁵ Peter Salmon “Sustainable Development in New Zealand” Address to Auckland Branch Resource Management Law Association (2002) <www.rmla.org.nz/librarydoc/index/order>.

¹⁶ See Herman E Daly “Economics in a Full World” (2005) *Scientific American* 100.

¹⁷ *Incorporating ‘Sustainability’ Into Natural Resource Law* Resource Management Law Reform Working Paper No. 24 (Ministry for the Environment (1989), p1.

2.3 Sustainable Yield

Thus, sustainability requires an inbuilt safety device to withstand extraordinary circumstances. The corollary to this is that a sustainable yield of any natural capital should be the yield that can be seized without diminishing the base of capital itself, even in unusual periods. Given the capital of renewable resources like water varies over time (that is the maintenance needs of ecosystems change) so does the amount of the sustainable yield.

The favourite example given as a renewable resource in general commentary is that of fish stocks, but the general principle applies to water and other renewable resources. Ignoring the principle of density-dependent growth to which fish and other living creatures are subject, and substituting a simple rate of replenishment, the following graph illustrates the point of sustainable yield of a certain water resource. The horizontal axis represents the size of the resource, and the vertical axis the rate of replenishment.

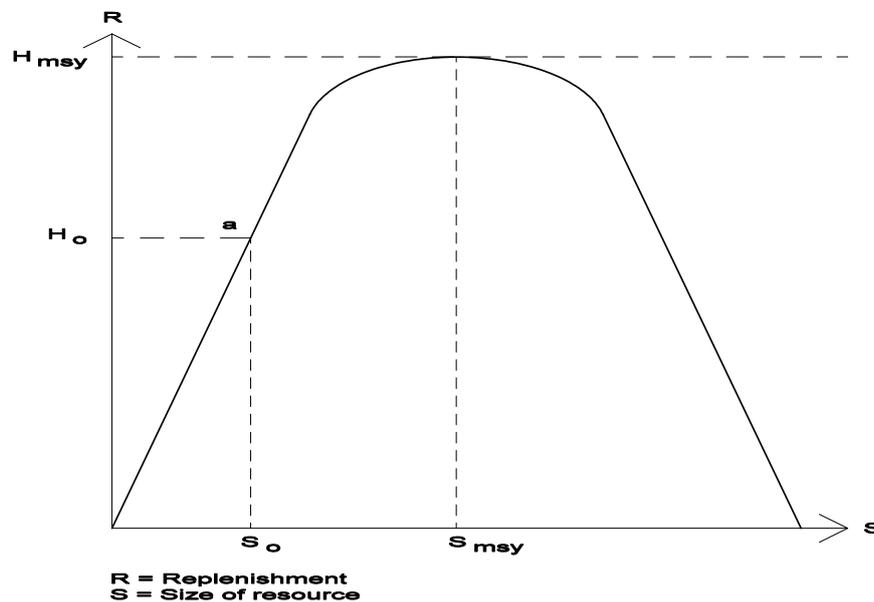


Figure 1: Sustainable yield Adapted from Michael S. Common *Sustainability and Policy* (Cambridge University Press, Cambridge, 1995 p.179-180).

Replenishment is greatest at resource size S_{msy} , and at the end of the S axis, replenishment ceases altogether. A sustainable extraction rate is shown. If a resource size of S_0 is accepted, then an extraction rate of H_0 will leave the resource with a surplus to cover dry periods, whereas an extraction value of H_{msy} (maximum sustainable yield) will put the resource at risk of overexploitation. It is clear those charged with the function of allocating resources, non-renewable or renewable, will need to exercise a degree of circumspection and discretion when doing so.

2.4 Human Impact

The human species is not divorced from the natural world despite the fact that it sometimes acts as if it were, but is for better or worse an integral part of it. Economic activity generally takes some levy from the natural environment. In the case of water, although essentially a renewable resource (at least in most cases but not, for example, in a blind aquifer) – pollution also takes its toll – serious ecological damage will occur unless extraction and use are managed prudently, and the losers are the natural environment (immediately) and future generations (subsequently).

Clearly humans are going to have an impact of some sort on the environment and probably the issue is to define the optimal impact we have, which is after all the function of normative economics. Tietenberg and Lewis make an interesting point in which they suggest the environmental/economic dynamic is a closed system.¹⁸ The environment *per se* cannot be accurately described as entirely closed as it receives most of its energy from the sun. The Earth's freshwater system however is definitely a closed system.

¹⁸ Tietenberg, T and Lewis L, *Environmental Economics & Policy* (6th ed, Pearson Education Inc, Boston, 2010).

The important implication of this assertion is the first law of thermodynamics – matter or energy cannot be created or destroyed. Thus the flow of produce passing into the economy from the environment must either accumulate in that system, or be discharged back into the environment as waste. If the accumulation stops, a balance has been reached between inflow and outflow. A model of this nature is an anthropocentric – and outdated – metaphor for water. All water coming in to economic use must either be used, or stored for later use, or it will pass back into the environment.

Water finding its way back to the environment is “waste” in the commercial sense that it is not capable of providing a benefit to the economy, but also may be waste in the environmental sense that it is spoiled by pollution. Waste in this sense affects the “environment” (as broadly defined by section 2 of the Resource Management Act) by making it less capable of providing for the economy, and less able to provide the life-supporting systems that we and other species rely on. This relationship implies the second law of thermodynamics – that entropy increases (that is to say energy no longer available for work).

In other words as the conversion of one form of energy to another is never totally efficient, some energy is always lost during the conversion and the rest, once consumed, is lost forever. Further, in a closed system – like water – and in the absence of new forms of input that system must eventually use up its energy and life will cease to function. However the planet continues to receive solar energy and, because entropy law suggests there is an upper limit to the flow of this solar energy that can be sustained, once our stored energy (fossil fuels, nuclear energy, water etc.) is consumed, the amount of energy available to us will be determined by this flow, together with energy we can store up (through dams, trees etc.). Accordingly we will come to rely on solar energy, and economic growth will be limited by its availability.

There is the possibility of new technology and substitution in some cases – however this is not the case with water. The debate is in basic terms therefore a matter of inter-generational equity, and as such can be discussed in terms of

distributive justice. Sustainability is probably not an aspect of distributive justice that, say, John Rawls would have debated since he considered justice to apply to humans only without the inclusion of non-humans.¹⁹ The debate goes further than one simply about ecology because future generations will be affected, and the argument shifts therefore very quickly to a question of intergenerational equity.

Consequently, a paradigm shift in reasoning as exercised by democratic liberals could see a liberal theory of justice extended to the environment. This will involve a re-think of traditional western ideals of humans' relationship to and attitude towards the Earth.²⁰ Just how successful this is, however, is a matter of some conjecture.

In broad terms, true liberal democrats view the natural environment as a factor to be included in a list of comprehensive ideals involved in the dialectics of justice, law, religion, politics, morality and so on, which make up the complicated club sandwich that is the institutional, constitutional, and philosophical framework of modern society. Under this model, water resources and the natural environment must take their chances in the democratic reconciliation between the various factions. In other words, the ecosystem is at the mercy of democratic majorities which might receive differing analyses during various polemics from time to time, as all are in constant flux. It is by definition an anthropocentric discourse and accordingly there is no strong natural obligation to biocentrism.

In broad-brush terms, ecologists have the natural environment at the core of their thinking, especially deep ecologists (who would have us restore the Garden

¹⁹ John Rawls *A Theory of Justice* (Harvard University Press, Cambridge Massachusetts, 1971).

²⁰ "Be fruitful and multiply, and replenish the earth, and subdue it; and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth" *Bible* Genesis 1: 28.

of Eden) in the mould of Naess and Lovelock.²¹ Rather than interests in the ecology being added as a layer of concern to social systems, ecological theorists prefer to overhaul each individual system itself and add a natural environmental ethical flavour to modify these individual norms. It is an entire reconstruction, brought about by a growing awareness of simple ecological justice in the sense that not only that other life forms are entitled to their place on earth, but also an understanding of, and discomfort at, the damage the human species is inflicting on the planet, and by extension, to other life forms – and by further extension to ourselves.

Rawls and his concepts of justice are, on this basis, *passé*: the natural environment and all other species of living creatures do not have any chance of making any decisions under Rawls' "veil of ignorance", and the question of Rawls, and for the utilitarians from whence he sprung for that matter, is simply whether "equal basic liberties compatible with a similar system of liberty for all" and "the greatest good for the greatest number" may be a clarion call for the destruction of our ecosystems.

2.5 The Biocentric/Anthropocentric Debate

The most important issue therefore is the decision as to what is to be sustained – the natural environment or human institutions (the economy, cultural and recreational structures, social justice etc.). These two impact on each other, but as one candidate for office with Hamilton City Council observed in the 2010 campaign (the aptly-named but ultimately unsuccessful Mark Servian) "The economy is a wholly-owned subsidiary of the environment", somewhat reflecting

²¹ Arne Naess "The Shallow and the Deep, Long-range Ecology Movement. A Summary" (1973) *Inquiry: An Interdisciplinary Journal of Philosophy* 16:1, 95-100 <<http://dx.doi.org/10.1080/00201747308601682>>; James Lovelock "Gaia Seen Through the Atmosphere" (1972) *6 Atmospheric Environment* 579.

a notion contained in clause 20 of the 1980 World Conservation Strategy report (this quote was originally from economist Herman Daly).

An accountant, especially, and an economic positivist – what Aneurin Bevan might describe as a “desiccated calculating-machine” – may have a different appreciation of sustainability than an environmental ecologist.²² This ecocentric/anthropocentric moral discourse has been active over the 60 years since Aldo Leopold first articulated it and it has still not been adequately resolved. In truth however it is probably rapidly becoming not just purely a matter of ethical standards but rather a matter of rudimentary exigency.

It is fair to say that historically humans have met increased demand by increasing supply – what Boulding would refer to as the cowboy approach.²³ This course will inevitably result in a depletion of any resource which is plundered in this way, and the exhortation of the *Brundtland Report* to slightly increase production is noted. As a result, humans will be forced by simple demand management into sustainable practices (for example maximising resource productivity), whether they like it or not.

Leopold actually talks in terms of an “ecological necessity” that humans come to some ethical compound with the animals and plants growing upon the land.²⁴ The general theory of Thomas Malthus is particularly relevant, that the power of population is indefinitely greater than the power in the earth to produce

²² But see Freer Spreckley’s 1981 expansion of traditional economic reporting framework, the triple bottom line theory: people, planet, profits. <www.locallivelihoods.com/cmsms/index.php?page=publications>.

²³ Kenneth Boulding “The Economics of the Coming Spaceship Earth” in H Jarrett (ed) *Environmental Quality in a Growing Economy* (Resources for the Future/Johns Hopkins University Press, Baltimore, 1966) 3.

²⁴ *A Sand County Almanac* (Oxford University Press, New York, 1966, The Land Ethic p217-241). The work was first published in 1949.

subsistence for man.²⁵ Malthus's classic argument is that population grows at a geometric progression (an exponential rate), whereas food only grows at an arithmetical rate (a linear progression). Malthusianism is reflected in the Club of Rome's publication *The Limits to Growth*.²⁶

The essential discussion therefore involves the resolution of the dialectics between economic production, sustainability, and justice to the environment. The fundamental question posed by traditional liberals is whether justice can be extended to nature at all, given that nature is neither a moral agent, nor is capable of extending justice in consideration of receiving it. An eco-centric view regards nature and humans as moral equals, a view traditionally yoked to notions of nature's intrinsic value,²⁷ and of goodness, and as such representing a preference perhaps not shared by everyone.

The nub of the debate is whether nature really does have value in its own right, or whether 'values' are an essentially human construct and therefore human values alone should be the basis for formulating policy. Such preferences are a product of value judgements and meta-ethical conclusions. Some will argue that humans are not always blessed with innate knowledge of what is good or bad, but being endowed with the power of reason are able to conclude what ambitions and what functioning will enhance their lives and well-being – as well as those that do not – an exercise in making a choice, which by definition is an exercise in volition:

Consciousness – for those living organisms which possess it – is the basic means of survival. For man, the basic means of survival is

²⁵ See Malthus, *An Essay on the Principle of Population*, Book 2 (Dent & Sons, London, 1973) at 304-315.

²⁶ D Meadows, D Meadows, and J Randers *Limits to Growth* (2nded Universe Books, New York, 1972).

²⁷ Rather like virtue being its own reward. See also definition of "intrinsic values" in section 2 Resource Management Act 1991.

reason. Man cannot survive, as animals do, by the guidance of mere percepts. A sensation of hunger will tell him that he needs food (if he has learned to identify it as hunger), but it will not tell him how to obtain his food and it will not tell him what food is good for him or poisonous. He cannot provide for his simplest physical needs without a process of thought. He needs a process of thought to discover how to plant and grow his food or how to make weapons for hunting. His percepts might lead him to a cave, if one is available – but to build the simplest shelter, he needs a process of thought. No percepts and no instincts will tell him how to light a fire, how to weave a cloth, how to forge tools, how to make a wheel, how to make an airplane, how to produce an electric light bulb or an electronic tube or cyclotron or a box of matches. Yet his life depends on such knowledge – and only a volitional act of his consciousness, a process of thought, can provide it.²⁸

Ayn Rand is close to Locke in her reasoning. Locke suggested our minds, *tabula rasa* at birth, gain simple ideas from sensations and form complex ideas by processes of consolidation. Rand is suggesting humans need to discover specific values that provide the requirements of life, and according to her, a code of values accepted by choice, which is by definition a code of ethics, that is the difference between right and wrong behaviour. She is suggesting a set of consequential moral principles where actions are designed to advance the common good, in this case survival.

Leopold similarly saw a progression of ethical sensitivity from the interpersonal to relationships with society as an entity and thence to relationships with “the land” (the natural environment)²⁹ This, he believes, will lead to a moderation of actions which were formerly based on simple expediency. Ultimately, if, as Leopold will have us believe, we humans will adopt environmental ethics – an accepted code of values (voluntarily according to Rand) – then cancerous damage to our environment, especially to Earth’s fragile water

²⁸ Rand A “The Objectivist Ethics” (1961) The Ayn Rand Lexicon: Objectivism from A to Z www.aynrandlexicon.com/ayn-rand-ideas/the-object.

²⁹ An echo of Norbert Elias’s theory of the civilising process: *The Civilising Process* (Blackwell, Oxford, 1994).

systems, will indeed be a great incentive for us to adopt a code of relevant environmental ethics, as this will be in our best interests, and will eventually be vital to our ultimate survival, and therefore may become a simple exercise in pragmatics. As Malthus suggests, population is obviously the Wild Card. It is possible we could reach the point (if we have not already) where there are not enough resources, especially water resources, to satisfy everybody's needs let alone wants.

Such a principle obviously demonstrates political philosophy or an academic construct rather than a universally accepted personal doctrine. Hardin's converse and pertinent (though largely metaphorical) theory suggests that individually people will act not in the interests of their community but rather in their own best interests, essentially because the individual will receive the benefits, the costs of which are shared among everybody else in the whole community.³⁰ Accordingly, Hardin advocates that the solution will require a paradigm shift in human values and ideas of morality to better embrace a universal sense of altruism.

Elder suggests education is an integral part of the reform process: "voluntary action is at least as important as government decree".³¹ Until such change is effected (if change can happen), Hardin's theory is more a guiding principle for authorities charged with allocating resources especially water resources and how those resources are used given their strategic importance than something that can easily be melded into the human conscience. Hardin's recommendation is that coercion is required rather than a bald reliance on

³⁰ "Tragedy of the Commons" (13th December 1968) *Science* Vol. 162 No.3859. This theory echoes Aristotelean discourse. Hardin was referring to "unmanaged commons" because some commons have been successfully managed – in some cases for centuries: see E Ostrom *Governing the Commons: The Evolution of Institutions for Collective Action* (Cambridge University Press, Cambridge, 1990). Also GG Stevenson *Common Property Economics* (Cambridge University Press, Cambridge, 1991).

³¹ P Elder "Sustainability" (1991)36 McGill LJ 831 at 837.

voluntary restraint, and specifically a permit system for extractive economic activities. In any event, *Our Common Future* suggests human conscience is subject to compulsion in straitened times that is people will do whatever they can, individually or as a community to survive,³² and this ultimately translates into a matter of intra-generational equity.

2.6 Practical and Ethical Considerations

In summary, sustainability may be seen not so much as a moral requirement as a practical necessity. Sustainability as an ethical proposition may have less to do with future generations as with problems closer to home and the current generation, given the damage climate change is inflicting on the planet now. In any event, the question of future generations is simply an anthropocentric perspective of a duty of care humans are coming to realise they have for the world's ecology.

Further, Malcolm Grant sees the question of the provision for future generations as an ethical minefield.³³ His argument is that humans are using resources at a rate that is prejudicing future generations (a simple statement of fact), but whether this is unfair to future generations is an ethical judgment, given that future generations will benefit from infrastructural and technological progress. Those who oppose sustainability argue that either the welfare of future generations is not our moral concern; or, if it is, they question whether it is more important than the organisation of contemporary society in terms of poverty and inequality, which would be only exacerbated by the pursuit of sustainability for future generations.

³² World Commission on Environment and Development *Our Common Future* (Oxford University Press, Oxford, 1987) at 27.

³³ *Sustainable Management: A Sustainable Ethic?* Paper delivered to Resource Management Law Association Conference October 1995. See *Frontiers of Resource Management Law* Resource Management Law Association of New Zealand Brookers Limited Wellington, 2012, at p 40.

On the other hand, those who support sustainability need to explain why the interests of future generations should take precedence over contemporary widespread poverty and inequality. Grant points out that we have demonstrated a dramatic inability to resolve the twin current problems of poverty and inequality of resource allocation without implementing complex programs to help future generations. Hardin suggests restraint cannot be left to the individual conscience, and the *Brundtland Report* tells us people in poverty will inflict whatever damage on the ecology they need to in order to survive. Hence some statutory restraint will need to be imposed to control the allocation of resources especially critical non-fungible resources like water; and this is the purpose of the effects-based Resource Management Act in New Zealand.

The idea of resource consumption as a sustainable activity, sustainable development had its naissance in the early 1970s in the expression “ecodevelopment” which became expounded by some international agencies (at first referenced mainly to rural development projects in the Third World) according to Abaza and Baranzini to describe the development and sustainability of natural resources which, according to the authors, represented a symbiosis of ecological and economic production.³⁴ (The word “symbiosis” in this context may be somewhat vague, but it essentially defines a mutually advantageous relationship, originally referring to people living together in a community. Currently the definition is somewhat more wide-ranging and while there is some sort of relationship between the environment and man’s institutions, it is difficult to describe it as symbiotic in its original meaning. It would probably refer to a type of symbiosis known as parasitism, where one organism derives benefit while the other is harmed.)

³⁴ Abaza H and Baranzini A (eds) *Implementing Sustainable Development* (Edward Elgar, Cheltenham 2002).

The earth's ecosystem is also the living-room for innumerable non-human species, which do not (in nature) rely on *homo sapiens* for their existence. Of course, "[d]evelopment cannot subsist upon a deteriorating environmental resource base; the environment cannot be protected when growth leaves out of account the costs of environmental destruction."³⁵ Shaw and Eichbaum give an anthropocentric viewpoint and describe environmentalism as a concern for protecting the environment *for human benefit* (emphasis added) whereas ecologism is a concern for the natural environment as a whole.³⁶ "Of the themes which characterise ecologism and environmentalism, sustainability – economic, environmental, and social – is the most important."³⁷ Given the Resource Management Act's concern for sustainability, it is important to examine how (and how far) that Act trades off human and ecological concerns.

2.7 Sustainability under the Resource Management Act.

The central debate about section 5 of the Resource Management Act focuses on exactly what it is supposed to mean. The wording suggests an approach somewhat wider than simply managing adverse effects on the natural environment.

Prior to the establishment of the final wording of Part II of the Act, which establishes the purpose of the Act and the principles by which this could be achieved, there was a fair amount of debate during the public consultation period relating to exactly what section 5 was trying to achieve. Many respondents felt section 5 was too anthropocentric, others that it failed to adequately provide for future generations. Some felt the section did not adequately cater for the

³⁵ World Commission on Environment and Development *Our Common Future* (Oxford University Press, Oxford, 1987) at 37.

³⁶ Shaw R and Eichbaum C *Public Policy in New Zealand* (2nd ed Pearson Education, Auckland, 2008).

³⁷ *Ibid*, at 150.

economy. The Treasury in particular was very critical.³⁸ Treasury submitted that it was inappropriate to incorporate social objectives, such as arbitrating the wants and needs of current and future generations in legislation concerned with environmental policy. Rather, it considered that the new Act should manage environmental impacts of human activity by allowing local authorities to impose minimum bio-physical standards, that is the bio-physical bottom line.

The discourse boiled down to a debate between those who hoped the statute would resolve inherent social, environmental and economic debates and those who hoped the statute would simply deal with the environmental effects of resource consents.³⁹ The then-Minister for the Environment, Simon Upton, felt the Review Group (under barrister Tony Randerson) in the final draft of the section achieved a bio-physical (and neo-liberal) perspective, and said so:

In adopting the present formulation of [section 5] the Government has moved to underscore the shift in focus from planning activities to regulating their effects of which I have spoken. We run a much more liberal market economy these days. Economic and social outcomes are in the hands of citizens to a much greater extent than they have previously been. The Government's focus is now on externalities – the effects of those activities on the receiving environment – and those effects have too often been ignored.⁴⁰

While Geoffrey Palmer gave a broad view of his understanding of Part II in his speech when the Bill was introduced, his successor Simon Upton (who spoke to the third reading) gave a rather more expanded view. Upton enthused

³⁸ See *Treasury Paper on Sustainability* (John Wilson) Resource Management Law Reform Working Paper No. 24 (Ministry for the Environment (1989).

³⁸ (July 1991) 516 NZPD 3019 (Resource Management Bill third reading).

³⁹ Review Group *Discussion Paper on the Resource Management Bill* (Ministry for the Environment), December 1990. In the case of water, of course, it is the *giving* environment that will suffer.

⁴⁰ Above, n 38.

about the economic and social outcomes of consents under the new Act being in the hands of citizens to a greater extent than under the somewhat *dirigiste* system of the former Town and Country Planning and the Water and Soil Conservation Acts, and how the new Act was focused on outcomes. He did acknowledge however that the new Act's sustainability prescription would inevitably need the kind of directive and controlling approach to economic and social activity that will require a "focus on trade-offs reached in adjudicative fora".⁴¹ The hope, of course, is that these forums will attune to the Act's principles and be sympathetic to those principles, if they can work out what they are.

2.7.1 An Examination of the Text of Section 5

Section 5, which encompasses the purpose and principles of the Act is actually extremely broad:

Notable though the Resource Management Act is for the aspirations and principles embodied in it, their very generality seems to have led in drafting to an accumulation of words verging in places on turgidity.⁴²

The "natural and physical resources" mentioned in subsections 1 and 2 includes "land, water, air, soil, minerals, and energy, all forms of plants and animals (whether native to New Zealand or introduced) and all structures."⁴³ Section 5 is divided into three cumulative parts – one ensuring the welfare of future generations, and therefore clearly anthropocentric, the second ensuring the welfare of ecosystems and therefore biocentric, and the third ensuring the welfare of the environment. This is not as biocentric as it might seem, because section 2 defines "environment" to include

⁴¹ Above, n 38.

⁴² *Auckland Regional Council v North Shore City* [1995] NZRMA 424 at 427. The judgment was delivered by Cooke P (Court of Appeal).

⁴³ Section 2.

ecosystems and their constituent parts, including people and communities; and all natural and physical resources; and amenity values; and the social, economic, aesthetic, and cultural conditions which affect matters stated in paragraphs (a) to (c) or which are affected by those matters.

It is this “unfocussed” definition of the word that creates a great deal of debate and can be confusing:-

...section 5 creates an obligation to avoid remedy or mitigate adverse effects on people and communities, and on social and economic conditions. The context makes clear that not just people’s health, safety and aesthetic preferences but also their economic well-being is to be protected from adverse effects. That conflicts with the general thrust of the objectives of the rest of section 5 and indeed Part II of the Act.⁴⁴

In his address to the Resource Management Law Association Conference in 1994, Mr Upton expressed the opinion that section 5 required that the matters in subparagraphs a, b, and c of section 5(2) must be secured whatever the planned activity. In other words his view is that people and their communities can provide for their health and safety only by ensuring that (a) the reasonably foreseeable needs of the future are met, (b) the ecological base for their wellbeing is sustained, and (c) the adverse effects of activities are avoided, remedied, or mitigated.

However, the only way Upton can come to this conclusion is to ignore the broad definition of the word “environment” in section 2(1). He was called

⁴⁴ Salmon G “Notes on Some Emerging Issues in Resource Management” (paper presented to Resource Management Law Association, Wellington , October 1994).

to task by Kerry Grundy over the matter and there followed a barely civilised debate between the two, as can be seen in Upton's response:⁴⁵

The answer is that, despite the curious artefactual nature of statutes in our legal system, Judges and others are supposed when the words on the face of a statute are less than clear, to frame their interpretation in terms of what Parliament intended. And in this instance I am perhaps uniquely aware of what was intended. That is because the drafting of s5 is largely mine. I chaired the Cabinet Committee that settled the final form of the bill and maintained a close oversight of its metamorphosis through the Select Committee. I was well aware of the "holistic" view Mr Grundy was arguing for as one policy alternative; and equally aware of the "balancing" view espoused by the development lobby. We consciously chose to impose a biophysical type of test because of a pragmatic view that there was a better chance of getting agreement on sustainability in those terms than the broader terms Mr Grundy argued for.⁴⁶

Upton's premise is that the section should be given a narrow interpretation to comply with the Act's ecological intentions. He ends his address thus: "sustainable practice, not semantic perfection."⁴⁷

The word "while" in section 5(2) has a critical meaning and has been the subject of much debate.⁴⁸ Professor Fisher's opinion is that reading "while" as a subordinating or strong conjunction the provision would come to mean the management function would be weaker than the ecological function that is to say short-term human values cannot take effect unless certain ecological values are sustained. However, with "while" read as a co-ordinating or weak conjunction, then human and ecological values have similar weight – the ecological/liberal

⁴⁵ See Kerry Grundy "In Search of a Logic: s5 of the Resource Management Act" (1995) NZLJ 40 and Correspondence at 124 and 125.

⁴⁶ Simon Upton (1995) NZLJ Correspondence at 124.

⁴⁷ Perhaps it may have been better to replace the word "environment" in the section with the word "ecosystems", or to give it a specific (narrower) meaning for the purposes of the section.

⁴⁸ See for example Fisher, DE "The Resource Management Legislation of 1991: A Juridical Analysis of its Objectives" in Brooker and Friend's Resource Management Act (1991) Vol. 1 at 9. Also Sarah Kerkin "Sustainability and the Resource Management Act 1991" (1992-1995) 7 Auckland U L Review 290.

democrat tension discussed above. Neither construction is ideal. A straightforward reading of the provision in the context of the tenor of the Act makes the subordinating case a somewhat inelegant use of the word “while” (the plain use of the word “if” would be more precise), but in certain cases subordinating conjunctions may be used as weak co-ordinating conjunctions (the “colourless use”) and used mainly as an elegant variation to avoid repeating the use of the word “and” (this word is already used 6 times previously in the first part of section 5(2)).

This conjunctive construction would, it is submitted, make for a more grammatically satisfactory reading of the provision but would definitely be counter to the Act’s sustainability imperative, to Bruce Pardy’s notion of an environmental bottom line,⁴⁹ and to both Geoffrey Palmer’s and Simon Upton’s yearnings. There is however a further sense of “while”, that is “during that time”, and “or so long as”.⁵⁰ This is also mentioned by Fisher as his preferred interpretation.

Thus the sustainable management function would only apply so long as the provisions of paragraphs a, b, and c of section 5(2) are adhered to. This interpretation, says Fisher, would give long-term environmental considerations some measure of control over short-term management objectives. It is less strict than “if”, and more demanding than “and”; an interpretation according to Sarah Kerkin that must be implemented, otherwise the Act’s purpose may never be fully implemented.⁵¹

⁴⁹ Below n 64.

⁵⁰ Oxford English Dictionary. (1st ed, Oxford University Press, Oxford 1933).

⁵¹ Sarah Kerkin “Sustainability and the Resource Management Act 1991” (1992-1995) 7 Auckland U L Review 290 at 298.

The semantic arguments have not reached into the heart of the matter: how to decide the dispute given the integrated management requirements of the Act. Despite a lack of guidance as to how the decision should be made, it is probably relevant to compare the Resource Management Act 1991 with the Water and Soil Conservation Act 1967. It is probably fair to say that both Acts represent a framework rather than a blueprint for addressing their core matters.

2.7.2 Case Law

The Court of Appeal in *Keam v Minister of Works and Development*⁵² confirmed the Planning Tribunal's approach to decision-making that a cost/benefit analysis should be undertaken and that a "broad test" would be appropriate, but that a weighing of advantages and disadvantages is not required if there are no significant disadvantages.⁵³

The Planning Tribunal's successor the Environment Court came to accept the "overall broad judgment" test, possibly as a result of the High Court decision in *New Zealand Rail v Marlborough District Council and Auckland Regional Council v North Shore City*.⁵⁴ "There is a deliberate openness about the language [of Part II], its meanings and its connotations which I think is intended to allow the application of policy in a general and broad way."⁵⁵

⁵² *Keam v Minister of Works and Development* [1982] 1 NZLR 319.

⁵³ *Ibid*, at 322-323.

⁵⁴ *New Zealand Rail v Marlborough District Council* [1994] NZRMA 70; *Auckland Regional Council v North Shore City* [1995] NZRMA 424.

⁵⁵ *New Zealand Rail v Marlborough District Council* [1994] NZRMA 70, at 86.

Ironically, about the same time as the Court of Appeal was hearing *Fleetwing Farms Limited v Marlborough District Council*,⁵⁶ the overall broad judgment test was established by three Environment Court cases.⁵⁷

However, the acceptance of this approach has now been called into question: *Environmental Defence Society v the King Salmon Company Limited*.⁵⁸ The Supreme Court in that case criticised the “overall broad judgment” approach as this did not, in the Court’s opinion, necessarily contemplate environmental bottom lines, and rather preferred a strict interpretation of planning documents when couched in prescriptive terms.

2.7.3 Further Interpretive Issues

There is actually a strong human-interest flavour to the provision. It is little wonder commentators (including some judges) have been constrained to complain of the “baffling complexity” of the section.⁵⁹ To muddy the waters further, sections 6 and 7 contain a large list of matters to be taken into account in achieving the purposes of the Act in relation to managing the use, development, and protection of natural and physical resources; it is overwhelmingly eco-centric in nature. Section 104, on the other hand, contains matters which must be taken into account by a consent authority; it is overwhelmingly anthropocentric in nature, including, oddly in contemporary economic thinking, section 2A (added in 2005) which compels the consent authority when considering an application to take into account the value of the investment of the existing consent holder.

⁵⁶ *Fleetwing Farms Limited v Marlborough District Council* [1997] 3 NZLR 257.

⁵⁷ *Trio Holdings v Marlborough District Council* [1997] NZRMA 97; *North Shore City Council v Auckland Regional Council* [1997] NZRMA 59; *Aquamarine Ltd. v Southland Regional Council* (C126/97).

⁵⁸ *Environmental Defence Society v The King Salmon Co Ltd* [2014] NZSC 38.

⁵⁹ See BV Harris “Sustainable Management” (1993) 8 Otago L Rev at 73.

The result is that the Environment Court and superior courts must juggle often competing values which are, by definition, incapable of being accurately comparable either in magnitude or in emphasis – with little guidance from the Act. Royden Somerville QC also makes the apposite and practical point that the value-laden matters in section 5 cannot be proved by primary evidence in quite the same way that adjudicative facts can.⁶⁰

Interestingly, the New Zealand Parliament chose the expression “sustainable management” over the Brundtland touchstone of “sustainable development”: it was apparently felt the former term was more specific than the latter as it was believed there would be some uncertainty about its concept and application.⁶¹ There was also the concern of the Review Group about the notions of the redistribution of wealth inherent in the Brundtland definition and the challenge of social inequities, and there were severe misgivings whether such concepts had a future in New Zealand environmental law. Another question for example is whether it is a proactive or reactive term. In any event “management” connotes mere administration or husbandry, whereas “development” suggests a structured process of growth.

Having said that, one view is that the practical effect of section 5 is it “encapsulates the fundamental underpinnings of the concept of sustainable development [the Brundtland construct] in the sense that it requires decision-makers to adopt an integrated perspective for managing natural and physical resources.”⁶² Rather than biophysical matters being a prime objective, this definition sees those matters as an equal ingredient along with social, economic, and cultural concerns in the decision-making process. This is an interpretation

⁶⁰ See Brooker and Friend *The Resource Management Act 1991: An Introductory Review*. (www.brookersonline.co.nz/databases/modus/environmentallib/rmresman/DISC).

⁶¹ Simon Upton *Purpose and Principle in the Resource Management Act*, (1995) Waikato L Rev 2.

⁶² Peter Skelton and Ali Memon “Adopting Sustainability as an Overarching Environmental Policy: a Review of section 5 of the RMA” (2002) 10 RMJ 1 at 4.

with which the Minister for the Environment responsible for the Bill's third reading, Simon Upton and his co-authors do not agree.⁶³ They suggest the fact that the broad Brundtland definition of sustainable development was discarded in favour of a more narrow definition argues against the integrated interpretation. They conclude that, while Skelton and Memon's interpretation is certainly possible, if that were Parliament's intention, the formula for sustainable development would have been adopted.

In our view, the plain wording of section 5 is easy enough to understand without recourse to concepts like sustainable development that are not referred to, or the insistence that an 'anthropocentric' reading of the section must necessarily involve weighing up everything against everything else. Neither do we find that Skelton and Memon add clarity in stating that section 5(2) contains "a definition or more correctly, a description of the term 'sustainable management' at least for the purposes of the Act." In our view section 5 (2) is a straightforward statutory definition that spells out what it is that is supposed to be 'promoted' by the Act.⁶⁴

The authors further argue that a biophysical interpretation cannot be dismissed simply on the basis that the section captures anthropocentric values. Any judgements under the Act about the importance of biophysical matters will be general judgements by humans reflecting human values, even if those values are not shared by everyone. The wording of section 5(2)(b) – "safeguarding the life-supporting capacity of air, water, soil, and ecosystems..." – provides a measure by which the interests of future generations (a beneficiary of the biophysical construct) can be gauged. If these resources can no longer support life, the interests of future generations are compromised.

The discourse is essentially an environmental ethical one, and reflects the debate between ecological theorists and democratic liberals. In terms of the Act,

⁶³ Simon Upton, Helen Atkins, and Gerard Willis "Section 5 re-visited: a critique of Skelton and Memon's Analysis" (2002) 10 RMJ 10.

⁶⁴ *Ibid.*, at 12-13.

the argument is whether the natural environment should be added as an extra component to the list of anthropocentric concerns in section 5, or whether the ecological element should be added to each of those concerns to the intent that interest in ecology permeates the whole anthropocentric dynamic. In the event the natural environment is only added as a layer of concern, it will need to take its chances in the interaction of all the others and will be at the mercy of value-based jurisprudence and democratic majorities. Certainly this is not the tone suggested by Mr Upton's speech, reproduced in *Hansard*: "The Government's focus is now on externalities – the effects of those activities on the receiving environment..."⁶⁵ (nor the Review Group's statement above).

The problem is not solved by the wording of section 5. Generally it states that the purpose of the Act is to promote (not achieve) sustainable management while sustaining the interests of future generations and satisfying certain ecological functions, leading to spirited debate.

Bruce Pardy argues for an ecological construct.⁶⁶ He contends that section 5(2) can be divided into 3 separate ideas, not simply following the 3 separate clauses in subsection 2. The first relates to the sustainable management in the use, development, and protection of only natural and physical resources which he claims targets only ecological elements.⁶⁷ However the Act defines "natural and physical resources" as including "structures" which are clearly human, thus laying the groundwork for example for a nature/heritage discord.⁶⁸ The second part states these resources are used, developed, and protected in a manner that provides for human social, economic, and cultural well-being and for human health and

⁶⁵ (July 1991) 516 NZPD 3019 (Resource Management Bill third reading). As already noted, what of the giving environment?

⁶⁶ Bruce Pardy "Sustainability: An Ecological Definition for the Resource Management Act 1991" (1993) 15 NZULR 351.

⁶⁷ *Ibid*, at 353.

⁶⁸ See S Rainbow "Heritage and the Resource Management Act" (1993) RMJ 12.

safety, and is clearly non-ecological. The third part, he contends, states these non-ecological goals are to be pursued while sustaining the potential of resources, safeguarding life-supporting capacity and avoiding adverse environmental effects which are also ecological in nature. Once again, the definition of “environment” in section 2 it is submitted is overwhelmingly anthropocentric.

Despite these inconsistencies, Pardy’s thesis, like Upton’s, is that the intention of the statute is ecological,⁶⁹ and, as ecological values are knowable, human input is not sustainable if it adversely affects those values. In other words he is advocating the establishment of ecological bottom lines. He concludes:

The purpose of the sustainability enquiry is to distinguish between the activities which do not change how ecosystems function and those that do. This purpose is apt to be lost if the question of sustainability is confused with whether an activity is socially, economically, or culturally advantageous. Such non-ecological considerations may be important, but they are separate. If an activity is not evaluated according to its effect on ecosystem function, ecological sustainability cannot be achieved.⁷⁰

Such a construct seems to be sensible. Without ecological sustainability there would be no social, economic or cultural sustainability. BV Harris concludes the section’s complexity together with its tendency to abdicate law-making responsibilities in favour of the courts make it too uncertain to be effective.⁷¹ In contrast, Geoffrey Palmer argues that the time when Parliament could spell out everything in black-letter law has passed (thus suggesting a Continental approach to law draftsmanship); but he does concede that there appears to be a reluctance among some judges of the Planning Tribunal (now

⁶⁹ A point made by Geoffrey Palmer: see *Environment – The International Challenge* Victoria University Press, Wellington, 1995) at 172.

⁷⁰ Above n 66, at 366.

⁷¹ BV Harris “Sustainable Management as an Express Purpose of Environmental Legislation: The New Zealand Attempt” (1993) 8 Otago LRev 51.

Environment Court) to boldly follow the intent of the legislation, which he says is clear enough.⁷² It is time for the courts to strike out on new and creative paths.⁷³

Barry Brunette suggests that, despite the differing views of section 5, applying the principles of that section to water resources would result in the following provisions:⁷⁴

- present water resource needs for social, economic and cultural well-being, as well as health and safety (section 5(2))
- the potential of water resources to meet the future needs of future generations (section 5(2) (a))
- safeguarding the life-supporting capacity of water resources (section 5(2) (b))
- avoiding, remedying or mitigating adverse effects of activities on water as a component of the environment (section 5(2) (c)).⁷⁵

The *Keam* test required that “any proposed use of natural water should be a beneficial use, and that the loss which might flow from the taking of the water should be weighed against the benefit which will result from its use.”⁷⁶ As noted the Environment Court is likely to have come to generally adopt an overall-judgment approach to matters before it, requiring it to make a decision using a broad judgment about whether the proposal is within the parameters of section 5 and whether it also promotes the sustainable management of natural and physical resources. If this is the case, as pointed out by Brunette, exercising this statutory discretionary power will now require more than a balancing of economic interests

⁷² Echoed by Simon Upton and his co-authors, who suggest the section be given a “straightforward” reading. See note 64 *supra* at 13.

⁷³ *Environment – The International Challenge* at 172.

⁷⁴ Barry Brunette “Freshwater Management and Allocation Under the Resource Management Act 1991: Does First-in First-served Achieve Sustainable Management Principles?” (2006)10 NZJEL 169.

⁷⁵ *Ibid*, at 191.

⁷⁶ *Keam v Minister of Works and Development* [1982] 1NZLR 319 at 322.

against the interests of the environment, but also the balancing of today's interests against the interests of future generations.

The question, of course, is how the superior courts have dealt with section 5, particularly in relation to allocation of natural resources which is at the heart of this enquiry. Geoffrey Palmer suggested:

Once an appropriate case reaches the New Zealand Court of Appeal, it can confidently be predicted that a suitably progressive yet workable approach will be taken to the Act. That Court has a sound record on environmental issues. It has increasingly shown itself to be capable of dealing effectively with the challenge of crafting broad principle into workable judicial tests, a task at which it has excelled in cases under the New Zealand Bill of Rights Act 1990. The Resource Management Act 1991 is analogous in important respects.⁷⁷

Bold words indeed, but the more important question is how well the Court of Appeal has lived up to them?

2.7.4 *Fleetwing Farms Limited v Marlborough District Council.*

In summary, then, it is clear the Resource Management Act is the consequence of a sustained and determined agitation not just within New Zealand but globally, insisting on a more eco-friendly and responsible attitude sympathetic towards the environment and the vast array of different creatures living within. Central to the theme of sustainability is the function of resource allocation, and it was this question which confronted the Court of Appeal in the case of *Fleetwing Farms Limited v Marlborough District Council*,⁷⁸ relating to conflicting applications to establish mussel farms.

⁷⁷ Palmer G *Environment – The International Challenge* (Victoria University Press, Wellington, 1995) at 173.

⁷⁸ *Fleetwing Farms Limited v Marlborough District Council* [1997] 3 NZLR 257.

The case calls for close analysis because it was the first time the Court of Appeal had the opportunity to discuss the allocation of natural resources within the Resource Management Act 1991. As noted above, Geoffrey Palmer was confident the Courts would fashion a specific judicial answer to broad political principle. In *Fleetwing* the Court was obliged to adjudicate on two separate applications (Fleetwing and Aqua King) affecting the same resource – in other words the grant to one applicant would necessarily preclude a grant to the other. It would be expected the Court would decide the matter according to the principles of sustainability, which is its brief under the Act.

The Court's decision rested on a consideration of bureaucratic actions underpinned by difficulties surrounding the date and process of the filing of competing applications. (The matter related to the allocation of marine farming resources.) Aqua King filed its application first, but Fleetwing's was the first to be formally accepted by Council as complete. Both applications were heard on the same day, and both were declined on the same day. Aqua King's notification of the decline of its application was dated the 29th November 1993, but Fleetwing's was dated the 1st December 1993. Aqua King lodged its appeal on the 21st December 1993, and Fleetwing lodged its appeal on the 6 January 1994.⁷⁹ Fleetwing's argument was simply that the appeals should be heard in order of the filing of the complete original applications with Council that is Fleetwing's first, then Aqua King's application. The Planning Tribunal resolved to hear Aqua King's appeal first as although incomplete it was filed first, and relied on section 272(1) as authority to do so. This section stated that the Planning Tribunal⁸⁰ is to hear and determine all proceedings as soon as practicable after the date on which they are lodged unless in the circumstances of the case it would be inappropriate. The section does not say that matters are to be heard in order – that seems to have

⁷⁹ The period 20th December to 10th January are not working days for the purposes of the Act: Section 2.

⁸⁰ Changed in 1996 to the Environment Court.

been assumed. In any event the word “practicable” means nothing more than “feasible”. Further, the requirement is to determine the matter, not simply remit it back to Council for further consideration. Therefore if the Tribunal were so minded it might have compared both applications and made a decision based on sustainability principles by granting the application to the more efficient of the operators. Instead, the Tribunal declined to exercise its discretion under subsection (1) by concentrating on form, and refused to depart from its philosophy of hearing the appeals in order of filing, even though Fleetwing’s application had effectively overtaken Aqua King’s in the bureaucratic process.

Fleetwing appealed to the High Court (Gallen J) which simply concurred with the Tribunal and upheld its normal practice of hearing appeals as soon as practicable,⁸¹ and in order of lodging (when the documents are accepted by the Registry); and confirmed the Tribunal’s conclusion that in this case there was no substantive reason to exercise discretion to depart from this norm.

Fleetwing appealed to the Court of Appeal. Despite Geoffrey Palmer’s glowing testimonial,⁸² it is probably fair to say the Court did not engage the subject in quite the same way the Court did in *Keam’s* case, and has undertaken a procedural rather than a substantive discussion, that is to say processes over outcomes. Richardson P delivered the judgment, addressing sustainable management with a somewhat perfunctory reproduction of section 5, devoid of any discussion, commentary, or analysis. The Court noted the Act’s concern for timetable,⁸³ and noted sections 102 and 103 both allowed for combined hearings for two or more applications in respect to the same proposal, in the case of a

⁸¹ The Planning Tribunal (now Environment Court) has broad powers to regulate its own proceedings.

⁸² See Geoffrey Palmer *Environment – The International Challenge* (Victoria University Press, Wellington, 1995) at 173.

⁸³ Section 37 gave a consent or local authority some power to extend a time period (since amended in 2003).

single applicant. The Court held that this is consistent with the approach taken in sections 104 and 105 but then, with respect, draws a long bow:

Clearly the statute requires each applicant's application or applications to be determined on their own merits. It does not allow for a comparative assessment of competing claims for the same source.

The conclusion that the statute requires the council to judge each case on its own merits also accords with the primacy attached to s5. If the relevant statutory criteria infused with the underlying objective of sustainable management are met in a particular case there is nothing in the Act to warrant refusing an application on the grounds that another applicant would or might meet a higher standard than the Act specifies.⁸⁴

It must be argued that these conclusions are simple *non sequiturs*, and it is quite uncertain what the Court meant by referring to a higher standard than the Act "specifies", given no discussion on the matter has been raised in the judgment. It could be equally argued that by preferring one applicant over another as well as confirming a beneficial use notion (as suggested by *Keam*) the Court would be better complying with its brief under section 5 which is, after all, the purpose of the Act. It should be noted also that this is virtually the only discussion of section 5 in the whole judgment. Oddly the Court suggested in view of the time constraints, the authority would be justified in refraining from a comparative analysis to meet its deadline. This is to simply ignore the provisions of section 37 and to recommend that the overarching purpose of the Act should be sacrificed on the altar of bureaucratic expediency.

The Court then went on to discuss the Marine Farming Act 1971. The judgment argues that section 8 of that Act gives the controlling authority power to exercise a preference of one application over another:

⁸⁴ *Fleetwing Farms Limited v Marlborough District Council* [1997] 3 NZLR 257 at 264.

Every such determination may, in the discretion of the controlling authority, be by lot, or by having regard to the financial or other circumstances of the applicant, or to the likelihood of the applicant being able successfully to develop a marine farm, and the determination of the controlling authority shall be final.⁸⁵

This is an example of the *dirigiste* system criticised during the third reading of the Resource Management Bill and which so alarmed Upton. The Court concluded that since these earlier provisions were not carried forward to the new Resource Management Act, the Parliament obviously intended applications to be dealt with on a first-come-first-served basis. Additionally their Honours pointed out that section 399 of the Act (“Applications received on the same day”), which deals with transitional matters, required that applications⁸⁶ in the pipeline were to be dealt with in order starting first with those “endorsed with the earliest date”⁸⁷ (the Court was careful to point out this included marine farming applications – the present case is such an application, although not a transitional matter). This, the judgment contends, is also a clear indication the legislature intended applications to be dealt with on a first come, first served basis.⁸⁸ Their Honours then discussed alternative provisions the legislature may have provided in the Act, and alternative provisions of certain other statutes.

With respect, it is submitted there are several possible challenges to the Court’s conclusion on these points. In the first place, the reference to the Marine Farming Act and the conclusion therefrom is, again, a simple *non sequitur*, and does not support the presumption the Court has come to, especially given the lack of discussion of section 5 of the Resource Management Act. Secondly, section 399 of the Act is in Part 15 which deals with “transitional provisions”, and

⁸⁵ Marine Farming Act 1971 s8 (3).

⁸⁶ Not relating to the same proposal, and not made by same person.

⁸⁷ Presumably since the section deals with applications received on the same day, the reference is actually about applications endorsed with the earliest time.

⁸⁸ *Fleetwing Farms Limited v Marlborough District Council* [1997] 3 NZLR 257 at 265.

accordingly by the very quality of the inherent notion of the term, is temporary in nature and characteristic, and simply means “intermediate”,⁸⁹ because the provisions are intended to have effect for a limited period of time. Thirdly, the discussion of alternative and qualitative provisions is meaningless since that discussion itself lacks a qualitative element, and has taken place in the absence of any analysis of section 5 of the Act.

The next topic relevant to our discussion considered by the judgment is the question of section 270(1). This provision enables the Environment Court to hear together two or more proceedings relating to the same subject matter unless in the Court decides it is impractical, unnecessary, or undesirable to do so. This provision is to be contrasted to the provisions contained in section 103, which enables Council to hear two or more applications by the same applicant together (with certain caveats). The Court felt the provisions of section 270 were sufficiently broader to allow the Environment Court to hear together two or more applications by different applicants.

Their Honours, however, decided this provision does not authorise the Environment Court to make a comparative assessment as between respective applicants, and that each application must be considered on its own merits. This might invite some particular mental gymnastics on the part of the members of the Tribunal. The question that needs to be answered is what the purpose of section 270 actually is, and how it relates to section 103. The Court of Appeal clearly thought there was no relationship. Therefore it could equally be argued the purpose of the section is precisely to allow such comparisons by linking the provisions in section 270 to section 5.⁹⁰ While each case needs to be judged on its own merits, there is no provision in section 270 to preclude the Environment

⁸⁹ *Oxford English Dictionary* (1st ed, Oxford University Press, Oxford, 1933).

⁹⁰ To be fair, this does not explain why section 103 is different, unless the provisions are not intended to be in any way complimentary.

Court from deciding that one applicant is more meritorious, or sustainable, than another.

Their Honours then moved to discuss section 272, relating to the hearing of proceedings. That section requires proceedings to be heard (and determined) as soon as practicable after filing, unless the Court in the circumstances of a particular case deems it inappropriate to do so. The Court of Appeal felt compelled to view this provision as a prescriptive pronouncement to accord priority on a first-come-first-served basis, despite that proviso. This bland conclusion is not particularly coherent, nor logical. The judgment goes on to say “[a]s with any statutory discretion, that power is to be exercised in conformity with the purposes of the legislation and the policies underlying the legislation.”⁹¹ Unhappily rather than proceed to a learned exposition of the theory and principles of sustainability, their Honours indulged in an exercise of form and procedure over substance, ignoring the principle of integrated management, and instead discussed the necessity of the Court to programme its caseload and fixtures appropriately.

A further matter of note is the question of section 104, which stated (at the time – it has since been amended) “...when considering an application for a resource consent, the consent authority shall have regard to ...(g) Part II.” It is appropriate to reflect on the previous words of the Court of Appeal in *Auckland Regional Council v North Shore City*: “Such an Act [the Resource Management Act] is not to be approached in any narrow way or with an eye to the protection of supposedly vested administrative interests.”⁹² Their Honours (it was a full Bench) were referring to the relative planning roles of regional and territorial authorities but the notion could equally apply to the Court itself.

⁹¹ *Fleetwing Farms Ltd v Marlborough District Council* [1997] 3 NZLR 257 at 268.

⁹² *Auckland Regional Council v North Shore City* [1995] NZRMA 424 at 426.

The judgment goes on to reaffirm that each case must be considered and determined on its own merits, but ignores the fact that the Court could make a merit-based assessment leading to a decision between certain alternative applications. “Where there are competing applications in respect of the same resource before council, the council must recognise the priority in time”.⁹³ This specific portion of the judgment is the authority for the first-come-first-served system adopted as a result within the resource allocation system in New Zealand. While competing applications are relatively uncommon, given that competition for diminishing (and valuable) resources like water will increase, the decision is of considerable importance. Significantly, what the case did not determine was at what stage priority was achieved:

As presently advised, we are inclined to the view that receipt and/or notification by the Council is the critical time for determining priority in such a case, but in the absence of extended argument and of any need to do so, we prefer not to express a concluded view.⁹⁴

This preference was destined to create more bureaucratic discussion in the future,⁹⁵ and it was decided by the Court of Appeal that priority was achieved by the first party to file a complete application, but confirmed the first in first served approach decided by *Fleetwing Farms Limited v Marlborough District Council*. The important cases were moving further away from a substantive discussion of integrated management and the Act’s fundamental doctrine, and concentrating on legal processes.

⁹³ *Fleetwing Farms Limited v Marlborough District Council* [1997] 3 NZLR 257 at 267.

⁹⁴ *Fleetwing Farms Limited v Marlborough District Council* [1997] 3 NZLR 257 at 268.

⁹⁵ See *Central Plains Water Trust v Ngai Tahu Properties Limited* [2008] NZCA 71 (regarding the Rakaia River), *Central Plains Water Trust v Synlait Limited* [2009] NZCA 609 (regarding the Waimakariri River).

Clearly, the Court in 1997 did not engage in the enquiry in quite the same way the same Court did in *Keam's* case in 1982.⁹⁶ Clearly the judgment appears to be the result of certain preconceived notions on the part of the Bench, which could also explain why the judgment is completely lacking in energetic scrutiny and analysis of the purposes and principles of the Act. Their Honours made reference to the Court of Appeal case of *Northland Milk Vendors' Association Inc. v Northern Milk Ltd*⁹⁷ as authority for their approach to administrative matters. That case held that where in new legislation a very real problem has certainly not been expressly provided for and possibly not even foreseen, the responsibility falling on the courts is to work out a practical interpretation appearing to accord with the general intention of Parliament as embodied in the Act. The courts can, in a sense, fill gaps in an Act but only in order to make the Act work as Parliament must have intended. Their Honours (Cooke P, McMullin and Somers JJ) even spoke of complying with “the spirit of the Act”.

To the contrary Hammond J was exactly on point in *TV3 Network Services Ltd v Waikato District Council*⁹⁸ where he stated:

In my view Part II of the RMA is critical to the new statute. It requires courts and practitioners to approach the new machinery provisions, and the resolution of cases, with the hortatory statutory objectives firmly in view. The fact that there are some difficult issues of interpretation of Part II itself, and its relationship with the rest of the RMA, does not absolve consent authorities and courts from wrestling with those problems; or justify the side-tracking of Part II.⁹⁹

This is what *Fleetwing* failed to do and the comment might be seen as a veiled criticism of that case given that decision was made in July 1997, and

⁹⁶ *Keam v Minister of Works* [1982] 1 NZLR 319.

⁹⁷ *Northland Milk Vendors' Association Incorporated v Northern Milk Limited* [1988] 1 NZLR 530.

⁹⁸ *TV3 Network Services Ltd v Waikato District Council* [1997] NZRMA 539 (High Court).

⁹⁹ *Ibid* at 543.

Hammond J's decision was handed down in September the same year. Their Lordships in *Maunsell v Olins*¹⁰⁰ observed that a statutory provision must be given a generosity of interpretation to afford it its primary meaning according to the tone of the Act, unless it is clear that some other meaning must be given to it to obviate injustice, anomaly, absurdity, or contradiction.¹⁰¹ "... section 5 is about environmental sustainability rather than efficient, let alone equitable allocation."¹⁰² This does not absolve the Court from its duty.

Fleetwing prompts the questions: (1) how allocating any resource to the first person standing in line can possibly comply with the persistent global clamour for humankind to soften its ecological footprint; (2) how such a regime could adhere to the integrated management rubric of the Resource Management Act; and (3) how such a process, in the absence of any comparison, can possibly lead to the most beneficial or efficient use of public resources, irrespective of which view the Court may have of Part II of the Act, especially section 7(b), that is to say having particular regard to "the efficient use and development of natural and physical resources".¹⁰³ This is more conspicuous, even in cases of plentiful supply, given some water permits may last up to 35 years.¹⁰⁴

The High Court had occasion to discuss the priority system in *Aoraki Water Trust v Meridian Energy Ltd*.¹⁰⁵ Although the case was primarily about the nature of water rights and the non-derogation of those rights, the Court did have occasion to discuss *Fleetwing*. Given the High Court is bound by the Court of Appeal ruling, the basis of *Fleetwing* was accepted without demur. That acceptance is despite the fact that their Honours (Chisholm and Harrison JJ) spent

¹⁰⁰ *Maunsell v Olins* [1975] AC 373 (House of Lords).

¹⁰¹ *Ibid*, at 391.

¹⁰² Milne P "Allocation of Water Between Productive Users" (2003) RMJ 12 at 12.

¹⁰³ See *Marlborough Ridge Ltd v Marlborough District Council* [1998] NZRMA 73 at 86.

¹⁰⁴ Section 123 Resource Management Act 1991.

¹⁰⁵ *Aoraki Water Trust v Meridian Energy Ltd* [2005] 2NZLR 268.

some time reviewing the features, as they saw them, of the Resource Management Act. These features include, they state, *inter alia*:-

(1) the sustainable management concept underpinning the Act which revolves around the *management* of resources as opposed to leaving their fate to chance (s5); (2) the obligation on a consent authority to have particular regard to the efficient use of resources (s7(b))...¹⁰⁶

The Court refrained from any comment as to how this view of the Act could be in harmony with the *Fleetwing* ruling.

As mentioned above the first-come-first-served principle has led to uncertainty due to the fact that the bench in *Fleetwing* did not decide at what stage priority is achieved. This was the basis of the Central Plains Water Trust cases involving first Ngai Tahu Properties Limited, and secondly Synlait Limited.¹⁰⁷ Both cases ultimately reached the Supreme Court for deliberation, but both matters were settled, thus sparing that Court the burden of making a decision, but denying our superior Court the opportunity to review the whole matter.

The question before the Court of Appeal in the Ngai Tahu case was whether priority was achieved when the first (complete) application is filed with Council, or rather when the first application is ready for public notification under the Act. It is worth noting that counsel on both sides agreed that *Fleetwing* was doctrinally binding in this instance, and the argument before the Court was how best to apply the principle in this case.¹⁰⁸ Baragwanath and Hammond JJ¹⁰⁹ both held that priority must remain with the first complete application to be filed

¹⁰⁶ Ibid, at 276-7.

¹⁰⁷ *Ngai Tahu Properties Ltd v Central Plains Water Trust* [2008] NZCA 71; *Central Plains Water Trust v Synlait Ltd* [2009] NZCA 609.

¹⁰⁸ *Ngai Tahu Properties Ltd v Central Plains Water Trust* [2008] NZCA 71 at paragraph 90 (per Hammond J).

¹⁰⁹ Hammond J expressed some reservations as to the efficacy of this approach (see paragraph 97).

(barring unreasonable delay).¹¹⁰ Their reasoning essentially was that otherwise a later simpler but entire application ready for notification and that does not need to proceed in stages might undermine years of preparatory work and research and torpedo an uncompleted but complex and expensive project. This position will be accepted by those applicants and their supporters who take part in a “gold-rush” application, and file early to foil later aspirants. In the case of Central Plains the “take’ application was divorced from the “use” application which was to be filed later. Even the take application of 2001 was incomplete in itself and was not therefore ready for notification as a single application.

Robertson J, dissenting, found that this approach is putting the cart before the horse and that the correct approach would be to give priority to the complete proposal that could be publically notified first, as Ngai Tahu had done. In this respect he agrees with Salmon J in *Geotherm Group Ltd v Waikato Regional Council*.¹¹¹ That learned Judge summed matters up by stating that the first come first served principle is appropriate to benefit the application which is first ready for notification because otherwise there would “run the danger of giving priority to an inadequate application”.¹¹² Robertson J argued his (and Salmon J’s) approach would enable the allocating authority to more accurately comply with Part II of the Act and make a better informed decision, as well as receiving informed public submissions.¹¹³ His reasoning was simply that the authority is unable to make a decision until and unless it knows what is involved with the use of the water:

¹¹⁰ Whatever that means – no definition was given. It is to be noted the Central Plains proposal had been extant since the first feasibility study in 1999 and nothing much seems to have happened to progress matters to the point where the application was ready for notification between 2001 and 2005. Counsel for Ngai Tahu correctly submitted that at the very least matters remained within the control of Central Plains.

¹¹¹ *Geotherm Group Ltd v Waikato Regional Council* [2004] NZRMA 1(High Court).

¹¹² *Ibid*, at paragraph 30.

¹¹³ In the present case, for instance the North Canterbury Fish and Game Council.

Although Mr. Wylie [of counsel for Central Plains] must be correct when he submits that an application to “take” water alone can be a stand-alone and discrete matter, it is bereft of reality to suggest that a consent authority, in determining whether to grant such an application, would not give consideration to the use to which the water was going to be put.¹¹⁴

This is a powerful dissenting opinion and the case decision is quite unsatisfactory as it appears to suggest a more complex proposal should have priority over a simpler option, irrespective of the merits of the more complex, save for the small possibly complicating matter of notice. It is noteworthy that two of the Central Plains trustees also sat on the Board of Ngai Tahu Properties Limited, so there is the not inconsiderable matter of conflict of interest. Despite this, it is an efficiency/policy interface which was debated again soon after in the Court of Appeal in the *Synlait* case,¹¹⁵ with more or less the same narrative. The court made comment on the written submissions of Mr. White QC (as he then was) in his capacity as *amicus* in the earlier *Ngai Tahu* case. The thrust of those submissions was that the courts were not paying enough regard to the principles of the Resource Management Act. This was rejected:

To give Part 2 full rein would cut across the RMA’s strict time limits and the detailed regime containing them. But that is not necessarily to reject it completely. Not only do the themes of Part 2 suffuse the whole RMA but the decision-making power in s104 is expressly subject to that Part. How are the competing elements to be reconciled?¹¹⁶

In point of fact the Act’s time limits are not necessarily so strict: section 37. Be that as it may, the Court concluded there needed to be a distinction between two different priorities, that of hearing and that of merit. The Court found that, as it had in the *Ngai Tahu* case, that the first to file a complete

¹¹⁴ *Central Plains Water Trust v Ngai Tahu Properties Ltd* [2008] NZCA 71 at paragraph 132.

¹¹⁵ Above, n 106.

¹¹⁶ *Central Plains Water Trust v Synlait Ltd* [2009] NZCA 609 at paragraph 82.

application will have priority of hearing. However later applicants, as ordinary members of the public, may challenge the first application in terms of its application and concepts at the section 104 hearing.

In this way the two themes of the RMA can be reconciled. There is a presumptive application of the statutory timetable (theme (1)), including a presumptive hearing priority to the first filed, but the consent authority, when acting under s104, has the power to apply the Part 2 and other (theme 2)) considerations rather than allow the theme (1) factors to deprive the community of a benefit which it considers outweighs them.¹¹⁷

Theme (1) remains the dominant consideration.¹¹⁸ However Associate Professor Kenneth Palmer states:

...this decision must be welcomed as returning the focus under the RMA to achieving sustainable management, and rejecting the notion that the first in time has a priority entitlement to use land, water, or other resource.¹¹⁹

With respect, the judgment states that each case is to be judged on its own merits, which is not new. It is submitted that the case does not really “return the focus under the RMA to achieving sustainable management” as Associate Professor Palmer claims. It may direct the attention more towards that, but as the Court of Appeal states (paragraph 91) the primary concern is the statutory timetable. In any event the Court pointed out that a later applicant who wishes to make submissions at the section 104 hearing may not present their full application. Consequently Council may be denied receiving important submissions.

¹¹⁷ Ibid, at paragraph 90.

¹¹⁸ Ibid, at paragraph 91.

¹¹⁹ K Palmer “Central Plains and Synlait – a two theme approach to hearing priorities and sustainable outcomes” (2010) RM Bulletin 117 at 118.

Thus, there is still to be no comparison of the various merits of competing applications and the sustainability principles of Part 2, the provisions of section 104,¹²⁰ especially section 104(1) (c), and of section 30,¹²¹ are not entirely and it is submitted satisfactorily addressed. More serious is the fact that if a council considers the potential effects of an application to be minor, notification is not required,¹²² and, consequently, parties which that council do not consider to be affected may not have the opportunity to make submissions, and worse, may not even be aware of the application. There is the further complicating factor of the 2009 amendments to the Act (the addition of Part 11A) curbing the scope of submissions which may be made by trade competitors and their surrogates. In 2009, the New Zealand Māori Council (as a direct result of the abandonment of the Supreme Court case of *Ngai Tahu v Central Plains*) undertook an unsuccessful application to the High Court for a declaration under the Declaratory Judgments Act 1908 that “[p]riority as between competing applications under the Resource Management Act 1991 for a finite resource should be determined through the exercise by consent authorities of a discretion.”¹²³

It would seem intellectually unsound to abjure the Act’s foundation principles in this way. An explanation may be that the courts were perhaps seduced into abandoning the Act’s precepts in favour of neo-liberal economic dogma. New Zealand enjoyed several decades of Keynesian social democratic hegemony. The thrust of that policy was, naturally enough, to use the state’s capacity to encourage economic growth (and stability) as well as equality of distribution through regulation, and control of markets, if necessary. This policy of government interventionism received a measure of intellectual criticism as

¹²⁰ Revitalised in 2003.

¹²¹ Revitalised in 2005.

¹²² Section 93.

¹²³ *New Zealand Maori Council* [2009] NZHC 1098. The application was struck out on application by three parties: the Attorney General, Trustpower Limited, and Meridian Energy. It was held to be inappropriate for the High Court to rule on a Court of Appeal finding (*Fleetwing*).

some of the regulations and restrictions were to a certain degree inconsistent and arbitrary.

When the New Zealand economy stagnated under Robert Muldoon's watch in the mid-1980s, the traditional principles were rejected with the election of the Fourth Labour Government in 1984. Finance Minister Roger Douglas's policies simply eschewed government control in favour of open competition with a free market utilised as an allocative mechanism to control economic activity. This model was alluded to by Simon Upton during his Third Reading of the Resource Management Bill – “we run a more liberal market economy these days”¹²⁴ – and the theory is simply to reduce the size and influence of government and instead allow the “market” to pick winners and losers. Whether this is a good mechanism to distribute strategic and diminishing public resources like water for periods up to 35 years – given the Act has inadequate provisions for the transfer of those permits – is a question which will be discussed later.

Another factor alluded to in the *Synlait* case is the question of consistency as a result of devolution of management. The veiled suggestion is that council officers are fickle: “It is impractical to use as a measure of priority...the mutable test of what a council officer, more or less cautious, more or less informed, might stipulate under s91...”¹²⁵ With the greatest of respect, similar arguments apply also to Her Majesty's judges, but interestingly the Parliament amended section 30 in 2005 to (*inter alia*) endow individual regional councils with the function of establishing rules¹²⁶ (if appropriate) to allocate the taking and use of water,¹²⁷ with the likelihood of some inconsistency, (depending how individual councils frame

¹²⁴ 516 *Hansard* 4 July 1991 at 3019.

¹²⁵ *Synlait Ltd v Central Plains Water Trust* [2009] NZCA 609 at paragraph 88.

¹²⁶ The Local Government Act 2002 imposes statutory responsibilities on regional and territorial authorities.

¹²⁷ The Government has however signalled its intention to remain involved in water matters: see The Ministry for the Environment “National Policy Statement for Freshwater Management 2014” (2014) <www.mfe.govt.nz/publications/rma/nps-freshwater>.

their regulations), but probably a departure from neo-liberal rhetoric. Likewise, section 104 was amended by the insertion of subsection 2A, also in 2005 to require consent authorities to take into account when considering an application the value of the investment of existing consent holders.

Memon and Skelton argue (in 2007) that¹²⁸ many regional council staff and elected officials have taken a narrow environmental interpretation of section 5 (unlike the Environmental Court) – in other words if an application were environmentally acceptable, a consent should be given, and it was up to “the market” to control matters from there. On the other hand one commentator agreeing with the *Synlait* comment above has stated:

The ideals of the RMA are, in fact, compromised by regional councils at nearly every step – from choosing not to publically notify consent applications to stacking hearings panels with commissioners known to be sympathetic to a desired result. Regional councils are not independent arbitrators of the environment – they have vested interest in “economic development” and, because of the election cycle, it’s the short-term gain that’s important to them and not the long-term loss to the environment.”¹²⁹

There has been some other criticism of this devolution of function,¹³⁰ but the reality will be seen in the rules each council is making in response to their responsibility under the 2005 amendment of section 30, that is subsection (1) (fa) (i) relating to the making of rules (hopefully eschewing the first-in-first-served principle) in a regional plan (“if appropriate”) to allocate the taking or use of water. This process is now well under way and some councils have either

¹²⁸ Memon A & Skelton P “Institutional Arrangements and Planning Practices to Allocate Freshwater Resources in New Zealand: A Way Forward” (2007) 11 NZJEL 241 at 253.

¹²⁹ Mike Joy “The Dying Myth of a Clean, Green Aotearoa.” (2011) New Zealand Herald <http://m.nzherald.co.nz/business/news/articles.cfm?c_id=3&objectid=10721337>.

¹³⁰ For example Brunette B. “Freshwater Management and Allocation under the Resource Management Act 1991: Does First-in First-served Achieve Sustainable Management Principles?” (2006) 10 NZJEL 169 at 177 *et seq*; See also Memon A & Skelton P (*supra* at n128).

completed for example Waikato Regional Council, or almost completed their reviews.

In any event, until each council completes the making of effective rules, the underlying *Fleetwing* principle will apply to those that have not yet done so. The ambition of “sustainability” and “sustainable management” is a laudable one but it is fair to say that the original legislative intent has been somewhat frustrated by bureaucratic outcomes of administration. The disagreement between Simon Upton and Kerry Grundy illustrates the point exactly. That discussion also illustrates how difficult it can be to accurately express legislative intent when competing interests are factored into the reckoning.

As Plato illustrates in his *Dialogues* although it may be difficult to adequately define a concept, people can readily give examples of that concept.¹³¹ It is clear the New Zealand courts have not adequately addressed the concept of sustainability. The American doctrine of beneficial use of water resources is indisputably a narrative about sustainability and sustainable management and so could very well be adopted in New Zealand in terms of the purpose of the Resource Management Act. By adopting the first-come-first-served model of resource allocation, the New Zealand courts have not come to grips with the basic intent of the Resource Management Act. This discussion will conclude that the first-come-first-served system is not in harmony with the Resource Management Act’s prescription of sustainable management. Accordingly some discussion of the priority system will be undertaken in the next chapter.

¹³¹ For example see *Laches* and Plato’s discussion about the definition of courage. Edith Hamilton and Huntington Cairns (eds) Plato (Princeton University Press, Princeton, 1961) at 123.

3 Chapter 3

3.1 First-in-first-served.

3.1.1 Introduction.

As we have seen in the preceding chapter there has been a world-wide trend towards sustainability in the treatment of natural resources, as there has been in New Zealand. Although *Fleetwing Farms Ltd v Marlborough District Council* did not involve water allocation, the New Zealand courts have, for better or worse, adopted the first-in-first-served system of natural resource allocation, including water. This chapter will examine that system.

In terms of the Resource Management Act 1991 the resolution of competing applications should, as a matter of basic law, quite simply and unequivocally comply with that Act's purpose and principles. Retired Environment Court Judge David Sheppard put it thus:

On priority to use a resource, [this] calls for management of freshwater to be strongly influenced by concepts other than who applied first:

The first concept is sustaining the potential of freshwater resources to meet future needs;

The second is the imperative of safeguarding the life-supporting capacity of fresh water, and of ecosystems associated with it;

Thirdly, freshwater management has to be influenced by the national importance of providing for the preservation of the natural character of fresh water and its protection from inappropriate use etc;

Fourthly, management has to be influenced by the national importance of providing for the relationship of Maori, and their culture and traditions, with their ancestral waters and taonga;

Fifthly, it is to be influenced by having particular regard to kaitiakitanga.

The reasoning for the “first come, first served” concept for substantive priority for freshwater,...[does] not however seem to be derived from, or influenced by, those concepts.¹

The problem has been acknowledged by the Executive: “Water allocation works on a first-in-first-served basis and does not reflect the value (that is to say economic, environmental, recreational or cultural) of water.”²

The type of allocation/value of water debate is arguably generally within the parameters of the purposes section of the Act. The question then is whether the first-in-first-served method of the allocation of our water resources is an appropriate system. The method of distribution of our water resources, however, is a discussion about allocative efficiency, not just environmental protection *per se*. There are many differing ways of allocating natural resources – renewable or not; the first-come (or in), first-served policy is basic and to be contrasted to an informed decision-making process, which involves an appreciation of environmental, economic and possible technical considerations, and which usually employs cost-benefit analyses.

The first-in-first-served model has the advantage of being simple in concept and execution, at least in theory,³ the system being an interpretation of “queuing”, and is probably efficient at processing the allocation of abundant resources. The system does not discuss the merit of one claimant *compared* to another (an equitable balance between various diverse points of view) but rather blandly states that one claimant *is* more deserving than another simply by a position in a queue.

¹ DF Sheppard “Reaching Sustainable Management of Fresh Water” (2010) Resource Management Law Association page 11-12 <[<www.rmla.org.nz/upload/files/address_session_3_v6_\(2\)>](http://www.rmla.org.nz/upload/files/address_session_3_v6_(2)).

² Ministry for the Environment “Fresh Water Management National Policy Statement (S32 Evaluation)” April 2011 HG Document No R001v9-WE130567-01 at 32.

³ However as to when an applicant actually joins the queue can be problematical. See *Central Plains Water Trust v Ngai Tahu Properties Limited* [2008] NZCA 71; *Central Plains Water Trust v Synlait Limited* [2009] NZCA 609.

The applicants “compete” by waiting in line,⁴ but the system does nothing to encourage productive efficiency that can benefit everyone. “Productive efficiency” has the potential to ensure scarce resources are not merely allocated, but allocated in a way that ameliorates scarcity through efficacy, thus possibly improving the supply, the value, or even the utility of what is produced. It is a legitimate expectation that the benefit from public/Crown resources like water be maximised as far as practicable.

The first-in-first-served system avoids the need to address the issue of sustainability altogether. A *reductio ad absurdum* approach may illustrate the point: the system may be adequate for, say, shopkeepers and car parks (these, of course have priority parking for disabled people) but it is unlikely the system would be used to decide job applications, for instance applications for academic chairs. It is certainly a perennial ethical problem within the medical profession and the question of waiting lists which debates whether in such case the system is a fair natural lottery with an egalitarian approach or whether the system is fundamentally flawed in moving people up a waiting list by allowing morally irrelevant issues such as wealth, power, connections, and more importantly changing principles or ideals to decide just how scarce medical resources are to be allocated. It is worth also noting that the *Helsinki Rules* adopted in 1966 and governing the competing uses of waters of international rivers does not adopt the first-in-first-served system. In fact Article 5 sets out a list of eleven various factors to be taken into account (generally equally biocentric and anthropocentric in nature) in deciding the equitable sharing of waters of an international drainage basin.⁵

⁴ Unless some try to jump the queue which could be argued was the case in *Central Plains Water Trust v Ngai Tahu Properties Limited* (note 3 *supra*).

⁵ *Helsinki Rules 1966*, available online at: <www.colsan.edu.mx/investigacion/aquaysledad/proyectofrontera/helsinki%20Rules%201966>.

3.2 Allocation and the Question of Fairness.

The priority principle is based on Locke's thesis of the rectitude of chronological possession, but it embodies the idea of haphazard fortuitous gains and offends normative notions of distributive justice – of whatever flavour – and, as such, it is a debate about equity. Distributive justice is probably founded on the assumption that unless some important difference should justify otherwise, all persons should be treated equally in distributive matters, and to treat people unequally in the distribution of important benefits and burdens in the absence of such justification is an ideal of bias. As already noted, the big question in terms of the Resource Management Act's purpose is whether the natural environment and the welfare of all the other organisms living within should be afforded *locus* as a "person" in the distributive debate: the anthropomorphic answer is "no"; the eco-centric answer is "yes".

This burden of justification should be regarded very seriously when addressing the issue with those acted against. Of course there may be relative accord as to the general meaning of the general term "equity" (in the general sense of "fairness") but it is really an elusive concept and there are important differences of opinion on its application which results in a variety of interpretations manifesting themselves from a variety of perspectives.

3.2.1 Utilitarian Approaches

Broadly speaking, the main schools of thought on the matter are the views of the utilitarians⁶ John Rawls,⁷ and Robert Nozick.⁸ Bentham's ideal of providing the

Factor 4 of Article 5 relates to past utilisation of the waters in the basin (not in the sense of priority), but is only one of the many factors to be taken into account.

⁶ Bentham, *J Introduction to the Principles of Morals and Legislation* (1789).

⁷ John Rawls *A Theory of Justice* (Harvard University Press, Cambridge Mass., 1971).

⁸ *Anarchy, State, and Utopia* (Basil Blackwell, Oxford, 1974).

greatest happiness for the greatest number ignores the interests of those who would miss out altogether under a first-in-first-served system; and, without the opportunity to plead their case, perhaps the greatest number could somehow redistribute a portion of their happiness to others to provide some for everyone.

Utilitarianism does not restrict the subordination of the interests of some over the interests of others, except that the overall outcome should be good for the majority. Its proponents are more concerned with the “average” welfare of society as a whole, even to the extent of sacrificing the interests of individuals to the common good. Bentham’s (Lockean) answer of course is that where equality and security of tenure come into conflict, security must prevail; but this is no succour to those without anything to secure – and the utilitarians cannot form a strong enough argument to discharge their duty towards excluded persons, especially those excluded by a crude chronological system, and more especially when a critical resource like water is involved.

3.2.2 Critique of “first-in-first-served”

Rawls’ view on the other hand would be that under his “veil of ignorance” (to ensure impartiality), no-one would agree to the first-in-first-served system simply because it produces inequalities of opportunities due to the implacable chronological nature of the model, and those lacking in fortune would miss out entirely: it is essentially an egoistic discourse. Rawls’ answer to this is his “difference principle” which would allow unequal distributions if those inequalities benefit those worse off in society and it would be rational for people to accept this given they make their decisions in the original position that is behind the veil of ignorance. Equal opportunity ensures that those with equal impulsion and aptitude have an equal chance of success.

The first-in-first-served system does not provide equal opportunity (except perhaps in terms of barging into the line) and hence cannot be seen in Rawlsian terms as “just” on any level. Nozick (who was not so much concerned about social justice as such but rather the establishment of property rights) posits that a

doctrine is just not in terms of distribution, but rather whether there is a just process of establishing property rights, that is to say outcomes are not so important as procedures. Nozick takes a Lockean approach to the accumulation of natural resources - the righteousness of original acquisition.

John Tisdell's⁹ view of Nozick's position is stated as: “[f]ollowing Nozick, for a water doctrine to be just it should have evolved from the individuals joining together from rational self-interest to protect natural rights and only allow the water authority to provide protection for water rights against fraud or deceit.”¹⁰ Following his line of reasoning, for an authority to allocate the resource (as in New Zealand) would be beyond the function of his “minimum state”.

Nozick is not an anarchist, however; and justifies some form of state apparatus to protect resource owners from hostilities from aggressive and possible indigent outsiders (“independents”) which, seen from a different perspective, smacks of the tyranny of the majority over the minority, and some will see democracy in this light. Further, Nozick tracks a Lockean path towards resource accumulation so that individuals are free to pursue the acquisition of resources not held by others, provided this does not compromise¹¹ the rights of others already in existence – a suggestion of Pareto optimality – a watered down version of a first-in-first-served system. In the real world the government owns or controls many resources (for example minerals, water) so it is reasonable to expect government involvement in allocative decisions.

⁹ Tisdell JG “Equity and Social Justice in Water Doctrines” (2003) 16 No 4 Social Justice Research 401.

¹⁰ Ibid, at 411.

¹¹ In his “minimum state”, or indeed any state, it would be an insurmountable task to know this, or indeed how to calculate it. It may be theoretically possible in a given instance, but there would be difficulties in a general application.

As Garrett Hardin's theory suggests, individuals need to be coerced into refraining from resource consumption which they would individually calculate as being the most rewarding where individual profits are achieved at public cost. Generally speaking, governments establish endogenous processes with the purpose of improving overall social well-being,¹² admittedly a difficult task as this is hard to measure. It has however a wider responsibility to address the needs of unrepresented or inadequately represented groups. In terms of distributive justice, (and the Resource Management Act) this responsibility extends also to future generations.

3.2.3 Equitable Considerations

Equity is important because people value it and in this context it is protection for the individual against the hostilities of the state, as well as that of other individuals. That is one matter, but allocative efficiency¹³ quite another. The two do not make for easy bed-fellows, since an improvement in efficiency does not necessarily have equitable outcomes. It is a tension between the rights of the individual and the interests of society.

Any allocation that requires more primary resources (such as water) than another to achieve the same end is clearly undesirable from an efficiency perspective. Similarly efficiency might require the maximum use of inputs, and one project which produces less than another from the same inputs is equally undesirable. It is also undesirable from the perspective of the general precepts of the Resource Management Act. The first-in-first-served system does not allow the necessary calculus to take place. From the economy's point of view, initial outputs determine further distributions like goods, income, technology, but from

¹² See generally Aristotle "Politics" <classics.mit.edu/Aristotle/politics.html>

¹³ There are other ideas of efficiency of course for instance technical, productive (which may become important when deciding allocative outcomes).

the natural environment's point of view, the main issue should be a reduced strain on resources (both renewable and finite) and a reduction of any negative knock-on effects borne by the ecosystem.

In terms of the Resource Management Act, and, given that some consents can last for up to 35 years; any inefficiencies will necessarily be amplified with the passage of time and such inefficiencies have an inter-generational impact as the interests of future generations may well be compromised. Therefore the mechanism for allocating natural resources should engage a system of cost-benefit analyses implicit in a comparative assessment of competing applications. Environmental components such as water (and clean air) are public resources and there is little incentive on the part of the consent holder to remedy inefficiencies once they are factored into a consent. Under a cost-benefit analytical system, efficiency is increased when desired outputs are increased relative to the necessary inputs. The environment can be seen in these terms as simply a provider of raw materials, but the process with the greatest net benefits can be identified. A cost-benefit equation is an ordinary tool of analysing policy and regulatory impacts. The Ministry for the Environment employs cost-benefit analyses to establish a number of their policies, for instance on recycling, soil contamination, air quality, water measuring devices. In relation to air quality, in 2004 the Ministry for the Environment used a cost-benefit analysis to study air quality initiatives, and this study was updated in 2009, again using the same method.¹⁴

3.3 The Government Addresses the *Fleetwing* Principle.

The area of New Zealand where the matter of competing applications is most stark (a competition between both differing users and uses) is water at the Waitaki Catchment in Canterbury. The region has 70% of New Zealand's

¹⁴ Ministry for the Environment "The Value of Air Quality Standards" October 2009 <mfe.govt.nz/publications-search-Ref CR89>.

irrigated land, and for a number of reasons the Canterbury Regional Council had not formulated a strategic water allocation plan.¹⁵ The Government introduced the Resource Management (Waitaki Catchment) Amendment Act Bill in 2003. The purpose of the new Act was described as:

The aim of the Bill is to amend the Resource Management Act 1991...to enable the merits of competing water uses for the Waitaki catchment to be considered and to establish a framework for the allocation of the water “that will allow for sustainable development.”¹⁶

Importantly, Sinclair Knight Merz (of Australia) was commissioned by the Ministry of Economic Development to undertake an analysis (as required by section 32 of the Act) of the proposal to take water in the Waitaki catchment.¹⁷ The Act as passed established the Waitaki Catchment Water Allocation Board, which was required to prepare an allocative framework that ultimately became part of the Regional Plan: the Regional Council allocated the (Waitaki) water rights based on the Resource Management Act, and the Board’s framework – but may consider competing uses by a cost-benefit analysis.

Clearly, the Government intended to revisit the water allocation methodology, especially given about the same time the Cabinet invited the Minister for the Environment to undertake a significant review of the Resource Management Act, including water allocation, with a view to improving the quality

¹⁵ See M Morgan & Others *Canterbury Strategic Water Study* Report 4557/1 (2002), <www.researcharchive.lincoln.ac.nz/bitstream/10182/3> (Last accessed 4 February 2014).

¹⁶ Bills Digest No. 1051 (9 December 2003).

¹⁷ Ministry of Economic Development *National Cost Benefit Analysis in the Waitaki Catchment: Model Scoping Report* 30 October 2003.

of decisions and processes.¹⁸ The result was *Cabinet Paper: Improving the Resource Management Act 1991*. Part F states:

The RMA establishes a regime where natural resources (freshwater, geothermal, coastal space and assimilative capacity of air) are allocated on a “first-in-first-served” basis. First in first served gives preference to current rather than potential users, and avoids having to address the most economic allocation of the natural resource.¹⁹

Further: “There are some simple amendments considered necessary to proceed with now to address resource allocation issues: - (a) Explicit recognition of natural resource allocation as a role and responsibility of regional councils.”²⁰ There is a natural tension between two outcomes – a lack of national consistency on the one hand, but improved local outcomes on the other with the devolution of control to the individual regions, which in any event is the intention of the Act.

The result was the Resource Management Amendment Act 2005, and the material provisions of the relevant section of the principal Act (as amended) read as follows:

30. Functions of regional councils under this Act–

(1) Every regional council shall have the following functions for the purpose of giving effect to this Act in its region:

...

(fa) if appropriate, the establishment of rules in a regional plan to allocate any of the following:

the taking or use of water (other than open coastal water)

Thus, the position in New Zealand is that the *Fleetwing* process of dealing with competing applications on a first-in-first-served basis is a default position

¹⁸ Cabinet Paper “Improving the Resource Management Act 1991” (13 September 2004) CAB Min (04) 30/10.

¹⁹ *Ibid*, at 162.

²⁰ *Ibid*, at paragraph 168.

and will only apply to those regions where the councils have not yet formulated their response to section 30 (as amended), or indeed will have done so but opted to retain that system.

3.4 How the Allocating Authorities Manage their Responsibilities

Among the responsibilities which the Resource Management Act lays at the door of the allocating authorities is the important matter of the need for the establishment of Regional Policy Statements and Regional Plans.²¹ This important function provides an “overview of the resource management issues of the region and policies and methods to achieve integrated management of the natural and physical resources of the whole region”.²² This policy framework regulates the contents of the regional plans which assist councils in carrying out their statutory functions under the Act. These documents were among the earliest documents prepared by the councils after the introduction of the Resource Management Act, and are mostly under review; second generation documents are currently being prepared.

All councils adopted the first-in-first-served procedure (which was really decided for them by the *Fleetwing* decision), but this practice is universally under review.²³ Additionally if they had not already done so, councils are probably now obliged in their Regional Plans to take into account their further responsibilities under the 2005 amendment to the Act,²⁴ viz the establishment of rules in the Regional Plan to allocate the taking and use of water²⁵ (among other resources), given that Regional Policy Statements provide a structure to guide the contents of

²¹ See Part 5 and Schedule 1 of the Act.

²² Section 59.

²³ The exception is the Chatham Islands: the council has not issued any water permits and doesn't see the need for them (personal correspondence).

²⁴ Section 30 (1) (fa).

²⁵ Paragraph 41 of the third report of the Land and Water Forum recommends regional plans as being a better tool to manage the quality and allocation of water than the consent process.

the Regional Plan. Accordingly this amendment requires Regional Plans to be amended to accommodate this statutory requirement. These rules probably should, by virtue of the imperative implicit in the statutory provision, make provision for adjudicating between competing applications.

Moreover, for some years these allocating authorities had been looking forward to the prospect of a National Policy Statement relating to freshwater management. The subsequent first Land and Water Forum report²⁶ anticipated the first National Policy Statement for Freshwater Management by only a few months.²⁷ One of the heads that first Forum Report identified was that of an improvement to the allocation process. The first Land and Water Forum Report however concludes in relation to water allocation:

The current first-in-first-served system does not [emphasis added] need to change in catchments where there is an abundance of water and little prospect of that changing. There should, however, be a mechanism for moving to a different allocation scheme, in the form of a threshold of pending scarcity or proportion of total allocation being reached.²⁸

The suggestion was confirmed in Recommendation 35 of the third Report of October 2012. With the greatest of respect, this may be impoverished thinking. The clear suggestion is that we can currently abuse abundant water sources until future generations are constrained to cobble together restraining allocative mechanisms.²⁹ In any event the third Report also says of the first-in-first-served system: “There is no guarantee that the use profile that has emerged from this is

²⁶ Land and Water Forum. 2010. *First Report of the Land and Water Forum: A Fresh Start for Fresh Water*. “A Fresh Start for Freshwater” is not to be confused with an earlier report of the same title.

²⁷ Unbelievably it took 20 years to introduce this fundamental component of the resource management programme.

²⁸ Land and Water Forum. 2010 *First Report of the Land and Water Forum*, paragraph 128.

²⁹ Indeed, it is possible these steps will need to be taken by generations not so future.

efficient or equitable...”³⁰ At least a management approach now, (as required by the Resource Management Act) would demonstrate our willingness to play our role in the sustainability construct. Apart from the equities involved, it is essentially an efficiency discourse and to act otherwise would arguably be contrary to one of the Resource Management Act’s objectives.

In matters of allocation the second National Policy Statement for Freshwater Management which came into effect on the 1st August 2014 has as its several general objectives³¹ the purpose of safeguarding the life-supporting capacity of ecosystems, sustainably managing the taking and using of freshwater, and the maximisation of the efficient allocation and use of water. The Statement emphasises the requirement of every regional and unitary council to make or change its Regional Plan to the extent necessary to achieve these objectives. Matters central to the allocation issue is contained in Objective B1, Objective B2, and Policy B3:

Objective B1

To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of freshwater, in sustainably managing the taking, using, damming, or diverting of freshwater.

Objective B3

To improve and maximise the efficient allocation and efficient use of water.

Policy B3

By every regional council making or changing regional plans to the extent needed to ensure the plans state criteria by which applications

³⁰ Land and Water Forum. 2012. *Third Report of the Land and Water Forum: Managing Water Quality and Allocating Water*, paragraph 197.

³¹ These objectives in the second Statement in relation to water quality are virtually identical to the first.

for approval of transfers of water take permits are to be decided, including to improve and maximise the efficient allocation of water.

It is hard to imagine how the adoption of a first-in-first-served process (even in catchments with current water reserves) could possibly comply with this policy initiative, and as a consequence councils will have to adopt a process of comparative analysis when scrutinising competing applications. Councils – even water-rich ones – with an attitude averse to “picking winners” (which was the usual defence of the first-in-first-served procedure) will likely need to rethink their processes.

The hugely important Policy B3 and also the recommendation of the third report of the Land and Water Forum for allocating authorities to increase the flexibility³² of the transfer of water permits under section 136 of the Act is noted:

Water within the allocable quantum [in essence water remaining after an allowance for ecological requirements] needs to be easily transferrable between users, to allow it to move to its highest valued use, (i.e. to enable society as a whole to obtain the greatest collective value from the water resources across the full range of values). The design of the allocation system should remove administrative barriers to transfer and trading.³³

It is therefore clear that the Land and Water Forum is signalling a two-pronged need for change: first it wants to discourage the use of the first-in-first-served process in allocating water resources; but, secondly, and much more notable, the Government’s acceptance of the Report is affirming quite clearly that the transfer of water permits to a higher-value user will be an important platform in the quest for greater efficiency in water resource management. Thus, both National Policy Statements and the third report of the Forum provide a distinct

³² See clauses 26 and 27 in the List of Recommendations of the Report.

³³ Land and Water Forum. 2012. *Third Report of the Land and Water Forum: Managing Water Quality and Allocating Water*, Recommendation 25.

suggestion that New Zealand needs to prepare for water markets.³⁴ Such a scheme is a quantum leap and therefore it is entirely appropriate in the next chapter to examine this initiative in terms of a discussion of the introduction of the trading of water permits.

³⁴ See also Land and Water Forum. 2012. *Third Report of the Land and Water Forum: Managing Water Quality and Allocating Water*, paragraphs 64-68; Recommendation 3(c).

4 Chapter 4

4.1 Transfer of Consents under the Resource Management Act 1991

As demonstrated in the last chapter, the Land and Water Forum Reports have made it clear that a relaxed system of water rights transfer is one of the desirable improvements to New Zealand's overall water resource husbandry. Such a mechanism should be introduced, but, if it were, it would not be particularly in harmony with the provisions of the Resource Management Act 1991 in its present form. This chapter will address this issue.

The central provision relative to the transfer of consents is contained in section 136(2) of the Resource Management Act which reads as follows:

A holder of a water permit granted other than for damming or diverting water may transfer the whole or any part of the holder's interest in the permit –

(a) to any owner or occupier of the site in respect of which the permit is granted; or

(b) to another person on another site, or to another site, if both sites are in the same catchment (either upstream or downstream), aquifer, or geothermal field, and the transfer –

(i) is expressly allowed by a regional plan; or

(ii) has been approved by the consent authority that granted the permit on an application under subsection (4).

Subsection 4's provisions are essentially that the application for a transfer shall be treated as an application for a consent *ab initio*, in the event the transfer is not provided for in the regional plan. The Act's provisions relating to the transfer of water permits – unless allowed in the regional plan – are therefore not very nimble, given the lengthy and expensive consent process to which the provision refers. The free-market rationalism of the two governments involved in the formation of the Act would suggest an easier transfer process would be contained in the section

and it is notable is that there was an inability prior to the 2005 amendment to even transfer permits temporarily.¹

Section 136 of the Act therefore currently allows the transfer of water consents under certain conditions.² It may be argued that sections 5 (“sustainable management”) and 7 of the Act provide the mandate for the transfer of water permits – the general provision of section 7 in particular: “the efficient use and development of natural and physical resources.” The main argument in favour of a transfer system is to allow a transfer of a consent to more efficient or higher-value users.

Of particular interest is the definition of “efficient allocation” in the definition section of both National Policy Statements for Freshwater Management: “Efficient allocation” includes economic, technical and dynamic efficiency.” The use of the expression “dynamic efficiency” is an important departure from the use of “efficiency” *per se* in a general sense (say in the sense of making optimal use of scarce resources). The notion of dynamic efficiency is a well-developed economics discourse and relates to efficiency over time, a balance of short term goals and long term concerns and often results in the maintenance of efficiency by the introduction of new technologies and working techniques over an interval.³

The expression “efficient allocation” appears in both National Policy Statements on Freshwater Management in Objective B3 (“To improve and maximise the efficient allocation and efficient use of water”)

¹ Section 2A, allowing temporary transfers, was inserted by the Resource Management Amendment Act 2005.

² Referred to as “permits” in the section.

³ See T Tietenberg and L Lewis *Environmental Economics and Policy* (6th ed, Pearson Education Inc, Boston, 2010) at 29.

and Policies B2 (requiring councils to ensure their regional plans contain provisions for the efficient allocation of water) and B3 (requiring councils to ensure regional plans contain provision for the transfer of permits). Thus these policies require the on-going achievement of a desired outcome arguably with the expenditure of the lowest input with lowest possible technical inefficiency. In terms of the outcomes of Policies B2 and B3, this would suggest an ease of transferability to achieve the most economically efficient use of water resources persisting over time.

4.2 Trends Towards an Easing of the Transfer of Water Permits.

In point of fact, the old Water and Soil Conservation Act 1967 contained a basic provision allowing the transfer of water permits to new owners or occupiers of the land to which the right was attached.⁴ The essence of the provision in section 136 of the Resource Management Act 1991 is that the permits may only be transferred to another site within the same catchment and only if allowed by the regional plan, or a resource consent to do so is granted by the allocating authority.⁵ The problem was that not all regional plans allowed such a transfer, possibly because councils perceive a danger when such action can be completed without their involvement.⁶

Both National Policy Statements requires every council to include criteria in its regional plan by which applications for approval of transfers of water take permits are to be decided.⁷ It can be confidently predicted councils will try to ensure they have some input into the transfer process. Despite the Resource

⁴ Section 24A as inserted by s3 Water and Soil Conservation Amendment Act 1969. The permits are called “rights” under that Act. Its effect was retrospective.

⁵ Section 136 (2) (b) (i) and (ii).

⁶ If such a provision is included in the regional plan, a simple notice to council is all that is required: section 136(3). See also *The Favourite Limited v Vavasour* [2005] NZRMA 461 at paragraph [30] (High Court) where Ellen France J described Council’s function as a “postbox”.

⁷ Policy B3.

Management Act's provision (at section 122) that resource consents are neither real nor personal property,⁸ the decision in *Aoraki Water Trust v Meridian Energy Trust*⁹ makes it clear that the holder of a resource consent has a right to use the resource attached to the consent and which accordingly has some value, in some cases not inconsiderable value, which in turn suggests the permit has some characteristics of property.¹⁰ A degree of confusion is inevitable but it is certain that there exists some form of legal privilege capable of being transferred – provided certain factors are conducive to the establishment of an expedient system of alienation.

Memon and Skelton express the view that section 122 is designed to allay public concerns that water remain in the public domain and that ownership thereof should not be privatised.¹¹ However it is the right of access to the water that is being transferred (not the ownership of the water itself); the benefit of the water itself is merely usufructuary in nature. A Ministry of Agriculture and Forestry Technical Paper drawing on overseas experience states:

Much of the literature stresses the need for clear, enforceable property rights to water or 'pure property rights to water'. Development of such rights appears to be seen as the next important stage in the Australian government's reform of water policy. A number of principles for the implementation of effective property rights have been established. These stipulate that water entitlements must be clearly specified in terms of:

- Rights and conditions of ownership tenure
- Share of the resource being allocated
- Details of agreed standards or services to be delivered

⁸ Such a provision might arguably act to frustrate the provisions of section 136, that is to say transferees may lack confidence as to what they have purchased.

⁹ *Aoraki Water Trust v Meridian Energy Limited* [2005] 2 NZLR 268.

¹⁰ See also the provisions of section 122(2) and (3). The question of property will be discussed in chapter 5.

¹¹ Memon A & Skelton P "Institutional Arrangements to Allocate Groundwater Resources in New Zealand: A Way Forward" (2007)11 NZ J Env'tl L 241 at 258.

- Constraints on transferability
- Constraints on resource use or access¹²

The practical problem is that, despite the provisions of the Resource Management Act, water permits in New Zealand have been regarded as property of some kind by various interested parties from consent holders through to real estate agents, and the value attributed to them has been pragmatically amalgamated into the value of the land, despite the fact that the permits do not run with the land. Although the renewal of a water permit is not guaranteed under the Resource Management Act, in practice up to now this has occurred as a matter of course, even though conditions may be reviewed. The interested players argue a degree of certainty is essential to ensure continued confident investment in future planning.¹³

There has been a continual debate on the issue of permit transfer from the time of the passing of the Act. In a 1997 publication, the Ministry for the Environment identified several factors which are prerequisites for a transfer system to function effectively.¹⁴ First, there needs to be a fully allocated resource where demand exceeds supply, otherwise new permits would simply be issued to new applicants with no incentive to transfer existing permits either in whole or in part. In the event there is no new water for new applicants, a competent system of re-allocation is of some consequence.

Secondly, there needs to be sufficient technical knowledge about the resource availability and the environmental effects of its use to enable council to

¹² *Economic Efficiency of Water Allocation* MAF Technical Paper 2001/7 at paragraph 3.3.

¹³ Memon A & Skelton P “Institutional Arrangements to Allocate Groundwater Resources in New Zealand: A Way Forward” (2007)11 NZ J Env'tl L 241 at 259.

¹⁴ *Resource Management Ideas. No12 Transferable Permits-From Theory to Practice*, at page 5.

set suitable restraints on consumption.¹⁵ Permit holders will have certainty as to how these restraints will affect them.

Thirdly, there needs to be a policing system to monitor events with appropriate sanctions meted out to those who transgress permit conditions. Fourthly transaction costs need to be kept down so that the benefits (both private and community) exceed the total costs of the exchange – the establishment and administration of a system would naturally involve certain amount of costs. Lastly, the system needs to be flexible and sufficiently diverse.

Although implied in the above, Joseph Sax in the final conclusion to his New Zealand paper advises that the system must also be simple. A Byzantine scheme or indeed even one similar to the current resource application process would be self-defeating – “If your system generates a lot of work for water lawyers, you have already failed,”¹⁶ – a complicated transfer process increases transaction costs, sometimes substantially as well as creating delay. A technical report (that is to say not Government policy) from the Ministries for the Environment and Agriculture and Fisheries in 2004 identified certain benefits derived from a trading system:

Enhancing the transferability of water permits would potentially lead to an improved overall system of water allocation and use. To the extent that trading facilitates the reallocation of water resources, the first-in first-served approach to making initial allocations would be of less concern. Similarly, where initial administrative allocations turn out not to be to the highest valued use, trading potentially allows this to be corrected over time reducing the need for councils to review allocations. In turn this would potentially provide greater certainty for investors, with reviews of allocations primarily driven by environmental factors rather than the need to provide for other uses.

¹⁵ Councils have this responsibility under section 30 (1) (e) of the Resource Management Act.

¹⁶ J Sax “Our Precious Water Resources: Learning From the Past, Securing the Future” [2009] RM Theory and Practice 30 at 51.

The emergence of a price for water would also provide incentives for technical efficiency in use.¹⁷

Regional councils are generally cautiously supportive of a transfer system but some have up to now shown a degree of reluctance to the establishment of one within their borders. As stated this may be due in part to their lack of confidence in their ability to maintain control of the transfer process, but also due to the fact that such a system may be unpopular and may be politically suspect. The Northland Regional Council review of its Regional Policy Statement for example probably sums up the fears held by some residents. The discussion document of October 2010¹⁸ promotes the notion that the 2005 amendment to section 136 of the Act to encourage and facilitate the transfer of water permits – temporarily or permanently – would promote more efficient use of water by freeing up unused or unwanted allocations.¹⁹

The Discussion Paper however also articulates the concerns of many submissions received which were against such a scheme:

The majority of submitters oppose the transfer of water permits via market forces. They feel that water is a “common” resource and the ability to transfer water permits will effectively privatise it – they support the idea of communities determining what the best use of water is.²⁰

¹⁷ *Water Programme of Action- Water Allocation and Use* (2004b) MfE 561 paragraph 10.9.2.

¹⁸ Northern Regional Council New Regional Policy Statement Discussion Document 2010.

¹⁹ In some cases catchments are over-allocated but do not experience problems because some permit holders do not extract their full entitlement. Therefore it is important to take into account those matters referred to in section 30 (1) (i) and (ii). Policies will need to be introduced to ameliorate the problem of over-allocated resources. See Report of the Land and Water Forum, September 2010, paragraph 142, and Policy B5 and B6 National Policy Statement Freshwater Management, May 2011, and July 2014, which have virtually identical provisions.

²⁰ Northland Regional Council New Regional Policy Statement Discussion Document 2010 at 71.

The Technical Report²¹ identifies problems as well, notably negative public perception of such a scheme as well as the management of potential environmental impacts.²² Councils have an obligation under section 30(1) (e) of the Act to control water flow and levels ((reinforced by Policy B1 of both National Policy Statements for Freshwater Management) but not all have managed to achieve this outcome due to lack of facilities. To environmental impacts must be added social and cultural matters. Further the nature and duration of consents are other matters needing to be addressed. Clearly, the “take” and “use” components of the permit will need to be separated to enable the transfer system to properly function; and, from investors’ perspectives, the longer the duration of the permit the better. Memon and Skelton also suggest that restrictions on councils’ power to review conditions would add to the security of the investment undertaking.²³ Splitting permits in this way and restricting councils’ powers are clearly beyond the current parameters of the Act.

In any event, obviously, there is the need for change to accommodate the provisions of the National Policy Statements on water,²⁴ especially Policy B3 which has the same provision in both Statements, and which took effect on the 1st July 2011. This requires every Council to include provisions for the transfer of water permits in their regional plans. One commentator has suggested the National Policy Statement may not be as staunch as might be supposed at first blush.

Philip Milne suggests that although a regional plan must give effect to the National Policy Statement, this would be subject to Part 2 of the Resource

²¹ *Supra*, at note 17.

²² Meticulously also identifying the interests of lessors.

²³ Memon A & Skelton P “Institutional Arrangements to Allocate Groundwater Resources in New Zealand: A Way Forward” (2007)11 NZ J Env’tl L 241 at 260.

²⁴ See section 55 Resource Management Act whereby councils are obliged to give effect to such Statements.

Management Act, and if inconsistent then part 2 would prevail.²⁵ This may not be the case however because the effect would be to allow councils to cherry-pick elements from the Statement for inclusion into their Plans, and decline to implement others. This is unlikely to be the case.

Notwithstanding this possible outcome, the amendment process must be complete by the end of December 2030. While the Resource Management Act devolves to the regions the task of managing local resources, in the case of nationally significant issues central government will give direction to local councils for the making resource management decisions.²⁶ Councils are stuck with this process irrespective of submissions made to them by their ratepayers.

It is notable that, in a survey prepared for the Ministry for the Environment in 2001,²⁷ the authors identified several factors bothering a minority of those interviewed. While three-quarters of those questioned generally supported the idea that water rights should be able to be transferred between properties, the rest presented a cocktail of differing concerns including a philosophical aversion to paying for a natural resource, anxiety that the system would increase the use of the resource thereby putting its reliability at risk, a simple lack of altruism, unfamiliarity, a lack of confidence that the market would find players, a belief that the current transfer system indicates that the price has gone too high, and a lack of confidence that the system would be fair.²⁸ These individuals will need to adopt

²⁵ Milne, P. "The NPS on Freshwater Management: What will it mean in Practice?" (November 2011) RMJ 13 at 16.

²⁶ The Minister for the Environment actually has wide powers under Part IV of the Resource Management Act.

²⁷ Ministry for the Environment *Attitudes and Barriers to Water Trading*, Lincoln Environmental Report 4464/1 December 2001 (TR 115).

²⁸ *Ibid*, at 13.

the same confidence that the Parliament has in acknowledging that the allocating authorities will be able to devise a means to implement Policy B3.²⁹

More significantly however, slightly less than eighty per cent of interviewees indicated their support for the notion of temporary transfers of water permits – almost half identifying as lessee rather than lessor – although the number supporting the notion of permanent transfers were somewhat lower, at just under sixty per cent.³⁰

4.3 The Need for Infrastructure.

Of critical importance is investment in water infrastructure, both storage and delivery.³¹ Storage of water has the potential to resolve a number of issues relating to permit transfer. It would allow temporal as well as spatial transfers, and also generating a certain confidence in supply,³² and, by extension, in the system itself. The National Infrastructure Unit has identified some other important benefits.³³

In addition to smoothing the variability of supply, water storage and delivery systems would enable exporters to take exploit higher-value markets that require a reliable supply of high-quality products, as well as helping New Zealand deal with the straits of climate change. The Property Council of New Zealand at its 2011 National Conference (held in Australia) suggested New Zealand needed

²⁹ Both National Policy Statements for Freshwater Management Implementation Guides include direction to Councils in giving effect to the Policies contained in the Statements.

³⁰ The main reason was the belief that the land was probably dependent on a supply of water for its utility.

³¹ The small size generally of New Zealand's catchments is an unfavourable element, and infrastructure expenditure is inevitable for an effective market system to flourish. Water infrastructure is dramatically expensive.

³² Ministry for the Environment *Attitudes and Barriers to Water Trading*, Lincoln Environmental Report 4464/1 December 2001 p 39. (TR 115)

³³ National Infrastructure Unit Publication *Rural Water Infrastructure* (September 2009) <www.infrastructure.govt.nz>.

to spend one billion dollars funding water supply, treatment, and management issues.³⁴ The New Zealand Infrastructure Unit is committed to annual reports on progress on the 2011 National Infrastructure Plan. This body reports on a number of core infrastructure matters including “productive” or “rural” water.³⁵

The Government is obviously cognizant of the need for infrastructure expenditure. The first Report of the Land and Water Forum identifies this as one plank in its raft of reform suggestions. Provided planning and construction is done correctly, the Report states that rural water infrastructure will allow for greater crop diversity as well as reducing pressure on river flows and the amount of water per hectare required to be irrigated due to greater efficiency.³⁶ The consenting process will need to be reviewed to enable incentives to be built into the process that give clear signals to proponents of large water schemes about the collaborative behaviour and capabilities that are required, and to favour consent applicants who collaborate with each other.³⁷ Similarly the term of consents should be reviewed, as their duration can affect investment certainty.³⁸

Certain strong signals have come from the Government about its intention to make the transfer of water consents more usual and accepted than is currently the case. In addition to its initiative in the National Policy Statement for Freshwater Management, important indications were contained in the Budget of 2011. This Budget announced the government’s commitment to an expanded irrigation fund to support the development of new water harvesting, storage, and

³⁴ The Property Council of New Zealand National Conference Proceedings (2011) www.propertynz.co.nz/files/Events/John%20Rae.pdf.

³⁵ See National Infrastructure Unit “Infrastructure 2013” (2013) National Infrastructure Unit <www.infrastructure.govt.nz/plan/2011implementation/2013report/nsir-oct13>.

³⁶ Land and Water Forum. 2010. *First Report of the Land and Water Forum: A Fresh Start for Fresh Water* para 151.

³⁷ *Ibid*, at para 155.

³⁸ *Ibid*, at para 163.

distribution infrastructure.³⁹ In preparation for the Budget, the Ministry of Agriculture and Fisheries commissioned the New Zealand Institute of Economic Research to estimate the economic impacts of increasing irrigation in Canterbury, Wairarapa, Waimea, and Hawkes Bay by a total of 347,000 hectares.⁴⁰

This is a significant area and would increase the total area of irrigated land in New Zealand to over 900,000 hectares.⁴¹ Dams and delivery systems will require an equally significant capital outlay. The Report is predicated on the New Zealand Infrastructure Plan (2010) which identifies infrastructure policy as being focused on productivity and employment growth. The conclusion the Institute arrived at is that by 2035, irrigation could increase agricultural exports by 2026 by \$4 billion per annum in 2010 terms that is to say inflation and price increases excluded. The Institute's report formed the basis of a Ministry of Agriculture paper to the Cabinet Economic Growth and Infrastructure Committee on 11th March 2011.

The Institute's Report recognises these regional-scale schemes will cost about \$9 billion⁴² requiring private-sector finance, probably from multiple investors and a suitable return on investment. Developments of this nature are largely an unknown quantity in New Zealand and will require a new business model. High standards of commercial governance will be required and return on investment will need to be shared by both irrigating farmers and infrastructure investors. The risks will probably need to be underwritten by local or more likely central government. Importantly, the risks of this type of investment are not yet clearly understood by financial markets, and, until they are, a factored-in risk

³⁹ This had been discussed in MAF Technical Paper 2001/7, at paragraph 3, page 11. (See note 12 *supra*).

⁴⁰ NZEIR *The Economic Impact of Increased Irrigation* Final Report to Ministry of Agriculture and Fisheries 9 November 2010 at para [44].

⁴¹ *Ibid*, at para 22 and para 44.

⁴² Including on-farm costs (See para 4).

assessment might challenge the viability of the schemes. However, the potential gains are such that the government has committed itself to the programme.

Accordingly the Budget announcement in 2011 confirmed the government will allocate \$35 million over 5 years for the Irrigation Acceleration Fund to support the development of irrigation infrastructure proposals to the ‘investment-ready’ prospectus stage. The second stage of government involvement entails a state investment of up to \$400 million ‘seed money’ of equity in the construction of regional-scale schemes to encourage third-party investment.⁴³ The Crown will be a minority partner, but its involvement will give the schemes a much needed official blessing. The Budgets of 2013 provided \$80 million, 2014 \$40 million, and 2015 a further \$25 million. Overall however, the combination of the National Policy Statement for Freshwater relating to instruction to regional councils over permit transfers and the government commitment to infrastructure announced in the 2011 Budget suggests strongly that the government is viewing the notion of water permit transfers – and by extension some species of a market system – with a definite degree of anticipation. Importantly, climate change science is telling humankind as a species to prepare for climate extremes such as droughts and water projects of the type envisioned by the Government will be of critical importance in the short- to medium-term future.

4.3.1 The Opuha Dam

There are already a number of small private irrigation schemes operating in New Zealand. The Community Irrigation Fund was established in 2008 and supplied funds for several projects. This Fund has now been incorporated in the Accelerated Irrigation Fund, established in 2011, and has continued to fund community schemes. Arguably one of the most successful is the Opuha Dam

⁴³ Provision has also been made for the endowment of \$15 million for waterway clean-up.

scheme commenced in 1995 and operated by Opuha Water Limited. This initiative supplies not only water for irrigation, but also commercial and domestic water for the Timaru District Council, and in addition has its own 7.4 megawatt hydro-electric scheme.⁴⁴ In terms of its irrigation scheme, the project provides support for some 16,000 hectares for the irrigation season which is September to April. The project is currently working towards an Audited Self-Management system, that is to say some of the responsibilities of the Canterbury Regional Council are delegated to the company under agreed terms. The thinking is that a lower compliance burden can be achieved as well as better adaptive water management utilising local knowledge, rather than suffering the imposition of a “top-down” regulatory approach (this can be seen in terms of a transaction- cost discourse). Opuha Water Limited holds a number of consents to dam and discharge supplied water from Lake Opuha. Each individual shareholder however is required to have a water permit issued by the Canterbury Regional Council to take and use this water and this amount corresponds with the shareholding water allocation. The shareholders may sell their shares permanently (for example with farm sales), or lease them on a medium-term basis (for instance an irrigation season), or short-term – weekly or monthly. Both sellers and buyers simply register their interest with the administrator, and the parties negotiate between themselves the price and amount of water to be transacted.

There are a number of identifiable factors impelling the success of the Opuha project. Lange, Winstanley, and Wood have identified several.⁴⁵ First, there is the matter of certainty of access any stored water. Shareholders have their access continuously recorded so they know exactly how much of their allocation they have left at any point in time. Consequently, farmers are able to decide

⁴⁴ Contracted out to TrustPower as from the 1st November 2011. The contract was previously held by Contact Energy.

⁴⁵ Lange, Winstanley, and Wood *Water Transfers in Practice – Some Issues Revealed*. Institute of Environmental Science and Research Limited (2006).

whether they have water to trade, or whether they need access to more water. This is a very strong incentive to trade.⁴⁶

The second factor is a corollary of the first – a revelation that water has an economic value, thus having an effect on trading decisions. Although a contentious issue, there is no denying that the value of the shares has increased.⁴⁷ Concomitantly the value of the irrigated land has increased as well.

Thirdly, the authors identify the degree of enhanced economic activity in the area. This includes not only a return on investment of the shareholders, but also a significant increment in crop production resulting in the establishment of processing factories at Timaru and continuing contracts for farmers. Commerce such as dairy, lamb, grain, and seed industries also benefit.

Fourthly, since the scheme was set up, there have been changes to the river management regimes. Minimum flows have been imposed on the Tengawai River, and farmers who have rights to take water from that river are sometimes compromised because the flows are too low for extraction to occur. The trading system is a simple one, in contrast to the transfer system within the Resource Management Act and has the potential to compensate these farmers who can transact with others further down the catchment not affected by the same restrictions.

Fifthly, the scheme is blessed with a simple administration system. The administrator (Hubbard, Churcher & Co., Timaru) collects all relevant

⁴⁶ Each share irrigates 4 hectares providing 1000 cubic metres per week for the irrigation season. The total volume per season is 22,500 cubic metres per share at a flow rate of 1.6534 litres per second.

⁴⁷ The shares initially cost \$250, but are currently trading for \$5,000. See “Opuha Water Limited Enabling Sustainable Growth” Hawkes Bay Regional Council (<www.hbrc.govt.nz/HBRCDocuments/HBRC%20>).

information,⁴⁸ and keeps a list of those wanting to trade and those wanting access. The project also has its own website.

Lastly, the authors recognise that the system is self-policing. Stock-piling of water allocations is unlikely because users have to pay eighty per cent of the water charges irrespective of whether they use the water or not, and in any event the shareholders are all *bona fide* farmers. Anyone trying to speculate would very quickly be identified by those concerned.

The authors also identify factors working against a transfer system. Apart from geographical restrictions and regional council regulatory constraints,⁴⁹ the main barrier is an attitudinal one. Water trading is not common in New Zealand yet,⁵⁰ and there is the reasonable perception that permanent transfer could result in a loss of access to water, thus possibly affecting production and thereby reducing the value of the relevant land. Temporary transfers are more common.⁵¹ Some Maori, and, indeed, some Europeans, have a belief that water trading is wrong in principle,⁵² and some members of the general community believe that economic efficiency is not the most important criterion.

It has to be noted, however, that anecdotal evidence suggests the trout and salmon fishery in the Opuha River and Opuha Lake is greatly improved, greater flows have resulted in fewer river mouth closures, and the lake has provided recreational opportunities.⁵³ The authors note that while at the shareholders' end of the bureaucracy the system might seem simple and straightforward, in fact it is

⁴⁸ For instance, hydrological information, security of supply, characteristics of rights to be traded.

⁴⁹ Somewhat ameliorated by the Audited Self-Management process. The "audited" component is important.

⁵⁰ However, there are a number of water brokers established, for example Hydrotrader Limited.

⁵¹ Around 600 in the year 2011 (per T. McCormick, CEO 25/11/11).

⁵² Iwi generally hold a contentious view that ownership of water resources rests with them.

⁵³ Opuha Dam Ex Post Study, August 2006 (Ministry of Economic Development through Aoraki Development Trust) 41-42.

relatively complex. Of course there is the added issue of equity in terms of distributive justice. In the case of Opuha, the processes used to engage members of the community were extensive, and successful.⁵⁴ However the decision to invest would be made in many instances in the absence of either experience in water matters, or funds, and these affected farmers have been excluded from that water market process.

4.4 Tradable Permits as Economic Instruments.

Although this research is not an economics discourse, some analysis needs to be made of the marketing of water rights. Markets are used for distributing and re-distributing both natural resources and produced goods. It is crucial however that the commodity being marketed be clearly identified by the players. Knowledge of what is being traded is the only real requirement: the parties do not even have to meet.

The Dublin Statement on Water and Sustainable Development⁵⁵ stated (in the Fourth Principle) that water had an economic value and should be recognised as an economic good. This statement probably proclaimed a universal understanding – water has been seen in economic terms as having a value for some centuries – but the controversy of the statement came from its view of water in naked economic terms, rather than in terms of a universal human right.⁵⁶ The Principle is probably not yet universally accepted, but the *de facto* position is quite clear, and that is water is seen as an economic good, and therefore it does

⁵⁴ Lange, M *Equity and Fairness in Water Resource Allocation and Management* Water and Health <[www.esr.cri.nz/site/Collection/Documents/ESR/PDF/SocialScience/Water and HealthIssue 35.pdf](http://www.esr.cri.nz/site/Collection/Documents/ESR/PDF/SocialScience/Water%20and%20HealthIssue%2035.pdf)>, at p3.

⁵⁵ International Conference on Water and the Environment Ireland January 1994.

⁵⁶ But see UN Committee on Economic, Social and Cultural Rights. General Comment No 15 (2002) – water is recognised not only as a public good and a limited resource, but also as a human right.

actually have some sort of value, as opposed to both cost and price, and the distinction is vital. The value of water is described in the following illustration:

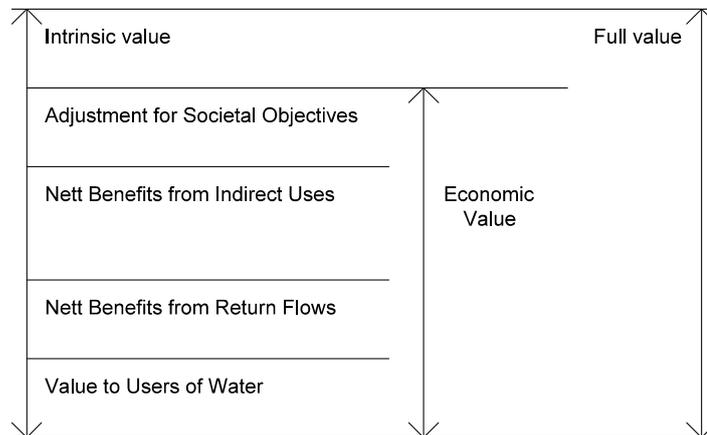


Figure 2: P Rogers, R de Silva, and R Bhatia "Water as an Economic Good: How to use prices to Promote Equity, Efficiency, and Sustainability" *Water Policy* 4 (2002) 1 at 3.

The full value of water can thus be seen as the total of both ecological and economic worth. Cost on the other hand is a wholly disparate (economic) discourse:

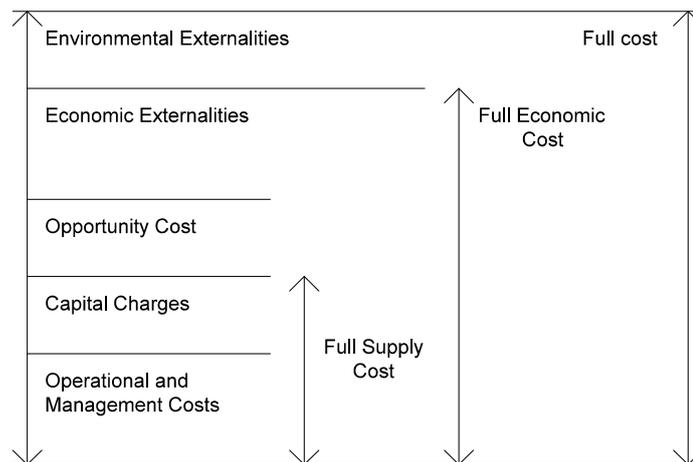


Figure 3: P Rogers, R de Silva, and R Bhatia “Water as an Economic Good: How to use prices to Promote Equity, Efficiency, and Sustainability” *Water Policy* 4 (2002) 1 at 3.

The cost of water can be seen as the total amount of all resources expended in producing goods and services. Both value and cost are entirely different from price. Price is a matter determined by cost but not solely so, as it reflects a fluid discrepancy between supply and demand. Contemporary economic theory informs us that decentralised environmental economic instruments provide the flexibility to change quickly to certain market conditions

as well as provide the incentive to the parties to respond cost-effectively to government objectives:

... used properly, [economic instruments] are ruthlessly neutral, relatively immune to special pleading, costly to avoid, and effective in inducing private economic agents to change their accustomed behaviour.⁵⁷

Although environmental economic instruments are largely utilised to mitigate pollution effects,⁵⁸ they can also be used in a quasi-regulatory capacity to reallocate certain (in our case water) command and control consents in the form of tradable permits. Tradable water permits are actually more accurately described as legal instruments, albeit cross-dressed as economic instruments. They are legal instruments in that they describe some contractual relationship or create some rights and obligations between the parties, but display the ambition to be economic instruments because they have the potential to achieve environmental policy goals. They achieve this by modifying the behaviour of the parties through market signals rather than explicit prescriptions, with an intended consequential improvement in the quality of environmental activities.

In the case of water permits, markets will allow the redistribution of already allocated water both used and unused with the potential to conserve the water supply at source. In the event that allocating authorities issue minimum flows and water levels (which they are required to do), a cap on the supply will create some scarcity as it is possible more water will be unavailable for extraction. Such a redistribution is a matter of sustainability, but it will also free up the resource for the possible use by others, thus contributing to economic growth. Classic economic theory suggests the system will inspire a transfer of entitlement

⁵⁷ Bertram G “Economic Instruments and Environmental Policy in New Zealand” (Paper presented to Resource Management Law Association Annual Conference Wellington October 1994).

⁵⁸ Thus giving voice to clause 16 of the 1992 Rio Declaration on Environment and Development (in short: polluter pays).

(in whole or in part; permanently or temporarily) and result in a shift towards more efficient use by others who value the water more than the transferor. The self-interest carrot is a more effective model than the command and control stick of traditional methods in achieving efficiency.

More importantly, both parties come to realise that as a result of the market transaction, the subject matter, water – or more accurately access to the water – has a certain price,⁵⁹ and accordingly both will value it more,⁶⁰ which could in turn mean that both parties will come to recognise there is value in the natural environment, as well as being an exercise in pragmatism, that is to say the exercise may teach the parties to conserve the environment for monetary, not just ecological reasons. It has to be acknowledged that historically there has been a certain tension between market forces and environmental protection. However:

Among the more enlightened participants in the environmental policy process the air of confrontation and conflict has now begun to recede in many parts of the world. Leading environmental groups and regulators have come to realise that the power of the market can be harnessed and channelled towards the achievement of environmental goals, through an economic incentives approach to regulation.⁶¹

The flexibility of the market system may result in the achievement of environmental goals at a lower cost. The efficacy of environmental economic instruments then is really a combination of both economic efficiency and environmental effectiveness. Economic efficiency combined with effective environmental practices will also arguably result in sustainable development, with the possible addition of deference to social responsibility.

⁵⁹ Such a view may likely encourage investment in water storage.

⁶⁰ Some environmentalists eschew the notion of placing a monetary value on the environment.

⁶¹ Tietenberg T “Economic Instruments for Environmental Regulation” (1990) 6 Oxford Review of Economic Policy 17 at 17.

Sinner and Salmon make the further point that under the traditional system councils have faced some difficult water allocation decisions:

Logic might suggest [allocated limits] should be no more than 100% of the available flow in excess of that needed to maintain in-stream values in a river, or up to 100% of the rate of replenishment of a groundwater resource. But because different users need water at different times, 100% allocation usually means that some available flow goes unused. For this reason, among others, some resources are “over-allocated”, e.g. to 130%, but if councils enforce minimum flow regimes, over-allocation reduces the security of supply of those who have water permits, especially if users expand production or otherwise make more complete use of their allocated amounts.⁶²

Economic instruments in the form of tradable water permits have the potential to obviate this problem. If councils allocate to 100% of the available resource, any water not being used during any particular interval can be traded to those who need it at the time. This potentially reduces the need to over-allocate the resource to take full advantage of all available water.

As noted, the traditional regulatory approach of environmental protection and decentralised economic market instruments are not really alternatives because regulations and prices may complement each other. The normative model will have a regulatory agency ascertain allocative levels. There is of course the polemics of the hoary debate as to whether these levels reflect biocentric or anthropocentric values, but from an economist’s point of view, the regulator should balance the marginal costs and the marginal benefits of more rigorous environmental protection. The result however has to be politically realistic. Permits are distributed according to set principles, but these principles may be set in a variety of ways. From the point of view of circulation, though, the market

⁶² J Sinner and G Salmon “Creating Economic Incentives for Sustainable Development” Report to the New Zealand Business Council for Sustainable Development November 2003 at 24.

will reallocate those permits. In equilibrium the price will reflect the marginal willingness to pay for a marginal extractive right.

Importantly, from the viewpoint of the objective of dynamic efficiency (that is to say, a balance of short term and long term goals contained in the National Policy Statement for Freshwater Management), such efficiency may be achieved by reducing depletion (and therefore costs) by investment in techniques and technologies that reduce water consumption. A charge (say, by way of a premium paid for extraction paid on an increasing scale) pursuant to Pigou's Theory⁶³ may produce dynamic efficiency as well, but the difference is in the equilibrium: it is a governmental agency that sets the charge, and this charge may set an excess of either supply or demand, depending on the level set, but the charge will need to be set over and over, as the ideal level will be a moving target. The calculus needed to set (and collect) the charges will probably be extremely complicated and will need to rely on accurate information collected centrally – a cost-benefit analysis will identify a reasonable target quantity to balance environmental against other interests.

In terms of sustainability, the regulator should balance the marginal cost of more environmental protection against the marginal benefit of more environmental protection; and, in terms of efficiency, then, a Pigouvian system is extremely poor. In terms of environmental policy though, the major difference between marketable permits and charges is seen in terms of distributive justice.

The ethical arguments prompted by competing claims for natural resources are an on-going and a significant source of controversy. In purely economic dialectics, however, Coase Theory propounds that initial distribution like a first-in-first-served model has little if any ultimate effect on efficiency (provided there

⁶³ See generally AC Pigou *The Economics of Welfare* (Macmillan, London, 1920).

are sufficiently low transaction costs), but rather such initial assignment is only a simple distribution of wealth in the form of natural resources. Those initial allocations may, of course, be re-allocated by the market to any highest bidder.

4.5 Lessons from the American and Canadian Scallop Fisheries.

The differences between regulated and rights-based systems are starkly focussed by an interesting comparative study into the American and Canadian scallop fisheries conducted by Robert Repetto in 2001.⁶⁴ This is a particularly apposite study as, prior to the Hague Line being drawn across George's Bank by the International Court of Justice in 1984, both countries had open access to and competed for the same scallop resource with the result that the fishery became dangerously overfished by largely inefficient harvesting techniques. Following the drawing of the Hague Line,⁶⁵ each country has fished its own area of influence, but using different management techniques. The United States continued with a regulatory approach, whereas Canada adopted a rights-based transferable quota system in 1986. The comparison is particularly appropriate as scallops are not migratory, and both countries use similar harvesting techniques.

Further, as the author states, although some Canadians and Americans might disagree, there are not large differences in cultural background, legal traditions, or fishing histories of the two countries. It is therefore an entirely empirical study and it is quite reasonable to infer that the differences come about due to differences in management. The two fisheries have been subsequently compared by collecting biological and economic data pertaining to each one for periods before and after the Canadians adopted their transferable quota system in 1986.⁶⁶ Biologically, the Canadians have managed to maintain their stock at a higher level

⁶⁴ R Repetto "A Natural Experiment in Fisheries Management" (2001) *Marine Policy* 251-264.

⁶⁵ Repetto broadly suggests a comparison with the 38th parallel and the vivid differences between the (regulated) North Korean and the (free-market) South Korean economies.

⁶⁶ Prior to that, the Canadians operated a command and control system also.

of abundance, closer to the levels consistent with the maximum biological and economic yields. They have also managed to avoid the taking of under-sized scallops. By contrast, before the scallop grounds were closed to harvesting the Americans suffered substantially higher rates of exploitation, even of under-sized scallops, and led to lower levels of stock abundance, far below those consistent with optimum yield.

Economically there is a stark difference in both static and dynamic efficiency. In the United States, the size of the (already bloated) fleet remained virtually the same due to restrictions on licensees' ability to stack multiple licences onto a single vessel, and a regulated reduction in the allowable number of days at sea have impinged heavily on those operators who would have fished their vessels more intensively. The Canadians, on the other hand, have managed to reduce the size of their fleet significantly, with a steady reduction in the number of days spent at sea. The Canadians have managed to significantly increase revenue per sea-day due mostly by a sevenfold increase in catch due to an improvement in stock numbers. The revenue in the United States fell sharply due to reduced stock numbers, and taking of undersized scallops.

In terms of dynamic efficiency, the Canadian industry invested in larger more modern boats, as well as investing voluntarily in a government research programme. The Americans, on the other hand, have resorted to complaints that the government research programme has underestimated the scallop population by missing dense populations, and have lobbied to have the permissible catch increased. At the time of writing [2001] 65% of the Canadian quota remained in original hands, suggesting smaller operators have not been at a significant competitive disadvantage, or that a rights-based regime necessarily results in monopolization of the industry. Because the entitlement is valuable, the transferable entitlement commands a price. Those with quotas but with high cost-structures possibly find it more profitable to sell their quotas to others, rather than utilizing them. Those with lower cost-structures can take on more quotas and still make a profit. The market system makes all this possible.

4.6 The New Zealand Fisheries Quota System.

New Zealand has a current example of economic instruments used as tradable permits in the form of its own fisheries quota management system and lessons for a water market system may be gleaned from this. Although the system has its drawbacks, it is generally acknowledged to work reasonably well and was introduced in October 1987. Although obviously not unique to New Zealand, ours is actually the world's largest application of an individual transferable quota system.

Historically, it became clear by the early 1980s that the generally-held belief that the oceans were teeming with fish unaffected by harvesting was quite incorrect. The sustainability of the industry was a risk. The main problem was that the fisheries (both inshore and deep water) were held in common ownership where nobody has ownership of the fish until after they were caught (similar to the situation with water). The imperative therefore was to catch as many fish as possible before they were harvested by another boat, an example of Hardin's theory of the Tragedy of the Commons.

Traditionally, the fishing industry was controlled by regulation – that is to say fishing methods (nets, tackle etc.), the number of boats, and limiting the season.⁶⁷ A change in approach resulted in the introduction of a scheme in the form of the quota management system that rather controlled how much fish (in tonnes) were to be caught.⁶⁸ This system relies on a blend of regulation and market performance, as it should. Each year the Minister of Fisheries gathers information to set the Total Allowable Commercial Catch for a particular species for each year and from year to year, allowances being made for non-commercial

⁶⁷ The Law of Unintended Consequences meant that by limiting the length of the season, boats were obliged economically to head to sea irrespective of conditions thereby compromising safety.

⁶⁸ It is worth noting when it became known a quota system based on catch history was to be introduced, fishing activity increased markedly.

activity such as recreational and customary uses. The total represents the amounts of fish quota owners are allowed to catch of a particular species each year and is expressed in tonnes, which can vary from year to year. In each year quota owners are assigned an annual catch entitlement calculated both on the share of the total quota they hold and the total annual commercial catch. Once the total annual catch for any year is known, the kilogramme equivalent of each quota share is calculated and transferred to the quota owner on the first day of each fishing year as an annual catch entitlement. This establishes the tonnage of fish that the quota owner is able to catch within the next fishing year. Both individual quotas and annual catch entitlements are definite property with defined rights which attract a price and may be mortgaged, transferred either permanently or temporarily, or gifted under the Fisheries Act 1996, and a register of both quota and annual catch entitlements is kept by the Ministry for Primary Industries.⁶⁹ Trade is facilitated by newspaper and magazine advertisements, as well as the services of brokers. The Fisheries Act (which is continually amended) limits how much quota any one person or company may hold,⁷⁰ in order to avoid a monopoly by any one holder for any one area or of any one species. Such a system could quite feasibly be adapted to assist in water market activity.

That is not to say that the New Zealand fishery is without its problems. There are some difficulties with the Quota Management System including legal disputes and there is not always total agreement about the level of the Maximum Sustainable Yield (there are particularly problems with the Orange Roughy stock). Management of individual species may not have regard for the welfare of others. However, the marketing of quotas is working reasonably well despite the fact that the property right in the quota is not a classic property right because it represents

⁶⁹ See Part 8 Fisheries Act 1996.

⁷⁰ See Fisheries Act 1996, section 59, and 5th Schedule. Generally quotas are owned by New Zealanders, but exemptions are now available to enable some foreign companies to own both quota and annual catch entitlements.

only a share in the total allowable catch and does not provide an exclusive right (that is to say the exclusion of others) to the fish. Traders understand the nature of what they are transacting, and that it is possible the Minister may set the allowable tonnage for any species at zero at any stage for the common good – thus rendering the property right inactive. In the case of water, trading in permits will occur if the nature of what is being traded is generally understood. Farmers especially would recognise the need to give a “hair cut” to a right in times of water shortage.

Immediately following the introduction of the transferable quota system in New Zealand there was a flurry of market activity during which the sum of the transactions was greater than the total amount of quota allocated.⁷¹ The logical inference is that some quota must have been sold or leased a number of times during the first few years.⁷² A further logical inference is that less efficient operators may have left the industry making it more efficient overall. From an overseas perspective an American study⁷³ of our system has concluded:

Whether market-based instruments are being applied to fish, pollution, or other resource problems, the ability of firms to buy and sell quotas in a well-functioning market is necessary for achieving efficiency gains. In practice, one might worry that these markets may be thin or plagued with information problems...

We typically observe both a sufficient number of market participants and high enough levels of market activity to support a competitive quota market [in New Zealand]. The level of activity has risen steadily over the years, consistent with the notion that the development of these markets takes time.⁷⁴

⁷¹ Lock K and Leslie S “New Zealand’s Quota Management System: A History of the First 20 Years” (2007) Motu Working Paper 07-02 Motu Economic and Public Research 24.

⁷² See *Allocation, Trade and Holding of Quota*, chapter 3 <www.fish.govt.nz/.../qms_chapter_03>.

⁷³ Newell R, Sanchirico J, and Kerr S “Fishing Quota Markets” (2002) Resources for the Future <ageconsearch.umn.edu/bitstream/10451/1dpo2oo2o.pdf> 31-32.

⁷⁴ The authors further note that there are some markets with few transactions but these tend to be economically and ecologically unimportant (p 32).

The lesson from both our own and the Canadian experience would suggest that, given robust parameters (for example property-right structures that are clearly and unequivocally defined), trading in economic instruments works well in (re)-allocating resources, and responds vigorously and effectively to market conditions. The aim of the fisheries model is to ensure fish stocks do not become exhausted. The same applies to water markets: this chapter demonstrates they can provide a valid mechanism to divide water rights as far as practicable, initially for the benefit of vendor and purchaser but ultimately for the benefit of the whole community as well as the environment. In the case of water, rigorously maintained minimum water levels and flows would be crucial and the market system would need to operate around these limitations.

Private property rights are a legitimate implement in managing environmental degeneration. Given the fisheries model was cobbled from scratch in New Zealand, a similar water model is indeed a distinct possibility. As always, the Devil is in the detail and the question is how a market for water permits might function. This will be discussed in the next chapter.

5 Chapter 5.

5.1 The Place for Water Markets

5.1.1 The Importance of Economics

The previous chapter established that both the Land and Water Forum and the New Zealand government would like active water markets to be established in New Zealand and that there are clear benefits both economically and environmentally from doing so. It is appropriate now to look at water markets in some detail.

Water markets have been functioning in the western states of the United States of America virtually from the outset of western settlement. The nature of the water rights is clearly understood, as is the market process. If New Zealand were to introduce tradable water permits in the form of property rights, some discussion about a market system is necessary. This research is not an economics dialogue, but economic ideas are as important in any discussion of a market system as are legal concepts. The two complement each other. There are two basic concepts of water re-allocation – reallocation through a purely administrative system (of whatever type), or reallocation through a market system. A market system would rely on a legal framework to administer the economically-based decisions of the participants. Once tradable permits are introduced, the question is how the alienation of them can be transacted. This and the next chapter will examine the special case of water markets.

There are essentially two main types of administrative solutions: administrative control of quantity issued to applicants (including perhaps the specification both of the time and purpose of extraction), and the administrative

control of prices (including a tiered approach to pricing).¹ There are problems with both of these administrative solutions. The former might enlarge, rather than contract, the bureaucratic machinery, thereby having the potential to create considerable transaction costs,² and expand the role and influence of government. Further, bureaucrats are largely sheltered from the economic consequences of their actions. Further still, the bureaucracy is unlikely to have all the relative current information necessary to achieve its goals. The latter system of managing prices is the more common form of control. Such a system regulates the consumption of water through pricing regimes. There are however efficiency difficulties (in the general sense of the term) with such a system. The following graph illustrates the problems:

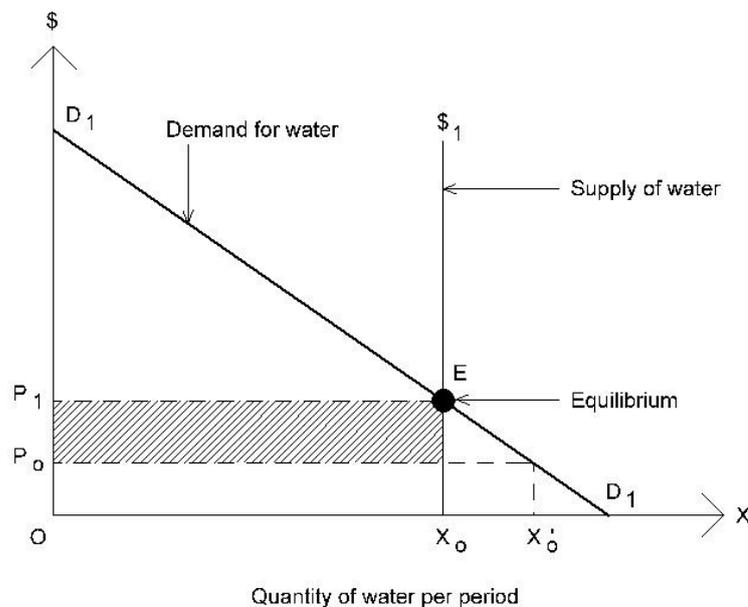


Figure 4: Clement A Tisdell *Resource and Environmental Economics* (World Scientific, Singapore, 2010) at 300

¹ See Clement A Tisdell *Resource and Environmental Economics* (World Scientific, Singapore, 2010) at 299-305.

² The “economic equivalent of friction” OE Williamson *The Economic Institutions of Capitalism* (The Free Press, New York, 1985) at 19.

Tisdell explains it thus: the demand curve for water is at D_1-D_1 , and its availability is at X_0 . per period. P_1 represents the regulated price of water and the water is allocated exactly at this price. The economic value of the use of the water is maximised if everyone pays the same price for the water because this ensures equality in the marginal willingness of everyone to pay for the water. On the other hand, the supply and demand for water is inconveniently variable,³ and accordingly it may be difficult for administrators to accurately determine the appropriate price of water relative to its supply. If it is assumed again that water availability is at X_0 but the price is fixed at P_0 , the graph illustrates that there will be an excess of demand over supply. The administrator might then increase the price to reduce the demand. These prices are regulated rather than assessed by the market. In the event that the water is priced differently for different groups of users, the inevitable result is that water is not allocated in such a way to maximise its overall economic value, that is to say. the water cannot as a matter of logical necessity be priced at its maximum overall general efficiency for both – it will represent either a subsidy for one or a tax for the other.

Tisdell further suggests that water pricing by administrators may be the subject of distributional or political determinations. If the price of water is set at P_0 (on distributive grounds), the profits of the water consumers are obviously higher than if the consumers had paid the price at P_1 , and the profits will vary between P_1 and P_0 . The calculus is clearly not merely one of general efficiency, and the pricing may be an exercise in husbandry motivated beyond the parameters of economics.

³ Variability is related to temporal and spatial differences of hydrological fluctuations for example precipitation, river flows, even water quality. It is not to be confused with the notion of uncertainty which is related to a lack of knowledge.

Another approach is to price water on a tiered structure so that the price increases with the amount of water consumed. This approach is designed to ration the allocation of water. Tisdell provides the following explanation:

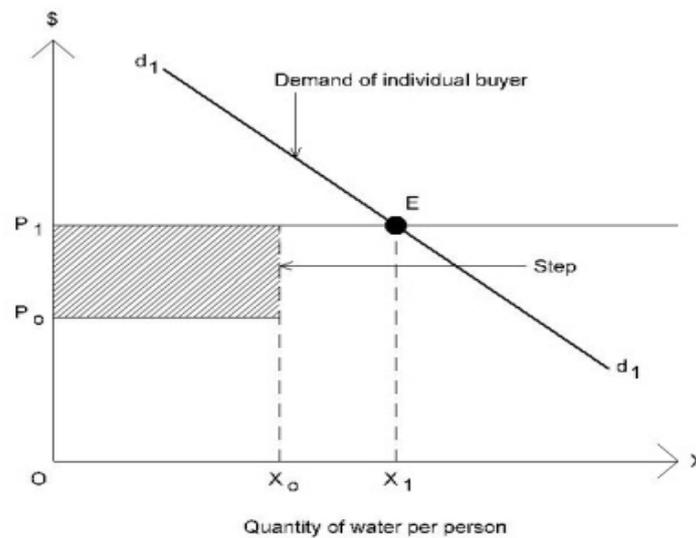


Figure 5: Clement A Tisdell *Resource and Environmental Economics* (World Scientific, Singapore, 2010) at 302.

The system works in the manner following *viz* the demand line D_1D_1 requires the consumer to pay P_0 per unit for the first X_0 units used. If the buyer purchases up to X_1 units, rather than paying P_1X_1 for the water used the consumer will pay the amount that is smaller by the amount $(P_1-P_0)X_0$ located in the shaded area. Also, if everyone pays P_1 for their marginal purchases of water, the graph tells us the demand would be brought into equality of supply (if the income effect on demand is zero). If we assume there are no externalities, the allocation will be efficient because everyone pays the same price for their marginal use of water. The equality of price results in the marginal value of use equal for all consumers. The insurmountable difficulty however is that the administrators know very little if anything at all about the day to day supply and demand dynamics (especially on an individual consumer level) and therefore it is impossible for an administrator to adjust prices effectively in the manner that a market system can.

5.1.2 The Advantages of Markets

In a free-market scheme self-interest will ensure participants will be aware of and weigh up the relative risks and opportunities before commencing to treat - and will sink or swim by the decisions they make. A regulatory system would make the task of valuing alternative uses an extremely difficult and time-consuming task. A market system both establishes the value of the commodity traded and has the flexibility to reflect changes in the value-system. On a cost-benefit analysis, then, water marketing is seen generally as a vastly better approach to the question of reallocation of resources. Conversely legislation that restricts water transfers may suggest that “policymakers do not expect the gains from market transactions to outweigh the political and economic costs of allowing active markets to develop.”⁴ This is of course a policy matter.

As noted previously, the market system may be used when conjoined to economic instruments as a system acting as an *amicus* of nature, in which the participants can help preserve natural resources, or at the least use them in a more efficient manner.⁵ These market structures can be superimposed on a government-regulated allocation regime,⁶ thus ensuring limited rights to divert water are ultimately efficient, thereby minimising the cost of regulation to the economy. A further advantage is that the ability to transfer ownership of a water right will foster an incentive with the right-holder to oversee the resource carefully and to use it more efficiently in order to preserve it due to its value. If a right-holder can make a profit from the sale or lease of water rights, he or she is

⁴ BC Saliba and DB Bush *Water Markets in Theory and Practice* (Westview Press Inc., Boulder, 1987) at p 8.

⁵ See Tom Tietenberg and Lynne Lewis *Environmental Economics & Policy* (6th ed, Pearson Education, Boston, 2010) at 495-6.

⁶ Depending on jurisdiction, this regime may also include prior appropriation or riparian doctrines. Public allocation systems involve governmentally-administered distribution of rights. See Tom Tietenberg and Lynne Lewis *Environmental Economics & Policy* (6th ed, Pearson Education, Boston, 2010) at 178-183.

likely to indulge in practices that conserve the water for sale thus making that water available to others.

Carol Rose proposes a curious argument, that markets promote democracy and moderate the power of the State. In this respect she is virtually quoting Milton Friedman's thesis (*Capitalism and Freedom* (University of Chicago Press, Chicago, 1962):

Because the socialist state could control jobs, education, and indeed advancement on any front, Friedman argued, the socialist state could repress dissent easily. Capitalism and private property, on the other hand, offer multiple sources of power, taking the forms of income, prestige, and assets. Thus, on Friedman's argument, states that permit private property and free enterprise also foster the proliferation of multiple power sources and, ultimately, diverse political views and movements.⁷

However, the market system has a more prosaic function, *viz* enabling one party to contract with another to trade some form of property for money or some other form of exchange. The most important function of the market system is that of providing a systematic process by which the voluntary participants are able to contact each other and interact in such a way as to reach a conclusion to buy and sell commodities or services. It is not merely a simple mechanism to define the price of a commodity, but encompasses the necessary accoutrements of administration, regulation, payments, and enforcement, which are all legal matters. Further, economics as a discipline does not debate the interests or well-being of one party over another – that is an ethics argument and traditionally economics is more concerned simply about the efficiency effects of alternative policies.

⁷ Carol Rose "Privatization – The Road to Democracy?" (2005-2006) 50 St Louis ULJ 691 at 705.

An illustration is appropriate. Two parties A and B have water rights, party A is a farmer and party B an industrialist. Party A has a surplus of water, party B a deficit. A certain volume of water, say 1000 cubic metres may represent \$1,000 in potential profit to party A, but party B offers \$5,000 for it. There is a \$4,000 disparity in the marginal value to each party. Should the transaction proceed, both A and B are better off in terms of their own preferences. The debate over price is a purely distributional one. However party A is unlikely to sell another 1000 cubic metres on such terms. For one thing, water is now more scarce for him and giving up more water may mean he will need to abandon more pressing uses. On the other hand party B may not be so anxious to purchase as before as his immediate need has been satisfied, and more water would be put to less urgent needs. For both party A and party B the marginal value in use has declined with increases in consumption. Conversely, the marginal value in use will increase if consumption is reduced. The conclusion is that efficient allocations are attained when there are no mutually advantageous exchanges possible between any pair of participants in a trade.⁸

Not all market activities are dissociated calculations, however. For instance there are certain extra-economic values which should be considered as well, especially in the case of water. First, certain sectors of society might value water beyond its economic value by simply leaving it *in situ*, for example recreation, fishing, cultural, and ecological virtues. The Resource Management Act states in section 30 that one of the functions of regional councils relates to establishing minimum water flows and levels but notwithstanding that, society needs to calculate the benefits of allocation in the form of production, employment and the like, balanced with the protection of the ecosystem – the familiar anthropocentric/biocentric debate.

⁸ See J Hirshleifer, JC de Haven, and JW Milliman *Water Supply – Economics, Technology, and Policy* (University of Chicago Press, Chicago, 1960) at 38.

Secondly, in the United States and elsewhere where water markets are employed, certain sectors of society fret that water might be transferred away from traditional agriculture to industrial use, a higher-value user. However this is the very basis of economic efficiency. Dispassionate economics by its very nature places all marketable commodities on a par for instance the desire for foodstuffs and the desire for manufactured goods. It does not enquire into preference formation.

These preferences, though, are balanced on the margin and there is no great political move to encourage the consumption of one over the other. Once the desire for food is satiated there is nothing iniquitous about the consumption of manufactured goods. It is reasonable to accept all rational individuals act in this fashion⁹ and on the margin the desire for food is no different than the desire for manufactured goods. In any event if society felt there was no balance it could subsidise the one and tax the other, but at least at present there is no general agitation for this to happen.

Thirdly, some would argue that the distribution of wealth and talents affects the conditions of supply and demand, which in turn affects prices and values and accordingly the market system may not be the ideal device for resource (re-)allocation. However, there may exist some social preference for a certain degree of inequality as reward for effort and a certain amount of re-distribution of wealth is achieved through the market (and tax) systems and that improvements in efficiency increases society's overall wealth without drastically upsetting socio-economic equilibrium.

⁹ It is acknowledged that some less rational and more intemperate individuals do not. Behavioural economics is starting to explore motivation drawing on insights from psychology and sociology to present a better picture of actual decision-making than the "rational person" offers. See for example Christine Jolls, Cass R Sunstein and Richard H Thaler "A Behavioural Approach to Law and Economics" in Cass R Sunstein (ed) *Behavioral Law & Economics* (Cambridge University Press, New York, 2000) 13.

Before a market system can flourish, certain basic necessities need to be in place – infrastructure, a method of introducing vendor and purchaser (and the more the better), and certainty surrounding the legal security of the rights transacted that is to say market scope. From a legal perspective, chief among these is the crucial question of status and ownership of the commodity to be bought and sold. If consideration is to be exchanged the item being purchased must have definite ownership capable of being alienated. The question of trust goes to the very heart of the market system, especially the matter of surety of title.

However, in the case of water there is an even more basic question: should water – including access to water – be regarded as a tradable commodity at all, or should it be regarded as a “common” good, which is owned by no-one but at the same time in a sense owned by everyone? Despite their involvement in the Land and Water Forum Reports, Maori are of the view that water is not a commodity but rather a taonga or treasure. If it were a commodity, it can be bought and sold in commercial transactions between willing actors, but if it is a common good, it is a public sector responsibility and should be collectively owned and managed. In this respect an important political feature to the argument is that consumers of water become individual customers rather than a body politic.¹⁰

In point of fact, both socio-economic theorems have their attractions and the arguments flow back and forth. Those in favour of the Dublin Principles argue that water is no different from other natural resources like bauxite, oil, or coal and the like, and feel justified in using water in the same manner as other resources used to bolster the economy. In any event the fact that water is treated in some areas as a marketable but non-fungible commodity necessarily gives it value and therefore likely to be the beneficiary of careful husbandry by those hopeful to profit from its tradability.

¹⁰ The obverse of Carole Roses’s argument above – see note 7.

Further, given that water is unevenly distributed by nature the market system might ensure those who (somewhat perversely) establish golf courses in a desert pay the costs of doing so at the expense of more efficient uses elsewhere. Moreover, as climate changes and extensive deforestation takes its toll, greater pressure will be put on diminishing water reserves which may even end in conflict, and the market system has the potential dynamics to defuse such tensions and as prices increase, consumption is likely to decrease.

5.1.3 The Special Case of Water

On the other hand, the contra-argument is that water is a special case; that it is an apolitical resource randomly distributed by nature around the globe, but essential to all life on it – not just human life, including the associated social and cultural mechanisms. The argument extends to the point that humanity has reserved for itself an equal right for everyone to have access to the resource.¹¹ This is naturally a political discussion.

More prosaic is the argument that if access to water is dependent on economic exchange, those too poor to purchase it will need to go without. This is a distributive justice debate.¹² As noted, the economists' answer is that by giving water a value, there will be an incentive to save it, thereby making more available to others, and according to the laws of supply and demand, at a reasonable (market-controlled) cost.

In any event, treated as a human right with open access the result may be a “tragedy of the commons” where the benefits accrue to the individual but the costs

¹¹ See K Bakker *The “Commons” Versus the “Commodity”*: *Alter-globalisation, Anti-privatization and the Human Right to Water in the Global South*. <Aguabolivia.org/wp-content/uploads/2010/07/ier-04-documento_Bakker 2007.pdf>.

¹² The same argument can be applied to junior appropriators under the American prior appropriation system, or indeed those who miss out under the riparian model.

are shared jointly by all and consequently some restraint needs to be imposed, with the further result that not all humans will have access at all times: in other words, access will not continuously be a human right.

As with most antithetic arguments, the answer is somewhere between.¹³ The State has the power to allocate water resources – and thus influence the supply of consumer goods – but their subsequent redistribution is more effective through the market system. John Wodraska’s general thesis is that water is both a common and a commodity, and a hybrid model would be an appropriate solution to the debate. While Wodraska does not debate the issue of water markets, he posits that conservation is the key to water management, and water markets, it is submitted, would be a legitimate and pragmatic tool in the water manager’s toolbox.

Professor Barton Thompson, a well-known commentator on this issue, has a thesis which also argues for a hybrid model, which is a rather neat amalgam of the three issues he identifies and which also fit nicely into the Resource Management Act’s framework. His conclusion is that water should be regarded as a “public commodity”. He sees three themes in the water debate: water as a public trust (the State holds and manages water as custodian for the public as a whole), water as an economic commodity (to be priced and traded by the private market system), and water as a human right (where the public has access to potable water):

When combined, the three themes suggest an alternative vision of water as a *public commodity*. This vision recognises that the public has a critical interest in water. Water is unique among all resources. Water is essential not only to life, but to virtually any human endeavour and thus the betterment of society. Water is an

¹³ See J Wodraska “Water: Resource or Commodity?” Maxwell S (ed) *The Business of Water* (American Water Works Association, 2008) 245 at 245. See also B Thompson Jr. “Water as a Public Commodity” (2011-2012) 95 Marquette L Rev 17 at 17.

irreplaceable element of most healthy, functioning ecosystems – and thus the production of ecosystem services is of importance to people. Water is also intrinsic to most religions and cultural systems. For all these reasons, water is inherently public, and governments have a continuing obligation to ensure its effective management for overall societal well-being, including both environmental protection and essential human consumptive needs. However, commodifying water can actually help promote these goals. Pricing, markets, and even the participation of private entities have helped ensure that water is not wasted and, when properly directed and regulated, can help promote the environment and increase drinking-water access. Treating water as public but not as a commodity will fail to maximize social benefits, while treating water as a commodity but not as public will fail to ensure that water meets all public needs.¹⁴

What Professor Thompson is saying is that the public has a stake in water management and a market model has the potential to promote efficient water use thus promoting the public interest. Each of the themes plays a different part in the water management discussion. Both public trust and human right themes might merely relate to water management but more importantly suggest the ultimate good of water management is not entirely economic. In terms of the public trust, as noted in chapter 4 the State can and does use the market system for environmental craft-work. More specifically as already noted above:

... the commoditization of water, by increasing water efficiency, can reduce the pressure on existing environmental flows and on groundwater aquifers. Private water markets, moreover, can both assist the government in achieving environmental protection and permit individuals to contribute towards a higher level of protection than the government provides.¹⁵

In terms of a human rights deliberation, Thompson mentions that although there is a problem of demand exceeding supply in some parts of the world, the real problem is more likely to be access rather than supply. These areas may have neither the resources nor the resolve to supply water to all citizens who must use

¹⁴ B Thompson Jr “Water as a Public Commodity” (2011-2012) 95 Marquette L Rev 17 at 18-19.

¹⁵ Ibid, at 41.

their own limited resources to access water supplies. Small-scale water markets – usually informal – provide access for these people. This is especially the case in Asia. These markets are very competitive, and by providing access to those who otherwise would not have it, the income gap between farmers is also reduced.

Thompson gives two major examples of jurisdictions that have embraced the “public commodity” model – South Africa and Chile. Unlike Chile, South Africa has stressed the role and importance of environmental protection since its 1996 Constitution. Private ownership of water is proscribed, and water reserves are provided for both environmental and human needs. This is an interpretation of water as a public trust, but the Republic has introduced water markets as a tool to improve systemic efficiency.

Chile, on the other hand, has been at the vanguard of world reform of water management – that country has been a proponent of free-market reform. Chile’s commoditization of water has significantly contributed to the gross domestic productivity of those regions who have embraced the system.¹⁶ While it has recognised the importance of water to citizens – bolstered by the utility of subsidies – Chile has not been so assiduous in matters of the public trust interest in water. Despite the 1981 Water Code providing that water is a natural resource for public use,¹⁷ water transfers under that Code were permitted without deference to environmental considerations.¹⁸ South Africa, by contrast, has. In other words Chile has not balanced Thompson’s three issues into an effective whole.¹⁹

¹⁶ B Thompson Jr “Water as a Public Commodity” (2011-2012) 95 Marquette L Rev 2011 17 at 49.

¹⁷ Clause 5: “Water is a national public asset and gives individuals the right to use it in accordance with the provisions of this Code” (approximate translation from the original Spanish).

¹⁸ Major reform in 2005 was intended to address environmental protection matters.

¹⁹ Chile reformed the 1981 Water Code in 2005 to address some environmental concerns.

It is clear the tensions between the three themes needs sound management. Further as a corollary, water markets *per se* are not, in isolation, necessarily an effective tool for environmental stewardship. Minimum water levels and flows play a critical role.

Thompson's argument is an elegant one, and provides a niche for the market system to play its part in environmental stewardship. Buried in the Resource Management Act 1991 are arguably representatives of his three themes *viz.* sections 14(3) (human right), section 30 (public trust) and section 7(b) (commodification). It is an important discussion given the change in international attitude to water as suggested by various United Nations instruments. For instance in the original 1945 Charter and the later 1948 Universal Declaration of Human Rights no express mention was made of water, probably because it was regarded as a given and was inherently necessary for the achievement of many of the goals. The Dublin Statement is 1992 was important because express mention was made of the economic value of water.²⁰ This was ground-breaking at the time as it did not qualify water as a universal right and was therefore highly contested by human rights groups.

In 2002, the United Nations Committee on Economic, Social and Cultural Rights adopted General Comment 15²¹ which was formulated as a comment on Articles 11 and 12 of The International Covenant on Economic, Social and Cultural Rights promulgated in 1966. These Articles²² direct that a right to an adequate standard of living, including adequate food was a basic human right. Water is not mentioned, but perhaps buried in the intent of the Articles. The 2002 General Comment specifically fills in the gaps, as it were – it describes water as a

²⁰ See generally *Our Common Future* (1987). The sentiment was also articulated by Agenda 21 at Rio de Janeiro in June 1992.

²¹ UN Committee on Economic, Social, and Cultural Rights “The Right to Water” (2002) UNHCR <www.unhr.org/49d095742.html>.

²² These came into “force” on 3 January 1976.

“public good” access to which is a “human right” at paragraph 1, and “...water should be treated as a social and cultural good, and not primarily as an economic good.”²³ Although these comments are not legally binding the sentiment is that water is seen as a universal right.

More recently, on the 28th July 2010 the General Assembly of the United Nations passed resolution GA/10967 recognising that access to water was integral to the realisation of all human rights, and later on the 30th September same year the United Nations Human Rights Council adopted a resolution (A/HRC/RES15/9) recognising that the human right to water (and sanitation) is part of the basic right to an adequate standard of living. This is the first time the Council has openly declared itself on the issue, despite the fact that such a view was openly accepted by the Council’s officials for some time. The matter is complex, and renders down to the problem of defining something into existence. Platitudes are all very well, but practical problems still exist, and it would appear the commodification of water will inevitably assist with the realisation of the United Nations ideals. Seen with a functioning practical view of matters, captured water is in fact very much already seen as a commodity (which admittedly is different from unappropriated water), whether it be the startling global market for bottled water, the beer and soft drink markets, or even the coffee market. The point is that water is being regarded as, treated as, and traded as a commodity whether or not the commentators agree with such a locus and this is not taking into account worldwide formal and informal water markets for farming or industry. Water is being bought and sold world-wide, so clearly forms of a water market system exist world-wide.

²³ At paragraph [11].

5.1.4 The Notion of Property.

Central to the consideration of water markets in New Zealand is the nature of the ownership of consents under the relative provisions of the Resource Management Act. As seen in the previous chapter, legal certainty of both ownership and substance of consents is crucial to the proper functioning of any credible trading system. Whilst the nature of ownership of quotas is characterised under, say, the Fisheries Act 1996, or even the Emissions Trading Scheme under the Climate Change Response Act 2002, the same cannot be said of consents under the Resource Management Act.

Before a discussion of the ingredients of the Act's system of ownership, some mention needs to be made regarding the question of privatisation of water. Water markets in New Zealand are not predicated on the notion of privatising the ownership of the water itself, only on the idea of alienating a consent (or part of a consent) issued pursuant to the Resource Management Act to take water, which is an entirely different matter. The old Water and Soil Conservation Act 1967 generally extinguished the existing common law riparian rights and replaced them with a statutory administrative system *mutatis mutandis* the same as the system we have today under the Resource Management Act. In neither statute did the Crown purport to own the country's water resources:

The Water and Soil Conservation Act 1967 left intact the general common law principle that the water itself is, until appropriated, not the subject of property. But with certain exceptions that Act vested the sole right to dam any river or stream, or to divert, take, or use "natural water" (among certain other rights in respect of natural water) in the Crown.²⁴

²⁴ FM Brookfield "Water" in Sir Robin Cooke (ed in chief) *The Laws of New Zealand* Butterworths, Wellington 3 at 46. See section 21 Water and Soil Conservation Act 1967.

The English case of *Embrey v Owen* held that flowing water is “of public right”: “... flowing water is *publici juris* ... in the sense that ... none can have property in the water itself, except [that] which he may choose to abstract from the stream ...”²⁵ Under the Water and Soil Conservation Act and the Resource Management Act, the Crown did, however, fetter itself with the obligation to manage those resources.

Although the Crown is charged with the management of water, it also does not “own” the physical water. Water continues to be regarded legally, economically, and socially as a public good, owned by everyone and no-one, with the Crown holding only ‘rights’ to water. These rights may be allocated to individuals in the form of a resource consent.²⁶

The question of privatisation does not, then, apply, given a vendor cannot pass a better title than he or she has to start with: *nemo dat quod non habet*. That is not to say the Parliament does not have the power to vest ownership of water in the Crown: it probably has the power to do so but not the political will. There is currently no great lobby for this to happen, and such a move would be politically risky, given the possible Māori claim to the physical ownership of water.²⁷ Similarly in the United States:

Although the popular literature refers to the tradable permit approach as “privatizing the resource”... in most cases it doesn’t actually do that. One compelling reason in the United States why trading permits do not privatize these resources is because that could be found to violate the well-established “public trust doctrine”. This common law doctrine suggests that certain resources (such as water and, arguably,

²⁵ *Embrey v Owen* (1851) 155 ER 579; 6 Ex 369 at 585.

²⁶ O Nyce “Water Markets under the Resource Management Act 1991: Do They Hold Water?” (2008) 14 Canterbury LR 123 at 141.

²⁷ See *NZ Maori Council v Attorney General* [2013] NZSC 6. See also Rachel Kennard “The Potential for Maori Customary Claims to Freshwater” (2006) Otago Yearbook of Legal Research <www.otago.ac.nz/law/research/journals/otago036803.html>. Also Jacinta Ruru “Māori Legal Rights to Water: Ownership, Management, or just Consultation?” (2011) Resource Management Theory and Practice at 119.

air) belong to the public and that the government holds them in trust for the public; they can't be given away.²⁸

Property rights are, naturally enough, a dominant institution in most, if not all, the developed capitalist economies.

In the world of Robinson Crusoe property rights play no role. Property rights are an instrument of society and derive their significance from the fact that they help a man form those expectations which he can reasonably hold in his dealings with others. These expectations find expressions in the laws, customs, and mores of a society. An owner of property rights possesses the consent of fellowmen to allow him to act in particular ways. An owner expects the community to prevent others from interfering with his actions, provided that these actions are not prohibited in the specifications of his rights.²⁹

A question of some moment is what “property” actually is, and how does the notion meld with the provisions of the Resource Management Act. Barton makes the point that there is generally a gradual “propertizing” of many natural resource consents, and that the attraction of property rights is that they are good against those with whom we do not have a contract, that is to say, strangers.³⁰ The oft-quoted definition of property is that of Wilberforce LJ:

Before a right or an interest can be admitted into the category of property, or a right affecting property, it must be definable, identifiable by third parties, capable in its nature of assumption by third parties, and have a degree of permanence or stability.³¹

²⁸ T Tietenberg, “Tradable Permits in Principle and Practice” (2007) <web.mit.edu/ckolstad/www/TT_SBW.pdf> at p 15.

²⁹ H Demsetz “Towards a Theory of Property Rights” 57(2) *The American Economic Review* 347, at 347.

³⁰ B Barton “The Nature of Resource Consents: Statutory Permits or Property Rights?” (2009) NZLS CLE 51 at 59.

³¹ *National Provincial Bank Ltd v Ainsworth* [1965] AC 1175 at 1247-8.

France-Hudson,³² however, discusses the nature of property rights and identifies further characteristics. Exclusivity ensures the benefits of the resource accrue to the owner and gives a long-term incentive to enhance the resource because the benefits will accrue to the owner. Duration is important because it has a direct influence on investment in the resource – the owner can invest early and obtain the benefit some years later.³³ Flexibility affords the rights an ability to be adjusted without weakening the holder’s title and enable the owner to change the use of the resource without consequence.

Many rights come with necessary stipulations however and these will make the consents less flexible. Security of title is a reference to the degree of risk that attaches to the exercise of the right over time, and like exclusivity it allows an owner to be sure to receive the benefits from the investments in the resource. Restraints on state-acquisition of private property are now found in most developed countries. Transferability is a key concept and makes it possible for a market to operate, and for the resource to flow to a higher-value user. It is also a method by which the owner may realise his investment. France-Hudson adds a further criterion, *viz* divisibility but this is really part of the transferability aspect. It would allow a permit holder to reduce his scale of activity without losing the right completely.

A discussion of “property” in legal terms is quite natural: lawyers and the courts are more at home in referring to property in this way. Gibbons’ paper, however, includes the point made by former Environment Court Judge Jackson that in terms of the Resource Management Act both law and economics are necessarily intertwined inasmuch as both economics and the Act are inherently

³² B France-Hudson “Private Property’s Hidden Potential” (Doctor of Philosophy Thesis University of Otago, 2014) at 296-304.

³³ Barton makes the point that a lease is property even though it may be for the duration of one day, or even one hour.

concerned with resources.³⁴ He goes on to quote Anderson & McChesney's view of an economic approach to property rights which suggests there are both formal and informal rules governing access and use of both tangible and intangible assets.³⁵ There is a clear tension between a *numerus clausus* approach to property rights (that is to say there is a closed number of recognised property rights), and the idea that statutory property affords resource consents rights based on the attributes of the consent rather than attempting to squeeze these attributes to fit general property law.³⁶

5.1.5 The Nature of Consents under the Resource Management Act 1991.

There are therefore clear advantages in the ownership of clearly-defined and understood property rights. There are however other important claims to environmental benefits of ownership. Laura Fraser³⁷ gives two main ones: first, ownership settles the question of control and the importance of the resource in terms of encouraging an affinity with the resource and fosters an interest in its conservation thus engendering an incentive to preserve the resource and thereby fostering public participation in environmental policy. Secondly, she states that individuals make better managers than governments with better efficiency underlain by a public preference for individual choice over regulation.

Ms Fraser makes the point that the advantages represent a mixture of philosophical ideas and pragmatism combining to encourage environmentally advantageous use. However she also points out some disadvantages. She

³⁴ Gibbons T "Property Rights in Resource Consents: Some Thoughts from Law and Economics" (2012) NZULR 46 at 49.

³⁵ Ibid, at 51.

³⁶ The recent introduction of carbon credits has been described as introducing a new property: see Hepburn S "Carbon Rights as New Property: The Benefits of Statutory Verification" (2009) 31 Syd L Rev 239. She suggests an evolution in the attitude to the public trust doctrine towards a proprietary verification of natural resources.

³⁷ L Fraser "Property Rights in Environmental Management: The Nature of Resource Consents in the Resource Management Act 199" (2008) 12 NZ J Envtl L 145 at 157-161.

suggests private ownership will obscure the public qualities of the resource resulting in an attitude of use rather than sustainability. With respect, this is to confuse principle with practice. Sustainability is the remit of those formulating policy, but those working within that framework will almost invariably have a subjective and practical outlook.

The most significant disadvantage Laura Fraser identifies is the question of compensation for the taking of property. “Specifically, if compensation is payable for restrictions on a property right in an environmental context, actions to protect the resource may be less likely due to the financial disincentive created.”³⁸ The decision in *Aoraki Water Trust v Meridian Energy Ltd*³⁹ offers the consent holder a certain protection against an expropriation argument.

The last argument Ms Fraser proposes against ownership of resource consents is one of nomenclature. The argument suggests there is a connotation of privilege of “property” in consents, so suggests the instruments should be called ‘licences’. This, of course, is mere semantics.

It would appear on balance that outright ownership of a consent under the Act would be appropriate. In summary:

There are multiple advantages of property rights arrangements including flexibility, cost-savings, information generation, migration to high-valued uses and better alignment of incentives for conservation or investment in the resource. The more complete are property rights, the more the private and social benefits of resource use are meshed, eliminating externalities and the losses of the common pool. Furthermore, when agents are owners of some part of the greater rents from reducing the externality, they have greater

³⁸ Ibid, at 160.

³⁹ *Aoraki Water Trust v Meridian Energy Ltd* [2005] 2 NZLR 268.

incentives to comply, to police one another, and potentially, invest in the stock.⁴⁰

However the Act has some legally perverse provisions relating to ownership of consents and section 122 (1) generally states that they are neither real nor personal property but they may be treated as personal property in certain cases for example the creation of a charge (subsection 3).⁴¹ Obviously, there is ample opportunity for confusion. Subsection 1 is quite definite, but the following provisions cloud the issue.

Pankhurst J in *Dart River Safaris Ltd v Kemp*⁴² did not address the issue directly, but he was certain a consent – despite section 122 (1) – afforded the consent holder with legal rights of some sort, despite the fact that they are not predicated on land law. These rights are such that they may not be “denied or eroded” (at paragraph 27). This is a view taken by their Honours in *Aoraki Water Trust v Meridian Energy Ltd*.⁴³ Further, their view (at paragraph 26) was that the consent was in the nature of a licence (described somewhat loosely as a “bare licence”) bearing in mind the provisions of section 122(1). Later in the decision after reviewing the provisions of Part 6 of the Act their Honours concluded that:

A number of specific provisions...elevate the status of a water permit from something in the nature of a bare licence to a licence plus a right to use the subject resource. In that sense it has similarities with a *profit à prendre*.⁴⁴

⁴⁰ GD Libecap “The Tragedy of the Commons: Property Rights and Markets as solutions to Resource and Environmental Problems” (2009) *The Australian Journal of Agricultural and Resource Economics* 53 at 134.

⁴¹ It should be remembered the Resource Management Act is primarily a consent regime, not an ownership regime. It is not designed to deal with the consequences of the importation of property ideas.

⁴² *Dart River Safaris Ltd v Kemp* [2000] NZRMLR 440 (High Court).

⁴³ *Aoraki Water Trust v Meridian Energy Ltd* [2005] 2 NZLR 268.

⁴⁴ At paragraph 34. The Crown does not have a proprietary interest in the water in the first place so it is hard to imagine how a water permit could be classed in the nature of a property right as recognised by law.

The discussion is clearly predicated on property law, which is understandable. The High Court received an opportunity to discuss the provisions of section 122 with the case of *Armstrong v Public Trust*.⁴⁵ Fogarty J came to the conclusion that as section 122(1) is located in Part 6 of the Act, and since that Part also contains provisions relating the transfer of various types of consent⁴⁶ then the logical conclusion is that the purpose of section 122(1):

... is to prevent other transfer of consents except as provided for in this statute. Subsection (2) of s 122 can then be seen as providing some general qualifications. Paragraphs (a) and (b) deal with the involuntary transfer and para (c) and subs (3) allow the securitisation of consents. Such recognition of property rights is contained. What Parliament has set its face against is the unfettered transfer of resource consents except where specifically provided.⁴⁷

And again:

This Court will not find that the legislature has so intervened to displace the common law position as to joint tenancy [the argument related to the survivorship provisions of joint tenancy], by a side wind, when pursuing control over the allocation of scarce resources, as it is doing in the RMA. To the extent that it does in fact allow property rights under the RMA, the common law as to real and personal property will apply, subject to constraints in the specific provisions of the statute.⁴⁸

The statement does not assist with identifying the nature of the ownership of a resource consent however. Such a consent possesses the attributes of something owned: it is definable, it can be identified by third parties, it is capable of assumption by third parties, and it has a degree of permanence and stability.⁴⁹

⁴⁵ *Armstrong v Public Trust* [2007] 2 NZLR 859.

⁴⁶ See sections 134-138A (inclusive).

⁴⁷ *Armstrong v Public Trust* [2007] 2 NZLR at 863.

⁴⁸ *Ibid*, at 864.

⁴⁹ See *National Provincial Bank Ltd v Ainsworth* [1965] AC 1175 at 1247-8.

Cases such as *Aoraki Water Trust v Meridian Energy Ltd*⁵⁰, *The Favourite Ltd v Vavasour*⁵¹ and *Hampton v Hampton*⁵² make it clear that they also have value, a necessary pre-requisite in the event section 122 (3) providing for a charge to be granted over a consent as security to a creditor were to be invoked. Complicating the calculus is the fact that although the consent may not be personal property, the natural resource extracted, be it minerals or water, definitely is:

that the subject matter of the licence (i.e. the right to participate in a fishery that is exclusive to licence holders) coupled with a proprietary interest in the fish caught pursuant to its terms, bears a reasonable analogy to rights traditionally considered at common law to be proprietary in nature.⁵³

And, further:

What was once a “common” or “public” has been converted to the exclusive but controlled preserve of those who hold licences. The right to commercial exploitation of a public resource for personal profit has become a privilege confined to those who hold commercial licences.⁵⁴

Thus, a property right in natural resources comprises an amalgam of a right to participate in extraction coupled with an ownership of the resource taken. The grant of a consent establishes a possession of value of whatever label – for example a statutory licence – and legitimate commercial expectations are that this possession will be protected. Professor Barton puts it rather neatly: “it is often asserted that the government should not alter ‘vested rights’ of one kind or

⁵⁰ *Aoraki Water Trust v Meridian Energy Ltd* [2005] 2 NZLR 268, [2005] NZRMA 251.

⁵¹ *The Favourite Ltd v Vavasour* [2005] NZRMA 461.

⁵² *Hampton v Hampton* Environment Court Christchurch, September 2008 C102/08. This unfortunate family dispute is still before the courts in 2015.

⁵³ *Royal Bank of Canada v Saulnier* (2008) 298 DLR 193 at 209.

⁵⁴ *Harper v Minister for Sea Fisheries* (1989) 168 CLR 314 at 325.

another without harm to the reputation of the jurisdiction as an investment destination.”⁵⁵ The cases suggest a traditional legal approach prevails.

Barton makes the point that the courts should not muddy the water of statutory interpretation with importations that stray from parliamentary intent.⁵⁶ From a purely pragmatic viewpoint, in the event a functioning water market system were to be established in New Zealand and the provisions of section 122 (1) were to create a measure of uncertainty, those provisions would need to be amended to provide resource consents with some degree of certainty of legal identity. Any legal practitioner acting for a purchaser of a water permit who did not advise his client of the provisions of section 122 would be failing in his legal duties. The client’s reaction is likely to be more practical than that of scholars.

5.1.6 A Further Note on Water Markets

Even in the event that the appropriate marketing apparatus were missing or found wanting, spontaneous or informal marketing may still take place. There are informal water markets throughout the world. In parts of Asia, notably India and Pakistan, as well as parts of North Africa and Latin America, there are very healthy informal markets. The case of India is particularly illustrative. Water may be sold there informally on an hourly basis.⁵⁷ Apart from the problem of corruption – some officials need to be paid to provide the water to which farmers are entitled – in some areas appropriate infrastructure is lacking. Despite this informal markets fulfil an important need:

⁵⁵ B Barton “Property Rights Created Under Statute in Common Law Legal Systems” in *Property and the Law in Energy and Natural Resources*. A McHarg, B Barton, A Bradbrook, and L Godden (eds) (Oxford University Press, Oxford, 2010) at 81.

⁵⁶ Barton B “The Nature of Resource Consents: Statutory Permits or Property Rights?” (2009) NZLS CLE 51 at 77.

⁵⁷ K Palanisami “Water Markets as a Demand Management Option: Potentials, Problems and Prospects (2009) IWMI-Tata Water Policy Program <<http://publications.Iwmi.org/pdf/H042160.pdf>>.

The most convenient water supply, which is standard for all urban dwellers in wealthy countries, is piped water into the house from a reliable piped-water network. Such supplies rarely serve the urban poor of Africa, Asia and parts of Latin America.... Those without functioning water connections or wells (in many cities both water connections and wells are of intermittent reliability) have to venture out to collect water from other sources, and often need to negotiate with other people. It is in this scramble to secure daily water needs where alternative systems of water resale and vending come in.⁵⁸

The problem with informal markets such as these – both rural and urban – is that they generate no fiscal advantage to the government (at least not directly) nor do they provide incentives or funds for investment in appropriate infrastructure. Further there is no one to ensure agreements are adhered to. It is better to acknowledge the practice officially and create water rights that may be traded thereby providing secure and open rules of conduct. Transaction costs are of prime importance: “Where costs to each person of defining and defending rights exceed the potential for gains from trade, then there is no incentive to act.”⁵⁹ In the case of water, being a fugacious resource,⁶⁰ those costs can be quite high. Garrick makes the point that institutional change is expected when benefits of a rule change are sufficient to overcome transaction costs.⁶¹

Informal markets expand to fulfil a need, fill a gap as it were, and this apparatus may be found, for example, in the United States: water rights in Colorado have been transacted among traders on a permanent basis for more than a century even though no centralised trading arrangements have been in place,⁶²

⁵⁸ M Kjellén & G McGranahan *Informal Water Vendors and the Urban Poor*. Human Settlements Discussion Paper Series 2006 <www.iied.org/HS/publications.html>.

⁵⁹ J Bennett “Markets and Government – an Evolving Balance” in J Bennett (ed) *The Evolution of Markets for Water*. (Edward Elgar Publishing Limited Cheltenham UK (2005) 1 at 3.

⁶⁰ That is to say it can move around in such a way that is difficult to determine.

⁶¹ DE Garrick *Water Allocation in Rivers under Pressure* (Edward Elgar Publishing, Cheltenham, UK, 2015) at 37-8.

⁶² Charles W Howe and Helen Ingram “Roles for the Public and Private Sectors in Water Allocation: Lessons from Around the World” in DS Kenny (ed) *In Search of Sustainable Water Management* (Edward Elgar Publishing Limited, Cheltenham, UK, 2005) 25 at 40.

thus giving comfort to those who require more water for their needs. The market prices will, of course, reflect the actual opportunity costs free of distortions caused by subsidies. Easter, Rosegrant and Dinar put it thus:

There are two distinctly different opinions about the institutional setting required for efficient market exchanges: The neoclassical view posits that a legal system is required; a more pragmatic view emphasizes the importance of informal contract enforcement. 63

The authors go on to quote Greif (1997:239-40), who observes:

This neoclassical view that places the legal system at the centre of contract enforcement in market economies has recently been criticized on the basis of evidence indicating that many contemporary exchange relations in the West and elsewhere are informal. The associated contract enforceability is not provided by the legal system but is based on reputation, general morality, and personal trust within social networks. Empirical evidence indicates the importance of two distinct systems of informal contract enforcement: the individualistic system of informal contracts enforcement prevalent in the West, under which the reputation and morality of the individuals are key, and the collectivist system of contract enforcement prevalent in most other societies, under which the personal trust within the social network is critical.⁶⁴

The suggestion is that in the absence of formal arrangement, an informal system could fill the void. Clearly a formal arrangement would be preferable, and provide comfort to the vendor and purchaser.

⁶³ KW Easter, MW Rosegrant, & A Dinar A “Formal and Informal Markets for Water: Institutions, Performance, and Constraints” (1999) 14 No1The World Bank Research Observer February) 99 at 100.

⁶⁴ Ibid, at 100.

Brent Layton in his paper in *Resource Management Theory & Practice* 2011⁶⁵ makes the point that structures and markets are actually complementary, not alternatives.

In a New Zealand context, he gives a couple of examples from the era before the country embraced a demonstrably market economy. The first of these is the New Zealand futures market. This began in 1985 when there was no specific legislation to accommodate such an initiative. The International Commodities Clearing House was instructed to provide software and to act as clearing-house. Layton states that at the time in the absence of clear legislation there was a general concern that the activity might be regarded as a gambling activity by the relative officials and the resultant contracts would be therefore unenforceable. The matter was therefore resolved by settling each day's contracts at the end of each day's trading thereby limiting the Clearing House's exposure to one day's movement in prices.

The second example relates to the New Zealand Electricity Market. This market was also created without specific legislation, and to make matters worse the government made it clear it would not enact any. The solution to enforceability was to structure this market as a multi-lateral contract. Participation was voluntary and market rules had to be agreed to by the parties to the multi-lateral contract. Commerce Commission consent was necessary lest the agreements be regarded as "price-fixing" under section 30 Commerce Act 1986.⁶⁶ If this were the case the contracts would be illegal and therefore, as with the

⁶⁵ B Layton "Tradable Systems for Water: Best Use and Maximising Value" in T Daya-Winterbottom (ed) *Resource Management Theory and Practice* Thomson Reuters (2011) at 107. Layton was the Director of the New Zealand Institute for Economic Research from 2003 to 2008.

⁶⁶ The angst was the result of an abundance of caution because in fact the Commerce Commission determined that the market functioned by measuring prices, not fixing them. See B Barton "From Public Service to Market Commodity: Electricity and Gas Law in New Zealand" (1998) 16 *Energy & Nat Resources L* 351 at 367.

futures contracts, unenforceable. The solution required complex multi-party negotiations with attendant costs and travail to ensure enforceability.

However, in the case of water, in New Zealand, with its robust institutional legal structures, there is no reason why a largely frictionless system not be put in place: there is no need for informal markets and further, with a simple but sturdy market system, there should be no demand for them either. The transfer of water rights, which in some cases may represent to the purchaser a not inconsiderable investment as well as investment opportunity, requires the measure of comfort and certainty that is furnished by a sturdy legal system where water rights – which as a matter of necessity will need to be cleft from the land in respect of which they were originally granted – may be recorded and defended before a judicial tribunal if a vigorous and confident market were to ensue.

Layton's theme is that there are a number of other lessons for future water markets to be learned from history. These lessons can be applied to water markets which have been discussed earlier, but Layton puts them into context:⁶⁷

- (1) Clarity about what is being traded. Normally there would be no problem, but it is the abnormal circumstances that usually take time to mature and it is how these circumstances are dealt with which determines whether parties are willing to participate in the market. Absolute certainty is not essential, just so long as the participants have sufficient information to factor into their decisions, for example the possible abatement *pro rata* of fish quota in the event of a change in the allowable catch has not obstructed the trading in fish quota. In the case of water, the chances of

⁶⁷ See B Layton "Tradable Systems for Water: Best Use and Maximising Value" in T Daya-Winterbottom (ed) *Resource Management Theory and Practice* Thomson Reuters (2011) at 110-116.

the allowable water take from various aquifers being reduced in the future would be relatively high as knowledge of the ecologies of them evolves.

- (2) Tradability and highest value user. It does not matter whether a water permit is obtained *gratis* as part of a publicly-sanctioned allocation (as is the case in New Zealand), or paid for by the holder; if it is freely traded every permit-holder faces its highest use value when deciding to use it, trade it, or leave it idle. In other words, the opportunity cost of using, selling or leaving idle a water permit is its value in its highest use by someone else. For rational economic decision-making about the use of a water permit, the cost that matters most is the opportunity cost, not its original cost (ignoring the value to the Crown).
- (3) Tradability and Allocative Efficiency. Economists regard dynamic efficiency (with its emphasis on investment for the future) as the most important type of efficiency to economic growth and the improvement of economic welfare in the long run. Allocative efficiency (or lack thereof) is unimportant if water permits are readily tradable (and transaction costs are sufficiently low). It is also important that one party does not gain enough market power to influence the market and raise prices above the value of their benefit to society at the margin. The Commerce Act 1986 generally governs markets and prohibits conduct that restricts competition. It is worth noting that the Waikato Regional Council proposed, under Variation 6 of its regional plan, to grant Mighty River Power a virtual monopoly of water in the Waikato River above Karapiro – certainly enough to grant the power company market power.⁶⁸ There was no proposal to make the power company's water rights tradable, which would have been allocatively inefficient, unless every drop of water in the upper Waikato

⁶⁸ This proposal was not upheld in the Environment Court during the review process. See *In the Matter of appeals under Clause 14(1) of Schedule One of the Resource Management Act 1991* Decision No [2011] NZEnvC 380 at 56.

were more valuable if used for power generation than any other alternative use.

(4) Initial Allocations and Wealth Distribution. The corollary of the importance to economic growth of dynamic efficiency is the principle of non-derogation.⁶⁹ The expropriation of water rights, however acquired, without proper compensation will naturally inhibit investment. The consequence of this is that if or when a new legal regime relating to water rights is created (for instance when the resource becomes scarce), or adverse environmental impacts are discovered, it is important not to remove those rights or diminish them without relevant compensation.⁷⁰ Grand-parenting of existing allocated rights avoids the negative impact on dynamic efficiency of expropriation of those rights. Provided trading is readily available, there should be no problem with grand-parenting of existing water rights provided anticipation of same does not result in the artificial increase in consumption in order to increase entitlements.⁷¹ If, on the other hand, grand-parenting leads to an allocation of the resource which is inappropriate, the authorities may tender to buy back some unused or underused rights, so that those who value them least may cash them in, but those who value them more may keep them. A pro rata “haircut” across the board to comply with established minimum water levels and flows would initially create inefficient outcomes, but these would be ameliorated by subsequent transfers through the market which would re-establish efficiency within the reduced allocation.

(5) Broadening the Market Improves Outcomes. Layton makes several points here. First (as an economist) he asserts that speculators play a useful

⁶⁹ See *Aoraki Water Trust v Meridian Energy Trust Ltd* [2005] NZRMA 251 at paragraphs 36-38.

⁷⁰ The author gives the example of the economic chaos in Zimbabwe created by the authorities ignoring this very principle. The alternative to compensation, of course, is to simply state in a right that it may be exposed to diminution in certain cases, which might affect its value somewhat.

⁷¹ This can be overcome simply by making entitlements available on the basis of historical use, or “best practice” (productively) efficient use.

economic role by providing lubrication for the system and thereby improving the allocative efficiency of outcomes. The wider and more diverse the source of market participants the better as this will improve the outcomes in terms of allocative efficiency. Secondly, as already mentioned in the case of water rights, it is sensible to separate the right to take water with the right to use water. This will free up trading by opening the market to those who currently do not have the right to use water. Conversely, it should not be essential that those who buy a right to take water already have a right to use water. Finally, prohibiting the transfer of water between different types of use (for example irrigation and industrial) will preclude water from gravitating to its most valuable use, thereby resulting in allocative inefficiency.

Discussion of general water markets in New Zealand is not novel, and Layton concludes his paper with a brief discussion of the New Zealand Business Council for Sustainable Development's⁷² publication entitled *Sustainable Freshwater Management – Towards an Improved New Zealand Approach*.⁷³ This comprehensive (and largely hydrological) report suggested a theoretical new water allocation framework for New Zealand. A straw-man approach was suggested by the Council with a view to remedying the current water allocation systematic shortcomings as it saw them:⁷⁴

- (a) value-based allocations precluded by the first-in first-served system;
- (b) high transaction costs;
- (c) all allocated water is rarely utilised incurring significant opportunity costs;

⁷² This organisation no longer exists and has now merged with Business New Zealand's Sustainability Forum.

⁷³ Prepared by Aqualinc Research Limited, Report H07004/1 August 2008.

⁷⁴ Ibid, at 39.

- (d) a diversity of in-stream values are hidden under the “environment” label and therefore risks to each in-stream value are unable to be compared to risks to other values;
- (e) the risk avoidance policy taken for ecological protection precludes a balanced consideration of all risks associated with water allocation decisions and risk mitigation policies; and
- (f) lack of short- and long-term security of allocation.

The report suggests that regional councils will continue to set the rules for managing the environmental, recreational, cultural and economic interests in the relative catchments, with central government providing guidance through National Policy Statements and National Environmental Standards. Thus, a mixed statutory planning and market regimen would be responsible for the architecture and stewardship of the water resource – what the Business Council refers to as the “best use solution”.⁷⁵ The community, through the planning process, determines the original allocation (as it does now, within limits set by central government), but a voluntary market system would be utilised to re-distribute the water allocated to the tradable pool.

The salient features of the proposal for New Zealand are as follows:

- (a) by necessity, the water taken would unbundle the “take” from the “use” components of the consent;
- (b) the water right would be a secure property right;
- (c) the entitlements would be transferable, pursuant to rules defined in the plan for that purpose;

⁷⁵ This was articulated by the then Chief Executive Officer of the Business Council for Sustainable Development Peter Neilson at the Annual Conference of the New Zealand Resource Management Law Association 18th Annual Conference at Christchurch Friday 1 October 2010. See <rmla.org.nz/librarydoc/index/category/5/order/title/date/2010>.

- (d) the entitlements would represent a proportional share of the available water rather than a guaranteed volume or flow rate;
- (e) these proportional entitlements would be adjustable in accordance with scientific or other exigencies;⁷⁶
- (f) the granting of a permit (the report uses the term “water access entitlements”) would take into account relevant reliability of supply;
- (g) Council-promulgated rules would define which voluntary transfers would be permitted activities, and those that are discretionary activities; and
- (h) a hibernating entitlement would be considered “used” if it is required in the future, but it may be temporarily transferred for a defined period.

Layton concludes that the Business Council’s proposals are generally in terms of the matters mentioned in his paper. He is critical, however, of some aspects of the proposal and some issues may need further reflection, but clearly a great deal of thought has been expended on a theoretical market model.

Regional councils are currently addressing their regional plans to include matters required by the National Policy Statement for Freshwater Management, including provision for transfer of consents.

The Waikato Regional Council has already worked on this and completed Variation 6 of its Regional Plan. This is a practical embodiment of Council’s requirements to effect a transfer of a consent to take water. The provisions are contained under the heading “Efficient Use of Water”. A very interesting comment is that poorly planned or managed irrigation can result in nutrients from the land leaching into a water supply thus causing a degradation of water

⁷⁶ Cf section 128 Resource Management Act 1991, or even the proviso to section 14(3)(b) for that matter.

quality.⁷⁷ Policy 2 of the integrated Regional Plan includes as an efficient use of water the facilitation of the transfer of water take permits, provided such a transfer does not offend policies relating generally to water quality and natural characteristics and monitoring.

Policy 3 contains relative provisions for the transfer of water permits, and provided the transfer meets the relative requirements contained in the Regional Plan, the transfer is concluded by a simple notice signed by both parties and delivered to Council no later than 5 working days prior to the date of the transfer. Clause 3.4.4.1 of the Regional Plan contains provisions by which the Council will play its part in facilitating the transfer process and touting its benefits. It is likely that a market system will develop around these transfer provisions. All-in-all, the transfer process under the regional plan is designed to operate within relative environmental boundaries.

5.2 Water Markets in Chile

As already noted, one jurisdiction where the ecosystem takes no particular precedence in a water market economy is that of Chile. There were a number of water reforms in Chile prior to the adoption of the 1981 Water Code.⁷⁸ The 1981 version was predicated on the new constitution of the military government of Augusto Pinochet. This constitution embraced free-market economic policies and the water code (“the Chilean Model”) was a child of this neo-liberal thinking, although to be fair it was also a compromise between the neo-liberals and the conservatives. The “Chicago Boys”⁷⁹ got most of what they were after: “a *laissez faire* legal framework that allowed private market transactions of water rights, and

⁷⁷ Waikato Regional Council Regional Plan (Variation 6) at 3.4.1.

⁷⁸ For example, 1855 State Civil Code, 1951 Water Code, 1967 Water Code.

⁷⁹ A group of young Chilean economists, most of whom trained at the University of Chicago under Friedman.

tight restrictions on government spending and regulation in the water sector”.⁸⁰ Crucially though the neoliberals were obliged to abandon the legal rules and financial provisions which they felt would have increased the cost of water – matters which they believed were important in establishing market discipline and efficiency.

...because agricultural water use was the dominant priority and concern among those who wrote the [1981] Water Code, the legal and institutional arrangements for other water management issues were either overlooked or simply left to the free market. Problems of river basin management, coordination of multiple water uses, conflict resolution, economic and environmental externalities, and so forth would have to be handled by the general framework of the 1980 Constitution, which established strong private property rights and economic freedom, weak government regulatory agencies, and a powerful but incompetent judicial system.⁸¹

The chief aim, then, was to establish efficiency by a reallocation system within agricultural and irrigation markets. Secure property rights which could be freely traded gave comfort to investors secure in the knowledge that water rights would not be expropriated without due compensation. New water rights may be obtained from the Dirección General de Aguas⁸² provided, however, there was evidence that the water was actually available and the new use did not harm existing right holders, similar to New Zealand’s initial allocation system. Any competition for the same water was dealt with by way of an auction system, unlike New Zealand’s first-in-first-served system. In a 2008 article, Bauer suggests Chile put the cart before the horse:

In other countries that have allowed or encouraged water markets...these markets have been a policy instrument within the larger context of water law and regulation. In Chile this order is reversed: water resources management takes place in an institutional

⁸⁰ C Bauer *Siren Song* (Resources for the Future Washington USA, 2004) at 47.

⁸¹ *Ibid*, at 50 (written in 2004).

⁸² The Directorate General of Water, or DGA.

context that has been shaped by and for water markets. The Chilean Water Code is so laissez faire that the overall legal and institutional framework has been built in the image of the free market...⁸³

Thus the original objectives of the Code were the primacy of agriculture and irrigation, and the assumption was simply that free markets would reallocate some of this water to non-agricultural use. Bauer's paper admits the system has some advantages including (*inter alia*)⁸⁴

- (a) the encouragement of private investment in water and infrastructure (admittedly variable throughout the country);
- (b) trade has resulted in the re-allocation of water resources (in certain circumstances and geographical areas); and
- (c) the creation of non-consumptive water rights has encouraged hydro-electric schemes, first by the government and later by private companies.⁸⁵

The negative impacts however are not unsubstantial:⁸⁶

- (a) a lack of coordination of multiple water uses in managing river basins, together with a lack of integrated management of surface water and groundwater;
- (b) the difficulty in resolving water conflicts through both judicial and non-judicial means;
- (c) the non-internalisation of both economic and environmental externalities;

⁸³ C Bauer "The Experience of Chilean Water Markets" (2008) Expo Zaragoza at 3 <www.zaragoza.es/contenidos/medioambiente/cajaAzul/18s6-P3-carl%20J.520BauerAcc.pdf>.

⁸⁴ Ibid, at 5.

⁸⁵ Unfortunately, not without serious and uncompensated impacts on other water users, particularly irrigators.

⁸⁶ Above n 83 at 6; C Bauer *Siren Song* Resources for the Future, Washington USA, (2004) at 124.

- (d) a lack of clarification, enforcement, and monitoring of the relationships among different property rights and duties, for example the relationship between consumptive and non-consumptive water rights;
- (e) a lack of environmental and ecosystem protection; and
- (f) a lack of public assistance to poor farmers to improve social equity in matters of water rights and water markets.

These are complex problems which are, fundamentally, the very challenges that an integrated management system – such as New Zealand’s Resource Management Act 1991, National Policy Statements, National Environmental Standards and specialist Environment Court – is designed to address.

Addressing the 2005 Chilean reforms, Bauer is of the opinion that these reforms did not go far enough, but did improve the situation somewhat:

- (a) there has been an improvement in water rights title information and record-keeping;
- (b) management of groundwater has been improved;
- (c) the DGA’s regulatory authority over future grants of water rights has been bolstered (but not over existing rights);
- (d) the problem of minimum ecological flow has been addressed;
- (e) most interestingly a fee for non-use has been introduced. This is designed to attack speculators, hoarding, and monopoly of water rights.⁸⁷

The current global water crisis is driven by growing scarcity and growing conflict, two water problems that are ever more tightly bound together. Although economic principles can be powerful tools for dealing with water scarcity, legal and political institutions are the key to resolving water conflicts. Moreover, scarcity is not simply a physical problem – rather, it depends on social context and is often

⁸⁷ Perhaps speculators do not provide the right grade of lubricant to the market process, as asserted by Layton in his paper (*supra* at note 73).

driven by social factors more than physical factors... This further underlines the importance of legal and political institutions in shaping the use of economic principles. In short, the Chilean experience confirms the need for a more critical and interdisciplinary approach to water law, economics, and policy.⁸⁸

Bauer is criticising the Chilean system but, by extension, is supporting the western American system.

5.2.1 Contrasting the Chilean and United States Approaches

The two models are starkly different. Chile shares a great deal in terms of geography and hydrology with the western United States as both have areas which are predominantly arid, both have rejected riparianism,⁸⁹ and both have adopted some form of market structure to aid in the re-allocation of water resources. Both have allowed the private ownership of water rights, and have partitioned the ownership of water rights and the ownership of land. Both recognise water as usufruct in nature, and acknowledge that there is a difference between ownership of the access rights and ownership of the resource *per se*. While the Chilean Model is a creature of statute, the western American system however is generally embodied in the doctrine of prior appropriation, an organism of the common law, which “grow’d like Topsy” to suit the local conditions. A critical difference though is that unlike Chile, in the western United States a purchaser must show need and demonstrate that the water can be put to beneficial use,⁹⁰ and there is provision for forfeiture for non-use.

While both Chile and the western United States have adopted the market system as a means of re-allocation of water entitlements, the Americans have

⁸⁸ Above n 83 at 10.

⁸⁹ Generally speaking, in the case of the western United States: some of these American jurisdictions retained riparianism in a modified form for example California, Texas, and Washington.

⁹⁰ Many such jurisdictions define beneficial use by statute.

vastly more experience in this regard and have been trading water rights through the common law for nearly two centuries. The relatively recent Colorado-Big Thompson system which was established on an administrative transfer model has been actively trading water since 1959, and as a result has a large body of institutional knowledge. Accordingly, some examination of that model is appropriate.

5.2.2 The Colorado Big Thompson System

The Colorado-Big Thompson system is quite different to general western American water markets because it avoids the “no injury” rule prevalent elsewhere in the west. New Zealand does not have this rule, which states that a transfer of a water entitlement may only be completed provided the change does not compromise the rights of junior appropriators, which New Zealand does not have.

5.3 Summary

In summary, then, although there is a lot of legal design that is critical to water markets, they have several advantages, chiefly:

- (a) They introduce flexibility into the overall allocative system and can quickly allow for changing demands, conditions, and technologies. Whilst it is acknowledged the transfer of water may raise concerns about unwelcome changes in local economies, and consequential changes to established local social and community order; it needs to be recognised that a functioning economy should have a system to allow declining commercial undertakings to be displaced by new and vigorous ones.

- (b) Their utility allows for swift reactive measures in times of need.⁹¹
- (c) They allow for a central mechanism by which buyers and sellers interchange information about water requirements and demands, suppliers and supplies, as well as transfer opportunities and establishing prices.
- (d) Water markets have the potential to promote conservation in the sense that they would enable permit-holders to husband their entitlements and sell what they save. This is actually an exercise in opportunity cost economics. That system would be easier, quicker, and with less anxiety than the current forfeiture/abandonment system in western states. The corollary of course is that by freeing up entitlements that are allocated but unused for whatever reason, the burden is reduced on further new allocative demands placed on rivers, aquifers, lakes etc. In addition, water markets may afford governments and environmental groups the occasion to purchase water for ecological purposes for example in-stream flow and water levels.

Traditionally in the American west, it was regarded as waste to allow water to remain in a river unused. This thinking is, thankfully, changing. In the period 1990 -1997, total acquisitions of water in the United States by purchase, lease, or donation for in-stream use totalled more than 2.3 million acre-feet – the volume of water that will cover one acre of land to a depth of one foot.⁹² As mentioned the Colorado-Big Thompson market system is not typical of general American water markets, but has definite lessons for New Zealand and which go well beyond simply lessons as a financial market model. The next chapter will examine the Colorado Big-Thompson market system in some depth.

⁹¹ During the major drought in 1991 the state of California was able to purchase water from those who did not need it and on-sell to those that did.

⁹² See Clay J Landry *Saving our Streams Through Water Markets* Pol. Econ. Res. Centre 1998 at 7.

6 Chapter 6.

6.1 Water Markets: The Colorado Big-Thompson System.

The previous chapter illustrated how water markets might function. It is appropriate now to examine overseas experience in a water market and how lessons from abroad may assist New Zealand in establishing a water market model. New Zealand has an example of an operating water market in the form of the Opuha Dam project near Timaru. The Opuha project (which was mentioned in chapter 4) is a successful one and interestingly the factors driving that success are, *mutatis mutandis*, the same factors driving the success of the western United States Colorado-Big Thompson project.

This very large project represents one of the most active and well-established water markets in the western United States, but as explained in the previous chapter it does not represent the general western American water market.¹ Opuha and the Colorado-Big Thompson share similarities. Both are used for various irrigation, municipal, industrial, recreational, and hydro-electrical benefits, both are largely snow-fed, both have had disasters,² and both have energised local economies.

6.2 Reasons why Colorado-Big Thompson has been Successful

This research has identified that there are four main reasons why the American scheme has been so successful, which are common to both Colorado-Big Thompson and Opuha. First, both schemes have clearly-defined water rights steeped in contract law: Opuha relies on clearly-defined rights to the company

¹ It has been actively trading water rights since 1959.

² Opuha in 1997 with a dam collapse; Colorado-Big Thompson in 1976 with a disastrous flood that killed 145.

shares. Secondly, both projects are defined by their reliability of supply.³ Thirdly, in the case of farmers, both are used as a supplementary supply.

Fourthly, both have a simple and cheap administration system which is the absolute core of the success of both systems as it keeps transaction costs to a minimum. That process is crucial to the success of a market system and the American project demonstrates this extremely well. The process also establishes why it is proper to examine the American scheme in some detail, given its long history.

The Colorado-Big Thompson scheme has the added advantage of large numbers of varied market participants. However from the perspective of this research, both use economic instruments in the form of tradable rights to achieve their ends. Internationally the employment of (formal) water markets for both mercantile and environmental application is increasing. In Colorado there has been trading of water-rights for well over 100 years. In this State, the market system is a judicial one and has not been very efficient. Outside the general judicial system however there are examples of districts where water has been traded administratively within the district area. One of the most reputable and efficient of these markets is operated by the Northern Colorado Water Conservatory District with the Colorado-Big Thompson system:

The water right transfer market that has developed for Colorado-Big Thompson (C-BT) Project water in north-eastern Colorado is one of the most active and well established water markets in the western U.S. C-BT Project water has been actively traded between agriculture, municipal and industrial uses since the early 1960s. In several ways the C-BT market symbolises a best case example of existing water

³It is acknowledged that in 2015 Opuha has experienced problems in this area due to a lack of water.

markets, because it lacks many of the restrictions or difficulties faced by other markets.⁴

The project has an impressive footprint and an interesting history. The project spreads over approximately 250 miles. It stores, regulates, and diverts water from the Colorado River on the western slope of the Continental Divide to the semi-arid Eastern Slope and employs a comprehensive distribution system. It provides supplemental water for irrigation of about 640,000 acres of land, municipal and industrial use, hydroelectric power, and water-oriented recreation opportunities. It diverts on average about 213,000 acre-feet of water per annum.⁵ It includes no fewer than 12 major storage systems fed by 35 miles of tunnels and 120 ditches covering 95 miles (the transportation or delivery system), 7 hydroelectric power plants and provides water for no fewer than 30 cities and towns. Its construction required sophisticated technology for the day.⁶

The facility was financed through, and built by, the U.S. Bureau of Reclamation. The U.S. Bureau of Reclamation holds the water rights granted to the Federal Government by the state of Colorado to supply the project. The Northern Colorado Water Conservancy District is granted, by contract, the perpetual rights to use the water made available by the construction of the project (excluding water made available by the Green Mountain Reservoir as well as water for Rocky Mountain National Park and the town of Estes Park), provided it abides by the terms and conditions contained in the repayment contract with the Bureau of Reclamation:

⁴ Ari M. Michelsen “Administrative, Institutional and Structural Characteristics of an Active Water Market”. (1994) Water Resources Bulletin, American Water Resources Association 1 at 3.

⁵ The Scheme has a total capacity of 310,000 acre-feet.

⁶ The Alva B. Adams Tunnel which transfers the water from the western slope of the Colorado River to the eastern Front Range of Colorado, runs in a straight line under the Continental Divide, is 13 miles long and nearly 10 feet in diameter.

16. On payment of all construction repayments by the District as required by this contract, and compliance by the District with the covenants it is required to perform, the District shall have the perpetual rights to use all water excluding water made available by the Green Mountain Reservoir and the water rights reserved in Articles 24 and 25 hereof,⁷ that become available through the construction and operation of this project, for irrigation, domestic, municipal, and industrial purposes, but excluding any and all uses for power.⁸ It is agreed and understood that the use of the water made available by the project shall be primarily for irrigation and domestic uses; and that the manner of delivery shall be to this end...⁹

The cost of construction of water infrastructure is extremely high. The Bureau, however, was concerned, naturally enough, that the Federal Government should secure a means of recovering its construction costs, or at least a decent portion thereof. Thus, the Bureau required the then newly-formed North Colorado Water Conservancy District (established in September 1937) to enter into a repayment arrangement of the District's share in advance, but it was agreed that the District's exposure would not exceed \$25,000,000 to be repaid over a period of 40 years.¹⁰ The resultant repayment contract dated 5th July 1938 enabled the District to sell its allotments, that is to say a share in the water delivered by the project at a predetermined cost; in addition it enabled the District to start contracting with potential water users before the project was actually finished and the final cost established. Thus, the District was able to finance its obligations to the Federal Government by a combination of taxes,¹¹ wholesale hydro-electric sales, and significantly through revenue derived from the allocation and re-allocation of water allotments. The State of Colorado passed the Water

⁷ Water for the Rocky Mountain National Park and the town of Estes Park.

⁸ This was amended on 21st June 1968 to include power, with monetary compensation to the Bureau for loss of revenue.

⁹ Article 16 Contract between the United States and the Northern Colorado Water Conservancy District dated 5th July 1938.

¹⁰ The actual cost was around \$164,000,000 although the Bureau thought it would cost about \$44,000,000. See O Knight "Correcting Nature's Error: The Colorado Big Thompson Project" (1956) 30(4) *Agricultural History* 157 at 157.

¹¹ The power to levy was introduced by the Water Conservancy District Act 1937. (37-45-121 to 37-45-126 inclusive).

Conservancy Act in 1937 which gave the board of directors general powers to sell or lease water.¹² The crucial factor in all this is that the project was actually predicated on a water market model.

Pursuant to the Water Conservancy Act 1937, the Board of the District was granted general powers:

(b) (I) (A) To take by appropriation, grant, purchase, bequest, devise, or lease, and to hold and enjoy water, waterworks, water rights, and sources of water supply, and any and all real and personal property of any kind within or without the district necessary or convenient to the full exercise of its powers;

(B) To sell, lease, encumber, alien (*sic*), or otherwise dispose of water, waterworks, water rights, and sources of supply of water for use within the district.¹³

The District had a powerful incentive to ensure that the market model functioned efficiently and effectively. Intelligent planning has ensured there are several major competitive advantages enjoyed by the Colorado-Big Thompson market model: (1) there is a high degree of predictability and surety of water supply, (2) the Project does not unduly need to worry about return flows and the rights of junior appropriators,¹⁴ and (3) the transfers are an administrative rather than judicial process. Each of these characteristics will be considered in turn.

6.2.1 (1) The Predictability of Supply.

The project was designed to deliver a maximum of 310,000 acre-feet per annum. The resultant homogenous allotments are defined in these terms that is, one

¹² C.R.S. §37-45-118. (See note 17 below).

¹³ Water Conservancy Act 1937: 37-45-118. Although the section omits the reference to “beneficial use” as is a general requirement of western water law, the Board has this requirement of all its allottees, whether permanent or temporary. See however subsection 37-45-118 (II). (Which refers to beneficial use of the waters of the works).

¹⁴ However all return flows are dedicated to downstream users so an owner of a water allotment cannot reuse the return flows.

allotment equates to one acre-foot, and so there are 310,000 allotments in parcels (termed units) divided among the allottees.¹⁵ If the project were to deliver a full quota of 310,000 acre-feet, each unit would receive a full acre-foot, *viz* 100%. If the project were to deliver, say, 217,000 acre-feet (that is to say 70%) in any year, then each allotment would receive 0.7 of an acre-foot. The annual quota which determines how much water is available to each allotment (similar to the New Zealand fisheries quota system) is determined by the hydrologists and engineers following the winter precipitation (snowfall, runoff forecast, retained soil moisture, current reservoir storage etc.) and then is officially declared by the Northern Colorado Water Conservancy District Board of Directors. The Board tries to store water during wet seasons by setting a lower quota during these seasons for use during drier seasons.

Traditionally, the Board has set the quota in April – the beginning of the irrigation season - at the beginning of spring and the winter snowmelt. Initially, agriculture held 85% of water allotments; however, starting from the late 1960s water began to be re-allocated by sale to municipal¹⁶ and industrial uses and, as at 2011, only 34% of these allotments was held by agricultural water users (that is to say irrigators).¹⁷ There was a growing demand for year-round water deliveries, so the Board in 2001 began declaring an initial quota effective 1st November in each year, supplemented by the April quota later in the season. This enables non-agricultural entities to better plan their water strategies. The April quota may be increased if, in the opinion of the Board after proper advice, it appears the hydrological conditions prevailing in any particular season will allow for it. Thus the market system at the Northern Colorado Water Conservancy District has a

¹⁵ The average amount supplied between 1953 and 2010 is in the region of 213,000 acre-feet. (Northern Colorado Water Conservancy District fact sheet 3 December 2010).

¹⁶ It is notable that in 1937 the population of the District was 75,000. In 2012 it was 850,000.

¹⁷ Northern Colorado Water Conservancy District fact sheet.

commercial advantage in that once the quota is set there is an absolute surety of supply.

6.2.2 (2) The Prior Appropriation System and Return Flows.

The rights of junior appropriators are a major hindrance generally to water transfers in the American west. Initially riparianism was the imported water rule. Riparian rights link reasonable use of water to ownership of lands adjacent to a water source (rivers, lakes streams etc.). They define water rights generally in terms of use of water linked to ownership of adjoining land.¹⁸ This doctrine only recognises the rights of riparian landowners, and the rights of other potential users are not protected by riparian law.¹⁹ Importantly, from a western United States perspective, a riparian owner has rights to water whether or not those rights are exercised – the doctrine does have a concept of reasonable use to protect the interests of other riparian owners,²⁰ but it does not rely on the actual initiation and continuing use - especially beneficial use - of the water for its validity.

It was quite clear to the early settlers that, in an arid land where rivers were few but arid acreages were staggeringly huge, the riparian system would simply not work – it “tended greatly to prevent the very development which made the lands valuable.”²¹ In any case, the miners were the driving force for change in the west – they were working federal land and could not legally claim a riparian right based on ownership. Thus, in most states, including Colorado, although the

¹⁸ See A Dan Tarlock, James N Corbridge Jr, David Getches, and Reed Benson *Water Resource Management* (6th ed, Foundation Press, New York, 2009) at 112.

¹⁹ New Zealand generally abandoned riparianism in 1967: Water and Soil Conservation Act of that year, and replaced it with an administrative allocation mechanism. See section 21 Water and Soil Conservation Act 1967 and section 354 Resource Management Act 1991; also FM Brookfield “Water” in *The Laws of New Zealand* (Butterworths, Wellington, 1997) 60 at para 51.

²⁰ In the case where there may be insufficient supply to meet the needs of all relative riparian owners the water is rationed according to a broad standard of “reasonableness”.

²¹ *Empire Water & Power Co. v Cascade Town Co.* 205 Fed 123 at 127 per Circuit Judge Hook (1913).

riparian system was initially imported, it was abandoned in favour of the prior appropriation system. This prior appropriation system was born in the west, as Professor Sax states: “It is a great example of the law of necessity becoming the law of the land.”²² It is also a grand example of American practical self-help in a region with little, if any, legal infrastructure at the time. One of the leading cases states that the diversion and use of water in Colorado had transformed a parched land into something of immense value. Riparianism was totally impractical in Colorado, and that, as a matter of practical necessity, the first to appropriate water for a beneficial purpose has the prior right to the water, and that right must be protected.²³ It is possible to discern the justification of the prior appropriation doctrine in terms of individual riparian rights sacrificed on the altar of national development, in which a larger number of people have a vested interest.²⁴

In basic terms the prior appropriation system is a water distribution system that enables a person (or entity) to simply take – or appropriate – water and apply it to a beneficial use in a non-wasteful manner with due diligence. There is actually a hint of utilitarianism in the doctrine, and in the Colorado Supreme Court decision in *Coffin*, notably Bentham’s greater happiness principle. In the nineteenth century, utilitarianism played an important role in the democratic and political reforms in Britain and its spheres of influence. With a strict interpretation of utilitarianism, an act is not right or obligatory because of its inherent character, underlying motives or its relation to divine or other dictates; but rather due to the overall human happiness and well-being it produces.²⁵

²² Joseph Sax “Why I Teach Water Law” (1984-5) 18 U Mich J L Reform 273 at 274.

²³ *Coffin et al. v Left Hand Ditch Company* (1882) 6 Colo. 443, at 446-7.

²⁴ See Terry L Anderson and PJ Hill “The Evolution of Property Rights: A Study of the American West” (1975) 18 J L & Econ 163; Donald Pisani “Enterprise and Equity: A Critique of Western Water Law in the Nineteenth Century” (1987) 18 Western Hist Q 15.

²⁵ See, generally, JH Burns (ed) *The Collected Works of Jeremy Bentham - An Introduction to the Principles of Morals and Legislation* (The Althone Press, London, 1970).

Importantly, the contemporary emphasis on conservation of a resource in an era of gross and profligate waste of other natural resources is particularly noteworthy.²⁶ By diverting water, the appropriator acquires a usufructuary right but which is an actual property right capable of being held totally independent of the title to the land, provided the aforementioned conditions are adhered to.²⁷ The fact that the water right is independent means that it can theoretically be traded among others, thus ensuring its circulation. The priority is actually chronological,²⁸ and is determined by the date on which the water was first appropriated.²⁹ The first appropriator is termed the “senior appropriator”, and the others are termed “junior”: no.1, no.2, no.3 and so on in chronological order of their appropriations. When water becomes scarce, the most junior appropriator must discontinue his or her water supply to ensure the supply of his or her immediate chronological superior, and so on up the water rights chain.

This might appear at first blush to be a relatively straight-forward system, but an extra variable is added to the equation in the form of return flows.³⁰ The essence is in terms of the interests of others. In a lot of cases the use of the appropriated water is not totally consumptive, – a large portion and in the case of irrigation (by far the most common usage of appropriations) something like fifty per cent either evaporates or flows back to the stream from whence it came,³¹

²⁶ See, generally, Charles F. Wilkinson *Crossing the Next Meridian* (Island Press, Washington USA1992).

²⁷ See *Schilling v Rominger* 4 Colo 100 (1878) at 103; *Coffin v Left Hand Ditch Co* 6 Colo 443 (1882) at 446.

²⁸ Literally “first in time, first in right”.

²⁹ Or, when the first work was commenced on a project which would take time to complete. See Sax Thompson Leshy and Abrams *Legal Control of Water Resources* (4th ed, Thompson/West Publishing Company, St. Paul, 2006) at 125-126.

³⁰ With the Colorado-Big Thompson project, an allotment is for one use only and any return flows are forfeited back to the scheme and cannot be appropriated or sold. The thinking behind this policy is that when constructed the system was new and the water imported, therefore there were no downstream users, and consequently it did not have to contend with pre-existing claims: see Article 19 Repayment Contract with U.S. Bureau of Reclamation.

³¹ Or indeed into a different watershed – the system’s flexibility does not prohibit out-of-catchment uses.

either above ground as surface water in return sloughs and ditches, or below ground as groundwater return flows through a shallow alluvial aquifer. Thus, the returned water is used (and re-used) as it flows down the river. Accordingly, many water rights depend on return flows,³² and any alteration to the location and use pattern of upstream water use may affect other downstream appropriators if their rights depend on existing historic patterns of use. Under general western water law, the “no injury” rule prevails whereby a transfer of a water right (or a portion thereof) may not cause damage to other users,³³ thereby protecting the rights of downstream third parties to their return flows.

It can be easily appreciated how complicated this can be and is best illustrated by a hypothetical example.³⁴ “A” has an entitlement, from a fully allocated stream, to 20 cubic feet per second (cfs), which is used April – September in each year for irrigation, and he is proposing to sell 16 cfs of his entitlement to “B”, an urban water agency who historically has returned fifty per cent of its entitlement as return flow. There are junior appropriators downstream. “A” only consumes twenty-five per cent of his entitlement³⁵ which means that historically 15cfs of “A”’s water returns to the stream for use by junior appropriators. If “B” takes 16 cfs, only 11 cfs will be available to juniors (“A” will continue to use twenty-five per cent of the remainder of his entitlement, “B” will return 8 cfs which means that 11 cfs is available to juniors, not the 15 cfs as before.) The solution is to allow “B” only 8 cfs, of which 4 will be returned: this 4 plus the 8 left in the stream (half of the 16 originally proposed to be sold) plus the 3 cfs returned by “A” from his remaining entitlement equals 15 cfs. However,

³² Return flows are not classified as wasted or abandoned water.

³³ There is a major practical difficulty in establishing the actual volume of consumptive use and return flows of a particular right, thereby significantly adding to transaction costs on sale or lease.

³⁴ Given in Sax, Thompson, Leshy, and Abrams *Legal Control of Water Resources* (4th ed, Thomson/West Publishing Company, St. Paul, 2006) at 270-271.

³⁵ The inefficiency may be excused under the “community custom” rule. See discussion in *State of Washington Department of Ecology v Grimes* 121 wash 2d 459 (Wash 1993).

if “B” intends to use its new entitlement all year round (in the case that, say, “B” is a municipality), this would compromise the junior appropriators during October – March which under the “no injury” rule would not be allowed. Further, there may be differences in timing of the return flow which may affect junior appropriators who rely on “A”’s return flow during the allowed period of April – September. It may, for instance, take days or weeks for “A”’s return flow to find its way back to the stream. “A”’s use in September may support juniors in October, but if “B” returns water faster (or slower) than “A” there may not be enough water in October to support the junior, and a change in the timing may contravene the “no injury rule”.

In New Zealand we do not have a prior appropriation system, at least not in the American sense of that expression. Importantly, return flows are not an issue here. As part of this research all our Regional Councils were contacted and questioned on this point and none factors return flows into its allocative calculus³⁶ except in cases of non-consumptive use for example hydro-electricity. New Zealand is very fortunate in this regard.

6.2.3 (3) Administrative Transfers.

The Colorado-Big Thompson market system also avoids the complexity of junior rights and return flows as its initial allocation mechanism is proportional, not appropriative, which means the entitlement may be used entirely (with only one use) and the interests of junior appropriators are irrelevant, because there are none, except to the extent that they are entitled to whatever return flows there are. Thus, the District is freed from the complication of managing return flows which simply devolve to the District for further distribution. This clearly suggests a much simpler, cheaper and quicker transfer mechanism (a permanent transfer is a

³⁶ One Council was distressingly forthright and admitted it was still trying to work out how much water it had actually allocated to users.

little more complex) within the District boundaries which is exactly what the architects of the scheme intended. Speedy transfer of agriculture-to-agriculture allotments is critical to irrigated agriculture in semi-arid regions.

In general western water law, initially when an appropriation was made there was little, if any, government authority overseeing the process, and consequently there was no useful public record of users' appropriation.³⁷ The emerging judicial system of the time was utilised to resolve disputes and claims were settled by evidence, such as there was. This was clearly unsatisfactory and state-by-state an administrative permit system has been introduced for appropriations (except in Colorado which is a judicial process), which has since developed to require state administrative bodies, for example State Water Board, to include functions such as regulating initial uses, keeping proper records, recording diversions, changes of use, and abandonment.³⁸ The role of these administrative bodies is much more substantial than initially envisaged, but most importantly it does provide a proper public record. It is in fact a quasi-judicial office with which any proposed changes in water use needs to be filed. In the state of Colorado outside the Colorado Big Thompson Scheme the system is wholly judicial whereby a special water court considers an application for appropriation and later transfer. In each system –administrative or judicial – transaction costs and delay impact on the efficiency of the transfer process, despite any understanding that the transfer would finally eventuate.³⁹

With the Colorado-Big Thompson system the initial allocation and later transfer is accomplished through an entirely administrative process, which is in contrast with the rest of the state of Colorado. The procedure is short and cheap

³⁷ See Sax, Thompson, Lehy, and Abrams *Legal Control of water Resources* (4th ed, Thomson/West Publishing Company, St. Paul, 2006) at 131.

³⁸ In California the administration also determines whether an application is in the “public interest”.

³⁹ Above n 37 at 269.

and is not concerned about adverse impacts on others. The administrative transfer procedure is straight-forward and clearly defined by the Northern Colorado Water Conservancy District's rules. There are other advantages in the system's transfer process. Return flows may be retaken by the system as there are no juniors, but individual efficiency savings may be transferred – unused water may be transferred to another location and use with the approval of the directors.

There is a contrast between this system and the general western water law where a transferor may only transfer water that has been put to beneficial use by the transferor. There is clearly an incentive within the Colorado Big-Thompson system to be efficient and conserve water which can then be sold or leased to someone else. Not all western states have adopted conserved water programmes (including Colorado), which would allow such a process and in those states that have not there is no such incentive as the conserved water is forfeited back to the system. However, there is a strict requirement of beneficial use of the water and this is one of the few restrictions on the transfer of Colorado-Big Thompson water,⁴⁰ a restriction totally in harmony with the rest of the western United States. There is an overall concern that something valuable and in short supply should be used wisely and that there be no opportunity or suggestion of abuse of a rare but common resource.

The Colorado Water Conservancy Act gives the directors of the Northern Colorado Water Conservancy Board wide and all-encompassing powers,⁴¹ including the power to gather waterworks and water rights (including the right to exercise powers of eminent domain⁴²) as well as, generally, the power to construct and maintain facilities. The board of directors also has the power to levy and

⁴⁰ This is enshrined in the Water Conservancy Act 1927: 37-45-118 (IV) (f).

⁴¹ See C.R.S. §37-45-118.

⁴² The right to compulsorily acquire private property for public purposes.

collect tax upon all real estate property within the district.⁴³ In this regard the District is a quasi-municipal entity. This is limited to between one-half a mill on the dollar to three mills on the dollar, depending on the valuation of each district, and whether it is yet to receive water from the project. A mill is equal to one dollar per one thousand dollars on the valuation of each individual property within each district. This tax is to be added to levies received from sales of water to municipalities (class B assessments), large corporations (class C assessments), and other landowners who also demonstrate a beneficial use (irrigation) for the water (class D assessments). It is these class B, C, and D water rights which are actively traded.

Whilst it might be assumed the Project with its size, value, and market activity would be ordained with a large amount of legal apparatus and dispute resolution mechanisms necessary to undertake the administration of such an active and dynamic water market, in fact this is not so. The entire water allotment and trading process is managed administratively by the board of directors which derives its authority from statute:

The board shall have the following powers ... To make and enforce all reasonable rules and regulations for the management, control, delivery, use, and distribution of water.⁴⁴

Transfers are either permanent or temporary. The process is entirely simple and clearly defined by the District. To achieve a permanent transfer, all that is necessary is a simple application form signed by both parties. Basic information is all that is needed, particularly copies of titles to the properties concerned (where the transfer is to another farmer) to enable the District to ensure the rectitude of the process. The purchaser must however demonstrate a justification for the

⁴³ C.R.S. §37-45-121 (1) (a); §37-45-122.

⁴⁴ C.R.S. §37-45-134 (1) (a) and (b) (2014).

transaction by establishing a beneficial use for the water.⁴⁵ The District charges a flat fee of \$200 currently, irrespective of the amount of water traded. The cost of title searches are in addition to this amount. District staff physically inspect the purchaser's property to ensure the stated beneficial use is legitimate and that the water procured is supplemental to existing water rights for the property. The completed application is simply submitted to the board of directors which considers and if proper approves it at its monthly meeting. Even after approval a further physical check is made to confirm matters. This takes up to two weeks. In essence, then, the maximum time it might take to effect a sale is no more than six weeks, but typically around four. The judicial process in the rest of Colorado on the other hand can take cost tens of thousands of dollars and take up to eighteen months to complete.⁴⁶ Temporary transfers in the Colorado-Big Thompson are even simpler – the parties simply lodge a postcard with the District which then actions the matter without charge. By its very nature, a temporary transfer does not attract the same rules as to beneficial use as does a sale. The District's website has provision for buyers and sellers to make contact with each other, thus greatly simplifying the process of finding a trading partner.

It is clear the simple trading system enjoyed by the District raises issues about organisation theory, that is to say the corporate framework and the structure of systems external to that framework which affect business efficiency, coupled with an exercise in simple transaction cost economics, that is, the cost of conducting business. A simple and well-understood process will contribute significantly to a reduction in the overall cost of transacting business, and conversely a Byzantine system would almost certainly increase the overall cost.⁴⁷

⁴⁵ Municipalities are allowed a certain measure of leeway and may hold "conditional water rights" in anticipation of future growth – an example of typical American practicality.

⁴⁶ See Sax, Thompson, Lehy, and Abrams *Legal Control of Water Resources* (4th ed, Thomson/West Publishing Company, St. Paul, 2006) at 269.

⁴⁷ See generally Oliver E. Williamson "The Economics of Organization: The Transaction Cost Approach" (1981) 87 *American Journal of Sociology* 548-577.

New institutional economics suggests that the concepts of organisation theory and transaction cost economics are actually mirror-images of each other. Given that economics in general, and the market system in particular, are both principally concerned with the administration of resources for which purchasers are competing; organisational structures are important in terms of the impact their mechanisms have on the ultimate distribution and re-distribution of those resources. In this context, systems and economic organisations matter, and matter a great deal because they are instrumental in making markets work better. These systems consist of procedural rules and regulations as well as dispute-resolution mechanisms. Navigation through these obstacles can be extremely expensive and time-consuming.⁴⁸

The Northern Colorado Water Conservancy District's systems keep these matters to a minimum through its board of directors' procedure. The process is mostly reduced to a type of scientific positivism by the employment of engineers and hydrologists, although the beneficial use requirement necessitates a certain degree of judicial decision-making; however, this is a well-understood concept. Interestingly these "institutions" also employ informal rules like codes of conduct and customs. Transaction cost economics assume that human beings are capable of opportunistic behaviour, that is to say a tendency to pursue personal interests,⁴⁹ and the District's practice of double-checking each water transfer after the final order is made, but also before the transfer actually takes place is entirely appropriate and suitably cautious. In other words, the directors do not merely pay lip-service to informal arrangements – these arrangements are formalised, illustrating the inherent tension between the cost of systems and the potential risk to efficiency by relaxing those systems. It is, of course, cost-effective to shape

⁴⁸ See Sax, Thompson, Lehy, and Abrams *Legal Control of Water Resources* (4th ed, Thomson/West Publishing Company, St. Paul, 2006) at 269.

⁴⁹ M Turvani "Illegal Markets and New Institutional Economics" in C Menard (ed) *Transaction Cost Economics* (Edward Elgar, Cheltenham, 1997) 127 at 129.

cultures and routines, and efficient governance leads to efficiency which in turn leads to cost-effectiveness. It is important to remember that the District's water market system is less a true competitive market, but rather more the transfer of clearly-defined legal rights to district allotments demonstrates a low-cost transaction procedure. The architecture of the District's allotment and market structure ensures transactions are cheap because they are book-ended by easily understood protocols on the one hand and an appropriate and pragmatic safeguard against opportunism in the form of speculation on the other.

The performance of any water market, the Northern Colorado included, is related to contract law and clarity of agreement and thoroughness of completion of those contracts are critical elements. Traditionally in contract law the identity of the parties is irrelevant. In the District's case, while the parties may be at arm's length and may not be perfectly acquainted with each other, they are both under the eye of all other allottees. Such conditions must have an influence on the establishment of the character of its market system, especially given the parties must remain in a continuing relationship within the District boundaries. These conditions also help towards easing the governance by the board of directors and simple governance is appropriate for simple contracts. In addition the District processes a multitude of contracts, and the more often these are processed the less opportunity for uncertainty to cloud the arrangements. These frequent and common-form trades ensure transaction-specific costs may be kept to a minimum.

6.3 The District's Requirement of Beneficial Use

The District derives authority to make reasonable rules and regulations for the management, control, delivery, use and distribution of water under the Water Conservancy Act and these rules are contained in Book 2 of the Northern Colorado Water Conservancy District Rules and Regulations. Five provisions have a common denominator of "beneficial use" which is knitted into the very fabric of the District's Rules:

Rule I: Water must be used for beneficial purposes

The Board shall have power on behalf of the District:

To appropriate and otherwise acquire water and water rights; ... to provide, sell, lease, and deliver water for municipal and domestic purposes, irrigation, power, milling, manufacturing, mining, metallurgical, and any and all other beneficial uses ...”

Beneficial uses can only be those permitted by the constitution and statutes of Colorado.

Rule II: Water allotted for irrigation must be a supplemental supply.

“The board shall make an allotment of water to petitioning owners of land in the district upon which water can be beneficially used ... in such amount as will in the judgment of the board, together with the present supply of water for irrigation purposes on such lands, make an adequate water supply for irrigation of such lands ...”

Rule III: All water allotted shall be classed by types of service and different rates of payment may be applied against each class of service.

In addition to supplemental irrigation allotments, “...water not allotted to lands ... shall be sold, leased, or otherwise disposed of; provided that rates shall be equitable, although not necessarily equal or uniform, for like classes of service throughout the district.”

(A) Interpretations and policies of the Board:-

- (1) From the numerous beneficial uses named in the statute, the Board grouped such uses into four classes of service:
 1. Municipal and domestic
 2. Industrial
 3. Multi-purpose (Industrial and Irrigation)
 4. Supplemental irrigation.

Rule IV: The Beneficial uses of water supply allotted by the District shall be restricted to the area lying within the District.

While the statute authorises the Board to provide, sell, lease, or otherwise dispose of water for beneficial purposes, it does so – “... provided the sale, leasing, and delivery of water ... shall only be made for use within the District.”

Rule V: Delivery of water shall be withheld from any allottee or allotment beneficiary in case of:-

- (1) Default or delinquency of payment of any assessments or charges due the District;

- (2) Non-compliance with provisions of any contract or agreement with the District; and
- (3) Non-compliance with or violation of the rules and regulations of the Board.⁵⁰

With a water right transfer transactions, especially a cheap administrative process, there is the danger that the system may be put at risk and abused by speculators. Hence the requirement that any water right held is actually put to a beneficial use is clearly of major importance in the management of its water resources by the District and this is a doctrine that is in the very DNA of western American water law. The term is used in all western states' water codes and even in some state constitutions. The wording of nine state codes is virtually identical.⁵¹ Even Rule V (3) distinctly suggests that supply will be curtailed in the event the water is not put to beneficial use.⁵²

In general western water law, there is a sustainability calculus in the beneficial use principle: an intention to wring the best outcome from a scarce resource. In terms of a resource management discussion, the success of the Colorado-Big Thompson's husbandry of its water resources is due to an integrated system of low-cost market efficiency coupled with careful practical management with an eye firmly on the beneficial use requirement. If New Zealand were to adopt a water market model, a beneficial use requirement will be as pertinent here as it is in America because the doctrine addresses head-on issues of sustainability, efficiency, and a protection against speculation. It is entirely appropriate

⁵⁰ These are partial extracts of the relative rules.

⁵¹ See Janet Neuman "Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Law" (1998) 28 *Envtl L* 919 at 923-4.

⁵² The Project follows the general Colorado water law in its implementation of its beneficial use doctrine.

to now consider the general American doctrine of beneficial use in some detail.

7 Chapter 7

7.1 Beneficial Use – A Background.

The Colorado-Big Thompson market system insists that its water is put to beneficial use. A requirement of this nature is general in all western American state water laws. This chapter will argue that beneficial use is a water resource management tool of some utility to New Zealand. The challenge facing water managers is summed up by Tarlock, Corbridge, Getches and Benson as the craft the sharing a scarce resource among competing users but at the same time taking into account geographic and temporal mismatch of water supplies.¹

New Zealand does not currently have a beneficial use doctrine; however, one objective contained in both New Zealand National Policy Statements for Freshwater Management is that of B3 “[t]o improve and maximise the efficient allocation and the efficient use of water.” Such a prescription would, it is submitted, include the introduction and action of some beneficial use of water doctrine in New Zealand. The repealed Water and Soil Conservation Act 1967 had a form of this doctrine. The preamble to that Act declared that its objective was “to make better provision for the conservation, allocation, use, and quality of natural water.”

The National Water and Soil Conservation Authority under the 1967 Act was directed to address beneficial use in its statutory duties under section 14:

14 (3) (d) To co-ordinate all matters relating to natural water so as to ensure that this natural asset is available to meet as many demands as possible and is used to the best advantage of both the country and the region in which it exists in the course of nature.

¹ A Dan Tarlock, James N Corbridge, D H Getches, and Reed D Benson *Water Resource Management* (6th ed, Foundation Press, New York, 2009), at 1.

(m) To promote the best uses of natural water, including multiple uses, and to allocate natural water between competing demands.

“Used to the best advantage” and “best uses” strongly suggests of a beneficial use notion. It is noteworthy that the advantage should accrue to the country and the region, unlike the American system where the benefit accrues to the individual, but, by extension, the region and country would benefit accordingly. Under section 20 of the 1967 Act, Regional Water Boards were required to factor beneficial use into their statutory functions:

20 (5) (c) ...the Board shall promote the protection of water supplies of local authorities and the conservation and most beneficial uses of natural water within the region.

Applications in respect of natural water were made to the Regional Water Board (usually the local Catchment Board acting in this capacity) as required by section 24. Under the Water and Soil Conservation Regulations 1968, the first schedule thereto comprised the form of the application, and this form required the description of the purpose for which the water is to be used.

In *Greensill v Northland Catchment Commission*, the Board held that “beneficial use” means that the applicant: “must show amongst other things the extent to which the use of the water applied for will be beneficial to him.”² The Court of Appeal in *Keam v Minister of Works and Development*³ had the final say as the meaning and impact of the beneficial use imperative contained in section 20(5)(c) of the Water and Soil Conservation Act 1967. The Minister of Works and Development had applied to take geothermal water. The application was granted by the Water and Soil Conservation Authority in the first instance, but, on appeal, the Planning Tribunal had taken the view that it was required to weigh the

² *Greensill v Northland Catchment Commission* (1971) NZTPA 59 at 59.

³ *Keam v Minister of Works and Development* [1982] 1 NZLR 319 (Court of Appeal).

competing public interest by balancing the benefit that would accrue from the exploration of the geothermal field against the benefit of preserving the field for scenic attraction and scientific study (Dr. Keam was a scientist). The Tribunal stated it would expect that a comprehensive plan of exploration would first be prepared and that a decision to explore would not be made without full evaluation of the likely consequences.

The Chief Justice in the High Court held that in weighing up the benefit and losses from use:

Consideration of beneficial use is only necessary where a water supply cannot meet in full all demands for water within the region. If all the demands of a region and likely future demands can adequately be met from the sources of water available, the fact that a professed use is not beneficial use should not of itself result in a water right being declined⁴

So, according to the learned Judge section 20(5) (c) should read as follows to better identify its intent:

...so far as may be necessary a Board shall promote the protection of water supplies of local authorities and the conservation and most beneficial uses of water so far as may from time to time be necessary to meet in full all demands for or in respect of natural water within the region.⁵

His Honour is suggesting the provision is too broad and uncertain without his addition. In the Court of Appeal, Cooke J approved of this approach, and also approved of the approach taken by the Planning Tribunal of balancing the benefits to both exploration and preservation, and further that any proposed use must be a beneficial use. However his Honour also agreed with the Chief Justice:

⁴ *Minister of Works and Development and National Water and Soil Conservation Authority v Keam* (1981) 7 NZTPA 289, at 294 per Davison CJ.

⁵ *Ibid*, at 294.

It is as a useful general test of that kind that I understand the Planning Tribunal's proposition in its decision *in this case* [emphasis added] that any proposed use of natural water should be a beneficial use, and that the loss which might follow from the taking of the water would be weighed against the benefit which will result from its use.

...

But there may be cases where the Tribunal's broad test will be inappropriate, at any rate if read literally. For example there might be an application to abstract some water for a limited term from a source of supply so abundant that during that term there is no reasonable possibility of any shortage at all or any other consequence damaging to anyone. In that kind of case it would be wrong, I think, to apply the benefit test in any exacting way. Then it should be enough that the applicant wished to have the right for some legitimate purpose which he considered of benefit to him.⁶

These comments suggest two things. First, the expression "of benefit to him" would suggest a judicial interpretation of section 20(5) (c) which differs significantly from the prescription in section 14(3) (d). That provision required the National Water and Soil Conservation Authority to ensure water be used to the best advantage of both the country and the region. Section 20(5) (c) simply states that the water should be used for the "most beneficial uses of natural water within the region". Benefit to the individual is not expressed, but may be inferred. Secondly, the beneficial use doctrine under the Water and Soil Conservation Act differs significantly in both scale and substance from the doctrine as developed by the common law in western United States' jurisdictions as we shall see. To be fair though our version did not have time to mature since it was scrapped by the Resource Management Act in 1991 and replaced by an effects-based model.

In New Zealand, major changes to natural resources law have been made legislatively and the Resource Management Act 1991 is a good example of this. In America, a sea-change of approach to water law was made through the common law. In both cases change was effected to address a need. The doctrine

⁶ *Keam v Minister of Works and Development* [1982] 1 NZLR 319, at 322-323. (Court of Appeal).

of beneficial use is a home-grown American notion conceived as a matter of practical necessity.

The concept of riparian rights where only the landowners adjacent to waterways would have access to water must have seemed totally impractical to English eyes accustomed to gazing at a green and pleasant land but now seeing only an arid landscape. There was already trouble in England, however. Riparian law had evolved somewhat from the relatively temperate pastoral simplicity of the Romans, on whose notions the riparian common law was based.⁷ Getzler suggests that after centuries of comparative constancy, human society evolved from the simple agrarian model to a less simple agrarian model (an outcome of both an improvement in agricultural techniques and productivity in the Middle Ages to the Agrarian Revolution in the eighteenth century), to a (subsequent) industrial model of the nineteenth century.⁸ That evolution continues today.

The water requirements of a simple seventeenth century agricultural system are quite different to the water requirements of factory production in the nineteenth century, which in turn is different to the water requirements of, say, contemporary hydro-electric (or for that matter nuclear) power production. Many factors worked to make a strict riparian doctrine unstable: ironically the doctrine reflected its own subject matter in that flowing water is inherently in a state of persistent change, as is the demand for the water and the end use of it. Water allocation rules had accordingly more or less developed in a way to accommodate the ever-growing demand for their subject matter. The standard image of nineteenth century industrialised England is probably the “dark Satanic Mill” blighting a green grandeur. But Blake was writing about that in 1804, long before steam became prevalent (high technology for the times) so his mills were, at that

⁷ J Getzler *A History of Water Rights at Common Law* (Oxford University Press, Oxford, 2004) at 1-2.

⁸ *Ibid*, at 8-45.

time, powered by the humble water-wheel. In fact, it was the demand for more water-wheels which compelled judges to try and seek legal solutions to accommodate the needs of these new players. There were between 10,000 and 20,000 watermills in Britain by about 1700, and up to five watermills for every mile of usable stream in some areas – figures that were multiplied many times over by the time industrialisation really accelerated.⁹ Getzler is of the view that the common law was ultimately quite unable to govern water entitlements, and an *ad hoc* regime of private and public statutes was used to perform the task¹⁰.

7.2 The American “Practical” Approach.

In the American west, water law similarly evolved to meet demand from milling, mining, and agriculture. The prior appropriation model was introduced to spread the water supply beyond the bounds of the riparian system to supply water over a parched landscape.¹¹ Professor Tarlock is of the view that the beneficial use requirement of the prior appropriation doctrine was originally imposed to control purely paper acquisitions of water so that appropriations were limited to the amount of water actually put to use rather than the amount claimed. He traces the possible genesis of the notion to the early Mormon settlements in Utah and their irrigation practices. The early Church predicated the privilege of property ownership on the productive, non-speculative use of that property.¹²

As developed the beneficial use doctrine has certain core characteristics. It controls the use of water by individuals, but displays a degree of flexibility. There is a general uniformity of application throughout the western states of America, but appropriators must have some proprietary interest in the land to

⁹ J Getzler *A History of Water Rights at Common Law* (Oxford University Press, Oxford, 2004) at 22.

¹⁰ *Ibid*, at 44.

¹¹ See *Coffin v Left Hand Ditch Company* 6 Colo 443 at 446.

¹² A. Dan Tarlock *Law of Water Rights and Resources* (Thomson Reuters/West Eagon Press, Minnesota, 2012) at 323.

which the water right is attached. The doctrine is absolutely the very basis of the body of western water law. “The water codes of all the western states and some state constitutions include the term ‘beneficial use’”.¹³ It is generally described as “the basis, measure, and limit of an appropriative right” by western water statutes: “Statutes of nine states intone in nearly identical language that ‘beneficial use, without waste, is the basis, measure, and limit of a water right.’”¹⁴ Riparianism began to lose its grip in the early Rhode Island milling case of *Tyler v Wilkinson*¹⁵ which departed from the general English riparian principle at the time that riparian owners were entitled to receive their water without obstruction or diminution (except for reasonable domestic and stock use), but the real question is what amounts to “reasonable use”.¹⁶ The judge goes on to say that an appropriation too may be recognised either by a grant from all the proprietors whose interest is affected by the appropriation, or by a long exclusive enjoyment without interruption (twenty years) which affords a just presumption of right.¹⁷

It was, however, the mining industry which drove the need for change. Charles F Wilkinson makes the point that the miners had a simple rule – first in time, first in right: a principle based on simple common sense. That principle extended to a due diligence rule which required the miner to actively work his claim, or the right was lost. Later developments were consistent with utilitarian objectives and an appropriator had to ‘divert’ water by physically taking it out of the watercourse. Importantly the water had to be put to a beneficial use.¹⁸

¹³ Janet C Neuman “Beneficial Use, Waste, and Forfeiture: the Inefficient Search for Efficiency in Western Water Law” (1998) 28 *Envtl L* 919 at 923.

¹⁴ *Ibid*, at 923-4.

¹⁵ *Tyler v Wilkinson* 24 F. Cas. 472 (CCRI 1827). As to reasonable use see also the later English case of *Swindon Waterworks Company v Wilts and Berks Canal Navigation Company* (1875) LR 7 HL 697 (HL). See J Getzler *A History of Water Rights at Common Law* (Oxford University Press, Oxford, 2004) at 321.

¹⁶ Per Storey J at 474.

¹⁷ *Ibid*, at 474.

¹⁸ Charles F. Wilkinson *Crossing the Next Meridian* (Island Press, Washington, 1992) at 232-234.

The landmark decision is the 1855 Californian case of *Irwin v Phillips*.¹⁹ Irwin had diverted all of a stream from its natural course to his mining operations quite some distance away. Phillips and Jordan later occupied the stream bank but found they lacked water for their requirements, so they diverted some of Irwin's water back to the streambed. Irwin sued and won at local level. The Supreme Court of California considered the matter. A complicating factor was an 1850 Statute:

The common law of England, so far as it is not repugnant to or inconsistent with the constitution of the United States or the constitution of this State, is the rule of decision in all the courts of this State.²⁰

Delivering the decision, Heydenfeldt, J. stated:

Among the most important are the rights of miners to be protected in the possession of their selected localities, and the rights of those who, by prior appropriation, have taken the waters from their natural beds, and by costly artificial works have conducted them for miles over mountains and ravines, to supply the necessities of gold diggers, and without which the most important interests of the mineral region would remain without development.²¹

Implicit in this statement is the notion of putting the water to some sort of productive and beneficial use. *Irwin v Phillips* did not however entirely reject the idea of riparianism in California, as the lands involved in the dispute were federal, and accordingly the riparian doctrine did not apply to them. Interestingly, two years later the California Supreme Court case of *Crandall v Woods*²² in essence upheld riparian rights for occupied land against later appropriation by others, but suggested, *obiter*, a preference for priority for water on vacant land as a matter of

¹⁹ *Irwin v Phillips* 5 Cal. 140 (1855).

²⁰ 1850 Cal. Stat. 219.

²¹ *Irwin v Phillips* 5 Cal. 140 at 146.

²² *Crandall v Woods* 8 Cal. 136 (1857).

public policy. Later in 1886, the Californian Supreme Court was obliged in *Lux v Haggin*²³ to decide whether it would uphold riparianism, or an appropriative system, or create a new system altogether. The Court found for both water rights systems, but decided that appropriative rights were secondary to riparian rights, and expanded the definition of reasonable use by allowing water to be used for commercial and agricultural purposes, provided that use did not impact negatively on other riparian owners. Thus California has a hybrid prior appropriation-riparian model of water management requiring (reasonable) beneficial use of appropriated waters, and reasonable use of riparian waters.²⁴

Reference has already been made in the last chapter to the 1882 landmark irrigation case of *Coffin v Left Hand Ditch Company*²⁵ in relation to the new prior appropriation system. That decision makes bold reference to beneficial use as a requirement of an appropriation: “And we hold that...the first appropriator of water...for a beneficial purpose has...a prior right thereto.”²⁶ Interestingly though, the idea of “beneficial use” as discussed in the judgment is accepted as a given, that is to say there is no attempt to justify the notion; its adoption appears to be accepted naturally and taken for granted. The basic principle was the child of experience – a static supply of water which was simply inadequate to satisfy the needs and aspirations of the rapidly growing population with the concomitant needs of agriculture and industry.

²³ *Lux v Haggin* 69 Cal. 255 (1886).

²⁴ This model was encapsulated into the Californian Constitution (Article XIV) but is now found in Article X §2.

²⁵ *Coffin v Left Hand Ditch Company* 6 Colo. 443.

²⁶ *Ibid*, at 447.

7.2.1 Statutory Incorporation of Beneficial Use

As noted the doctrine has become sanctified in many state constitutions and statutes. For example, the notions of both “reasonable” use and “beneficial” use have become enshrined in the California constitution:

It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.²⁷

An amendment to the constitution provides that a water right is limited to the quantity of water reasonably required for the beneficial use to be served, and does not extend to waste or unreasonable use.²⁸ Numerous other western states adopted it, too:

- Alaska’s constitution states *inter alia* “Wherever occurring in their natural state, fish, wildlife and water are reserved to the people for common use”.²⁹ Section 4 expands the concept and states that “Fish, Forests, wildlife and *all other replenishable* [emphasis added] resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses.”³⁰
- Colorado’s constitution states: “The right to divert the unappropriated waters of any natural stream to beneficial uses shall never be denied.”³¹

²⁷ California Constitution Article 10, Section 2.

²⁸ Article 14, Section 3.

²⁹ Article 8, Section 3.

³⁰ Alaska is not one of the dry western states, and can hardly be described as lacking in water.

³¹ Article XVI, section 6.

- Wyoming’s constitution provides: “Beneficial use shall be the basis, the measure and limit of the right to use water at all times...”³²
- Arizona’s constitution provides: “(2) All existing rights to the use of any of the waters in the state for all useful and beneficial purposes are hereby recognised and confirmed.”³³
- New Mexico’s constitution provides: “Beneficial use shall be the basis, the measure and limit of the right to use water.”³⁴ Idaho provides: “The right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses shall never be denied ...”³⁵
- Utah’s constitution states: “The legislature of the state of Utah having heretofore declared ... that ‘beneficial use shall be the basis, the measures and the limit of all rights to the use of water in this state’.”³⁶
- Montana’s constitution states: “All existing rights to the use of any waters for any useful or beneficial purpose are hereby recognised and confirmed.”³⁷
- Texas’s constitution provides: “The conservation and development of all natural resources of this State ... including ... the waters of its rivers and streams [for] power and all other useful purposes, ...”³⁸

These many positive constitutional statements have some recurring themes: the recognition and confirmation of existing rights, and the declaration of the terms of continued water use. Some states have the beneficial use doctrine enshrined in their state statutes, for example Nevada, which states: “[b]eneficial

³² Title 41 (Water), Chapter 3, Article 101.

³³ Article XVII (Water Rights).

³⁴ Article XVI, Section 3.

³⁵ Article XV, Section 3.

³⁶ Title 73, Chapter 10, Section 31.

³⁷ Article IX, Section 3 (1).

³⁸ Article XVI, Section 59a.

use shall be the basis, the measure and the limit of the right to the use of water.”³⁹

In conjunction:

Rights to the use of water must be limited and restricted to as much as may be necessary, when reasonably and economically used for irrigation and other beneficial purposes irrespective of the carrying capacity of the ditch.⁴⁰

In Kansas: “All appropriations of water must be for a beneficial purpose.”⁴¹ Again: “Such appropriations shall not constitute ownership of such water and appropriation rights shall remain subject to the principle of beneficial use.”⁴²

The Texan Water Code provides: “No right to appropriate water is perfected unless the water has been beneficially used for a purpose stated in the declaration of intention.”⁴³ “Beneficial use’ means the amount of water which is economically necessary for a purpose authorised by this chapter when reasonable intelligence and reasonable diligence are used in applying the water...”⁴⁴

Colorado’s statute states that “Beneficial use is the use of that amount of water that is reasonable and appropriate under reasonably efficient practices to accomplish without waste the purpose for which the appropriation is lawfully made.”⁴⁵

Some states have gone as far as providing a list of beneficial uses either in the constitution or in statute, for example Colorado determines that “... water for

³⁹ Nev. Rev. Stat. 533.035.

⁴⁰ Nev. Rev. Stat. 533.060.

⁴¹ Kans. Stat. Ann. 82a-718.

⁴² Kans. Stat. Ann. 82a-707.

⁴³ Texas Water Code Section 11.026.

⁴⁴ Texas Water Code Section 11.002(4).

⁴⁵ Col. Rev. Stat §37-92-103(4) (2006).

domestic purposes shall have preference over ... any other purpose, and ... agriculture shall have preference over...manufacturing.”⁴⁶ Montana’s statute defines beneficial use (in the definition section) as “the use of water for ... including but not limited to agriculture, stock water, domestic, fish and wildlife, industrial, irrigation, mining, municipal, power, and recreational uses.”⁴⁷ Texas lists agriculture, gardening, domestic uses, stock raising, mining, manufacturing, industrial and commercial uses, recreation, pleasure, oil, gas, and sulphur production as beneficial uses.⁴⁸ These examples suggest that the beneficial use mandate is very strong in the legislation of those dry western states beyond the 100th meridian. They also confirm the comments of Professor Neuman at note 13, above.

The system is flexible, however; and the accepted list of beneficial uses grows with time and changes in market conditions and custom. This is a vital component to give the doctrine contemporary relevance. For example an integral component of the appropriation model is an actual diversion – that is to say the taking of water from the source for a beneficial use. Accordingly water simply left in-stream for the benefit of recreation and wildlife was once seen as non-beneficial. “To the nineteenth century mind that created the [beneficial use] doctrine, leaving water in place was simply not a use.”⁴⁹ However, in deference to efficiency, most states would allow direct watering of stock from a stream overriding the requirement for physical diversion and therefore the need for man-made structures.⁵⁰ By extension, today most states have adopted measures which recognise instream (that is ecological and recreational) uses of water and have

⁴⁶ Colorado Constitution Article XVI, section 6.

⁴⁷ Mont. Code Ann. Section 85-2-102 (4) (a). Strictly speaking this is not a definition of, but rather examples of beneficial use.

⁴⁸ Texas Water Code Ann. Sections 11.002, 64.003 (19).

⁴⁹ A. Dan Tarlock, James N. Corbridge, Jr., David H Getches, and Reed D. Benson *Water Resources and Management* (6th ed, Foundation Press 2009) at 182.

⁵⁰ Some for example New Mexico and Utah still required physical diversion as a safeguard against the evils of riparianism.

even removed the diversion requirement. Some have protected streams by setting certain flow levels.⁵¹

7.2.2 Case Law Consideration of Beneficial Use

In some cases the judiciary played an integral part in the process of allowing in-stream uses because in three states (Colorado, Idaho, and Nebraska) challenges were launched against the legislation, in two of the cases on constitutional grounds – such a *laissez-faire* approach would not amount to a beneficial use. In all three cases (between 1974 and 1990) the courts found in favour of the legislature.

The first of these cases was *State, Dept. of Parks v Idaho Dept. of Water Administration*.⁵² At issue was the constitutional provision authorising and directing the Park and Recreation Board to appropriate in trust for the people of the state certain unappropriated waters in Malad Canyon, and further that such recreational use was declared to be a beneficial use.⁵³ The question was whether such provision was *ultra vires*. This question was relevant in terms of the other Idaho constitutional provision that “The right to divert and appropriate the unappropriated waters of any natural stream to beneficial uses shall never be denied.”⁵⁴ The Court latched onto the fact that the first provision directed the Board to “appropriate”, but not to “divert and appropriate”, but in any event had no difficulty in holding that “those values and benefits [of recreational use] constitute beneficial uses”⁵⁵ and therefore constitutional.

⁵¹ Christine A. Klein “The Constitutional Mythology of Western Water Law” (1994-1995) 14 Va Env'tl LJ 242 at 363-4.

⁵² *State, Dept. of Parks v Idaho Dept. of Water Administration* 96 Idaho 440 (1974).

⁵³ Idaho Constitution s 67-4507.

⁵⁴ Idaho Constitution art. 15 Section 3.

⁵⁵ *State, Dept. of Parks v Idaho Dept. of Water Administration* 96 Idaho, 440 at 444, per Shepard, C.J. (1974).

In the 1979 Colorado case of *Colorado River Water Conservancy Dist. v Colorado Water Conservation Bd*,⁵⁶ the relevant statute provided “Nothing in this article shall...deprive the people of the state of Colorado of the beneficial use of those waters available by law and interstate compact.”⁵⁷ The Board made three applications for minimum stream flow rights under the Act. The District objected, but the Supreme Court ultimately upheld the applications. The Court noted that in 1886, it had upheld an appropriation to store water in a natural reservoir in the bed of a stream, and that was adequate for an appropriation and therefore a beneficial use.⁵⁸ In the present case, the Court held “...we hold that under SB 97 [the relevant statute] the Colorado Water Board can make an in-stream appropriation without diversion in the conventional sense.”⁵⁹ In essence the court held that in-stream use was beneficial.⁶⁰

Oddly enough, the case is diametrically opposed to and ultimately distinguished from an earlier Colorado Supreme Court decision on similar particulars.⁶¹ In that case where the legislation purported to allow non-diversionary appropriations, the court simply refused to accept such legislative intent.⁶² The case in Nebraska⁶³ involved an appeal against the Director of Water Resources partial grant of in-stream flow appropriations to the Game and Parks Commission. The relative constitutional provision states “The right to divert unappropriated waters of every natural stream for beneficial use shall never be

⁵⁶ *Colorado River Water Conservancy Dist. v Colorado Water Conservation Bd*, 197 Colo 469 (1979).

⁵⁷ Colo. Sess. Laws 1973, ch.442, at 1521.

⁵⁸ *Larimer Co. Reservoir Co. v Luthé* 8 Colo. 614. (1886).

⁵⁹ *Colorado River Water Conservancy Dist. v Colorado Water Conservation Bd* 197 Colo. 469 (1979) at 476.

⁶⁰ As required by Colo. Sess. Laws 1973, ch.442, at 1521 (this was not decided on constitutional grounds).

⁶¹ *Colorado River Conservation District v Rocky Mountain Power Co.* 406 P.2d 798 (Colo. 1965).

⁶² Justice Hobbs concludes this change of heart was bought about by the intervention of the environmental era. See G Hobbs “Colorado Water Law: An Historical Overview” (1997-199) 1 U Denv Water L Rev 1 at 22.

⁶³ *In Re Application A-16642* 463 N.W. 2d 591 (1990).

denied.”⁶⁴ The Court upheld both the beneficial nature and non-diversionary nature the Director’s decision and stated rather stolidly “...must conclude that the use in §6 of the term “divert” serves some purpose other than to prohibit non-diversionary appropriations.”⁶⁵

Although the legislative lists of beneficial uses started with an unavoidable reference to the nineteenth century, as time progressed these lists were updated to reflect an ever-changing contemporary attitude and requisites. As can be noted, the statutory approach has been to either provide lists of suggested beneficial uses, or to avoid lists and allow experience to take its course and have judicial pronouncements make up the lists. Thus, as is usually the case, it has been the courts which have provided the some detail of the beneficial use concept. Interestingly the judicial inter-relationships in America are somewhat close, and states (quite appropriately and usually) regularly refer to each other’s jurisprudence for example *State of Washington Department of Ecology v Grimes*⁶⁶ in the judgment of Smith J, although most of the references are to local Washington state cases there are references to material from Montana, California, Utah, Wyoming, Oregon, and Colorado.

In spite of...statutory and constitutional distinctions, there seems to be little significant variation among the states in the general interpretation and application of the beneficial use doctrine. State courts borrow liberally from other states in developing the concept of beneficial use for resolution of disputes before them. In fact the Ninth Circuit Court of Appeals has described the beneficial use doctrine as a matter of general law among the western states.⁶⁷

⁶⁴ Nebraska Constitution art. XVI §6.

⁶⁵ *In Re Application A-16642* 463 N.W. 2d 591 (1990) at 602.

⁶⁶ *The State of Washington Department of Ecology v Grimes* 121 Wash. 2d. 459 (1993).

⁶⁷ Janet C Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use (1998) 28 *Envtl L.* 919 at 925.

By way of an example of judicial law-making, in the 1872 Montana case of *Gallagher v Basley*,⁶⁸ Wade C.J. held that waters appropriated for irrigation was a beneficial use. As noted, the current 1972 Montana constitution now holds this to be so. In 1866, when the cause of action arose, the state of Montana did not have a constitution: the document was lost on its way to the printer and it was not until 1889 that the state adopted its first constitution.⁶⁹ In the New Mexico case of *In re the Application of Plains Electric Generation and Transmission Cooperative, Inc.*,⁷⁰ the relevant New Mexican statute provided:

[t]he owner of a water right may change the location of his well or change the use of the water, but only upon application to the state engineer and upon showing that the change will not impair existing rights...⁷¹

It was agreed by the parties that any change of use would still have to be for a beneficial one, the question was whether the intended industrial use (power generation) actually was, with the additional question as to whether such would be utilised in a timely manner.⁷² The Court of Appeal of New Mexico (Minzner J) upheld the state engineer's opinion that, in fact, it was. In a very real practical sense the courts have reflected the changing attitudes and needs of the times. Janet C Neuman states that in the late nineteenth century and early twentieth century the beneficial use concept focused on a limited category of activities, reflecting the times, for instance domestic use, farming, stock raising, mining, milling, power production. Development of the concept saw an expansion of beneficial activities like recreation, aesthetics, wildlife habitat, pollution

⁶⁸ *Gallagher v Basley* 1 Mont.457 (1872). This decision was affirmed by the Federal Supreme Court. See 87 U.S. 670 (1875).

⁶⁹ See Article III section 15 of the 1889 Constitution for the relative provision.

⁷⁰ *In re the Application of Plains Electric Generation and Transmission Cooperative Inc* 106 N.M. 775 (1988).

⁷¹ New Mexico Statutes Annotated 1978 section 72-12-7.

⁷² The anxiety was that the notion of future use was too speculative.

abatement. Similarly other activities have not withstood scrutiny from a contemporary perspective.⁷³

In 1899, the City of Los Angeles needed more water to service an expanding population (seventy-five thousand). Burdened with a need to develop a further water supply and construct head-works, the City acquired an area of land that had a water supply adjacent to the city boundaries.⁷⁴ However, included in the City's proposed uses were ponds and artificial lakes, and the Court amply demonstrated a nineteenth century attitude:

The last matter of difference relates to water used in the ponds and artificial lakes. The real objection to this seems to be that it looks like extravagance or waste. We feel that where water is so precious it should not be used for mere matters of taste and fancy, while those who need it for useful purposes go without.⁷⁵

Reasoning that an outside authority superintending the City's decisions would be "intolerable", the Court perceived the issue as a matter of degree:

While, therefore, I am not prepared to say that the discretion of the municipal authorities could not under any circumstances be interfered with, I do not see how we can do so here. It is clearly a municipal use which is familiar in municipal history.⁷⁶

In terms of Colorado's beneficial use requirements, in *Empire Water & Power Co. v Cascade Town Co*,⁷⁷ the question before the United States Supreme Court was whether leaving water in its natural watercourse in a waterfall was a beneficial use in the sense of its aesthetic quality under Colorado's legal

⁷³ Janet C Neuman "Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use" (1998) 28 *Envtl L* 919 at 927-8.

⁷⁴ The idea was to purchase the land as well so the city could keep stock away thereby preventing contamination of the water.

⁷⁵ *City of Los Angeles v Pomeroy* 124 Cal. 597 at 650 per Beatty CJ.

⁷⁶ *Ibid*, at 650.

⁷⁷ *Empire Water & Power Co. v Cascade Town Co* 205 Fed 123 (1913).

structures. The Court found that the attitudes of people has changed since the days of the early settlers, and in any event the state Constitution should be interpreted in a general, not narrow sense and embrace new instances as they arise.⁷⁸ Ultimately however the complainant failed. The case was exceptional, “but we think the complainant is not entitled to a continuance of the falls solely for their scenic beauty. The state laws proceed upon more material lines.”⁷⁹ Although as an aesthetic amenity the use was beneficial to the user, the Court felt (this was 1913 after all) the state of Colorado needed to manage its water resources to foster the type of development the public wanted, or needed – milling, mining, irrigated agriculture, and the growing towns and cities.

Such pragmatism manifests itself in many of the dry states’ water jurisprudence. Attitudes and imperatives change over time however. For instance western states allow for the maintenance of golf courses. The current Kansas statute for example provides that irrigation use extends to the maintenance of crops, gardens, orchards, lawns (not exceeding 2 acres), *and the watering of golf courses* [emphasis added], parks cemeteries athletic fields and racetrack grounds.⁸⁰ California considers the irrigation of golf courses a beneficial use but only with recycled non-potable water where available.⁸¹ The same applies in Colorado (where available), and in Nevada. Clearly the courts and the legislatures give the implementation of the doctrine a degree of flexibility to ensure its relevance. For instance, there is a strong argument that the state of Oregon allows water to be used for scenic purposes, which is unlikely to have been accepted in the nineteenth century:

⁷⁸ Ibid, at 128 per Hook, Circuit Judge.

⁷⁹ Ibid, at 129. It has to be remembered that the “benefit” is usually taken to mean “profit”.

⁸⁰ Kansas Water Appropriation Act K.A.R. 5-1-1. (June 2012).

⁸¹ Section 13550(a) Art.7 2005. Recycled water may have a high salt content so is not always suitable for landscape irrigation.

Conserving the highest use of the water for all purposes, including ... scenic attraction or any other beneficial use to which the water may be applied for which it may have a special value to the public.⁸²

Neal H. Bell points out that the Oregon state legislature has made it quite clear that it understands the public concern and affection for aesthetics by “expressly withdrawing [that is, excluding] from appropriation the waters of streams along the Columbia River and other places where there are waterfalls and other scenic attractions”.⁸³ In Idaho, Shepard C.J. stated: “...use of water for providing recreational and aesthetic pleasure represents an emerging recognition in this and other states of social values and benefits from the use of water.”⁸⁴

A few states have taken the opposite approach and specifically declared certain uses not to be beneficial. Professor Neuman gives a few examples:⁸⁵ Oklahoma does not view the use of water in coal slurry pipelines to be beneficial,⁸⁶ and Kansas provides that evaporation of water from sand and gravel pits is not beneficial.⁸⁷ The use of geothermal water for any purpose other than its heat value is not beneficial in Idaho.⁸⁸ Despite the fact that there are constitutional and legislative variations among the western states, generally speaking, there is a remarkable even tenor about them, and a consistency in the general understanding and application of the doctrine. The requirement for beneficial use has remained constant, but functions have developed over time.

As is clear from the foregoing, the determination of beneficial use is first and foremost a judicial function. This is clear from *State Dept. of Parks v Idaho*

⁸² Ore. Rev. Stat. §537.170 (3) (1963).

⁸³ Neal H. Bell “Beneficial Use of Water” (1964-1965) 3 Willamette L J 382 at 385.

⁸⁴ *State, Dept. of Parks v Idaho Dept. of Water Administration* 96 Idaho, 440 at 444 (1974).

⁸⁵ Janet C Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use” (1998) 28 *Envtl Law* 919 at 927.

⁸⁶ Okla, Stat. tit. 27§7.6 (1997).

⁸⁷ Kan. Stat. Ann. § 82a-734 (1997).

⁸⁸ Idaho Code § 42-233 (1996).

Dept. of Water Administration and the unequivocal statement from Bakes J: “... this Court is the final arbiter of the construction of the Idaho Constitution, and therefore must determine whether or not the [intended uses] in this case are a ‘beneficial use’ ...”⁸⁹

In the western states, an appropriation of water must be in respect of a parcel of land to which the appropriator must have some entitlement, either legal or equitable and on which the water is put to use, but to a beneficial use. The least requirement is some colour of a possessory right thus giving priority to those with some sort of commitment and vested interest in the land. However, in a demonstration of American pragmatism, it has been held that where a water distribution company is involved (and there are many of these operating in America), there is no need for the company to have an interest in land (which it usually doesn’t) because it is the consumer – rather than the company – which is the true appropriator and who puts the water to beneficial use: *Wheeler v Northern Colorado Irr. Co.*⁹⁰ On the other hand, in *Lake Shore Duck Club v Lake View Duck Club*,⁹¹ the plaintiff made use of a parcel of “uninclosed [sic] public domain, no part of which has ever been tilled”. At no stage was the plaintiff ever the owner of the relative lands, nor did it have any proper right of occupation. The water was used for the propagation and growing of vegetation suitable for the breeding of wild fowl. Thurman J held that such use may very well be beneficial, but the appropriator had not effected a valid appropriation, as it did not have an interest in the land used for the purpose.

We are decidedly of the opinion that the beneficial use contemplated in the making of the appropriation must be one that inures to the

⁸⁹ *State, Dept. of Parks v Idaho Dept. of Water Administration* 96 Idaho 440 at 448 (1974).

⁹⁰ *Wheeler v Northern Colorado Irr. Co* 10 Colo. 582. (1888).

⁹¹ *Lake Shore Duck Club v Lake View Duck Club* 50 Utah 76 (1917).

exclusive benefit of the appropriator and subject to his complete dominion and control.⁹²

The key characteristic of the western system is that the Americans have taken an evolutionary approach in defining and developing what a beneficial use actually is. This of course gives flexibility to the doctrine but malleability is not its singular, nor its most important attribute. The notion is actually three separate but connected components, each an indispensable part of the whole – (a) the initial appropriation of the water (b) to be used diligently for some beneficial purpose (c) without unnecessary waste.⁹³ The first (originating) component is a correct appropriation of the water. Priority in the western states is not dictated by the date of filing,⁹⁴ but rather the date on which the water is first applied to a beneficial use, or, as in the case of a project that takes time to complete (as was, for instance, the situation in the New Zealand case of *Central Plains Water Trust v Ngai Tahu Properties Limited and Canterbury Regional Council*⁹⁵), then in the western states the priority relates back to the date on which the initial work leading to the application was commenced. It is to be noted that the initial step has to be a stroke, or strokes, of some authority which indicate clearly the intention of the appropriator: “Clearing a road to improve access...discussing the intent to appropriate with state officials, staking the springs, and filing an application...all manifested Vought’s intent to appropriate.”⁹⁶

7.3 Comparison with New Zealand

In New Zealand our originating process is purely administrative, that is to say an application is made to the relative regional or unitary council for a water right

⁹² Ibid, at 79.

⁹³ See *Coffin v Left Hand Ditch Company* 6 Colo 443 (Colo 1882); *Tulare Irrigation District v Lindsay-Strathmore Irrigation District* 45 P.2d 972 (Cal 1935).

⁹⁴ Colorado still uses a judicial rather than administrative process.

⁹⁵ *Central Plains Water Trust v Ngai Tahu Properties Limited and Canterbury Regional Council* [2008] NZCA 71.

⁹⁶ *In Re Vought* 76 P.3d 906, (Colo 2003) at 915 per Hobbs, J.

under section 88 and the fourth schedule of the Resource Management Act 1991. Thus, the question of priority in New Zealand is a bureaucratic one involving the filing of an application, rather than the American approach where the physical activity of actually diverting the water is the important defining moment.

By far the most important of the ideas encapsulated by the beneficial use doctrine however are the last two – the actual use of water as an anti-speculation measure,⁹⁷ and the requirement to minimise waste – an efficiency measure squarely under the aegis of section 7 (b) of our Resource Management Act 1991. The beneficial use of water is diminished if a fair amount of the water is squandered in the process.

Public intrusion into essentially private arrangements is justifiable: Professor Sax suggests that as water is a public resource used privately, the decision as to how to employ the resource can be justified as a public one rather than a private one. Such a doctrine would also emphasise to users they have a certain responsibility inherent in their water rights, but would also alert others that permit-holders have a responsibility, and they would be keen to see that appropriators “toe the line”. Accordingly, an appropriator would have a duty to use the resource prudently, in ways that will ultimately benefit the public.⁹⁸ The important element in Professor Sax’s observation is in the word “used”, and if it is not used, there is the grave danger that the appropriation will be deemed to be speculative.

A proper-functioning beneficial use doctrine as devised by the American west has lessons for New Zealand if we are to extract the best efficient use of our water

⁹⁷ The benefit to the individual ultimately benefits the community: see Sax, J “Reserved Public Rights in Water” (2012) 36 Vermont Law Review 535, at 538.

⁹⁸ Ibid, at 537-538.

appropriations. More importantly, in the event that New Zealand does adopt a water market model, there is the danger that the market system might be open to abuse by speculative activities on the part of some market players. An artificial inflation of prices might occur, and appropriated water might be locked away from any form of use. New Zealand's own beneficial use doctrine, with its anti-speculation component, would be a useful tool to prevent an abuse of the allocation to private individuals of a public resource. It is appropriate to now study how the Americans have dealt with the anti-speculation element of their beneficial use doctrine

8 Chapter 8.

8.1 Beneficial Use – An Anti-Speculation Doctrine.

8.1.1 Background

The last chapter discussed the Americans approach to the beneficial use doctrine. A study of the various components that make up the doctrine is essential. One of the components is a proscription against the speculation of water rights, a crucial element in any water market. A market system usually invites speculation, and this chapter will argue that New Zealand should take steps to hinder the possible speculation of water rights. Despite the general economic view that speculators can provide a useful function in a market system, the Americans have concluded that speculation in water rights is not desirable. In the American west where water rights have traditionally been traded, speculative trading of those rights has always been rigorously discouraged.

The old English riparian system in a sense acted as its own auditor on water speculation matters since water rights could only be sold with the land, therefore the only way to speculate would be to hold the land until the time was appropriate to sell the riparian rights attached to it.¹ It is still possible to do so, obviously, but the doctrine has inherent limiting and saving factors.

Firstly, riparian rights are not exclusive – there is the duty of co-owners to share the water with others. “The old maxim ‘*Aqua currit et debet currere ut solebat*’ ... denotes that water is the common and equal property of everyone through whose domain it flows....² In other words riparian owners “... must so

¹ A riparian owner has an entitlement to but is not compelled to use water and will not lose water rights from non-use as is the case under the beneficial use doctrine. See FJ Trelease “Co-ordination of Riparian and Appropriative Rights” (1954-5) 33 Tex L Rev 24 at 41.

² *Tennessee Coal, Iron & R Co v Hamilton* 14 So 167 at 170 per Stone J (Ala 1893).

use it [water] as not to destroy or unreasonably impair the equal rights of others”,³ when exercising a right to use water passing over their lands.

Secondly, there is the limiting factor of the reasonable use principle:

The criteria...for determining reasonableness can be summarised as follows. First, attention should be given to the size, character and natural state of the water course. Second, consideration should be given the type and purpose of the uses proposed and their effect on the water course. Third, the court should balance the benefit that would inure to the proposed user with the injury to the other riparian owners.⁴

Thirdly, there are restrictions – enforced by common law – on off-tract and out of catchment usage.⁵ The old Roman principle held, in general terms, that the lower riparian land was obliged to accept water flowing to it naturally without any act of man.

In *Alberger v Philadelphia Electric Company*,⁶ the electric company tried to import water from outside the catchment to cool a nuclear power plant. The water use had absolutely nothing to do with the use or enhancement of the riparian land itself. *Philadelphia* had intended to use its riparian waters outside the boundaries of the riparian lands. As such it was held by the Court to be beyond the servitude-using right ancillary to the ownership of the riparian land.⁷ In *Anaheim Union Water Co. v Fuller*,⁸ the defendant was diverting water from the Santa Ana River to land which was not in the catchment. The plaintiff complained, notwithstanding it was accepted fact that more than enough water

³ *Elmore v Ingalls* 17 So. 2d. 674, per Livingston, J at 674. (Ala 1944).

⁴ *Three Lakes Ass'n v Kessler* 91 Mich. App. 371, at 377 per Bashara J (Mich Ct App 1979).

⁵ Although some American states have relaxed this requirement by introducing statutory permitting systems.

⁶ *Alberger v Philadelphia Electric Company* 112 Pa Commw 441 (Pa 1988).

⁷ *Ibid*, at 453 per Barbieri Senior Judge.

⁸ 150 Cal. 327 (Cal. 1907).

was left in the river for the plaintiff's purposes. The Court found that to be irrelevant – others above or below might want to make use of the water. Clearly, it would be extremely difficult to set about conceiving and executing a pre-determined plan to achieve any sort of speculative advantage under a riparian system. If the riparian system were to be replaced by a home-grown distributive mechanism, fears of a speculative abuse of that system needed to be addressed. The beneficial use doctrine met the challenge of speculation head-on, and tried to ensure that appropriated water was only put to good use, with the emphasis on “use”:

The definition of beneficial use is similar among prior appropriation jurisdictions, and it typically includes just about any domestic, agricultural, or industrial activity, including sewage treatment, crop production, stock watering, hydroelectric power generation, mining, and recreational pursuits. It does not, however, extend to speculative water uses.⁹

The simple fact is that speculation usually involves neither production nor job creation. Such latitude was anathema to the common nineteenth century American attitude. Concern for the economic well-being of the average person can be seen in various quarters in nineteenth century America. The National Grange was established in 1867 just after the American Civil War, and this society advocated, and continues to advocate for, rural American agriculture with a concern to improve the lot of small-scale agricultural people.¹⁰ The Knights of Labor had been established in 1809 and advocated for both social and cultural improvement for the average citizen.¹¹ The People's Party (the ‘Populists’) was established in 1891 and briefly crusaded on behalf of the average farmer against powerful élites, especially banks and railways. The federal Sherman Antitrust Act

⁹ Sandi Zellmer “The Anti-Speculation Doctrine and its Implications for Collaborative Water Management” (2007-2008) 8 Nev LJ 994 at 1004.

¹⁰ See information about National Grange at <www.nationalgrange.org/policy/>.

¹¹ It was disbanded in 1947.

was passed in 1890 and included provisions to protect people against the perceived evils of monopoly.¹² There were the same concerns in New Zealand. The Liberal Government took office in 1891 and was concerned to address the then-recent New Zealand economic and social order to address the same issues as their American cousins.¹³

8.1.2 The Dangers of Speculation

Speculation certainly does not connote the notion of “use”, let alone beneficial use. In the case of water, the notion of use excludes the idea of speculation since the amount of water acquired is limited by the beneficial use doctrine to the amount actually needed as opposed to the amount the appropriator was physically able to divert.¹⁴ There is actually an echo of Locke’s instruction to pre-political humans that they may appropriate what they need in the way of natural resources, but leaving enough in common for others.¹⁵

Generally speaking, speculation has the potential to cause unexpected and unpredictable (and ultimately undesirable and sometimes disastrous) fluctuations in prices. The notion is to be contrasted to monopoly which is a simple lack of competition and by extension a proper market restraint on prices. Both were feared by nineteenth century western American citizens, especially in the twin forms of railway-barons and cattle-barons. The developing legal framework of water law doubtless reproduced this general concern to keep this strategic asset safe from abuse. Monopoly and unfettered speculative accumulation may lead inexorably to power. Janet Neuman makes the point:

¹² Sherman Antitrust Act 26 Stat. 209 chapter 647 (1890).

¹³ This is not surprising according to historian Keith Sinclair, since “they had all drunk from the same intellectual spring.” See K Sinclair *A History of New Zealand* (revised ed, Penguin, London, 1969) at 172 et seq.

¹⁴ In terms of control, the doctrine prevents the type of monopoly enjoyed by riparian owners.

¹⁵ *The Second Treatise on Government* (1690) Chapter 5 section 27.

When something as important as water is scarce, those who control it can be very powerful indeed. The fear of concentrated power and control over resources in the developing West shaped the water law generally, and the beneficial use doctrine in particular.¹⁶

The Utah Supreme Court when discussing the unsuitability of riparianism for its state put it thus:

Riparian rights have never been recognised in this territory, or in any state or territory where irrigation is necessary; for the appropriation of water for the purpose of irrigation is entirely and un-avoidably in conflict with the common-law doctrine of riparian proprietorship. If that had been recognised and applied in this territory it would still be a desert; for a man owning ten acres of land on a stream capable of irrigating a thousand acres of land or more, near its mouth, could prevent the settlement of all the land above him.¹⁷

The spectre of power through control is quite clear in Justice Blackburn's statement. Although some economic theory will acknowledge that at least in some markets speculation can be useful by encouraging investments,¹⁸ the activities of speculators can drive up the price of an initial investment by aggravating demand-pull inflation. Other investors react to the price rises by venturing into the market, the demand thus further driving prices up. Something eventually collapses the confidence of the investors, and a consequential lack of demand causes prices to fall creating fear among the market players, and a herd mentality leads to mass sales and a corresponding decline in prices.

That is not the end of it, however; the losses can cause a default on bank loans. Genuine producers, uncertain of the future may reduce output and postpone planned investment. Banks will worry about risks of default and may reduce the amount of credit on offer, even for genuine productive enterprises.

¹⁶ Janet Neuman "Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Law" (1998) 28 *Envtl L* 919 at 963 (footnote omitted).

¹⁷ *Stowell v Johnson* 7 Utah 215 at 215 per Blackburn J (UT1891).

¹⁸ See B Layton, below n 24.

Consumers become infected by negative sentiment and postpone their own purchases and investments, especially major items like cars and houses. Of course speculation is actually common in investments such as real estate, futures, gold etc.; it was indeed the *primum mobile* of early western land and resource development and it could be argued that as everybody was able to participate, since the assets were bountiful, there was overall tacit approval.¹⁹

But locking up scarce and essential water resources from use by individuals and communities who have an immediate need to slake their thirst or grow crops on which to sustain themselves is a mortal sin under western water law. The universal prohibition against speculation in water resources stems from the near universal distrust of concentrated power over resources in the developing West, which in turn was a foundational force in shaping the doctrine of beneficial use.²⁰

There have, of course, been many examples of speculative disasters throughout relatively recent history. The effect of “tulipmania” on seventeenth century Netherlands was bad enough in its damage to the economy generally and the value of tulip bulbs in particular. Crucially public confidence in the tulip market was impaired, but tulips are totally unnecessary for human survival. The same cannot be said of water. A crash in a market is only a threat to the economy; with a non-fungible resource like water the result may possibly be catastrophic.

It must be remembered, of course, that all capital is speculative to some extent. It would be hard to envisage any market without some degree of speculation: parties engage in the buying and selling of commodities simply to gain profit by a rise or fall in market values. It is possibly a question of degree, – calculated risk-taking as against naked gambling.

¹⁹ The 160-acre farm unit envisaged by the Homestead Act 1862 was never going to find approbation in the arid west.

²⁰ Sandi Zellmer “The Anti-Speculation Doctrine and its Implications for Collaborative Water Management” (2008) 8 Nev LJ 994 at 998.

It is interesting to note the experience of Chile with the problem of speculation: the 1981 Water Code was a compromise between free-market neo-liberal economics and more circumspect conservatives. The neo-liberals, though, received the lion's share of the concession – “a laissez-faire legal framework that allowed private market transactions of water rights, and tight restrictions on government spending and regulation of the water sector.”²¹ More importantly the Code of 1981 did not address the issue of unused water rights.²² Problems of speculation and monopoly structures led to reforms in 2005, which empowered the President to exclude certain water resources from economic competition where the protection of the public interest was necessary, along with the introduction of fees for non-use, and the limitation of requests for water rights to cases of genuine need, that is to say those applying for water rights will have to justify the amounts of water they are requesting.

Perhaps there should be a cautious approach to Layton's position in his paper “Tradable Systems for Water: Best Use and Maximising Value”²³ :

“...speculators can serve a useful function lubricating tradability and through this improving the allocative efficiency of outcomes. Rules that encourage participation in the market by as wide and diverse a group as possible will tend to improve the outcomes in terms of allocative efficiency.”²⁴

Layton is correct in that speculators may perform a useful function. Speculators may relieve others of risk. For example if a speculator offers to buy a crop which has not yet been planted, the farmer is relieved from the worry of the price at harvest time so he or she can get on with the primary job of a farmer, that

²¹ CJ Bauer *Siren Song* (RFF Press, Washington, 2004) at 48.

²² It was argued that a Pigouvian tax for non-use would be too bureaucratically difficult to introduce. It might also be argued that such a tax could be the subject of intense political lobbying by interest groups on both sides of the argument.

²³ T Daya-Winterbottom (ed) *RM Theory & Practice* RMLA (2011) 107.

²⁴ *Ibid*, at 116.

is, farming and in that sense the speculator enhances the allocative efficiency of the crop. The futures contract guarantees the price, and any profit gained by the speculator can be seen as a fee for the risk taken. Competition, politics, weather, and demand largely dictate the final price, and farmers who do not enter into some sort of a futures contract are in a sense themselves speculators.²⁵ Nonetheless, there is arguably a negative attitude towards speculation held by members of the general public who do not share economists' general view of speculators. The problem – and it is a big problem – is the question of speculative bubbles as seen in the tulip example. Robert J. Shiller refers to a speculative bubble as one form of social epidemic leading to herd behaviour.²⁶ Investor enthusiasm is no substitute for methodical calculation of real value. An artificial increase in the price of access to water would be corrosive to the integrity of water markets, and a system which allows for such speculation quite undesirable.

8.1.3 Speculation and Publically-Owned Resources

A principle that avoids speculation by individuals in a commonly-held resource can probably be seen in terms of distributive justice and thus essentially a dialogue about the way things ought to be – that is to say an allocation that is fair to everyone. The speculation by prior appropriation of a commonly-held resource gained fundamentally for free is different from the speculation of stocks and shares – or even tulips – which must be first purchased. An artificial accumulation of property rights in a commonly-held resource by some individuals to the exclusion of others would be seen to be contrary to principles of fairness. In this sense, utilitarianism (which is predicated on a sentiment of generalised benevolence – “the greatest happiness for the greatest number”), and, indeed,

²⁵ See generally Thomas Sowell *Basic Economics* (4th ed, Basic Books Persus, New York, 2011).

²⁶ Robert J. Shiller *Irrational Exuberance* (2nd ed, Princeton University Press, Princeton, 2005) at 157-173. See also Robert J. Shiller *Finance and the Good Society* Princeton University Press, Princeton, 2012) at 178-186.

basic democracy may be viewed simply as systems that sacrifice the preferences and chances of property rights of the minorities and the unskilled to the benefit of the majority. Accordingly there is a chance of no real equality of opportunity.

While theories abound as to the origins and importance of property rights,²⁷ as well as the nature of those rights,²⁸ it could be argued that a property right is an extremely important right in our western constitutional order, without being described as a fundamental human right. "... on a scale of one to ten, constitutional rights are a 10, property rights are a 9."²⁹ Thus, it may be argued that property rights are not natural rights, but a creature of law, and therefore modifiable by law. Naturally, there are different types of property, reflected in different types of ownership

The rhetoric of property often seems to resound with the notes of heroic autonomy – “I can do what I like with my property” – perhaps, as noted earlier, in the same way that we so often symbolize property by easily segregated lands rather than flowing and necessarily-shared water.³⁰

Ownership of a water right is viewed differently in the western states than the ownership of land. Water rights are subservient to the land to which they are attached. Land is our chief motif for property (“real” property) and if water were to be that principal symbol, perhaps we might think of property rights in a totally different way.

²⁷ Carol Rose suggests seven: See “Property Rights as the Keystone Right?” 71 *Notre Dame Law Review* 329.

²⁸ Leigh Raymond suggests four: See *Private Rights in Public Resources* Resources for the Future, Washington, 2003.

²⁹ *AH Properties Ltd & Another v Tabley Estates* CP 142/92 High Court Hamilton (1993) at 36 per Hammond J.

³⁰ Carol Rose “Property Rights as the Keystone Right?” 71 *Notre Dame Law Review* 329 at 365. Of course, generally speaking, one *cannot* do what one wants to one’s property.

A strong argument concerning the origins and importance of property rights states that those rights (the priority argument) arose out of Locke's social contract theory, that peoples originally gathered property around them and traded the excess, so rules were needed to protect the property they have acquired - the "bottom up" theory. The converse theory is the "top down" theory which proposes that property accumulation is a government policy so it is able to render more tax.³¹ Endogenous growth theory advocates that economies expand by the introduction of human capital (including work) and innovation, especially to property. Thus, both theories contain a proposal of an increase in value of property items, and not the least because the purchaser values the items more than the vendor and accordingly the item may be of higher value in the hands of the new owner. Harold Demsetz holds that:

...property rights are an instrument of society and derive their significance from the fact that they help a man form those expectations which he can reasonably hold in his dealings with others. The dealings find their expression in the laws, customs, and mores of a society.³²

Daniel FitzPatrick makes the point that Demsetz assumes that property rights evolve naturally with the rise in the value of resources, but ignores the fact that there are also complex social systems at play.³³ David A Schorr,³⁴ using Colorado as an example poses an interesting theory about the origins of property rights, particularly in natural resources. He summarises the two generally

³¹ Ibid, at 333-340.

³² Harold Demsetz "Towards a Theory of Property Rights" (1967) 57 (2) Papers. Proceedings of the Seventy-ninth Annual Meeting of the American Economic Association 347-359, at 347.

³³ Daniel FitzPatrick "Evolution and Chaos in Property Rights Systems: The Third World Tragedy of Contested Access" (2006) 115 (5) Yale Law Journal 996 at 1045. It is interesting to note in terms of distributive justice that between 1850 and 1866 Congress discussed various bills to regulate miners' activities but discussions bogged down over ways to exclude Chinese from the harvest of metals: see G Coggins, C Wilkinson & J Leshy *Federal Public Land and Resources Law* (3rd ed, Foundation Press, New York, 1993) at 95.

³⁴ A Schorr "Appropriation as Agrarianism: Distributive Justice in the Creation of Property Rights" (2005) 32-1 Ecology Law Quarterly 3.

opposing theories as the “optimists” and the “pessimists”, where the optimists’ position is that the creation of property rights was founded on the theory that such would offer advantages in efficiency and wealth maximisation. The pessimist’s view is that interest groups manipulate the law to effect a re-distribution of valuable resources in their favour. Schorr’s (optimistic) “third way” view is essentially that rights are allocated in terms of distributive justice. These terms must be consistent with the norms of fairness, not necessarily in terms of allocative efficiency. His optimistic view is that, rather than being insidious, the evolution of property rights is guided by principles of justice.³⁵

Chief among his arguments in support of this position is the historical evidence of the origins of the prior appropriation doctrine in the mining districts of Colorado. “The miners’ ideology and analogs to their rules are clearly discernible...”³⁶ This includes a concern for a broad and fair distribution of resources. An example of this may be seen when the gold claim by John Gregory in Colorado in May 1859 attracted around 5,000 people within 3 weeks,³⁷ so a fair distribution code was essential – if for no other reason than to keep the peace. Such rules did include a prior appropriation system, but there were limitations on the size and number of diggings staked by any one person, which was clearly both a distributive and anti-speculation measure.

Janet C Neuman makes the point that “The fear of concentrated power and control over resources in the developing West shaped water law generally and the beneficial use doctrine in particular.”³⁸ Further, the Californian Supreme Court stated in *Irwin v Phillips* that the miners’ doctrine of prior appropriation was a

³⁵ Ibid, at 7.

³⁶ Ibid, at 11.

³⁷ See Charles W Henderson “Mining in Colorado” (Washington Government Printing Office 1926) at 29.

³⁸ Janet C Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Law (1998) 28 Environmental Law 919 at 963.

matter of “a universal sense of necessity and propriety”³⁹ The claims had to be actually worked, or they were forfeit. The echo of an anti-speculation intent can be clearly detected, that is, “use it or lose it”. Such claims would be returned to the pool of un-owned property (*res nullius*); it would then be available for distribution to other genuine claimants. Schorr points to other legislative matters, *viz* Colorado’s legislation pre *Coffin*,⁴⁰ and the 1876 Colorado Constitution. Early Territorial legislation drew on principles of existing mining rules.⁴¹ The common law monopoly of water by riparian landowners was legislatively abolished thus effecting a fairer distribution – with the right of access in the form of statutory easements across riparian owners’ land.⁴² The amount of water needed was effectively confined by limiting the size of irrigated farms to 160 acres,⁴³ which, by spreading the allocation, was clearly a distributive function. Schorr points out that the Colorado constitution of 1876 effectively entrenched this distributive quality: statutory easements were confirmed, as was the priority system. Three other principles were confirmed, *viz* public ownership of the state’s surface water, the requirement for water to be put to a beneficial use, and the complete abolition of riparian privileges.⁴⁴ For Schorr, by far the most important aspect of the constitution was the question of public ownership, on distributive grounds.

The conceptual punch of the section lies precisely in this public-property theory as the basis for the right of appropriation. Opening up the opportunity to acquire a water right to all members of the public was not, as one might have expected, based on a theory of the water being *res nullius*, unowned, and therefore freely available to all. It

³⁹ *Irwin v Phillips* 5 Cal 140 (1855) at 146.

⁴⁰ *Coffin v Left Hand Ditch Co.* 6 Colo. 443 (Colo.1882). This introduced the “Colorado Doctrine” of prior appropriation, and finally laid the riparian system to rest in Colorado, and then leading to the same principle elsewhere in the west.

⁴¹ For example, Act Concerning Irrigation (December 7, 1859).

⁴² 1861 Irrigation Act (1861 Colo. Sess. Laws) at 67.

⁴³ Act Concerning Irrigation, (1859) §1 at 214. This was more or less contemporary with the federal Homestead Act 1862, which envisioned farms of 160 acres each beyond the 100th meridian.

⁴⁴ Colo. Const. art XVI, §5 and §6. Public ownership of the water obviates riparian ownership by implication.

was, rather, as in riparian doctrine, the property of the public, *publici juris*. Only the right to use could be acquired, and then only under conditions stipulated by the owner (through its agent, the state). The recognition of public ownership...was important for providing the theoretical and legal underpinnings for the limitations on appropriation that would be applied by the state to prevent the replacement of monopoly by riparian owners with monopoly by speculating appropriators.⁴⁵

The distributive inequity of speculation is illustrated by a theoretical example whereby one group (the speculators or hegemons) perform the task of specifying who shares in the benefits and who does not by artificially inflating the cost of a commonly-held resource to their own advantage. By doing so, they damage the interests of the others and one group receives unearned gains at the expense of others who are denied the opportunity to beneficially use water for their own benefit and that of the greater good. Distributive concerns suggest everyone should have access to an acquisition price free from manipulation. Society needs to formulate institutions in an effort to diminish these concerns and to prevent infractions as best as it can, and in the western States of America this institution is the anti-speculation component of the beneficial use doctrine.

The famous American politician and engineer Elwood Mead (he was head of the Bureau of Reclamation from 1924 to 1936) was implacably opposed to water rights becoming tradable property: “The water of the public streams will become a form of merchandise...”⁴⁶ His worry was that speculation and monopoly would inevitably permeate the water institutions as they had with the other natural resources oil, copper, coal and iron, and that legal structures would be unable to prevent it.⁴⁷ His advocacy was ultimately unable to prevent the development of water markets, however the strict beneficial use requirement acted

⁴⁵ “Appropriation as Agrarianism: Distributive Justice in the Creation of Property Rights” (2005) 32-1 Ecology Law Quarterly 3 at 42.

⁴⁶ E. Mead *Irrigation Institutions*. The Macmillan Company, New York (1903), at 264.

⁴⁷ *Ibid*, at 365.

as an institutional auditor of the transfer system by preventing speculative abuse, as best it could. Provided the appropriator had diligently posted and recorded his notices and commenced and prosecuted his work in a timely manner, the claim for water dates or “relates back” to the time the notice was posted or work commenced. Therefore if the appropriation complies with this relation-back requirement, the assumption is that there is no speculation.⁴⁸

Intent is an important component in demonstrating *bona fides* and rebutting a claim of speculation. A certain amount of leeway is afforded however and each case is judged on its own merits. The Idaho Supreme Court in *Sand Point Water & Light Co. v Panhandle Development Co.*⁴⁹ put it thus:

It seems to us, however, when we consider that this work was being prosecuted in a mountainous section of the state where there is heavy snow fall and a long winter season with much rough and stormy weather which would interrupt and delay the character of work that was being carried on, that the amount and kind of work which is shown to have been done evidences good faith, reasonable diligence, and a purpose to complete the work and apply the waters to the beneficial use designated... the work upon the ground and its continued prosecution was ample actual notice to respondent, or any other subsequent claimant to these water, as to the nature of the claim asserted by the appellant.⁵⁰

The system is flexible enough to allow for future demands, especially in the case of municipalities, which are currently the fastest growing consumers of water in the United States:

The concern of the city is to assure an adequate supply to the public which it services. In establishing a beneficial use of water under such

⁴⁸ Originally prior to the relative administrative structures, a simple commencement of the work was sufficient. Arguments were resolved by lawsuit (unless by self-help), but evidence may be a big problem, see Sax, Thompson, Leshy, and Abrams *Legal Control of Water Resources* (4th ed, Thomson West, St Paul, 2006) at 131.

⁴⁹ *Sand Point Water & Light Co. v Panhandle Development Co* 83 P. 347 (Idaho 1905).

⁵⁰ *Ibid*, at 349 per Ailshie J.

circumstances the factors are not as simple and are more numerous than the application of water to 160 acres of land used for agricultural purposes. A specified tract of land does not increase in size, but populations do, and in short periods of time. With that flexibility in mind it is not speculation but the highest prudence on the part of the city to obtain appropriations of water that will satisfy the needs resulting from a normal increase in population within a reasonable period of time.⁵¹

With a degree of flexibility, the doctrine has the potential to remain relevant and to address contemporary issues as and when they arise.

8.2 The Colorado Experience with the Anti-Speculation Philosophy.

In balancing anti-speculation requirements and exceptions to the rule to allow forward planning obligations for municipal interests, Sandi Zellmer states that Colorado law is fairly typical in that it allows cities to anticipate and plan for projected population increases.⁵² In fact there is a pragmatic preference for municipalities in general, to enable them to more effectively prepare for the future – the “growing communities” doctrine. “... a municipal water supplier [may] hold a priority date for an unused block of water rights in anticipation of future needs.”⁵³

⁵¹ *City and County of Denver v Sheriff* 105 Colo. 193, at 202 per Otto Buck, J. (Colo. 1939). Denver’s water supply was acquired in 1918 when the population was between 150,000 -200,000. At the time of Sheriff’s case in 1939, the population was about 350,000. Currently it is about 620,000.

⁵² Sandi Zellmer “The Anti-Speculation Doctrine and its Implications for Collaborative Water Management” (2008) 8 Nevada Law Journal 994 at 1014.

⁵³ Janis E. Carpenter “Water for Growing Communities in the Pacific Northwest” (1997) 27 *Envl L* 127 at 128. See also A. Dan Tarlock and Sarah B. van der Wetering “Western Growth and Sustainable Water Use: If There are no ‘Natural Limits’, Should We Worry About Water Supplies?” (2006) 27 *Pub Land & Resources L Rev* 33 at 48 *et seq.*

A “preference” is a general term with a number of varying effects, from a superior right against others to a better right than others for the same purpose.⁵⁴ It is no trifling matter however as, although it avoids the allegation of speculation by virtue of its pragmatism, any city whose future uses are put at the top of the priority list will squeeze out the marginal land at the bottom.⁵⁵

In *City & County of Denver v Northern Colorado Water Conservancy District*,⁵⁶ the problem confronting the Bench was that for some 20 years Denver had not begun the actual construction of its water project and had made no attempts to secure funding for it apart from a fruitless approach to the U.S. Reclamation Service. The Colorado Supreme Court held there was no steady application of city’s appropriation and this had the effect of paralysing all river development for some 19 years without a single shovel-full of dirt having been excavated. This was held to be unfair to other water users of more modest means who had continued to work their appropriations but were pushed down the seniority ladder by the city which had done nothing on its intended appropriation for about two decades.

Notably, however, there were three dissenting judgments. These confirmed the finding of the same court in *Sherrif’s* case of 1939, and expressed sympathy for Denver’s predicament. Justice Moore’s dissenting judgment stated that municipal planning requires managerial discretion involving an ever-changing problem: “That is no less true today, with the increased population condition, and furnishes an approach to the one serious challenge to the good faith of the city...”⁵⁷

⁵⁴ See Frank J. Trelease “Preferences to the use of Water’ (1955) 27 Rocky Mtn L Rev 133 at 133.

⁵⁵ Ibid, at 159.

⁵⁶ *City & County of Denver v Northern Colorado Water Conservancy District* 276 P.2d 992 (Colo. 1954).

⁵⁷ Ibid, at 1020.

Further flexibility and protection from the imputation of speculation is found in another similar co-existent doctrine called the “progressive growth doctrine”, which gives support to those wishing to anticipate future needs for water by documenting those needs. Potential applicants include municipalities, but also developers and farmers (for irrigation). The position was articulated thus in *St. Onge v Blakeley*:⁵⁸

It is not requisite that the use of water appropriated be made immediately to the full extent of the needs of the appropriator. It may be prospective and contemplated, provided there is a present ownership or possessory right to the lands upon which it is applied, coupled with a bona fide intention to use the water, and provided that the appropriator proceeds with due diligence to apply the water to his needs.⁵⁹

In *State ex rel. State Engineer v Crider*,⁶⁰ the Court found (quoting Kinney on Irrigation and Water Rights Vol.2 p.1568):

“... where the purpose of the appropriation is for the irrigation of new land by a settlor, although the quantity first used is not the full amount claimed, the settlor may year by year increase the quantity used, as he gets his land ready for cultivation, up to the full amount of his claim ... provided he does not delay the final use for all the water claimed for an unreasonable time.”⁶¹

In 1954, the Colorado Supreme Court had mentioned that speculators may not appropriate water and, thereby, subsequently compel other *bona fide* appropriators to “pay them tribute” by purchasing a right which had been guaranteed to them by the Colorado Constitution.⁶² The odd aspect of the anti-

⁵⁸ *St. Onge v Blakeley* 245 P. 532. (Mont. 1926). This case also demonstrates the excruciating complexity of some water cases: a profusion of witnesses and 1000 pages of testimony.

⁵⁹ *Ibid*, at 539 per Matthews J.

⁶⁰ *State ex rel. State Engineer v Crider* 431 P.2d 45. (N. M. 1967).

⁶¹ *Ibid*, at 49 per Spiess J.

⁶² *City & County of Denver v Northern Colorado Water Conservancy District* 276 P.2d 992 at 1009 per Stone CJ (Colo. 1954).

speculation doctrine is that although it was generally accepted that such a hypothesis was encapsulated in the “use” prescription of the beneficial use notion, it was not until 1979 that in *Colorado River Water Conservation District v Vidler Tunnel Water Company*.⁶³ it was actually articulated as an independent tenet. The question before the Supreme Court was whether the water requested - with no associated definite use by Vidler’s municipal customers - was purely a speculative and conjectural claim: “Our constitution guarantees a right to appropriate, not a right to speculate.”⁶⁴

The unstated anti-speculation intention is contained in all state constitutions and/or statutes, but subsequent to *Vidler* that intention is discussed in negative terms about speculation rather than positive terms about use – a change in perspective. Vidler Tunnel and Water was involved in the business of dealing in and supplying water for a variety of different purposes from municipal,⁶⁵ industrial, and agricultural to recreational and energy generation. It was minded to increase its storage capacity by about 156,000 acre-feet. Crucially, the company did not have in place any contracts for the end use of the water it was planning to store. The company did however have use for approximately 7,000 acre-feet on land it either owned itself or leased. The Supreme Court held that the company was entitled to appropriate the 7,000 acre-feet only:

The right to appropriate is for Use, not merely for profit. As we read our constitution and statutes, they give no right to pre-empt the development potential of water for the anticipated future use of others not in privity of contract, or in any agency relationship, with the developer regarding that use. To recognise conditional decrees grounded on no interest beyond a desire to obtain water for sale would as a practical matter discourage those who have need and use for the

⁶³ *Colorado River Water Conservation District v Vidler Tunnel Water Company* 594 P.2d 566. (Colo.1979).

⁶⁴ *Ibid*, at 568 per Carrington J.

⁶⁵ The company was a private corporation not a municipality, but had been contracted in the past to various municipalities.

water from developing it. Moreover, such a rule would encourage those with vast monetary resources to monopolize, for personal profit rather than for beneficial use, whatever unappropriated water remains.⁶⁶

The Court found that a general need for water was insufficient and appropriators must show that they individually have the ability to place the water to beneficial use, or that they represented someone who had that ability and that firm contracts or agency agreements were in place. This was the genesis of the anti-speculation doctrine as such – the Court did not “articulate a new legal requirement...but rather merely applied longstanding principles of Colorado water law.”⁶⁷ *Vidler* was decided in the context of a private company, not a municipality, and the court did not expect the requirements of firm contractual commitments or agency relationships to apply with equal force to municipalities.⁶⁸ In 1979, immediately after the *Vidler* decision, the Colorado General Assembly amended the definition of “appropriation” in the Water Right Determination and Administration Act 1969 to enshrine the anti-speculation doctrine articulated in that case:

(3)(a) “Appropriation” means the application of a specified portion of the waters of the state to a beneficial use pursuant to the procedure prescribed by law but no appropriation of water, either absolute or conditional, shall be held to occur when the proposed appropriation is based upon the speculative sale or transfer of the appropriative rights to persons not parties to the proposed appropriation, as evidenced by either of the following:

(I) The purported appropriator of record does not have either a legally vested interest or a reasonable expectation of procuring such interest in the lands or facilities to be served by such appropriation, unless such appropriator is a government agency or an agent in fact for the persons proposed to be benefited by such appropriation

⁶⁶ *Colorado River Water Conservation District v Vidler Tunnel Water Company*. 594 P.2d 566, at 568 per Carrigan, J (Colo.1979).

⁶⁷ *City of Thornton v Bijou Irrigation Co.* 926 P.2d 1 at 37 (Colo. 1996).

⁶⁸ *Ibid*, at 38.

(II) The purported appropriator of record does not have a specific plan and intent to divert, store, or otherwise capture, possess, and control a specific quantity of water for specific beneficial uses.⁶⁹

Thus the anti-speculation doctrine as enacted in Colorado gives flexibility to governmental agencies responsible for supplying water to individual users while acting as a brake on speculative undertakings by private parties. The appropriations by municipalities must be consistent with reasonably anticipated requirements based on established projections of future demand.

It is clear from the preceding cases that the anti-speculation principle was driven by the application for conditional water rights, that is to say the water right would ripen in the event the owner implements his or her appropriation within a reasonable amount of time. It is important that the applicant clearly demonstrate the ability, intent and commitment to pursue and complete the appropriation:

No claim for a conditional water right may be recognised or a decree therefor granted except to the extent that it is established that the waters can and will be diverted, stored, or otherwise captured, possessed, and controlled and will be beneficially used and that the project can and will be completed with diligence and within a reasonable time.⁷⁰

Additionally, an owner of a conditional appropriation must periodically demonstrate to the water court that the project can and will proceed to completion:

In every sixth calendar year after the calendar year in which a water right is conditionally decreed or in which a finding of reasonable diligence has been decreed, the owner or user thereof, if such owner or user desires to maintain the same, shall file an application for a finding of reasonable diligence, or said water right shall be considered abandoned.⁷¹

⁶⁹ 1979 Colo. Sess. Laws 1366, 1368 (codified at §37-92-103(3) (a)).

⁷⁰ Colorado Revised Statutes §37-92-305 (9) (b).

⁷¹ Colorado Revised Statutes §37-92-301(4) (a) (I).

This is not a mere gratuitous statement, however – the procedure is serious and designed to protect both the resource and potential applicants from speculative accumulation of water rights. Moreover it was held by the Colorado Supreme Court that circumstances may overtake the applicant.

In *Municipal Subdistrict, Northern Colorado Water Conservancy District v Oxy USA Inc.*,⁷² Oxy had applied for a conditional water right in connection with an application to extract oil from shale on the applicant’s land. In its hexennial⁷³ application to maintain the right, it was held that the “can and will” standard and the anti-speculation doctrine applied to subsequent diligence proceedings. The Court found it could take into account in the renewal application the then current economic feasibility, or otherwise, of oil shale extraction due to low oil prices and thus whether the applicant had proved that it diligently developed its rights as well as whether it can and will complete the project.

The anti-speculation doctrine was initially intended to prohibit the entry of conditional decrees when the holder had nothing more than an intent to sell the right at an unknown time in the future for a profit. However, because a conditional right, or some portion of that right, may become speculative over time, we now hold that just as the “can and will” test continues to apply in later diligence proceedings, so does the anti-speculation doctrine... If a water right initially clears the anti-speculation hurdle, yet later becomes speculative, then the project is not moving towards completion and beneficial use.⁷⁴

A special note needs to be made regarding groundwater. The legal position of groundwater in Colorado is somewhat abstruse. Traditionally groundwater extraction was for relatively minor amounts extracted by humble

⁷² *Municipal Subdistrict, Northern Colorado Water Conservancy District v Oxy USA Inc.* 990 P2d. 701 (Colo.1999).

⁷³ This is the term generally used in the United States.

⁷⁴ *Ibid.*, at 709 per Kourlis J.

traditional methods such as windmills. However with developments in pumping technology and cheap electricity, pressure on sources became drastic.⁷⁵ As a consequence, the law regulating groundwater in Colorado has developed quite recently. The Ground Water Management Act was passed in 1965⁷⁶ and established the Ground Water Commission. Colorado's groundwater is defined in four categories, one being "designated water" which is not interconnected with surface water. This water is regulated by the Ground Water Commission.⁷⁷

In *Jaeger v Colorado Ground Water Commission*,⁷⁸ Jaeger was minded to apply to the Commission for a right to withdraw designated water. He intended to sell the water in the future but had no present contractual commitment for the sale and purchase of the water for beneficial purposes. His argument was that the relevant statute did not require a beneficial use:

If after such hearing it appears that there is no unappropriated waters in the designated source or that the proposed appropriation would unreasonably impair existing water rights from such source or would create unreasonable waste, the application shall be denied; otherwise it shall be granted ...⁷⁹

No mention is made of beneficial use, and this was relied on by Mr Jaeger. However the court had no difficulty in swatting his argument aside:

In fact, the anti-speculation doctrine was developed to encourage full utilization of water resources by making water available to those with a genuine, immediate use for the water. The anti-speculation doctrine works to supplement the statutory permit system and to encourage the fullest use of designated ground water resources.

⁷⁵ About 18% of Colorado's water came from these sources in 2003: *Colorado Ground Water Commission v North Kiowa-Bijou Groundwater Management District* 77 P.3d 62, at 69 (Colo. 2003).

⁷⁶ See Colorado Revised Statutes §§148-18-1 to 38.

⁷⁷ The others are regulated by either the water courts or the state water engineer.

⁷⁸ *Jaeger v Colorado Ground Water Commission* 746 P.2d 515 (Colo. 1987).

⁷⁹ See (now) Colorado Revised Statutes §37-90-107 (4).

In summary, the arguments of the appellant that the anti-speculation doctrine is not applicable to this case are not persuasive.⁸⁰

The judicial eye is constantly on speculative potential. One of the categories of Colorado's groundwater is "not non-tributary groundwater", that is water in the Dawson, Denver, Arapahoe, and Laramie-Fox Hills aquifer, known as the Denver Basin that do not satisfy the definition of non-tributary groundwater. The right to use that water is restricted to those owners of the overlying land, not by the application of prior appropriation rules. Despite this, the Colorado Supreme Court found that Colorado water was a public resource and appropriators seeking to use Denver Basin groundwater only possess an inchoate statutory right to use the water, but to suggest that the anti-speculation doctrine does not apply because the use of the water is limited to the overlying landowners disregards the goal of conservation and the public nature of the resource.⁸¹

To be consistent, the Colorado Supreme Court has held that although by statute water courts must allocate non-tributary ground waters without immediate plans for use,⁸² the Ground Water Management Act contains a beneficial use requirement,⁸³ and it is the State Engineer who evaluates that beneficial use. Thus whilst an applicant may obtain a decree to appropriate water without showing any plan for its use, that applicant may not secure a well permit from the Engineer without demonstrating a beneficial use for the water.⁸⁴

⁸⁰ *Jaeger v Colorado Ground Water Commission* 746 P.2d 515 at 523 per Lohr J (Colo. 1987).

⁸¹ *Colorado Ground Water Commission v North Kiowa-Bijou Groundwater Management District* 77 P.3d 62 at 80 per Bender, J (Colo. 2003). "Conservation" is an interesting choice of word. Gregory Hobbs has described the current period of Colorado water law as the "environmental era" (see *Colorado Water Law: An Historical Overview* 1 U Denv Water L Review 1 at 22 1997-1998).

⁸² Colorado Revised Statutes §37-92-305 (11); §37-90-137 (6).

⁸³ Colorado Revised Statutes §37-90-102 (2).

⁸⁴ *East Cherry Creek Valley Water & Sanitation District v Rangeview Metro District* 109 P.3d 154, at 158 per Coats J. (Colo. 2005).

In the major case of *High Plains A&M LLC v Southeastern Colorado Water Conservancy District*,⁸⁵ the Supreme Court of Colorado confirmed the notion that the beneficial use doctrine is attached to applications for changes in water rights.⁸⁶ High Plains had applied to change historical irrigation rights to any of over fifty various (and seemingly random) uses in any of 28 counties in Colorado. The Water Court had found the application “expansive and nebulous” making it difficult to satisfy the “no injury” rule as well as determining whether the beneficial use rule could be complied with. The Water Court held that the application violated the State’s anti-speculation doctrine. High Plains specifically argued that on a strict reading of §37-92-103(3) (which states that an “appropriation” of water means the application of a specific portion of the waters of the state to a beneficial use) and §37-92-305(9) (b) (which states that a conditional water right must also be for a beneficial use), the anti-speculation doctrine only applied to new appropriations and not to change application proceedings. The Supreme Court had no difficulty in disagreeing. Crucially, at the time of the filing of the applications, High Plains had no agreements with anyone to establish a beneficial use for the changed water rights in any of the 28 counties mentioned in the applications. The Court reiterated its finding in the 1891 case of *Strickler v City of Colorado Springs*⁸⁷ that water rights are transferable property rights, provided there is no injury to others, and (by inference) the water is put to a beneficial use. *High Plains* found that *Strickler* had not been overtaken by statutory provisions, but in any event those statutory provisions still anticipated a beneficial use on transfer:

⁸⁵ *High Plains A&M LLC v Southeastern Colorado Water Conservancy District* 120 P.3d 710 (Colo. 2005).

⁸⁶ The same fate befell the companion case of *ISG LLC v Arkansas Valley Ditch Association* 120 P.3d 724 (Colo. 2005). The facts of both cases are virtually identical, and the judgments handed down on the same day, 12 September 2005.

⁸⁷ *Strickler v City of Colorado Springs* 26 P.313 (Colo. 1891).

... the ... Act anticipates, as a basic predicate of an application for a decree changing the place of use, that there is a sufficiently described actual beneficial use to be made at an identified location or locations under the change decree.

A guess that a transferred priority might eventually be put to a beneficial use is not what the Colorado Constitution or the General Assembly envisioned as the triggering predicate for continuing an appropriation under a change of water right decree. The change application process is intended to facilitate transfers that are calculated to result in a continued application of the appropriated water to specified beneficial uses at different locations from the current decree under conditions to prevent injury to other water rights.⁸⁸

In the event the Court found otherwise, the prior appropriation doctrine in Colorado would be incomprehensible and of unmanageable complexity. Furthermore and just as importantly, the attitude of the Supreme Court judiciary is quite plain in the judgment. Part of that attitude is derived from history, but a telling passage of the judgment indicates the justices have a firm eye on the future:

In its findings resulting from the Statewide Water Supply Initiative, the Colorado Water Conservation Board projects an approximate twenty percent shortfall in supply to meet water requirements by the year 2030 across the state that may need to be filled by temporary or permanent agricultural transfers of water; this assumes that presently contemplated projects of local government water suppliers are actually built.⁸⁹

This is clearly a sustainability discourse very much like the imperative to promote sustainability contained in section 5 of our Resource Management Act 1991. Moreover, the judgment makes note of the over-appropriated status of three of the four main rivers in Colorado.⁹⁰

⁸⁸ *Strickler v City of Colorado Springs* 120 P.3d 710 at 720-721 per Hobbs J (Colo. 2005).

⁸⁹ *Ibid*, at 722.

⁹⁰ *Ibid*, at p 722.

Given the lack of new water to appropriate, and increasing demand, most issues with respect to potential speculation are likely to occur in these changes of water rights cases as opposed to new appropriations. High Plains and others have been cognizant of this change in economic conditions and have purchased irrigation water rights, hoping to sell those rights to urban areas located not only in the Arkansas Basin but throughout the front range.⁹¹

The Colorado Supreme Court has proved to be steadfast in its approach to anti-speculation matters. In *Pagosa Area Water and Sanitation District v Trout Unlimited*⁹² (“*Pagosa I*”), the Water Court had decreed a conditional appropriation to Pagosa of some 35,300 acre-feet with direct flow rights totalling 180 cubic feet per second, and for a period of 100 years. Trout Unlimited argued that neither the Water Court nor Pagosa could justify the amount of water so appropriated. The District’s engineer was of little help when he stated at trial that the claim was a “no-brainer ’cause you go to the site capacity and you do your darndest to get that amount built.”⁹³ The Supreme Court noted that governmental agencies were not “completely immunised” from accusations of speculation;⁹⁴ and while governmental agencies may appropriate for future projected needs without firm contractual commitments or agency relationships, the amount of water claimed is

(s)ubject to the water court’s determination that the amount conditionally appropriated is consistent with the municipality’s reasonably anticipated requirements based on substantiated projections of future growth.⁹⁵

⁹¹ Scott A. Clark and Alix L. Joseph “Changes of Water Rights and the Anti-speculation Doctrine: The Continuing Importance of Actual Beneficial Use” (2005-2006) 9 U Denv Water L Rev 533 at 563.

⁹² *Pagosa Area Water and Sanitation District v Trout Unlimited* 170 P.3d 307 (Colo. 2007). Pagosa/San Juan are a water & sanitary district/water conservancy district respectively (governmental agencies). Trout Unlimited is a fisheries conservation organisation.

⁹³ *Ibid*, at 311.

⁹⁴ Referring to *City of Thornton v Bijou Irrigation Co.* 926 P.2d 1 37 at 38 (Colo.1996).

⁹⁵ *Ibid*, at 80.

However this concession is “to be construed narrowly”.⁹⁶ The Supreme Court was not satisfied that the Water Court made correct findings of fact and accordingly the matter was referred back to that court for re-evaluation. The Water Court was instructed to make new findings on existing and new evidence offered by the parties.⁹⁷ It transpired that the Water Court did not re-examine the evidence as the Supreme Court requested and ignored the directive in Pagosa 1 to find out which party was correct. As a result the Water Court issued another decree giving Pagosa 25,300 acre-feet, with direct flow rights totalling 150 cubic feet per second. Trout Unlimited was still dissatisfied, and claimed the suggestion of speculation still hovered over the latest appropriation, arguing it did not conform to credible future water use projections.

The company again appealed: *Pagosa Area Water and Sanitation District v Trout Unlimited*⁹⁸ (“Pagosa 2”). Tellingly, though the Supreme Court gave the Water Court’s factual findings no regard at all.⁹⁹ Addressing the two main water rights granted by the Water Court, the Supreme Court found both the direct flow rights and the storage rights to be clearly excessive. In essence the Districts failed to satisfy the Supreme Court that they had a specific future beneficial uses for the water. By failing to justify the amounts of water decreed by the Water Court, Pagosa was effectively failing the anti-speculation test. Further, the court refused

⁹⁶ *Pagosa Area Water and Sanitation District v Trout Unlimited* 170 P.3d 307, at 317, per Hobbs, J.

⁹⁷ *Ibid*, at 320.

⁹⁸ *Pagosa Area Water and Sanitation District v Trout Unlimited* 219 P.3d 774 (Colo. 2009).

⁹⁹ Under the relevant statute (CRS §§37-92-302, -304, -305) the Supreme Court is able to conduct the proceedings *de novo*, but “we defer to the water court’s findings of fact unless the evidence is wholly insufficient to support those determinations.” *Ibid*, at 779.

to accept the population figures suggested by Pagosa,¹⁰⁰ and therefore by extension the flow rights and water storage claimed.

We agree that the “reality checks” the Water Court has included in the remand decree are appropriate for upcoming diligence determinations. But the “reality checks” are not a substitute for the Districts’ burden of proving the need for the amounts of water they claim should be conditionally decreed.¹⁰¹

Derek L. Turner sums up “*Pagosa 2*” thus:

Pagosa II puts municipal water developers on notice that the Colorado Supreme Court will scrutinize the factual findings of water courts to determine if the amounts of water conditionally decreed are truly needed to serve the reasonably projected municipal needs. The *Pagosa II* decision also functions as a warning shot from the Colorado Supreme Court to state water courts saying, in effect, “We are concerned with water speculation, and when we ask you to make specific findings concerning the anti-speculation doctrine, we really mean it.”¹⁰²

The Colorado Supreme Court has continued to demonstrate an implacable disposition to ensure the state’s anti-speculation doctrine is given due respect by applicants. In *Upper Yampa Water Conservancy District v Dequine Family*,¹⁰³ the question was whether the District could establish that it had sufficient need for additional water that could be put to beneficial use. The Water Court held that it did not and accordingly could not satisfy the anti-speculation doctrine. The Supreme Court agreed. It was clear the District needed the water to satisfy the existing

¹⁰⁰ About 63,000. A General Assembly-authorized study suggested a range between 34,500 and 41,500. See *Pagosa 2* at 787. The water court had ignored the directive in *Pagosa 1* to find out which party was correct.

¹⁰¹ *Pagosa Area Water and Sanitation District v Trout Unlimited* 219 P.3d 774, at 788 per Hobbs, J. (Colo. 2009).

¹⁰² Derek L. Turner “Pagosa Area Water & Sanitation District v Trout Unlimited and an Anti-speculation Doctrine for a New Era of Water Supply Planning” (2011) 82 U. Colo L Rev 611 at 668.

¹⁰³ *Upper Yampa Water Conservancy District v Dequine Family* 249 P.3d 794 (Colo. 2011).

contractual obligations it had with municipal and commercial users, rather than the reasonably anticipated future population demands of the municipalities with which it had contracts.

It is now too well-settled to merit elaboration that the intent to appropriate water for a beneficial use, proof of which is an integral part of the applicant's obligation to show it has made a "first step" towards appropriation, cannot be based on the speculative sale or transfer of the appropriate rights.¹⁰⁴

Accordingly, it was held that the conditional water right application was for speculative purposes.

Interestingly enough, the Upper Yampa District tangled with the Colorado Supreme Court again a few years later. At issue was the intention of the District to increase its water storage capacity as a hedge against the ravages of drought. On the face of it, this would seem to be an eminently sensible step to take. The court did not agree.

The District urges that placing water into storage "uses" it by removing the water from the stream system to "accomplish" a particular "purpose" – namely, use when needed at a later date. However defining storage for a later date as "use" seems more akin to "speculative hoarding", and, as such is in direct tension with Colorado's long-standing anti-speculation policy.¹⁰⁵

To be fair, this position is consistent with the Court's ruling in the 1912 case of *Highland Ditch Co v Union Reservoir Co*¹⁰⁶ (mentioned in the *Wolfe* judgment) in which it was held that diversion and storage by themselves are not sufficient to

¹⁰⁴ Ibid, at 797 per Coats, J. The first step is supposed to clearly demonstrate an immediate specific beneficial use or reasonably anticipated future needs.

¹⁰⁵ *Upper Yampa Water Conservancy District v Wolfe* 255 P.3. 1108 at 1111 per Eid J (Colo. 2011).

¹⁰⁶ *Highland Ditch Co v Union Reservoir Co* 127 P.1025 (Colo. 1912).

constitute an appropriation without the water being beneficially applied.¹⁰⁷ It may be consistent but it is also a very strict application of the doctrine. *Highland Ditch* was a case relating to irrigation, not the forward planning of a municipality. In 2011 the Supreme Court was unbending in its attitude towards water speculation: “Otherwise storage facilities would be an incentive to hoard water in advance of receiving absolute decrees – contrary to the anti-speculation doctrine.”¹⁰⁸ Janet C. Neuman makes the point that transfers have become the perceived threat that speculation and monopoly was one hundred years ago, certainly among rural interests which see urban sprawl and increasing water consumption as a threat to western agriculture.¹⁰⁹

8.3 The Difference between the Colorado and New Zealand Approaches.

There is no mistaking the attitude of the Colorado Supreme Court when dealing with these speculation cases. In water matters, the Court functions not merely as a venue for settling legal disagreements but also as a gatekeeper protecting the integrity and virtue of a state-managed strategic resource. In this regard it acts very much like our Environment Court, but with a great deal more clout. Scott A. Clark and Alix L. Joseph put it thus:

Application of the anti-speculation doctrine: 1) protects the public’s interest in this valuable resource; 2) promotes maximum utilization of the State’s limited water supply; 3) protects other water users from unspecified injury; and 4) protects the integrity of Colorado’s water court system.¹¹⁰

¹⁰⁷ Ibid, at 1025.

¹⁰⁸ *Upper Yampa Water Conservancy District v Wolfe* 255 P3. 1108 at 1112 per Eid J (Colo. 2011).

¹⁰⁹ “Beneficial use, Waste, and Forfeiture” (1998) 28 *Envtl L* 919 at 971-2.

¹¹⁰ Scott A. Clark and Alix L. Joseph “Changes of Water Rights and the Anti-speculation Doctrine: The Continuing Importance of Actual Beneficial Use” (2005-2006) 9 *U. Denv. Water L. Rev* 533, at 568.

Colorado's Constitutional provisions provide authority for the first two matters identified by Clark and Joseph. Article XVI §5 states that water is the property of the state and is dedicated to the use of the people of the state. The implication is that benefit is perpetual, and consequently continued beneficial use is necessary for the continued existence of a water right.¹¹¹ Article XVI §6 states that water may only be appropriated by those who will put it to beneficial use. Hence, stockpiling water for an unspecified future use is not allowed.¹¹²

The third matter is statutory. It is up to the applicant to satisfy the Water Court that there is no injury to others in a change of use application (Colorado Revised Statutes §37-92-304; §37-92 305). The appellant in the *High Plains* case was totally unable to satisfy this requirement in the Supreme Court.

Clark and Joseph argue the fourth matter relates to the cost and inconvenience adjudicating water rights to the parties. Again, *High Plains* articulates the problem: the company forced “the state and water users to expend thousands (if not millions) of dollars debating the merits of a nebulous project of uncertain future.”¹¹³ Thus the strict approach of the Supreme Court is justified by making it clear to potential players the Court's solid and uncompromising attitude. Further, the cases suggest quite strongly that the Supreme Court is exemplary in discharging its constitutional and statutory duties.

There is the temptation to compare our Court of Appeal case of *Fleetwing Farms Limited v Marlborough District Council*.¹¹⁴ It is fair to say this case is a procedural, rather than substantive, discussion of the Resource Management Act

¹¹¹ See *High Plains A&M, LLC v Southeastern Colorado Water Conservancy District* 120 P.3d 710 (Colo. 2005). (Above n 70).

¹¹² *Upper Yampa Water Conservancy District v Wolfe* 255 P3. 1108 (Colo. 2011).

¹¹³ “Changes of Water Rights and the Anti-speculation Doctrine: The Continuing Importance of Actual Beneficial Use” (2005-2006) 9 U. Denv. Water L. Rev 533, at 571.

¹¹⁴ *Fleetwing Farms Limited v Marlborough District Council* [1997] 3 NZLR 257.

1991. While it is also fair to say the appeal was actually on matters of procedure, the Court of Appeal's discussions about the purpose of the Act somewhat misses the point,¹¹⁵ which is quite simply that there is a statutory duty imposed on the various tribunals to take into account in any decision-making the sustainable management of the nation's natural resources. It may be argued that the Bench in *Fleetwing* did not discharge this duty, and it may be equally argued that given the same circumstances the Colorado Supreme Court would not be found wanting in this regard, for instance as demonstrated by its attitude and approach to both Upper Yampa District cases.¹¹⁶

Referring back to Clark and Joseph's final point about time and expense, the *Central Plains* cases which follow *Fleetwing* demonstrate how that decision compounded rather than settled the issue as new parties debated the point as to just when an application is "filed",¹¹⁷ despite the Court of Appeal in both cases having the opportunity of rectifying matters. Kenneth Palmer states in an article on the *Ngai Tahu* case that:

In many respects, the "first in, first served rule" derived from *Fleetwing* has advanced in a manner that misunderstands and marginalises the basic function and objective of the RMA – to ensure that scarce resources are fairly and properly allocated to achieve sustainable management for the well-being of the community.¹¹⁸

The Colorado Supreme Court would definitely agree. A further and more fundamental matter to which the American court would have great difficulty with, and identified in, the *Ngai Tahu* case was the fact that Ngai Tahu simply did not have any information as to how the water was to be used. This point is well made

¹¹⁵ See discussion in chapter 2.

¹¹⁶ See pages 20-21 *supra*.

¹¹⁷ See *Central Plains Water Trust v Synlait Limited* [2009] NZCA 609; *Central Plains Water Trust v Ngai Tahu Properties* [2008] NZRMA 200.

¹¹⁸ "Priority of Competing Resource Consent Applications – Marginalisation of the Sustainable Management Purpose" (May 2008) Resource Management Bulletin 133 at 136.

in the judgment of Robertson J. Although section 88 of the Resource Management Act 1991 makes it essential that the applicant provide an environmental assessment of the activity, and that in the absence of such information the authority may return the application as incomplete,¹¹⁹ the consent authority decided that section 91 should apply which allowed it to determine not to proceed with notification if other applications are necessary and it is appropriate to better understand the application that those further applications be made.¹²⁰

Robertson J's opinion was that in a situation where the "take" part of the application was understood but not the "use" segment, it is "bereft of reality to suggest that a consent authority ... would not give consideration to the use to which the water was going to be put."¹²¹ He went on to state that the Resource Management Act, read as a whole, suggests the "take" part of the application cannot be adjudicated upon without full information about the consequent use. This position is taken at an elementary level on environmental considerations simply because the assessments of the environmental impacts would be impossible.¹²² Under the scrutiny of the Colorado Supreme Court however and the beneficial use principles which it would apply, the Central Plains case would fail instantly because it smacks strongly of speculation, and there would be absolutely no point in approaching the Court without intelligible and compelling submissions.

The position was further discussed by the Court of Appeal in *Central Plains Water Trust v Synlait Limited*.¹²³ Again, the question under discussion was exactly when an application gained priority – when simply filed, or when the

¹¹⁹ Resource Management Act 1991, s88 (2); s88 (3).

¹²⁰ Resource Management Act 1991, s91 (1).

¹²¹ *Central Plains Water Trust v Ngai Tahu Properties* [2008] NZRMA 200, at para 132.

¹²² Schedule 4 Resource Management Act 1991.

¹²³ *Central Plains Water Trust v Synlait Limited* [2009] NZCA 609.

application is ready for notification under the Act.¹²⁴ Whilst the facts of the case are uncomfortably complex, in simple terms the Court of Appeal held that the priority belonged to the party first to file a complete application. Once again the issue was raised about the “take” and “use” components of an application. Startlingly, the Court of Appeal expressed the opinion that “[t]o give Part 2 [the purpose and principles of the Act] full rein would cut across the RMA’s strict time limits and the detailed regime containing them.”¹²⁵ The Colorado Supreme Court would be flabbergasted at the suggestion that the Act’s core rubric should be sacrificed on the altar of bureaucratic expediency.¹²⁶ It would certainly not agree that procedure should not be “swamped by aspiring to substantive perfection”,¹²⁷ but would see it simply as a matter of the consent authority complying with a statutory obligation.

Once again, in the event that the *Synlait* case came before the Colorado Supreme Court, it would have a different outcome as although Central Plains filed first, it was not able to provide the “use” details (as to the portions of the various applications which clashed) to satisfy the anti-speculation rubric which, like “sustainable management” under the Resource Management Act in New Zealand, is at the very heart of Colorado’s water law.

It would appear that an anti-speculation doctrine in New Zealand would surely make the consent application method a much simpler process in some cases, given the bureaucratic entanglements resulting from our *Fleetwing* procedure, however that application process is started. If as the Land and Water Forum tells us all New Zealand’s economically significant catchments are close to

¹²⁴ When an application is ready for notification, the applicant loses control of the process.

¹²⁵ *Ibid* at paragraph 82.

¹²⁶ In a marvellous display of prescience, Malcolm Grant had stated in 1995 that strong commitment to the sustainability ethic was needed if that imperative were to survive the threat of “bureaucratic engulfment” “Sustainable Management: A sustainable Ethic?” Paper presented to Resource Management Law Association Annual Conference Christchurch 6-7 October 1995.

¹²⁷ *Central Plains Water Trust v Synlait Limited* [2009] NZCA 609 at paragraph 92.

being fully allocated or even over-allocated (as at 2010),¹²⁸ a market system of re-allocation will be necessary to re-distribute those allocations, and with a market system comes the inevitable temptation to speculate. In that case a domestic anti-speculation doctrine will be highly desirable.

It is interesting to note that the Land and Water Forum has, in November 2015, finally addressed the issue of speculation.¹²⁹ It is almost tacked on as an after-thought. The Forum's idea is to deal with the problem through the Commerce Act. With respect this is an inefficient method and the problem of speculation would be better dealt with by a beneficial use doctrine.

It is acknowledged that such a policy may have the effect of driving the speculative endeavours underground, that is to say as a water right may only be held overtly and used as such, the best way to save water for speculative purposes would be to consume as much as possible now. A cost-benefit analysis might indicate that it will be profitable to waste water but recoup those losses in a future sale of the water right.

Professor Neuman writes that it is impossible to say how often this happens but is sure it is unlikely that "large numbers of individual western irrigators are consciously and intentionally irrigating *only* with an eye towards selling off their water rights at a later date."¹³⁰ She makes the point that both land and water values are likely to appreciate over time and since land with water rights attached is likely to be more valuable than bare land only, some farmers may continue to irrigate until the time is ripe to sell. That is fundamentally different though from

¹²⁸ Report of the Land and Water Forum: A Fresh Start for Fresh Water, September 2010, at p10.

¹²⁹ The Fourth Report of The Land and Water Forum, November 2015, at paragraphs 290-296.

¹³⁰ "Beneficial use, Waste, and Forfeiture" (1998) 28 *Envtl. L.* 919 at 968-9.

the appropriation of water and the commencement of wasteful irrigation simply to hold the water for future speculative uses.¹³¹

The American beneficial use doctrine has another component designed to address an issue of this nature – the avoidance of waste. A New Zealand anti-speculation doctrine would be predicated on the “management” component of the Resource Management Act’s purposes and principles: the notion of avoidance of waste in a beneficial use doctrine is predicated on the “efficiency” imperative in that Act. Increasing pressure on New Zealand’s water stocks dictates that avoidance of waste is another essential element to our own beneficial use doctrine and it is important to now review the American approach to this question.

¹³¹ Ibid, at 969.

9 Chapter 9

9.1 Beneficial use and the Question of Waste.

The American beneficial use doctrine is well-rounded and addresses not only speculation, as shown in the last chapter, but also the thorny issue of waste of water resources. Speculation in water rights by holding them unused to sell them at a future date for a profit is in a sense a type of waste: the water is unproductive. However, water may also be wasted by inefficient utility. Usually with commodities, an increase in demand is met by an increase in supply. However, in the case of water, as demand for the resource increases the supply remains constant. Therefore, a proscription against inefficiency and waste is an important tool in the quest to share available supplies as far as is practicable, and this is the case in all countries. Shupe¹ makes the (self-evident) point that "...consumptive demands of modern America threaten to overtake the land's capacity to provide."

Michael Toll comments:

So long as the population of the West remained small, the prior appropriation system worked reasonably well because there was sufficient water to meet settlers' modest demands. The rapidly growing population of the West and the attendant swelling demand for water resources, however, has increasingly stressed this delicate system.²

The Iowa legislature has put it thus:

The general welfare of the people of the state requires that the water resources of the state be put to beneficial use which includes ensuring

¹ Steven J. Shupe "Waste in Western Water Law: A Blueprint for Change" (1982) 61 Or. L. Rev. 483, at 483.

² "Reimagining Western Water Law: Time-Limited Water Right Permits Based on a Comprehensive Beneficial Use Doctrine" 82 U. Colo L Rev 595 at 597 (2011). (Footnotes omitted).

³ Iowa Code §455B.262. The provision was adopted in 1957, and the direction to conservation is to be noted.

that waste or unreasonable use, or unreasonable methods of use of water be prevented, and that the conservation and protection of water resources be required with the view to their reasonable and beneficial use in the interests of the people...³

The seriousness of the problem can be seen in Colorado's statistics as an example. Colorado is the third fastest-growing state in the United States. Between 1990 and 2000 the population grew by over thirty per cent. Between 2000 and 2009, the population grew by nearly seventeen per cent, and by 2050 the population is forecast to double from its present 4.8 million to 10 million people.⁴

If waste is a symptom of inefficiency, section 7 of our Resource Management Act 1991 addresses the issue and reads (in part) as follows:-

7. Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to –

...

(b) the efficient use and development of natural and physical resources.

The Act does not actually define "efficient", but it is reasonable to adopt a general dictionary definition, rather than the several different approaches preferred by economic theories. In this general regard "efficiency" can be taken to refer simply to achieving a result with minimum waste or effort.⁵ This definition was adopted by the Environment Court in *Marlborough Ridge Ltd v Marlborough District Council*: "This basic definition of "efficient" is certainly

⁴ Leila C. Behnampour "Reforming a Western Institution: How expanding the Productivity of Water Rights Could Lessen our Water Woes" 41 *Envtl L* 201 at 205 (2011). (Footnotes omitted).

⁵ This is the definition contained in the *Concise Oxford Dictionary* (Eighth Edition).

consistent with the purpose of the Act.”⁶ Consequently the avoidance of waste is quite demonstratively an integral component of that definition of efficiency.

Once again, the Act does not give any definition of “waste”, or any assistance in quantifying “minimum waste”. Similarly, it would be reasonable to adopt a general dictionary definition of “waste” – say, to spoil for want of proper attention, or skill, or care, that is, to squander. Judge Jackson in *Marlborough Ridge Ltd v Marlborough District Council* approved the general approach: “...the general definition does show why efficiency is a qualitative goal that has been included in the RMA – most people would prefer to avoid “waste”.”⁷

The avoidance of the waste of water makes perfect sense in New Zealand, but is vital in a western American landscape, and New Zealand can learn a lot from the American experience. The concept of waste in the American west is a fluid one and, interestingly, Colorado Supreme Court Justice Hobbs makes the salient point: “In-stream flows were traditionally considered to be a waste of water: today they are fundamental to the implementation of public values.”⁸ Leila Behnampour states “The historical underpinnings of Western water law, however, were premised on harnessing water for development, encouraging out-of-stream use, and diligently protecting vested rights – principles that often conflict with conservation.”⁹ As such, Hobbs is suggesting a sea-change of attitude towards ecology and the environment – and water use in the American west.¹⁰ That said, in terms of traditional appropriations, the most efficient use of an extremely

⁶ *Marlborough Ridge Ltd v Marlborough District Council* [1998] NZRMA 73 at 86 per Judge Jackson.

⁷ *Ibid*, at 86.

⁸ Gregory Hobbs “Priority: The Most Misunderstood Stick in the Bundle” (2002) 32 *Envtl L* 37 at 55.

⁹ Leila C. Behnampour “Reforming a Western Institution: How expanding the Productivity of Water Rights Could Lessen our Water Woes” 41 *Envtl L* 201 at 203. (2011).

¹⁰ The New Zealand Resource Management Act recognises these values.

scarce non-fungible, but vital, commodity is essential, whether it be for agriculture or industry, and this is self-evident.

In the context of the American prior appropriation system however efficiency has a very human face, because it may impact directly on the welfare of other appropriators in the same system. By way of example, in the case where a junior appropriator is downstream of a senior appropriator and relies on return flows for his or her water use, in the event the senior “wastes” water unnecessarily, other than by simple preventable evaporation (which takes a huge toll on water use), improved efficiency of the upstream senior diverter could result in reduced return flows for downstream diverters. This new “water use efficiency” upstream might directly affect the water availability and welfare of the downstream junior, or juniors.

9.2 The Approach Taken by Various Western States

In American jurisprudence waste of water has a special significance. If an appropriative right can only be acquired for a beneficial use, it is logical that any appropriated water that is wasted (beyond what is deemed to be acceptable limits in each case) is not, as a matter of simple construction, put to beneficial use. If the first ingredient of that imperative defines how water may be used, the second defines the extent to which the water may be applied, that is to say only so far as its use benefits the appropriator, and thus by extension society. In this guise, it is a policy against waste.

The early case of *Smith v Hawkins* put it thus: “ ... an appropriator can hold, as against one subsequent in right, only the maximum quantity of water which he shall have devoted to a beneficial use ... ”¹¹ Steven J. Shupe makes the point that the practical definition and the legal definitions of the concept of waste

¹¹ *Smith v Hawkins* 120 Cal. 86, at 88 per van Fleet, J. (1898).

do not necessarily accord.¹² He tells us that practically speaking, waste may be defined as the volume of water diverted for use, but not actually consumptively used, by the crop. Losses may originate in the conveyance system by evaporation, seepage and use by phreatophytic trees,¹³ or in application in the field (evaporation and irretrievable percolation). Shupe states that one-quarter of water withdrawn from a stream fails to reach the farm boundary,¹⁴ and of that portion only about a half is actually used by the crop. In other words in a practical sense more than half the water diverted for use by the average farmer is wasted. The legal definition, however, is a different matter.

A review of case law suggests an apt definition would be “the amount of flow diverted in excess of reasonable needs under customary irrigation practices”.¹⁵ It can be seen immediately that the notion of waste is not absolute, but is subject to the vagaries of local customs. Thus, beneficial use may not be as beneficial as might be supposed at first blush, and a more apt definition might include an appropriation of sufficient water to accommodate both customary waste and crop consumption.¹⁶ By way of illustration, in the old leading case of *Barrows v Fox*¹⁷ the court stopped short of declaring the plaintiff’s water use as wasteful, despite the fact that the water needed for domestic and stock could be supplied by a three-quarter inch steel pipe, rather than the open ditch and flume customarily used since 1877, and the amount of wasted water (which was quite considerable) was acceptable:

¹² Steven J. Shupe “Waste in Western Water Law: A Blueprint for Change” (1982) 61 Or. L. Rev. 483. Shupe is both a lawyer and a civil engineer.

¹³ These are deep-rooted and derive water from aquifers. In 1974 the Colorado Supreme Court held that the removal of such trees might also lead to major erosion and detrimental effects to the health of the stream and water: *Southeastern Colorado Water Conservancy District v Shelton Farms Inc.* 529 P.2d 1321, at 1327 per Day, J.

¹⁴ Bruce A. Maak, writing a decade earlier claims the figure to be one-half: “Water Waste – Ascertainment and Abatement” 1973 Utah L. Rev 449, at 449.

¹⁵ Above n 12 at 491.

¹⁶ Above n 14, at 489-491.

¹⁷ *Barrows v Fox* 98 Cal 63 (1893).

Ditches and flumes are the usual and ordinary means of diverting water in this state, and parties who have made their appropriations by such means cannot be compelled to substitute iron pipes, though they may be compelled to keep their flumes and ditches in good repair so as to prevent any unnecessary waste.¹⁸

As noted, all western states have adopted the beneficial use doctrine. Also as already noted, as with beneficial use in general and the anti-speculation doctrine in particular, each state generally has different but similar notions of the principle of waste, and a toolbox of legislative and common law devices to manage it. By way of example some actually prohibit the waste of water specifically, and using several legislated devices. The Texas Water Code for example describes waste as a public nuisance:

- (a) A person who permits an unreasonable loss of water through faulty design or negligent operation of any waterworks using water for a purpose named in this chapter commits waste, and the commission may declare the works causing the waste to be a public nuisance...¹⁹

Nevada describes waste in certain circumstances to be a criminal misdemeanor: “Any person who wastes water in violation of any of the provisions of subsection 1 is guilty of a misdemeanor.”²⁰ California has its “reasonable use” doctrine:

It is hereby declared that because of the conditions prevailing in the state the general welfare requires that the water resources of the state be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented...²¹

¹⁸ Ibid, at 67 per Beatty CJ.

¹⁹ Texas Water Code, §11.093.

²⁰ Nevada Revised Statutes 533.463 (2).

²¹ California Water Code §100-112.

Idaho requires ditch owners to maintain their apparatus to standard:

The owner or owners of any irrigating ditch, canal or conduit shall carefully keep and maintain the embankments thereof in good repair, in order to prevent the water from wasting during irrigation season, and shall not at any time permit a greater quantity of water to be turned into said ditch, canal or conduit than the banks thereof will easily contain or than can be used for beneficial or useful purposes...²²

Utah provides that the state engineer may require repairs to be undertaken to any ditch:

To prevent waste, loss, pollution, or contamination of any waters whether above or below the ground, the state engineer may require the repair or construction of head gates or other devices on ditches or canals, and the repair or installation of caps, valves, or casings on any well or tunnel or the plugging or filling thereof to accomplish the purpose of this section.²³

The Colorado Constitution, as already stated, mentions blandly (and broadly) that the right to divert unappropriated waters of any natural stream to beneficial use shall never be denied. The prohibition of waste is implied, but was made explicit by the common law: “The laws of Colorado are designed to prevent waste of a most valuable but limited natural resource, and to confine the use to needs.”²⁴

None of the statutes actually defines what “waste” in fact is. Clearly, to do so would be to unnecessarily solidify the concept. It has been argued that a fluid concept of waste, discussed on a case by case basis would appropriately reflect its subject matter. The Supreme Court of California put it this way:

²² Idaho Code §42-1203.

²³ Utah Code §73-5-9(1).

²⁴ *Empire Water & Power Co. v Cascade Town Co.* 205 F 123 at 129 per Hook Circuit Judge (8th Cir. 1913).

...Preliminarily, it should be stated that, whatever quantity an appropriator has actually diverted in the past, he gains no right thereto unless such water is actually put to a reasonable use. (26 Cal. Jur. 93, sec 286) What is a beneficial use, of course, depends upon the facts and circumstances of each case. What may be a reasonable beneficial use, where water is present in excess of all needs, would not be a reasonable beneficial use in an area of great scarcity and great need. What is a beneficial use at one time may, because of changed conditions, become a waste of water at a later time.²⁵

An obvious change of conditions might be an increase in demand due to an increase in population. In 1915 Samuel C. Wiel had written (quoting from “Water Rights in Western States” first edition at 333):

It seems to the writer not impossible that the courts will declare that what constitutes waste is a question of fact depending upon the evidence in each case, and not a question of law for declaration by the legislature.²⁶

The notion of waste is clear in theory, then, but, in practice, the position is somewhat bewildering. Given that the efficacy of the doctrine depends on the effect of court decisions, the judicial tone was set early on. In *Combs v Agricultural Ditch Co.*, Elliott, J stated:

An excessive diversion of water cannot be regarded as a diversion to beneficial use, within the meaning of the constitution and water in this country is too scarce, and consequently too precious, to admit to waste. The constitutional rule of distribution, ‘first come, first served’ does not imply that the prior appropriator may be extravagantly prodigal in dealing with this peculiar bounty of nature. We are aware that it may not be practicable to attain mathematical exactness in measuring the flow of water, but a reasonable approximation to substantial accuracy should be aimed at in determining controversies relating to water supply.²⁷

²⁵ *Tulare Irrigation District v Lindsay-Strathmore Irrigation District* 3 Cal 2d 489 at 567 per Waste CJ (1935).

²⁶ “What is Beneficial Use of Water” California Law Review Vol. 3 Issue 6, 460 at 467.

²⁷ *Combs v Agricultural Ditch Co* 28 P 966 at 968 (Colorado 1892). *Combs* was actually an anti-speculation case.

In 1912, the United States Supreme Court refused to recognise a right which would require appropriating the entire pre-dam current of the Snake River to deliver a relatively small volume of water actually put to beneficial use.

In this arid country where the largest duty and the greatest use must be had from every inch of water in the interest of agriculture and home-building, it will not do to say that a stream must be dammed so as to cause sub-irrigation of a few acres at a loss of enough water to surface irrigate ten times as much by proper application...²⁸

In Oregon, the Supreme Court was faced with a determination of the relative rights of various claimants to the use of the Silvies River and its tributaries. The Court heard that all water of the Silvies River had been appropriated and put to beneficial use. However, the custom in the district was to let nature take its course and to let the river channel overflow naturally during the time the mountain snow melted and to flood the area, and, as the flood subsided, to place dams, dikes, levies and restrictions in the channel to raise the water level and cause further flooding.

A method such as this was regarded as very wasteful since large areas were exposed to evaporation, and inefficient too – too much water at certain times, and too little at others. Three or four claimants had systems approaching the practical with ditches and laterals, and under this system were growing crops; with flood irrigation only wild meadow grasses were grown. It was quite clear that there was sufficient water to irrigate a greater area if it were properly managed. Bean, J. stated that the customs were:

...obviously wasteful, and do not serve the purpose of utilising the waters of the stream to their full extent in the application of water to a

²⁸ *Shodde v Twin Falls Land & Water Co.* 224 US 107 at 124-5. Actually the Court was quoting from the earlier case of *van Camp v Emery* 13 Idaho 202. (1907).

beneficial use, and should only be sanctioned only until a fair opportunity is had to construct ditches or canals and pipelines, or other artificial works, where necessary, to conserve the water and minimize the waste thereof, so as to irrigate as large an area as possible...²⁹

Again, at page 329, the Court stated: “Natural irrigation, in the crude manner indicated apparently applies only a portion of the water to a real beneficial use.” Despite these pronouncements the Court, in a long and detailed judgment acknowledging the customary wasteful and inefficient nature of the system, did not turn its collective mind to the issue and appears to have sanctioned the continuation of these outdated and prodigal practices. An approach of this nature is ambivalent to the resolution of the matter at issue, that is to say the avoidance of waste.

Similarly, in 1934, the same court wrestled with the problems associated with the water rights of the Deschutes River and its tributaries.³⁰ That Court had addressed the issue earlier in 1930, and at that time whilst stating:³¹ “It is a duty of the court in adjudicating water rights to suppress all wasting of water...”,³² but had finally passed the matter back to the state engineer who reported back two years later. It is clear from the report that the area contained some of the worst soils in the state, and that losses of about 45% and up to 65% in some cases were experienced, and that the state engineer thought it possible that losses could be reduced by repairing the delivery systems. The Court however concluded that

²⁹ *In re Water Rights in Silvies River* 237 P. 322 (1925) at 328. It is worth noting that the vast majority of the claimants had appropriations originating in the 1880s.

³⁰ *In re Water Rights of the Deschutes River*, 36 P.2d 585 (Supreme Court Oregon, 1934).

³¹ *In re Water Rights of the Deschutes River*, 286 P 563, at 666 (Supreme Court Oregon, 1930). The same judge, Bean J was prominent in all three of these Oregon cases.

³² Janet Neuman in her seminal paper “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use”. 1998 28 *Envtl. L.* 919 at 934, note 97, suggests although not identified in the judgment the Court is using the word “duty” in two ways: to describe the Court’s duty to enforce the law to suppress waste, and as a term of art in water law, that is an amount of water specified per acre as necessary to grow typical crops.

there was no certainty that the appropriators could do better, and reading between the lines felt that as the methods were customary, it would not go so far as to state the losses were wasteful. Accordingly the question of water consumed but not actually used was left unaddressed, despite both reports containing several references to the imperative to avoid waste. Such pronouncements do appear to be hortatory in nature.³³

9.3 The Question of Waste and the Issue of Local Custom.

The Californian Supreme Court grappled with a long-standing and acrimonious case in 1935, *Tulare Irrigation District v Lindsay-Strathmore Irrigation District*.³⁴ The facts generally were that one district's water use deprived the other.³⁵ One of the arguments put forward was that there was an uneconomic waste of water, of around 40% - 45% caused by poor methods of diversion. The claimant suggested this loss should not be more than 30%. There was a great deal of conflicting evidence, but the Supreme Court found that the appropriators were not scientific about their methods of diversion and there was indeed an uneconomic use of water but as the losses had been carried on for a number of years, the methods employed were customary. A finding of customary use was made in spite of the fact that a great number of appropriators admitted using the water to drown gophers – a use the Court specifically declared not to be beneficial. However:

...an appropriator cannot be compelled to divert water according to the most scientific method known. He is entitled to make a

³³Janet Neuman makes an apt observation at note 101 page 934 of her paper. She states that one of her colleagues (Jim Huffman) claims a proper functioning water market would solve the problem of waste with ease. (Farmers selling saved water). Similarly as a corollary she claims that if farmers were obliged to pay for their water avoidable waste would be minimised.

³⁴ *Tulare Irrigation District v Lindsay-Strathmore Irrigation District* 45 P. 2d 972. (Cal1935). This case had been litigated since 1916.

³⁵ The District appropriated the water and then supplied same to its stockholders, of which there were a large number.

reasonable use of the water according to the general custom of the locality, so long as the custom does not involve unnecessary waste.³⁶

It was accepted by the Court that other schemes in the San Joaquin Valley had conveyance losses averaged well over 40%, and two in particular suffered losses ranging between 55.2% and 57.9%, and (by way of balance) four government schemes built by engineers, not farmers, suffered an average loss of 46.8%. Accordingly the level of waste was found to be customary and therefore acceptable, the drowning of gophers notwithstanding.³⁷

Neuman³⁸ makes mention of the Newlands Project saga in the early 1980s. This was a United States Federal project in Nevada to supply water to 73,000 acres (which only grew alfalfa and other forage crops), and the trial court had awarded a water duty of 3.5 acre-feet for bottomlands, and 4.5 acre-feet for bench lands. “Water duty” is described as “... that [variable] measure of water, which, by careful management and use, without wastage, is reasonably required to be applied to any given tract of land for such period of time as may be adequate to produce therefrom a maximum amount of such crops as ordinarily grown thereon.”³⁹ The United States challenged these awards in the Federal Supreme Court as being too generous, but the Court did not agree. After delivering some platitudes in relation to the legal concept of beneficial use, the Court found as follows:⁴⁰

1. The beneficial use controversy is essentially a question of fact.

³⁶ *Tulare Irrigation District v Lindsay-Strathmore Irrigation District* 45 P. 2d 972 at 996 per the aptly-named Waste CJ.

³⁷ The judgment, on more than one occasion, makes mention of the fact that the appropriator was not one unit but rather a multitude of different appropriators, so it is tempting to suggest the Court was being somewhat pragmatic.

³⁸ See note 34 *supra*.

³⁹ *U.S. v Alpine Land & Reservoir Co.* 697 F.2d 851, at 854 per Kennedy, Circuit Judge. (U.S. Supreme Court, 1983).

⁴⁰ *Ibid*, at 856-857. See also Neuman, *op.cit.*, at 939-940.

2. The water duty awarded by the trial court reflects the amounts customarily provided to farmers since 1926 (when the Project began operating).
3. The evidence tended to show that the farmers' customary water use was reasonable in the circumstances
4. Although the United States' evidence tended to show that historical crops could be obtained with less water, this conclusion was based on possible rather than meticulous field conditions, and had used figures over a 26 year period, rather than the significantly higher yields over the past 10 years.

As a result, the Federal Court upheld the water duties awarded by the Nevada trial court. Neuman is highly critical of this approach. Her view is the decision suggests there has been a strong resistance to any change in the “beneficial use without waste” doctrine and the customary use excuse for continuing waste is a major impediment to change. She questions whether it was wise to divert nearly the entire flow of two rivers to grow stock food in an area that receives five inches of rain a year while destroying two fish species in the process. Her summary of the *Alpine* case is that while irrigation is a beneficial use of water, and while the methods used were customary (over a period of 75 years), the strong suggestion is that the farmers could do better, but as nobody had actually tried, they did not know for sure. Therefore, the Court cannot force change, but until customs change for reasons quite unconnected with legal requirements, the courts will not rule anyone out of line. Once a custom changes, the law may then force the stragglers into line – which results in a “glacial” pace of change due to the use of a customary standard.⁴¹ New Zealand should take a much tougher line and require excessive waste to be discontinued. Such a stance is taken in other areas of natural resources for example air and water pollution.

⁴¹ Janet Neuman at 940.

9.4 The Matter of Conspicuous Waste.

Naturally the courts have found uses to be wasteful in certain cases. The Supreme Court of Idaho considered the issue in 1922.⁴² The appropriator piped a ditch which had traditionally lost over 50% of its water. The appropriator wanted to keep the water saved. The Court found however that the losses were excessive and unreasonable and therefore was waste, to which the appropriator was not entitled. The appropriator was entitled to an allowance for reasonable loss in conducting the water to its place of use, but held the loss of 50% was not reasonable:

The farmers could not reasonably have been expected to build a cement lined ditch at the cost of \$100,000, as suggested by one of the witnesses. But they could have reasonably expected to prevent the water spreading out at several places as shown by the evidence. We are satisfied that the loss was unreasonable, excessive, and against public policy, and that respondents and their predecessors in interest could have forced the individual appellants to take measures to greatly reduce it if the issue had ever been raised between them.⁴³

It is clear from the judgment that the Court was not so much concerned about the level of waste but rather, although a customary practice, it was the nature of that waste that raised objections – water was allowed to simply spill out of the earthen ditches and this could have been rectified without much trouble and expense:

Although the user is not bound to extraordinary diligence in means and methods of use, may proceed according to local custom, he is bound to reasonable care in construction and maintenance of appliances to the end that of the vital fluid others be not unnecessarily deprived...In places their ditch is little more than an injuriously wide and shallow brook...In so far as plaintiffs claim right at all times to the flow of Coal [the waters of the Coal canyon] merely to avoid dry ditches and to secure the benefit of possible cloudbursts in the

⁴² *Basinger v Taylor* 211 P. 1085 (Supreme Court Idaho 1922).

⁴³ *Ibid*, at 1086.

mountains, it is unreasonable use, waste, and damage to other appropriators and without right in law.⁴⁴

The Supreme Court of New Mexico considered the question of waste in *New Mexico v McLean* in 1957.⁴⁵ The waters of an artesian well had been allowed to run uncontrolled for 24 hours a day without an irrigation system, and with no attempt to control waste. The New Mexico Constitution contains a provision that an excessive diversion through waste cannot be regarded as a beneficial use,⁴⁶ and also provided for forfeiture if such non-use continues for a period of four years.⁴⁷ Despite the user providing evidence that he did water native grass and his livestock, the Court held that to find for the user would be tantamount to the Legislature doing “a vain and useless thing which accomplishes no purpose in conserving our natural resources – but on the contrary, will permit the depletion thereof.”⁴⁸ The waste in this case was blatant and when “a landowner exceeds this use [beneficial purposes] he is appropriating to himself that which belongs to others...”⁴⁹ Accordingly the findings of the trial court were reversed by the Supreme Court which found that the defendant was in fact illegally irrigating his lands from the relative artesian well. It was the hopelessly inefficient system and the profligate nature of the waste, not the waste itself, which so offended the Court.

In 1971, the Court of Appeal in California was faced with a similar grossly wasteful case.⁵⁰ In this instance the appropriator diverted the entire flow of a creek for what was described as essentially domestic use. The Court of Appeal stated that the appropriator’s diversion is not measured by the flow originally

⁴⁴ *Dern v Tanner* 60 F.2d 626 at 628 per Bourquin, District Judge (District Court Montana 1932).

⁴⁵ *New Mexico v McLean* 308 P.2d 983 (New Mexico 1957).

⁴⁶ Article 16, §§1, 2 and 3, and §75-11-2 (1953).

⁴⁷ §75-11-8.

⁴⁸ *New Mexico v McLean* 308 P.2d 983 at 988 per Lujan CJ.

⁴⁹ *Ibid*, at 988-989.

⁵⁰ *Erickson v Queen Valley Ranch Co.* 99 Cal. Rept. 446. (California Court of Appeal, 1971).

appropriated, but by the amount of water put to beneficial use, plus an additional flow necessary to deliver it, and to make reasonable use of the water in accordance with the general custom of the district so long as this did not involve unnecessary waste.⁵¹ Unhappily for the appropriator in this case, the transmission losses were over 80% of the water diverted.

By holding that transmission losses amounting to five-sixths of the flow are reasonable and consistent with local custom, the [trial] court effectively placed the seal of judicial approval on what appears to be inefficient and wasteful means of transmission. Such a holding is not in conformity with the demands of article XIV, section 3 [of the State Constitution which declares a general policy to eschew waste, unreasonable use and methods of use of water.]⁵²

The lower Court was obliged to fashion findings and a judgment consistent with the constitutional policy of water conservation. Again, as with *New Mexico v McLean* it was the extraordinary extent of the waste that so outraged the Court.

Another case of extraordinary waste was *Imperial Irrigation District v State Resources Control Board*.⁵³ In 1980, a farmer complained that his land was being threatened by water overflowing from the Salton Sea.⁵⁴ It was found that a large amount of water was, in fact, finding its way into that lake, and the Board required the District to take certain ameliorative action by way of a corrective conservation plan. The District (finally) appealed, including an appeal on jurisdictional questions. There was no dispute over the fact that a large amount of

⁵¹ *Ibid*, at 449 - 450.

⁵² *Ibid*, at 450.

⁵³ *Imperial Irrigation District v State Resources Control Board*, 225 Cal. App. 3d 548 (Court of Appeal, California (1990)).

⁵⁴ The Salton Sea is a shallow saline endorheic lake (that is to say it has no outflow) which is below sea level. It is only five feet deep at its deepest point, is more saline than the Pacific Ocean, and is a closed drainage basin.

water was lost in the system.⁵⁵ The question was whether the losses were reasonable or not. The District contended that the overflow flooding the Salton Sea was actually achieving good, by preventing salinization (given the actual level of salinity this appears a forlorn justification). Thus, if the use were beneficial it must also be reasonable. In addition the District contended that there was no competing demand for appropriators to make use of the overflow and therefore it must be considered “surplus”, rather than “wasted” water. The Court of Appeal could not agree, and because the Board had both a constitutional and statutory duty to prevent waste, affirmed the Board’s decision that the use was unreasonable and wasteful, as a matter of law, despite the accusation that the Board was trespassing on the District’s autonomy.⁵⁶

...the general welfare requires that the water of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented...⁵⁷

The Court also stated⁵⁸ that to “say on the one hand that water conservation is the responsibility of the Board, and then to preclude it from measuring waste in irrigation practices, would be an absurd position.” As to the lack of dispute between users (the complainant Elmore was not a user), the Court held that the constitutional imperative over-rode such matters. Sax and others⁵⁹ make the important point that in some cases of waste, there is no one to complain,

⁵⁵ A total of between 365,000 and 694,000 acre-feet inclusive of canal spill, excessive tail-water, and canal seepage (at 554). This is a gigantic amount, given that the maximum storage by the Colorado-Big Thompson system is 310,000 acre feet, of which about an average of 220,000 acre-feet is diverted annually.

⁵⁶ Professor Neuman (at 942 n158) points out that the appellate court pragmatically reviewed the decision more as a conclusion of law than of fact, despite the US Federal Court treating beneficial use as a matter of fact in the *Alpine* case (*supra* at n 41). This enabled the appellate court take less heed of findings of fact.

⁵⁷ Article X section 2, California Constitution.

⁵⁸ *Imperial Irrigation District v State Resources Control Board*. 225 Cal. App. 3d 548 at 561.

⁵⁹ Joseph L. Sax, Barton H. Thompson, John D. Leshy, and Robert H. Abrams *Legal Control of Water Resources* (West Publishing Co Minnesota, 4th edition 2006) at 178-179.

for example an unreasonable diversion to the detriment of in-stream environmental health, or even the situation where one party demonstrates an intention to use conservation methods then fails to do so. In the end the simple fact was that a huge amount of Colorado River water was ultimately flowing into the Salton Sea, which meant it was lost to other potential users who could otherwise put it to beneficial use, and which water also contributed to the flooding of lands adjoining the lake.

One of the best known cases on waste is the 1993 case of *Department of Ecology v Grimes*,⁶⁰ the facts of which are thankfully relatively straight forward. In 1981, the Department of Ecology of Washington State was minded to review the existing water rights to Marshall Lake and Marshall Creek. Mr and Mrs Grimes held water rights which tracked back to 1906. They requested a continuation thereof at the customary rate of 3 cubic feet per second instantaneous flow, and storage of 1520 acre feet in the Lake reservoir. The referee, however, after some calculations, curtailed the rights to 1.5 cubic feet per second and a storage right of 920 acre feet – a reduction of 50% and 40% respectively. This new amount was calculated on the basis of “reasonable use”, that is the water duty for irrigating alfalfa was calculated at 1.2 cubic feet a second,⁶¹ to which the referee added 25% transportation loss (both amounts being the formula for a proper beneficial use). In relation to the storage, the referee found that the lake also has recreational benefits to others at resort facilities located around the lake. Mr and Mrs Grimes challenged these findings, but in evidence admitted that their system required a flow of 3 cubic feet per second to deliver 1 cubic foot per second to the paddock, and they agreed that their system was highly inefficient, and that it was losing between and half and two-thirds of their water. They

⁶⁰ *Department of Ecology v Grimes* 852 P.2d 1044. (Washington, 1993).

⁶¹ Such a figure had been accepted by the Department of Ecology from Washington State University Research Bulletin “Irrigation Requirements for Washington – Estimates and Methodology.”

responded, however, with a bifurcated argument. First, they argued that it was the custom of the district to irrigate as they had in the past. *Amicus* argued that the “local custom” test has historically been applied to determine whether or not an application is wasteful within the beneficial use definition, and this should be applied to general adjudications. The Court held however:⁶²

While customary irrigation practices common to a locality are a factor for consideration, they do not justify waste of water...Local custom and the relative efficiency of irrigation systems in common use are important elements, but must be considered in connection with other statutorily mandated factors, such as the costs and benefits of improvements to irrigation systems, including the use of public and private funds to facilitate improvements.

Accordingly, the Court approved the referee’s consideration of a certain report prepared by Washington University (referred to in the judgment as the “Irrigation Report”). Thus, while absolute efficiency is not a requirement⁶³ a reasonable efficiency test would only include the referee’s suggestion of a 25% loss for transportation, not the 50% to 66% figure admitted by Mr and Mrs Grimes. In other words, reasonable waste is permitted, but not profligate waste - customary or not - and each case is judged on its own merits. The Grimes’ second argument was that the right could not be “taken”⁶⁴ because the right was a property right, for which compensation ought to be paid.⁶⁵ The Court had no difficulty in dismissing this argument since the beneficial use concept, as developed in the common law, operates as a permissible limitation on water rights. In other words, water that is wasted unconscionably is never part of a legal

⁶² *Department of Ecology v Grimes* 852 P.2d 1044 at 1053 per Smith J.

⁶³ *Ibid*, at 1051.

⁶⁴ c.f. the derogation argument in *Aoraki Water Trust v Meridian Energy Ltd.* [2005] 2 NZLR 268, at 275-6.

⁶⁵ They quoted the US Fifth Amendment which specifically prohibits the taking of property without compensation. In addition, mention was made of the Washington Water Code introduced in 1917, some 11 years after the commencement of the Grimes’ water rights, which specifically protects the integrity of existing rights (at p1048).

appropriation and therefore Mr and Mrs Grimes never had a legitimate right to the wasted water in the first place to have it taken from them. It is reasonable to suggest the case is a matter of balancing the protection of an individual's right on the one hand, and on the other, emerging attitudes towards waste and the best use of public resources within the confines of the Fifth Amendment.

9.5 The Controversial Issue of Water Storage in the American West.

While it is not clear whether New Zealand would engage in a debate about water storage, especially given the current government's affection for new water storage and delivery systems; the matter is somewhat contentious in the American west. The Supreme Court of Idaho determined the issue of water storage in the case of *American Falls Reservoir District No2 v Idaho Dept. of Water Resources*.⁶⁶ The Court in that case found that there are two principles in Idaho water law – “first in time, first in right” coupled with that of the optimum use of the State's water. However these principles were held to be subject to the requirement of reasonable use.⁶⁷ The appellants argued that they should not be required to exhaust their available storage water prior to being able to make a delivery call against junior appropriators. In other words, they claimed to be able to continue storing their saved water while at the same time curtailing junior water use so those seniors could continue diverting and using further water themselves. The question to be asked was how much stored water was a reasonable amount of water to be so stored. The Idaho Conjunctive Management Rules provided that a water right holder was entitled to maintain a reasonable amount of storage.⁶⁸ The question was also to “determine whether the senior has a sufficient water supply to meet

⁶⁶ *American Falls Reservoir District No2 v Idaho Dept. of Water Resources* 154 P.3d 433 (Idaho, 2007).

⁶⁷ *Ibid*, at 438 per Trout J.

⁶⁸ Rule 42.1g.

actual needs rather than permitting water to be wasted through storage and non-use.”⁶⁹

As previously discussed, the Idaho constitution and statutes do not permit waste and require water to be put to beneficial use or be lost. Somewhere between the absolute right to use a decreed water right and an obligation not to waste it and to protect the public’s interest in this valuable commodity, lies an area for the exercise of discretion by the Director.⁷⁰

The Court ultimately felt it was better to have a scientifically calculated conclusion than to precipitately enforce a priority call on the juniors. The Court essentially held that to permit waste by excessive storage without regard for need would itself be unconstitutional.⁷¹ Naturally, it is all a matter of balancing the water right on the one hand and notion of reasonable use on the other. In this regard, *American Falls* is really a resurrection of the early case of *Schodde v Twin Falls Land and Water Company*,⁷² which actually gave rise to the reasonable method of appropriation doctrine.⁷³ In that case, an appropriator (similar to *Erickson*) diverted almost the entire flow of the Snake River (prior to the dam being built) in order to put a very small amount of water to beneficial use. The dam that was subsequently constructed downstream from Schodde’s farm resulted in his being unable to irrigate some 400 acres. Schodde trotted out the traditional

⁶⁹ *American Falls Reservoir District No2 v Idaho Dept. of Water Resources* 154 P.3d 433 at 450 per Trout J. The judge also expressed her opinion that the principle of prior appropriation is easier stated than applied.

⁷⁰ *Ibid*, at 451. The Director’s discretion (Director of the Idaho Department of Water Resources) in such matters was actually the nub of the case that is whether such discretion was constitutional or not. The question really was whether the statutory rules failed to recognise the basic common law principle of the prior appropriation doctrine that senior rights were always superior to those of the junior.

⁷¹ *Ibid*, at 451 per Trout J.

⁷² *Schodde v Twin Falls Land and Water Company* 224 U.S. 107 (U.S Supreme Court, 1912).

⁷³ See A. Dan Tarlock “The Legacy of *Schodde v Twin Falls Land and Water Company*: the Evolving Reasonable Appropriation Principle” 42 *Envtl L* 37 at 37 (2012). Tarlock is arguing that *Schodde* has been under-utilised.

argument about his prior appropriation protection from derogation.⁷⁴ The U.S. Supreme Court however, decided that although Schodde did indeed have a prior right, there was no guarantee his mode of delivery would be protected: “As we have pointed out, the court below did not question the right of the plaintiff to take by proper means ...”⁷⁵

Notably, the new dam irrigated some 300,000 acres and supported some 5,000 people and so Schodde’s wasteful diversion was unconscionable. Anyway to find against the new dam would be unthinkable: “It is clear that in such a case the policy of the state to reserve the waters of the flowing streams for the benefit of the public would be defeated.”⁷⁶

9.6 The Colorado Experience

Colorado was one of the states which embraced the *Schodde* principle as a powerful doctrine to avoid wasteful diversions. For example, in 1961, the Colorado Supreme Court in the leading case of *City of Colorado Springs v Bender*⁷⁷ ruled that before senior appropriators could enjoin juniors to curtail their lawful appropriation, those seniors needed to satisfy the Court that they had created a reasonable and adequate means of diversion, and *Schodde* was quoted as authority:

At his own point of diversion on a natural watercourse, each diverter must establish some reasonable means of effecting his diversion. He is not entitled to command the whole or a substantial flow of the

⁷⁴ By the time the matter finally came to hearing Mr Schodde had died, and his widow was substituted in his stead.

⁷⁵ *Schodde v Twin Falls Land and Water Company* 224 U.S. 107 at 125 per White CJ.

⁷⁶ *Ibid*, at 120.

⁷⁷ *The City of Colorado Springs v Bender* 366 P.2d 552 (Colorado, 1961). This case was cited and approved in the later case *Buffalo Park Development Co v Mountain Mutual Reservoir Co.* 195 P.3d 674 (Colorado, 2008).

stream merely to facilitate his taking a fraction of the whole flow to which he is entitled.⁷⁸

White J did go on to say that the senior appropriators “cannot be required to improve their extraction facilities beyond their economic reach, upon a consideration of all factors involved.”⁷⁹ Once again, it is a question of balance; but there is no question that in Colorado and elsewhere the question of efficiency of diversion will be a factor in enforcing priorities. In terms of a general waste doctrine, the Colorado Supreme Court made its feelings known very early on. In *Thomas v Guiraud*, Mr Guiraud had indeed diverted the entire flow of the stream, more or less as had both *Erickson* and *Shodde*. The Court, however, gave Mr Guiraud its blessing as it was satisfied he was not wasting the water and was putting the entire diversion to a beneficial use, but at the same time the court conceded that Guiraud “could not appropriate more water than was necessary to irrigate his land.”⁸⁰ A few years later, the same Court addressed the issue of the Town of Sterling’s water needs. The town had simply appropriated extra water from various springs. The town understood that domestic supplies had preference over other users. Sterling stated that it simply could not supply water to meet the demand. In the end the Court was unable to decide what the reason for the shortage of supply actually was, whether it was pressure of population or simply a matter of waste, so no order was made – it was first necessary to calculate “how much water of the volume diverted into plaintiff’s ditch is actually consumed by those living under it”.⁸¹ Predicament and necessity were no comfort to the town.

Oddly enough, there is a lack of Colorado cases directly on the issue of waste. However, the Colorado Supreme Court appears to take every opportunity to repeat its message of the essence of the appropriation doctrine and emphasising

⁷⁸ Ibid, at 555 per White J. In fact *Bender* involved a flowing aquifer, not a stream.

⁷⁹ Ibid, at 556.

⁸⁰ *Thomas v Guiraud* 6 Colo. 530 (Colorado 1883) at 532.

⁸¹ *Town of Sterling v Pawnee Ditch Extension Co.* 94 P. 339 (Colorado, 1908) at 342.

the prohibition of waste included by way of *obiter dictum*, and in remarkably consistent terms. *Pulaski Irrigating Ditch Co v City of Trinidad* was a case of a municipality attempting to sell water saved by the introduction of more efficient systems, and Teller J stated: “It is also settled law that an appropriator is limited in his use of water to his actual needs. He must not waste it ...”⁸² In *Weibert v Rothe Bros., Inc.* the Court was to adjudicate on a change of point of diversion for an existing irrigation well. Lohr J states “The owner of a water right has no right as against a junior appropriator to waste water, that is to say divert more than can be used beneficially.”⁸³ Again, in *City of Thornton v Bijou Irr. Co.* the Supreme Court was to tackle a broad spectrum of issues, including water quality, but nothing to do with waste. However, Lohr J repeated word for word (without acknowledgment) the statement of Teller J above.⁸⁴ The same Court, in 2002, adjudicated again on a change in the point of diversion from a well and stated “Diversions are implicitly limited to an amount sufficient for the purpose for which the appropriation was made, without waste or excessive use.”⁸⁵ The Supreme Court in *Ready Mixed Concrete Co. in Adams County v Farmers Reservoir and Irrigation Co.* considered the issue of a change in water use from irrigation to storage to replace water evaporated in gravel pits. Justice Hobbs states:

Colorado water law defines beneficial use to include reasonably efficient means of diversion, conveyance, and use. §37-92-103(4), C.R.S. (2004). Thus water users have a right and responsibility to engage in reasonably efficient water practices. Wasting water by diverting it when not needed for a beneficial use, or running more

⁸² *Pulaski Irrigating Ditch Co v City of Trinidad* 203 P.681 (Colorado 1922) at 682

⁸³ *Weibert v Rothe Bros., Inc.* 618 P.2d 1367 (Colorado, 1980) at 1371.

⁸⁴ *City of Thornton v Bijou Irr. Co.* 926 P.2d 1 (Colorado 1996) at 65.

⁸⁵ *In re Application for Water Rights in Rio Grande County* 53 P.3d 1165 at 1169 per Coats J (Colorado 2002).

water than is reasonably needed for application to beneficial use is “waste”.⁸⁶

The message is routinely hammered home by the judiciary, and the message is that an appropriation of water includes the amount of water to be applied to a beneficial use, together with a reasonable volume of water necessary to carry this amount of water from the point of extraction to the point of use, and each case is judged on its own merits. This is an absolutely fundamental characteristic of American water law. It is a characteristic which could be relevant to New Zealand, and nothing makes this starker than the seemingly more frequent and severe droughts experienced in those parts of the country which have embraced irrigation, namely Hawke’s Bay, Marlborough, and Canterbury. The United States’ experience has a lot to offer New Zealand, including a possible template by which we can address the issue of water waste now before the problem becomes magnified by increased water use bought about by a water permit market system.

Colorado, in common with other western states, in addition to the common law and a broad constitutional requirement,⁸⁷ has also imposed statutory limitations on the waste of water. The Groundwater Management Act,⁸⁸ and the Water Right Determination and Administration Act,⁸⁹ both carefully administer and manage water resources in the State. The Colorado Groundwater Act for example gives the State Engineer power to ensure wells are constructed and maintained as to prevent waste of water,⁹⁰ and the Water Right Determination and Administration Act gives statutory power to the Colorado General Assembly to

⁸⁶ *Ready Mixed Concrete Co. in Adams County v Farmers Reservoir and Irrigation Co* 115 P.3d 638. (Colorado 2005) at 645.

⁸⁷ Colo. Const. Art. XVI Section 6 (2012).

⁸⁸ CRS §37-90-101 to 143.

⁸⁹ CRS §37-92-101 to 602.

⁹⁰ C.R.S. §37-90-110 (1) (b).

impose limitations on the exercise of water rights to prevent waste and to promote beneficial use.⁹¹

Further, as already noted, embedded in the concept of beneficial use is the concept of “water duty” or “duty of water”. In common with other western states, the Colorado courts often utilise this idea as a further mechanism in the water management inventory.

The concept of duty of water emerged to help explain how the amount actually required to irrigate crops should be determined [footnote omitted]. Courts emphasize the importance of taking the steps necessary to allow water to do its “duty” of growing crops.⁹²

Essentially water duty is a duty to use only enough volume of water to mature a particular type of crop.⁹³ References are made to water duty from time to time in the water law reports of all western jurisdictions.⁹⁴ If beneficial use describes what categories water may be used for, water duty defines the amount of water required for that beneficial use. If the notion of waste is more a term of art than law, water duty has a somewhat scientific underpinning. The duty acts as a limit on the volume of water which may be diverted under a water right and is designed to prevent waste.⁹⁵ In 1909, the duty was described as:

In determining the “duty of water”, or quantity essential to the irrigation of any given tract of land, we must take into consideration the character, the climatic conditions, the location and altitude of the

⁹¹ C.R.S. §37-92- 305 (11).

⁹² Lawrence J MacDonnell “*Montana v Wyoming: Sprinklers, Irrigation, Water Use, Efficiency and the Doctrine of Recapture*” 5 Golden Gate Univ. Environmental Law J. 265, at 294 (2011-12).

⁹³ Initially there was some confusion as to the real meaning of the term, and in some cases it used to refer to the actual amount of water applied to the land, whether beneficial or not. See “Duty of Water” *Monthly Weather Review* October 1911 article by AL Fellows (<<http://docs.lib.noaa.gov/rescue/mwr/038/mwr-038-10>>).

⁹⁴ The case of *Department of Ecology v Grimes* 852 P.2d 1044. (Washington 1993) is a good example. (At n 62, above).

⁹⁵ Some New Zealand allocating authorities have embraced this idea for example Marlborough District Council.

lands to be irrigated, the kind of crops, period of time irrigated, and the necessary manner of irrigation, as well as many other contingencies not arising here.⁹⁶

In 1954 the Supreme Court of Colorado provided a very thoughtful and often-quoted definition:

Although the expression ‘Duty of Water’, in the opinions of some present day scholarly hydrologists and technical engineers, may be outmoded, provincial, unscientific, and otherwise objectionable, nevertheless it is a term well understood and accepted by every rancher and farmer who has had practical experience in the artificial irrigation of land for the production of crops. It is that measure of water, which, by careful management and use, without wastage, is reasonably required to be applied to any given tract of land for such period of time as may be adequate to produce therefrom a maximum amount of such crops as are ordinarily grown thereon. It is not a hard and fast unit of measurement, but is variable according to conditions.⁹⁷

This definition is now the standard, having been given a judicial commendation by being quoted with approval by the United States Court of Appeals in *US v Alpine Land & Reservoir Co.*⁹⁸ The notion of “duty” generally denotes either a legal or moral obligation, but viewed through the lens of western American water law “water duty” is seen as both.

9.7 The Promotion of Inefficient Practices

The beneficial use doctrine had its inception during a time of the plunder of natural resources in the American continent, as described in chapter one. These resources were so bounteous that it was considered they could never be

⁹⁶ *Hough v Porter* 98 P.1083 at 1101-2 per King C. (Oregon 1909).

⁹⁷ *Farmers Highline Canal & Reservoir Co v City of Golden* 272 P. 2d 629 at 634 per Clark J (Colorado 1954).

⁹⁸ *US v Alpine Land & Reservoir Co.* 697 F.2d 851 (U.S. C.A. 9th Circuit 1983).

depleted.⁹⁹ In a sense this conception provided the impetus for expansion and prosperity. The problem is that with a burgeoning population such conspicuous consumption will inevitably lead to demands which will exceed supply and will destroy the very resources on which we all rely. It is, essentially, a discussion about sustainability. The principle of waste in water law is specifically designed to address this problem and to reduce the amount of water simply frittered away. Unfortunately, there is some doubt whether the principle of waste as applied by the courts is really achieving the desired effect. Shupe makes the claim (in 1982) that “judicial sanction of inefficient techniques allows billions of gallons of irrigation water to be diverted daily from western streams and aquifers without being used by crops.”¹⁰⁰ Neuman blames this failure on the fact that the concept has had a generous application, has generally been poorly defined, and forfeiture has not been aggressively pursued.¹⁰¹ Doubtless, the quaint idea of customary practices contributes in no small measure to the problem. Whilst chronically wasteful practices have been attacked judicially, perhaps the western water courts when reviewing inefficient water usage might question whether even some customary practices are wasteful and therefore intolerable. The common law is well-equipped for the evolutionary process of modernising out-dated doctrines. In terms of an administrative approach, Neuman expresses concern that in many cases the water duties imposed by agencies have been simply too generous and perpetuate existing wasteful practices rather than insisting on efficiency improvements.¹⁰²

⁹⁹ See generally Charles F Wilkinson *Crossing the Next Meridian* (Island Press, Washington, 1992).

¹⁰⁰ Stephen J Shupe “Waste in Western Water Law: A Blueprint for Change” (1982) 61 Or L Rev 483 at 484.

¹⁰¹ Janet C. Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use” (1998) 28 *Envtl L* 919 at 975.

¹⁰² *Ibid*, at 982.

Another matter of waste is that of water conservation legislation in western America which allows appropriators to trade water they salvage by the introduction of efficient practices. “Waste” is not an easily defined common law term because the notion is applied on a case by case basis, and as noted the courts have given their blessing to various traditionally wasteful practices, unless extraordinarily profligate, and as a result not all customary methods are classified as waste. The judiciary might attack one appropriator with no guarantee that the finding will apply to others, resulting in a lack of uniformity. Thus some form of incentive in the shape of conserved water legislation, if possible, would appear to be desirable. Stephen F. Williams states:

Similar waste would result from unmitigated application of the rule of capture to oil and gas reserves – the other great resource to which it normally applies. All major oil and gas states, however, have adopted conservation legislation aimed at curing the problem. It is thus curious that neither legislative action nor even scholarly discussion has focussed on this defect of prior appropriation law.¹⁰³

Agriculture is the major user of ground and surface water in the United States – an average of 80% over the whole nation, but over 90% in many western states.¹⁰⁴ Moreover, “It is estimated that a seven per cent reduction in the amount of water consumed [beneficially used] by irrigated agriculture could support a doubling of all other uses of water.”¹⁰⁵ Moreover, as Leila C. Behnampour points out some western states have some imminent tough choices to make, given dwindling supplies and climate change effects, even to the point of deciding

¹⁰³ “The Requirement of Beneficial Use as a cause of Waste in Water Resource Development” (1983) 23 Nat Resources J 7 at 7. Shupe acknowledges an exception in a 1971 paper by C. Meyers and R. Posner. Janet Neuman’s seminal paper was published in 1998.

¹⁰⁴ United States Department of Agriculture (Economic Research Service) see <www.ers.usda.gov/topics/farm-practices-mana> (accessed 20 August 2013).

¹⁰⁵ Mark Honhart “Carrots for Conservation: Oregon’s Water Conservation Statute Offers Incentives to Invest in Efficiency” 1994-5 66 U Colo L Rev 827 at 828.

whether certain agricultural pursuits should be continued in some arid areas.¹⁰⁶ As noted the beneficial use doctrine works against any efficiency drive because any saved water must be returned to the state to be appropriated by someone else and there is no real incentive to save.

Some states, however, have introduced conserved water statutes that amend or adapt the beneficial use doctrine to allow the appropriator to improve water efficiency and then retain the conserved water which may be sold, leased or otherwise transferred to another.¹⁰⁷ This model provides incentive and improves the allocative efficiency of the doctrine, as well as creating a positive regime by rewarding efficiency. One of the impediments to the transfer of water rights is the ‘no injury’ rule. Changes to appropriations are not allowed if they impact negatively on other appropriators. The improper interception of return flows on which other water rights depend has been a major concern whenever these proposals have been considered by State legislatures. This would not be an issue in New Zealand, as we do not have junior appropriators in the American understanding of the term because none of our allocating authorities factor return flows into their calculations of water available for allocation.

In western American jurisdictions the rule can add significantly to the cost and delay as the authorities have to evaluate the potential effect of the change on others (some juniors rely on the return flow of water to supply their own appropriations). Some states, including Colorado (which is largely over-appropriated), have rejected the idea of conservation statutes due to the possible effects on junior appropriators. Some others have managed to adopt them (notably California, Montana, Washington and Oregon), all of which are prior

¹⁰⁶ “Reforming a Western Institution: How Expanding the Productivity of Water Rights Could Lessen Our Water Woes” 2011 41 *Envtl L* 201 at 201. A good example is the contentious issue of rice paddies in Texas.

¹⁰⁷ A good example is the California Water Code (section 1011), which was the first of the conserved water statutes.

appropriation states and which clearly means essentially that under traditional rules the appropriator does not have claim to any of the salvaged water. The rights of junior appropriators are carefully protected but the conservation legislation has been successfully woven into these rules. Leila C. Behnampour's article though (above at n.114) points out that of these states, California (the first to adopt the system) and Montana have indeterminate results owing to inadequate record-keeping. Washington has a system where the state funds the improvement in return for the saved water,¹⁰⁸ either in whole or in part, and has this has been relatively successful.¹⁰⁹ It is the state of Oregon which has been most successful. That success has been measured by the number of applications (currently an average of 6 per annum), and an 87% percentage success rate.¹¹⁰ While it is true that none of these systems has been intensely successful, at the very least they provide concrete evidence of a legislative intent to encourage efficiency and water conservation. It is truly astonishing that Colorado has not yet adopted these measures, given it is one of the driest of the western states and 85% of its water is used for irrigation.¹¹¹ Possibly the answer lies in the legal rights of senior water users who may still be in control of the legal processes of the state, and the problem of junior appropriators who rely on return flows of wasted water for their supply. There is, obviously, a problem if these juniors were required to purchase or re-purchase their appropriations.

Of course there are alternatives, for example Colorado's Alternative Water Transfer Methods Grant Program, which assists with the transfer of a portion of a farmer's historical use to municipal use, while enabling the farmer to continue using the remainder. However, what is really required is a more aggressive

¹⁰⁸ The emphasis in Washington State is to focus on in-stream flow protection.

¹⁰⁹ Unless the appropriator receives some reward for the exercise in the form of at least some water there is no incentive to undertake the exercise in the first place.

¹¹⁰ "Reforming a western Institution: How Expanding the Productivity of Water Rights Could Lessen Our Water Woes" 2011. 41 *Envtl. L.* 201, at 219.

¹¹¹ *Ibid.*, at 226.

enforcement of the waste doctrine, and this is a lesson for New Zealand: “Waste enforcement is a huge issue in Western water law and it may require many creative and conventional efforts to begin to change the entrenched low standards of efficiency”.¹¹² Further, there is no reason why enforcing legislation could not be introduced. Such legislation is universal in matters of air and water quality and generally in matters of pollution and it would be difficult to justify an argument against such measures in matters of water quantity. Behnampour’s conclusion is that measures could be introduced – water conservation statutes as well as the adoption of a more aggressive judicial attitude to waste – a combination of carrot and stick.

Shupe made suggestions in 1982 as to how he thought the doctrine of waste could be enhanced.¹¹³ Essentially, he submitted that the stick approach should be employed. His strong submission was that the courts should stop treating inefficient customary systems as part of a water right, for example the waste in *Tulare Irrigation District v Lindsay-Strathmore Irrigation District* 45 P. 2d 972 (at note 36 above). He identifies a 5-step approach.¹¹⁴ The first step is to acknowledge that a water right only give a right to actually use that water for a beneficial use, that is to say the quantity and flow required to achieving that benefit. Secondly, any water appropriated above this is a privilege, not a right. Wasteful practices of the nineteenth century became part of the appropriator’s protectable right due to the limits of technology available at the time. This is not the case today. Thirdly, an appropriator needs to acknowledge that the excess water taken as a privilege is subject to termination and be made available to others who will put it to a beneficial use. Fourthly, forfeiture for non-use and misuse needs to be strengthened. Currently, only the most blatant cases of misuse are actioned. The fifth step is the most crucial: embrace modern efficient technology.

¹¹² Ibid, at 231.

¹¹³ Shupe “Waste in Western Water Law: A Blueprint for Change” (1982) 61 Or L Rev 483.

¹¹⁴ Ibid, at 492.

Shupe emphasises the usufructory nature of a water right, and that if the water is not put to beneficial use, no benefit is derived and no right established – no matter how much water is appropriated. Early appropriators gained water rights by using water to grow crops, and that quantity including an allowable waste constituted a protectable water right. However, with the effluxion of time, technologies have been developed which allow for more efficient processes, and accordingly the old systems become a privilege rather than a right. To be fair, originally the old leaky inefficient systems were the only practical methods available to the initial appropriators. The point Shupe makes however is that these new technologies enable us to recognise what a wasteful appropriation of water actually is, so if understandings of waste change so too can the magnitude of a protectable water right.¹¹⁵ So, the excess water which the old inefficient system consumes is now constituted as waste, and, as such, is liable to forfeiture to the state to be again appropriated by someone else. Neuman agrees:

The courts should scrutinise water rights claims in general adjudications and individual actions and ask hard questions about whether uses are truly beneficial and non-wasteful by [contemporary] standards. Administrative water agencies need to bite the bullet and aggressively enforce against waste and forfeiture, promote conservation, and give clear legal guidance for an updated beneficial use doctrine. Western state legislatures should embrace the responsibility to insure water supplies for their future citizens, and give courts and agencies a mandate and funding to seek efficiency improvements.¹¹⁶

The real challenge, of course, is to work out how much water is actually wasted and therefore forfeited, and this is a mandate for water and soil engineers.

¹¹⁵ Ibid, at 496.

¹¹⁶ Janet C. Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use” (1998) 28 *Envtl L* 919 at 995.

The conserved water statutes allow the appropriator to sell, lease or otherwise dispose of the water that he or she has managed to save. Water markets can assist with the re-distribution of that saved water. The lesson from the western American experience of the waste doctrine for New Zealand – and indeed for water lawyers internationally – however is that the doctrine in America is not really adequately utilised, and an improved two-pronged contemporary approach would be effective in improving the efficiency of water use. Wherever possible, conservation statutes which enable appropriators to review and improve their water practices and sell or otherwise alienate the water thereby saved (the carrot), should be coupled to a more stringent enforcement procedure to encourage efficiency especially by tightening the rules of customary practices, with both harnessed to an effective doctrine of forfeiture by which the rights of those who do not comply are diminished (the stick). Forfeiture is another aspect of the beneficial use doctrine and accordingly a discussion of the forfeiture doctrine and process is required in the next chapter.

10 Chapter 10.

10.1 Beneficial Use and the Doctrine of Forfeiture.

10.1.1 Introduction

In summary, then, the beneficial use doctrine generally requires that water is used productively without unnecessary waste, with the emphasis on user. For the beneficial use doctrine to have any teeth, it needs to have enforcement provisions to ensure lawful appropriations are used according to the terms of the principles under which they were issued. The Americans take this extremely seriously. Thus, if a water right is not being used, or is found to be speculative or unduly wasteful, the right may be subject in whole or in part to forfeiture. New Zealand has a somewhat similar provision for non-use in the Resource Management Act 1991.¹

In American water law forfeiture is both a strategic but at the same time controversial doctrine. It is strategic in the sense that it is intended as an efficiency tool for the use and management of a scarce but essential core natural resource, and controversial in that it is seen by some to be a somewhat draconian measure that is to say the stripping away of a property right. In the event that any appropriator is not actually using the water right for the purpose for which it was established, the state forms the view that this right should therefore be taken away to be made available to someone else who will. The western states justify this position on the grounds that first, as stated, it is essential that water resources be used wisely due to their importance and scarcity; but, secondly, those states also assume the duty to husband water resources on behalf of the general public, not just the appropriator. Taking away a water right will always be regarded as controversial, especially by those adversely affected. Water rights are a clearly-

¹ Sections 125 and 126.

defined property right in the United States: “After the initial appropriation, however, the water right, like a mining claim, could be leased or sold. It was property – from the very moment it was first put to use.”² As such these rights have a definite value which can in some cases be very high. Consequently the effects of forfeiture may be quite dramatic. Efforts to strip these rights from an owner must be taken with great care, and it is entirely appropriate to study the doctrine in some detail.

The doctrine has its basis in both Lockean social contract theory where the greatest purpose of society is to protect the individual’s property rights,³ and Blackstone’s view that, although property rights are vested in the individual by immutable laws of nature, these rights may be necessarily curtailed by the requirements of living in a civilised society.⁴ Of course water is not the only natural resource which may be subject to forfeiture: for example, under the (American) Federal Land Policy and Management Act 1976, a mining claimant is required to file an affidavit of annual assessment of work before 31 December in each year (that is no later than the 30 December). Failure to do so is deemed by the Act as “conclusively to constitute an abandonment of the mining claim”.⁵ In *United States v Locke*,⁶ Locke filed his affidavit on the 31st December 1980, one day late. His mining claims were valued in the millions of dollars. The U.S. Supreme Court was implacable: Congress intended to void claims which were not filed prior to 31 December and, therefore, evidence of lack of intent to abandon was irrelevant.⁷ The Supreme Court took a very strict approach to the matter. In the specific case of water, the earlier chapter on waste demonstrated that the

² Charles F. Wilkinson *Crossing the Next Meridian* (Island Press Washington 1992) at 232-233.

³ “The Second Treatise of Civil Government” (1690) Chapter 9 paragraph 124.

⁴ See Robert Burns “Blackstone’s Absolute Rights” (1985-1986) 54 U. Cin L Rev 67 at 73.

⁵ 43 USCA §1744 (a) (1) (c).

⁶ *United States v Locke* 105 S. Ct. 1785 (US 1986).

⁷ *Ibid* at 1795-6. The word “abandonment” is a misnomer because if intent is irrelevant, then what the statute is really referring to is forfeiture. (See post).

doctrine is fundamentally a matter of an inappropriate level of water consumption to achieve certain results and the wasted water may be forfeited. Forfeiture, on the other hand, is more a question of non-consumption as in the case of speculation. Both may result in at least some loss of a water right:

Some courts combine waste and forfeiture, saying that a wasteful use produces a forfeiture just as nonuse does...However I maintain a distinction between the two, because a wasteful user is using [consuming] water, while a forfeiter is not.⁸

The whole idea underlying the doctrines of waste and forfeiture (and its close relation abandonment) is that the water is returned by an agreed legal process to the source from whence it came to then be appropriated by others who will put it to beneficial use. Those ‘others’ under the American system of appropriation are not necessarily potential new users, but more likely to be junior appropriators who under the procedure would become more senior, and who would then have a greater chance of having their water requirements fulfilled.

...this excess water belongs to the public under Colorado water law, subject to appropriation and use in order of decreed priority; any purported conveyance of water the appropriator does not “need” or has not put to a beneficial use flags as an illegal enlargement.⁹

Forfeiture and abandonment in western water law are quite different legally, and it is important to understand the distinction between the two. The old western water law maxim of “use it or lose it” expresses the common law fundamental that unless an appropriator makes use of the water right, it will be deemed to have been abandoned – if the essential element of intention to do so

⁸ Janet C. Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Law” (1998) 28 *Envtl L* 919 at 928 (at note 53). Perhaps there is a distinction between a substantive rule about the duties of a right-holder and a procedural rule about the consequences of a breach.

⁹ *Burlington Ditch Reservoir & Land Co. v Metro Wastewater Reclamation Dist.* 256 P.3d. 645 at 665 per Hobbs J. (Colo. 2011).

can be demonstrated. If a *prima facie* case of abandonment can be shown by those alleging it, the onus then falls on the appropriator to rebut that evidence by demonstrating there was no such intention to abandon the right. There is an understandable requirement that “the abandonment of a real property right cannot be declared except upon clear and convincing evidence.”¹⁰ Such a system is clearly a messy, time-consuming, and expensive exercise; persuasive proof of an intention to abandon can be very difficult to establish. If a case is made, the right is lost forthwith no matter how long the abandonment has been occurring. However, whilst abandonment is a common law notion, forfeiture is a statutory construction and generally provides that water rights are lost if they are unused for a set period of time, usually five years. Crucially, intent is immaterial:

Abandonment is a common law doctrine involving the occurrence of (1) an intent to abandon and (2) an actual relinquishment or surrender of the water right. Forfeiture, on the other hand, is predicated upon the statutory declaration that all rights to use water are lost where the appropriator fails to make beneficial use of the water for a continuous five-year period.¹¹

Forfeiture statutes have been favoured by most western states,¹² because, as administrative processes, they are much simpler and cheaper to apply than abandonment. It has to be recognised however that in the first instance administrative decision-making of this sort is a quasi-judicial process predicated on an analytical and judicial standard adopted from processes and concepts which have become accepted within an historical pattern (that is precedents), demonstrating traditional attitudes and established judicial principles. In American water law these decisions are not made by a low-ranking office-worker; they are made by the State Engineer or equivalent senior official. The

¹⁰ *Carrington v Crandall* 147 P.2d 1009 at 1011 per Ailshie J (Idaho 1944).

¹¹ *Sears v Berryman* 623 P.2d 455 at 459 per Shepard J. (Idaho 1981). His Honour repeated his statement a year later in *Jenkins v State Department of Water Resources* 647 P.2d 1256 at 1260 (Idaho 1982).

¹² Colorado and Montana are notable by excluding forfeiture from their statutory toolboxes.

whole purpose of administrative processes is to try to avoid the time and cost of litigation which can either significantly hinder or assist each party depending on their financial circumstances.

Abandonment, then, is a voluntary relinquishment of a water right, and the emphasis is on “voluntary”, if it can be proved; whereas forfeiture is an involuntary or forced loss of that right. Nearly all the seventeen western states have implemented a statutory forfeit provision – designed to be “quick, clean, and predictable.”

Indeed, the difficulty in proving the subjective intent element of abandonment led to the adoption of forfeiture periods as a more effective means of enforcing loss of rights by non-use. Thus, legislatures considered the clear, uniform, statutory forfeiture periods to be an improvement on the doctrine of abandonment.¹³

Interestingly enough, the early Californian case of *Utt v Frey*¹⁴ - a case directly on the question of abandonment – does not even discuss the level of evidence needed, nor does the well-known case of *Smith v Hawkins* of the same year which established the doctrine.¹⁵ However, significant cases since *Carrington v Crandall*¹⁶ have reinforced the need for “substantial evidence”, or “clear and convincing evidence”, as needed to effect a legal abandonment.¹⁷

¹³ Ibid, at 22.

¹⁴ *Utt v Frey* 39 P. 807 (Cal. 1895).

¹⁵ *Smith v Hawkins* 42 P.453 (Cal. 1895).

¹⁶ *Carrington v Crandall* 147 P.2d 1009 (Idaho 1944). See note 10 *supra*. See also Tarlock, Corbridge, Getches, and Benson “Water Resources and Management” (Foundation Press, New York, 2009) at 259-265.

¹⁷ For example *Gilbert v Smith* 552 P.2d 1220 (Idaho 1976); *Jenkins v Idaho Dept. Water Resources* 647 P.2d 1256 (Idaho 1982); *Sagewillow Inc. v Idaho Dept. Water Resources* 70 P.3d 669 (Idaho 2003).

10.1.2 Forfeiture – A Statutory Construct.

It was Elwood Mead who exhorted state legislatures to codify water laws, including provisions for termination of rights as an anti-speculation measure. Anderson and Kraft explain that his argument was that first, individual water rights furnished individual farmers with independence, and in the second place speculators and monopolies would endanger such a system and so should be strenuously avoided. “In Mead’s West, there would be no wealthy speculators developing water works in anticipation of selling water to settlers.”¹⁸ Such speculative claimants would have their appropriations taken from them to be made available to other genuine utilisations.

Each state has its own manner of managing of dealing with forfeiture. The taking of someone’s property by the State is not a process to be taken lightly and it is appropriate to take a careful look at the approaches utilised by a few western states to illustrate the broad method undertaken by these legislatures. Two states – Arizona and Nevada – have specifically applied statutory forfeiture in such a way as to exempt rights perfected prior to the passing of their relative water codes. This means these rights may only (in theory) be lost by abandonment. The suggestion was that the state could not, and should not, modify rights which had already been vested by the further addition of onerous statutory amendments to the established and accepted common law rules of abandonment. Arizona has put it thus:

Except as otherwise provided in this title or in title 48,¹⁹ when the owner of a right to the use of water ceases or fails to use the water appropriated for five successive years, the right to the use shall cease, and the water shall revert to the public and shall again be subject to

¹⁸ Peter R. Anderson and Aaron J. Kraft “Why Does Idaho’s Water Law regime Provide for Forfeiture of Water Rights?” (2011-2012) 48 Idaho L Rev 419 at 424.

¹⁹ Section 48 is an extremely lengthy provision covering a multitude of matters, including remedies for the non-payment of taxes.

appropriation. This subsection or any other statutory forfeiture from nonuse shall not apply to a water right initiated before June 12 1919.
20

Arizona has thus explicitly exempted forfeiture of rights prior to 1919. The state's first comprehensive water code was enacted on the 12 June that year and specifically exempted pre-existing rights. The original statutory provision read:²¹ "Nothing in this act contained, shall impair the vested rights of any person, association or corporation to the use of water". For the avoidance of doubt, §45-141(B) states that no forfeiture or abandonment in whole or in part shall ensue in the event that water is used on less than all the land to which a right was appurtenant. In the interests of equity the legislature accepts a variety of excuses for non-use²² from drought or other unavailability of water, to serving in the armed forces, to allowances accorded to municipalities in the event of a change of use from irrigation. This may seem to be relatively straight forward, but the Arizona Supreme Court has held that a large portion of the water statute is unconstitutional. In *San Carlos Apache Tribe v Superior Court ex rel. County of Maricopa*²³ Feldman J stated:

On remand, the trial judge held most of the statutory changes unconstitutional because they applied retroactively to affect vested property rights, thus violating the due process clause of article II, section 4 of the Arizona Constitution, or because they violated the separation of powers clause of article III of the Arizona Constitution. For most part we agree and affirm.²⁴

²⁰ Arizona Revised Statutes §45-141-(C). Pursuant to §45-141-(A) surface water and groundwater are essentially treated the same.

²¹ 1919 Ariz. Sess. Laws ch.164 §56.

²² Ariz. Rev. Stat. §45-189 (E). The provisions for indulgences are very broad: see A.R.S. §45-189 E (13) ("Any other reason that a court of competent jurisdiction deems would warrant nonuse.").

²³ 972 P.2d 179 (Ariz.1999).

²⁴ *Ibid*, at 202 per Feldman J.

The Court's reasoning was that the 1995 amendments to the water laws had the legal effect of reducing the opportunities to challenge appropriative claims, and thus claimants of reserved rights – the Indian Tribes as well as the United States – were at a relative disadvantage. As to the matter of forfeiture, the provisions of §45-141(B) (above) were held to be unconstitutional because they created a new protection against a finding of abandonment or forfeiture that did not previously exist.²⁵ Failure to use appropriated water on all appropriated land must be determined in accordance with the law as it existed at the time of the event, not on the basis of subsequently enacted legislation.²⁶ In relation to §45-141-(C) (which protected rights prior to 12th June 1919), there was an inconsistency with another provision in the same Act (probably accidental) which states that the Act applies to all rights to appropriate water initiated or perfected on or before the effective date of the Act and to any rights subsequently initiated or perfected (that is to say all water rights).²⁷ The Court was persuaded that the legislation suggested a general intent that the statute's various provisions be applied retroactively and thus the Court struck §45-141-(C) down as being unconstitutional simply on the basis that if applied retrospectively it creates a new and unconstitutional protection for pre 1919 water rights that may have been forfeited and then vested in others under the existing law prior to 1995. The problem was that if a certain pre-code water right were to be eradicated for non-use, and other claimants had acquired valid water rights, then to restore those lost rights by statute would unfairly (and in the view of the Court unlawfully) take these rights from other (junior) appropriators. Again, forfeiture and the resultant

²⁵ This defence according to Feldman J did not exist in the former version of the statutory provision (at p206).

²⁶ Ibid, at 206 per Feldman J.

²⁷ Quoted in the judgment as s24 of Chapter 9 -421R –S Ver. of HB 2276.

changes in priority must be determined under the law as it existed at the time of the event alleged to have caused the forfeiture.²⁸

Oddly enough, despite this judgment of the Arizona Supreme Court being handed down in 1999, nothing has happened to rectify or clarify matters and the relative provisions are still “on the books”, and the interpretation is possibly therefore still an open question. *San Carlos* was viewed favourably in the Washington case of *Lummi Indian Nation v State*²⁹ but was judiciously ignored by the Arizona Appeals Division in the 2005 case of *Phelps Dodge Corp. v Arizona Department of Water Resources*³⁰ This case was not on point, but provided a general statement on §45-141-(C), and the question of forfeiture was included in the judgment with absolutely no mention of *San Carlos* nor the acceptability or otherwise of the section.

Nevada’s laws provide, since 1999, for forfeiture of groundwater only.³¹ Forfeiture does not apply to surface water which may only be lost through the principle of abandonment. The section, which rambles somewhat, provides in part:

534.090

1. Except as otherwise provided in this section, failure for 5 successive years after April 15, 1967, on the part of any holder of any right, whether it is an adjudicated right, an unadjudicated right or a right for which a certificate has been issued pursuant to NRS 533.425, and further whether the right is initiated after or before March 25, 1939, to use beneficially all or any part of the underground water for the purpose for which the right is acquired or claimed, works a

²⁸ Ibid at 206 per Feldman J.

²⁹ *Lummi Indian Nation v State* 241 P.3d 1220 (Wn. 2010).

³⁰ *Phelps Dodge Corp. v Arizona Dep’t of Water Res.* 118 P.3d 1110. (Ariz. App Div 2005).

³¹ These rights may be lost through abandonment: N.R.S. §534.090 (4).

forfeiture of both undetermined and determined rights to the use of that water to the extent of the nonuse.³²

§533.060(2) states that “Rights to the use of surface water shall not be deemed to be lost or otherwise forfeited for the failure to use the water therefrom for a beneficial purpose.” Nevada substantially reviewed its water laws in 1999, and the above passage appears to remove the forfeiture period from the surface water statutes. §534.090 (2) goes on to provide some statutory relief to enable the State Engineer to extend in certain circumstances the time necessary to “work a forfeiture” to enable appropriators to get their house in order, as it were.

The Nevada Supreme Court has been quite strict on forfeitures. In *Town of Eureka v Office of State Engineer of Nevada*,³³ the town found itself in need of extra water rights to satisfy its municipal obligations so purchased 640 acre-feet of rights and commenced to use its entitlements. The State Engineer, however, later found that there was a period of non-use of 440 acre-feet of this water during the 5 years from 1983 to 1988, and, as a consequence, the town found itself with an entitlement of only 200 acre-feet. On judicial review, the District Court agreed; but the Supreme Court held that Eureka had “cured” the forfeiture by resuming substantial use. In essence, if unused water rights are brought back into use prior to a formal declaration of forfeiture, such action constitutes a cure to the forfeiture. The Court pointed out that both Idaho and Wyoming (which have statutes similar to Nevada) have held this to be so,³⁴ provided no claim or proceedings of forfeiture have begun. Moreover, “[b]ecause the law disfavors a forfeiture, the State bears the burden of proving, by clear and convincing

³² Nevada Revised Statutes 534.090. §533.425 provides that the State Engineer (who is the head of the Nevada Division of Water Resources) must issue a certificate of appropriation once he has satisfactory proof of the appropriation.

³³ *Town of Eureka v Office of State Engineer of Nevada* 826 P.2d 948 (Nev.1992).

³⁴ *Ibid*, at 952.

evidence, a statutory period of non-use.”³⁵ The non-use cannot be absolved by the filing of a mere application to change the diversion point, however, because no beneficial use of the water is being made in the interim.³⁶

It is interesting to debate whether the Nevada Supreme Court would hold the forfeiture statute to be constitutional. The Bench in the *Eureka* case certainly thought it was and held it to be so.³⁷ Nevada does not have the statutory confusion that Arizona has, so the decision is relatively straight forward. It is only “relatively” straight forward because the case of *In re Manse Spring*³⁸ had determined the meaning of the state’s forfeiture statute of the time. The relevant statutory provision stated that:

...in case the owner or owners of any such ditch, canal or reservoir shall fail to use the water therefrom for beneficial purposes for which right exists during any five successive years, the right to use shall be considered abandoned, and they shall forfeit all water rights, easements and privileges appurtenant thereto...³⁹

The legislation also provides however:

Nothing in this act contained shall impair the vested right of any person to the use of water, nor shall the right of any person to take and use water be impaired or affected by any of the provisions of this act where appropriations have been initiated in accordance with law prior to the approval of this act.⁴⁰

³⁵ Ibid, at 952.

³⁶ See *Preffered Equities Corp. v State Engineer, State of Nevada* 75 P.3d 380 (Nev. 2003).

³⁷ *Town of Eureka v Office of State Engr. Of Nevada* 826 P.2d 948 at 949 (Nev.1992).

³⁸ *In re Manse Spring* 108 P.2d 311 (Nev. 08).

³⁹ 1913 Nevada Statutes 140, §8 amended1940). See also *Andersen Family Associates v Hugh Ricci, P.E.* 179 P.3d 1201, at 1206 (Nev. 20 by 1917 Nevada Statutes 190 §1.

⁴⁰ 1913 Nevada Statutes 84 Comp. Laws §7970 (referred to in the judgment at 314).

The real question before the Court in *Manse Spring* was the cross-pollination in the wording of the statute of abandonment and forfeiture principles, which are quite distinct from each other. One party argued that abandonment rules should apply; the other for forfeiture rules. The Court found that the abandonment rules applied and further, as the initial trial judge found there was substantial evidence to suggest there was no intention to abandon, his findings were affirmed. The *Manse* legislation in 1913 specifically excluded the impairment of pre-1913 vested water rights, but the *Nevada* legislative provision lacks a similar provision. There was no question therefore of retroactivity in the legislation, but, if there were, it would not have met with approval by the Court:

The trial court held that to apply the terms of section 8 would have the effect of impairing rights to the waters of Manse Spring which had vested prior to the enactment of the 1913 statute, and therefore said section should be excluded; that rights acquired before 1913 could only be lost in accordance with the law in existence at the time of the 1913 statute, namely intentional abandonment. With this conclusion we agree.⁴¹

The Nevada Supreme Court's approach to *Manse Spring* was discussed and approved at federal level in *U.S. v Alpine Land & Reservoir Co.*⁴²

California, with its hybrid water law system, recognises both prior appropriation and riparianism; but riparian rights are, of course, not subject to forfeiture. These rights are neither created by use nor lost by non-use, but are rather acquired by owning riparian land.⁴³ The water law system is quite complex – the state maintains separate ordinances for surface water (which is subject to forfeiture) and groundwater which is further subdivided into three differing

⁴¹ *In re Manse Spring* 108 P.2d 311 at 316 per Orr J. (Nev. 1940). The Court went on to point out that this is not to mean that an acquisition prior to 1913 would assure the appropriator the right to the water indefinitely, without regard to placing it to beneficial use (at 316).

⁴² *U.S. v Alpine Land & Reservoir Co* 983 F.2d 1487. (US 9th Cir. 1992).

⁴³ See generally *Lux v Haggin* 10 P.674 (Cal. 1886); California Water Code §100-101; California Constitution Art. X §2.

groups, two of which (two types of “non-percolating groundwater”) are subject to forfeiture, but the other (“percolating groundwater”) is not. California embraced its comprehensive water code in 1914 and the new code had the effect of tidying up earlier statutes.⁴⁴ The idea of forfeiture, however, had been in the sights of Californian jurisprudence for some years. In the early case *Smith v Hawkins*,⁴⁵ the Supreme Court discussed the Californian Civil Code of the day, section 1411 of which stated that the appropriation of water must be for some useful or beneficial purpose, and when the appropriator or his successor in interest ceases to use it for such purpose, the right ceases.⁴⁶ As odd as it may seem, the Code did not stipulate a time by which such a loss would be suffered so the Supreme Court, in an example of judicial pragmatism, drew on other analogous areas of Californian law:

In this state five years is the period fixed by law for the ripening of an adverse possession into a prescriptive title. Five years is also the period declared by law after which a prescriptive right depending on enjoyment is lost for nonuser; and, for analogous reasons, we consider it to be a just and proper measure of time for the forfeiture of an appropriator’s rights for a failure to use the water for a beneficial purpose.⁴⁷

At least the approach taken by the Court was practical. Importantly, though the Court distinguished between forfeiture and abandonment; the latter was held not to apply.⁴⁸ This approach was approved and applied by the same Court in the major case of *Lindblom v Round Valley Water Co*,⁴⁹ and confirmed

⁴⁴ Pre-1914 rights are common law appropriative ones; post-1914 rights are administratively issued by the State Water Resources Control Board (formerly the California Water Commission) under a comprehensive permit system. In general terms, the distinction is very much like our old Deeds system and current Torrens system of land transactions.

⁴⁵ *Smith v Hawkins* 42 P.453 (Cal.1895).

⁴⁶ See *Smith v Hawkins* 42 P.453 at 454.

⁴⁷ *Ibid*, at 454.

⁴⁸ In fact if abandonment had been upheld, the Court would not have had to decide on a time period because the abandonment would have taken effect straight away.

⁴⁹ *Lindblom v Round Valley Water Co*. 173 P.994 (Cal.1918).

that non-use for five consecutive years or more results in forfeiture, regardless of intent.⁵⁰ The relevant current legislative provision for forfeiture is contained in the California Water Code, the general provisions of §1240: “The appropriation must be for some useful or beneficial purpose, and when the appropriator or his successor in interest ceases to use it for such a purpose the right ceases.” §1241 is more specific:

1241. If the person entitled to the use of water fails to use beneficially all or any part of the water claimed by him or her, for which a right of use has vested, for the purpose for which it was appropriated or adjudicated, for a period of five years, that unused water may revert to the public and shall, if reverted, be regarded as unappropriated public water...

Relief is granted in certain circumstances, for example the forfeiture period in certain cases may be extended by an additional period of not more than 10 years in the case of water appropriated for irrigation but not used by reason of compliance with crop control or soil conservation contracts with the Federal Government, or, in other cases of hardship, decided on a case by case basis.⁵¹ As in Arizona, the standard of proof in successful forfeiture cases is quite high. In *Barnes v Hussa*,⁵² the California Court of Appeal did not make a finding of partial forfeiture, despite the fact that the pipeline utilised by the Barneses was capable of transporting only about two-thirds of their entitlement, on the grounds that the Hussas did not offer any evidence that for the relevant five years the full water entitlement was, in fact, physically available for diversion. It should be noted that California does have a Conserved Water Program, which is contained in §1011 of the Water Code and which states, in essence, that there can be no forfeiture, upon the lapse of the forfeiture period, of appropriative rights to water so conserved thus making the conserved water available for sale or lease by the appropriator.

⁵⁰ Ibid, at 996 per Sloss J.

⁵¹ California Water Code §1241.6.

⁵² *Barnes v Hussa* 136 Cal App 4th 1358 (Cal. Ct of App 2006).

Idaho also retains a five year forfeiture period, and the current statute provides as follows:

All rights to the use of water acquired under this chapter or otherwise shall be lost and forfeited by a failure for a term of five (5) years to apply it to the beneficial use for which it was appropriated.⁵³

The Code lists eleven statutory separate defences in the nature of a relief against forfeiture,⁵⁴ including the usual tolerance given to municipalities, and conservation practices. In Idaho, the statutory exceptions are not exhaustive, and, as usual in these circumstances, the common law steps up when necessary: an appropriator is forgiven if the wrongful acts of others prevent the use of water.

The only reason the water owned by the plaintiff was not applied to a beneficial use for the five-year period relied on by the defendant to establish its asserted rights was that the defendant wrongfully deprived plaintiff of its use...⁵⁵

Clearly, the passage suggests circumstances over which the appropriator has little or no control. It is also quite clear that the appropriator will receive legal support: “Forfeiture or abandonment of water rights is not favoured and is not to be presumed, and all intendments are to be indulged in against a forfeiture.”⁵⁶ Such generosity of expression leaves little room for doubt.

This is in stark contrast to section 237: “The provisions relating to the loss of water rights by non-use and abandonment as set forth in section 42.222 shall apply to groundwater.”⁵⁷ The problem is that the word “abandonment” is not used at all in section 42.222, and given the basic difference between forfeiture for

⁵³ Idaho Code §42.222(2).

⁵⁴ §42.223.

⁵⁵ *Hodges v Trail Creek Irrigation Co.* 297 P.2d 524 (Idaho 1956) at 527 per Keeton J.

⁵⁶ *Ibid*, at 527 per Keeton J.

⁵⁷ Idaho Code §42.237.

non-use and abandonment such sloppy legislative drafting is quite inexcusable, especially given the historical confusion experienced in Idaho in the past (or perhaps it might explain the confusion):

The Idaho Code's language governing appropriation, including the forfeiture statute itself, came from the Wyoming Code. But the Code utilized the process of adjudicating water rights from the Colorado's system...Wyoming gave jurisdiction over disputes to a board of control (an administrative agency) while Colorado gave original jurisdiction over disputes to the courts. Further complicating matters, Idaho's 1903 act did not change the beneficial use statute Idaho had previously copied from California. So, in 1903, Idaho effectively meshed the beneficial use requirement, as enacted in California, with portions of two comprehensive Water Codes adopted in Colorado and Wyoming. Idaho's new Water Code thus contained a diverse and mismatched pedigree: an explicit forfeiture statute, like Wyoming's; an adjudication system like Colorado's, which did not recognize forfeiture; and, California's beneficial use statute, which the California Supreme Court interpreted as an independent basis for forfeiture.⁵⁸

The Idaho Supreme Court finally settled the issue in *Carrington v Crandell*:

What has just been said relates to forfeiture (abandonment as it is designated by the statute, sec 41-216 I.C.A.). While the statute designates it as "abandonment", it is in fact a statutory forfeiture.⁵⁹

Actually, Idaho's forfeiture statute is somewhat loosely-worded. The relative portion of §42.222 (2) commences "All rights to the use of water...shall be lost and forfeited... (emphasis added)" Argument was presented to the Supreme Court that this was simply all or nothing, leaving no scope for a partial

⁵⁸ Peter R. Anderson & Aaron J. Kraft "Why Does Idaho's Water Law Regime Provide for Forfeiture of Water Rights" 48 (2012) Idaho L. Rev. 419, at 426 (footnotes omitted). See also *Smith v Hawkins* 42 P. 453 (Cal 1895).

⁵⁹ *Carrington v Crandell* 147 P.2d 1009 (Idaho 1944) at 1011 per Ailshie J.

forfeiture. The Idaho Supreme Court had little difficulty in dismissing the argument:

If this court were to find that I.C. §42.222(2) does not authorize partial forfeiture of a water right, once the amount element of a water right is decreed, a water user could hold the water against all subsequent appropriators by using only a part of the water.⁶⁰

What the Court is stating is simply that, unless the notion of a partial forfeiture is accepted, the doctrine of forfeiture would be substantially devalued. In any event, in a spirit of consistency, the Idaho Supreme Court has agreed with the approach taken by the Idaho Department of Water Resources, which was always to accept partial forfeitures.⁶¹

Oregon's Revised Statutes tread a familiar path:⁶²

...Whenever the owner of a perfected and developed water right ceases or fails to use all or any part of the water appropriated for a period of five successive years, the failure to use shall establish a rebuttable presumption of forfeiture of all or part of a water right.⁶³

The statute goes on to provide that the appropriator has the burden of rebutting the presumption (if the appropriator chooses to do so, of course) by only showing one or more of the statutory excuses listed in §540.610 (2).⁶⁴ This list includes the usual indulgence to municipalities,⁶⁵ and addresses the question of

⁶⁰ *State v Hagerman Water Right Owners, Inc.* 947 P.2d 400, at 407-408, per Schroeder, J (Idaho, 1997).

⁶¹ One further interpretation, not argued, would be that all rights are forfeited in the event that not all entitlements are put to a beneficial use. This, of course, would be inherently contrary to the rules of natural justice and water which is being correctly put to a beneficial use would be lost too.

⁶² O.R.S. Vol.13 §540.610.

⁶³ Forfeited rights revert to the public to again be subject to appropriation in the usual manner: §540.610 (5).

⁶⁴ There are 14 altogether.

⁶⁵ These indulgences are not unlimited: there are certain limitations on municipalities' rights. See *Waterwatch of Oregon v Water Resources Com'n* 88 P.3d. 327. (Or Ct of App 2004).

climate change. Interestingly, it provides that the appropriator may rebut the presumption of forfeiture by showing:⁶⁶

The end of the alleged period of nonuse occurred more than 15 years before the date upon which evidence of nonuse was submitted to the commission [the Oregon Water Resources Commission] or the commission instituted cancellation proceedings under ORS 540.631 (Cancellation of forfeited water right) whichever occurs first.⁶⁷

It would appear that proceedings are considered initiated when evidence of non-use is submitted to the Commission. Further, an appropriator may only restore a water right if forfeiture proceedings do not begin within 15 years of the resumption of use. Of particular note is the fact that forfeiture is not automatic (that is it is not an administrative action). §540.631 provides that the Commission shall initiate proceedings for cancellation, and give the appropriator 60 days' notice of the date of hearing in order that the appropriator may protest the proposed cancellation, by showing any of the excuses listed in §540.610 (2). Also, Oregon provides that if an appropriator uses less water to accomplish the beneficial use allowed by the right, the right is not subject to forfeiture as long as the appropriator has the capacity to use the entire rate and is otherwise ready willing and able to make full use of the right.⁶⁸ Thus, this provision slots neatly into Oregon's Conserved Water Program allowing the appropriator to sell or lease the water saved.

Oregon does not balk at the thought of applying statutory forfeiture to pre-code water rights. In *Crandall v Water Resources Dept. of State of Oregon*,⁶⁹ Crandall was the owner of water rights with a priority date of 1872.⁷⁰ The

⁶⁶ §540.610 (2) (f).

⁶⁷ Utah has a similar statutory provision.

⁶⁸ §540.610 (3).

⁶⁹ *Crandall v Water Resources Dept of State of Oregon* 626 P.2d 877 (Or 1981).

⁷⁰ Oregon first codified its water law in 1909.

Supreme Court had no hesitation in confirming the forfeiture in entitlement of 15.6 cubic feet per second reducing the right from 40 cubic feet per second to 24.4 cubic feet per second. Similarly, in *Rencken v Young*,⁷¹ a water right with a priority of 1888 was almost completely forfeited to the state.⁷² The rectitude or otherwise of forfeiting rights to water extant before the water code of 1909 is not canvassed. Also, clear and convincing evidence was necessary to support a statutory forfeiture.⁷³ Strictness does not only apply to time: it also applies to place. In *Hannigan v Hinton*⁷⁴ the owner of a mining water right used the water at a location other than the certified place of use in the permit. The Oregon Supreme Court held that the term “place of use” is a component of “use” for the purposes of forfeiture and summarily stripped the water right from the owner.

Washington adopted its Water Code in 1917,⁷⁵ but it was amended in 1967. The original statute recognised and affirmed those water rights already in existence: “Nothing contained in this chapter shall be construed to lessen, enlarge, or modify the existing rights of any riparian owner, or any existing right acquired by appropriation, or otherwise”.⁷⁶ The current section states:

Any person entitled to divert or withdraw waters of the state through any appropriation authorised by enactments of the legislature prior to enactment of chapter 117, Laws of 1917, or by custom, or by general adjudication, who abandons the same, or who voluntarily fails, without sufficient cause, to beneficially use all or any part of said right to divert or withdraw for any period of 5 successive years after [1 July 1967], shall relinquish such right or any portion thereof, and said right or portion thereof shall revert to the state, and the waters

⁷¹ *Rencken v Young* 711 P.2d 954 (Or 1985).

⁷² The relative time period was 1979 to 1983, with an irrigation season from March to October. Rencken recommenced use in November 1983, but this did not save his right. He was left with enough water to irrigate 0.1 of an acre. The approach is nothing if not very strict. See also *US v Locke* at note 6 *supra*.

⁷³ *Rencken v Young* 711 P.2d 954 at 961(Or 1985) (per Campbell J). See also cases at note 14 *supra*.

⁷⁴ *Hannigan v Hinton* 97 P. 3d 1256 (Or 2004).

⁷⁵ Washington Laws 1917 chapter 117.

⁷⁶ Washington Laws 1917 chapter 117 §1.

affected shall revert to the state, and the waters affected by said right shall become available for appropriation in accordance with RCW 90.30.250.⁷⁷

Interestingly enough, the statute employs the term ‘relinquish’ rather than “forfeit” and thereby it somewhat shifts the emphasis for the loss on the lack of function by the appropriator (relinquish in the sense of renounce), rather than the positive force of the State actively stripping the right away (forfeit in the sense of being deprived). The other emphasis in the section is to reinforce the notion that the waters appropriated are “waters of the state”. The appropriator is under no illusion that the right is usufructuary only: the appropriator only owns the right to use the water.⁷⁸ The sting is in the expression “sufficient cause” which is defined by §90.14.140. This section lists the only narrow defences available to a delinquent appropriator. The courts have no ability to extend this list, except by defining what the individual clauses actually mean.⁷⁹ In other words, the relinquishment (forfeiture) is only rebuttable in terms of the statute itself. Clearly, Washington might face issues in relation to the wording of its statute in terms of the unconstitutional taking of a water right, the priority of which pre-dates the Water Code, as did, say, Arizona and Nevada.

This argument was actually advanced in the well-known case of *State Dept.of Ecology v Grimes*.⁸⁰ In that case, the Grimes’ water right went back to 1906, some 11 years before the Water Code, and their argument was that any diminishment of their rights would be unconstitutional. The Washington Supreme Court’s practical approach was that the forfeiture had nothing to do with the constitution, and was it decided on the basis that a water right is only valid where

⁷⁷ §90.14.160.

⁷⁸ Washington has a conserved water program by which the state will fund the efficiency measures and generally speaking take the saved water in lieu of payment. See §90.42.020(2). No issue of forfeiture exists. See also §90.14.140(1) (i). (Effective until 30 June 2019).

⁷⁹ One defence is that of military service during “military crisis”, whatever that may refer to.

⁸⁰ *State Dept.of Ecology v Grimes* 852 P.2d 1044. (Wn.1993). See Chapter 8 *supra*.

the appropriator beneficially, continuously, and diligently uses the water, which Mr and Mrs Grimes were not doing; and, accordingly, there can be no “taking” (constitutional or otherwise) of a water right where the appropriator is not using the water, simply because a right does not exist for the water not being used. The situation was well put by the Supreme Court of Nebraska:⁸¹ the application of a water right operates as a “condition subsequent” to the grant of the right; the Wyoming Supreme Court referred to beneficial use as a “continuing obligation”.⁸²

Wyoming has an integrated system: both forfeiture and abandonment are provided by statute, and neither requires the element of intent. The main difference between the two is the identity of the person who commences the proceedings: abandonment proceedings are commenced by members of the public,⁸³ and forfeiture proceedings by the state engineer.⁸⁴

The section goes on to identify precisely those persons with water rights who may petition for an order of abandonment.⁸⁵

Neither section requires specific intent, but both sections provide for the only excuse for non-use; namely, an absence of water to put to a beneficial use.⁸⁶ There is however the thorny issue of partial forfeiture in Wyoming water law. The abandonment provisions contain a stipulation that partial non-use is excused in the case where there was an insufficient supply of water but only if the

⁸¹ *In re Application A-15738 of the Hitchcock & Red Willow Irrigation Dists.* 410 N.W. 2d 101 at 106 per Hastings J. (Neb. 1987).

⁸² *Basin Electric Power Coop. v State Board of Control* 578 P.2d 557 at 563 per Rose J. (Wyo. 1978).

⁸³ W.S.A. §41-3-401 (a). The provision goes on to allow an appropriator to apply for extensions of time (5 years each) to enable him to get his or her house in order.

⁸⁴ W.S.A. §41-3-402 (a).

⁸⁵ W.S.A. §41-3-401 (b) (i) and (ii). Essentially, any water user who might benefit from a declaration of abandonment, or who might be injured by a reactivation of the water right.

⁸⁶ W.S.A. §41-3-401 (b); W.S.A. §41-3-402 (b).

appropriator's diversion infrastructure is in good working order.⁸⁷ Like Idaho, although the statute does not actually state specifically that a partial abandonment will be entertained (in fact §41-3-401 (a) talks about "all water rights and privileges" being forfeit), the courts have accepted partial abandonment – to give the doctrine some real meaning – and in *Laramie Rivers Co. v Wheatland Irr. Dist.* the Wyoming Supreme Court declared that in order for partial abandonment to succeed the Board of Control needs to determine the actual volume of water which the appropriator had actually used for the relative 5-year period, with the appropriator losing in abandonment proceedings only those rights to that volume of appropriated water in excess of the amount used.⁸⁸ In the case of the forfeiture provision, §41-3-402 (a) instructs the State Engineer that if an appropriator has failed to use "any portion" of surface, underground, or reservoir water appropriated by him for a period of five successive years, he may initiate forfeiture proceedings.

However §41-3-402 (j) is in direct conflict and provides that "Nothing in this section shall be construed to allow the state engineer to initiate forfeiture proceedings against water rights which are being put to beneficial use, wholly or in part." The State Engineer appears to have resolved the impasse by informally accepting §41-3-402 (j) as the correct interpretation.⁸⁹ He has probably taken the line of least resistance. Professor Squillace correctly points out that this is not a desirable outcome.⁹⁰ His view is that the courts would likely defer to the State Engineer's view and his office's interpretation through rulemaking proceedings. More importantly, however, the alternative view (that the legislature anticipated partial forfeitures) would give much-needed impact to the doctrine given that

⁸⁷ W.S.A. §41-3-401 (f).

⁸⁸ *Laramie Rivers Co. v Wheatland Irr. Dist.* 708 P.2d 20 (Wyo. 1985) at 36 per Rose J.

⁸⁹ See Mark Squillace "A Critical Look at Wyoming Water Law" XXIV (1989) Land & Water L. Rev. 307 at 337.

⁹⁰ See comments on *State v Hagerman Water Right Owners, Inc.* at note 63 above.

partial forfeitures are more likely than forfeitures of entire water rights, thereby releasing unneeded water resources from one place to others of high demand.⁹¹

10.1.3 The Doctrine of Abandonment – The Colorado Experience.

Not all states employ the usual five-year statutory forfeiture mechanism. Montana does not, and neither does Colorado. In other words, the unintentional loss of water rights by forfeiture as such is not recognised by either state. Instead, there is a statutory presumption of an intention to abandon if there is a ten year failure to use the water right for the beneficial use for which the water was appropriated. Colorado's statutory provision reads as follows:

For the purpose of procedures under this section, failure for a period of ten years or more to apply to a beneficial use the water under a water right when needed by the person entitled to use same shall create a rebuttable presumption of abandonment of a water right with respect to the amount of such available water which has not been so used; except that a presumption may be waived by the division engineer or the state engineer if special circumstances negate an intent to abandon.⁹²

The definition section (§37-92-103(2)) spells out that intent to discontinue use permanently is an essential ingredient. There follows a short list of statutory exemptions from the presumption of intent. The section actually reads more like the usual forfeiture process but it has a longer non-use period. The Colorado system requires each Division Engineer⁹³ to prepare abandonment lists:

...He [the Division Engineer] shall also prepare decennially, no later than July 1 1990, and each tenth anniversary thereafter, a separate abandonment list comprising all absolute water rights which he has

⁹¹ Mark Squillace "A Critical Look at Wyoming Water Law" XXIV (1989) Land & Water L. Rev. 307 at 337-338.

⁹² C.R.S. §37-92-402.

⁹³ Colorado is divided into 7 water divisions each with its own engineer, who are all under the auspices of the State Engineer.

determined to have been abandoned in whole or in part and which previously have not been adjudged to have been abandoned.⁹⁴

Notice is given to affected water rights holders, and those who do not object are deemed to have abandoned their rights and these are stripped from them. Those who do object, head to the Water Court to justify their position. The common law,⁹⁵ on the other hand, may be somewhat more benevolent and holds that non-use of a water right for an “unreasonable period” can give rise to a rebuttable presumption of an intention to abandon and the case law suggests that the presumption cannot be overcome simply by self-serving denials:

...that to rebut the presumption of abandonment arising from such a long period of nonuse [nearly 40 years], there must be established not merely expressions of desire or hope or intent, but some fact or condition excusing such a long nonuse.⁹⁶

In the 1973 case of *In re CF&I Steel Corp. in Las Animas County*,⁹⁷ the period of non-use of 54 years was held to be unreasonable, and there was no evidence that CF&I Steel had attempted to lease, sell, or otherwise use the water right during the long period of non-use, and the company had dismantled its diversion and transportation works, making it impossible to divert water at its decreed points. The presumption was, therefore, not rebutted. Evidence of good faith to alienate water rights suggests that there is no intention to abandon.⁹⁸ In any event twenty years had already been held to be unreasonable: *San Luis Valley Irrigation District v Alamosa*.⁹⁹ In all cases, the question of abandonment is to be

⁹⁴ C.R.S. §37-92-401(1) (a).

⁹⁵ The statutory and common law systems exist side by side and provide separate legal processes.

⁹⁶ *In re Water District No. 47 in Water Division No.1: Mason v Hills Land & Cattle Co.* 204 P.2d 153 (Colo. 1949).

⁹⁷ *In re CF&I Steel Corp. in Las Animas County* 515 P.2d 456 (Colo. 1973).

⁹⁸ See *Danielson v City of Thornton* 775 P.2d 11 (Colo. 1989).

⁹⁹ *San Luis Valley Irrigation District v Alamosa* 135 P. 769 (Colo. 1913).

determined by weighing all the evidence and assessing the credibility of witnesses – each case is judged on its own merits.¹⁰⁰

There is another aspect of the Colorado abandonment rules which might have been of some assistance to New Zealand in the Central Plains crop of cases and the problem of priority of resource consent applications. Colorado employs the notion of a ‘conditional water right’ which is described as a right to perfect (a process by which the water right is made absolute) a water right with a certain priority upon completion with reasonable diligence of the appropriation upon which such water right is to be based.¹⁰¹ The essence of the system is that the water is finally used for the beneficial use identified in the application. An appropriator is then required to demonstrate intent by an overt act for the purposes of completing the “first step” towards perfecting the conditional right.¹⁰² This constitutes notice to interested parties of the nature and extent of the proposed demand on the water supply.¹⁰³ The sting in the tail is that the conditional appropriator is required every six years to apply to the Water Court for a finding of “reasonable diligence”, that is to say he or she has “demonstrated a steady application of effort to complete the appropriation in a reasonably expedient and efficient manner under all the facts and circumstances.”¹⁰⁴ If the Court does not make such a finding, the “conditional water right shall be deemed considered to be abandoned.”¹⁰⁵ As noted in *United States v Locke*,¹⁰⁶ the courts can be very tough on time limits. In *Bar 70 Enterprises, Inc. v Highland Ditch Ass’n*,¹⁰⁷ the clerk of the Water Court sent a certified letter to Highland notifying them that

¹⁰⁰ *Consolidated Home Supply Ditch & Reservoir Co. v Town of Bertoud*. 896 P.2d 260 at 267 per Mullarkey J. (Colo. 1995).

¹⁰¹ C.R.S. §37-92-103(6).

¹⁰² C.R.S. 37-92-305 (9) (b).

¹⁰³ See generally *City of Thornton By and Through Utilities Bd. V City of Fort Collins* 830 P.2d 915 (Colo. 1992).

¹⁰⁴ C.R.S. §37-92-301 (4) (b).

¹⁰⁵ C.R.S. §37-92-301 (4) (a) (I).

¹⁰⁶ *United States v Locke* 105 S.Ct. 1785 (US1986). See above n 6.

¹⁰⁷ *Bar 70 Enterprises, Inc. v Highland Ditch Ass’n* 694 P.2d 1253 (Colo. 1985).

their conditional water right would be considered cancelled unless an application for a finding of reasonable diligence was filed during the month of August 1981. The application was filed on the 4th September. The Court found that, physically, due diligence had been demonstrated but that this notion also included filing the application in a timely manner. Therefore, the conditional right was considered abandoned and terminated. In the New Zealand *Central Plains* cases, the water right was granted without precise knowledge of how these rights were to be exercised. Under Colorado law, the beneficial use must be identified in the application, and this requirement was significantly absent from the *Central Plains* cases.

In summary, then, water rights in Colorado may be lost by common law abandonment after an unreasonable period of non-use, or by the division engineer reviewing abandonment lists in respect of absolute rights, or by the Water Court finding an absence of due diligence in the case of conditional water rights. There is, as such, no doctrine of forfeiture incorporating an absence of intent coupled with a list of statutory defences, which, in some states, limits the occasion for a defence against the accusation of non-use.

Given their abhorrence of speculation and waste, it is surprising how reluctant the courts are to make a finding of forfeiture (because it is a statutory construct) and abandonment (because it relies on demonstration of intent). In terms of Colorado law those asserting the intent to abandon must establish their case by a “preponderance of evidence”¹⁰⁸ but the rebuttal must disclose some fact or condition that excuses the non-use, or shows the owner’s intent not to abandon: a lesser evidentiary burden.¹⁰⁹ The Colorado courts have in the past accepted a

¹⁰⁸ *Haystack Ranch, LLC v Fazzio* 997 P.2d 548 at 552 per Martinez J (Colo. 2000).

¹⁰⁹ *Ibid*, at 552. Intent is a subjective element which may be difficult for an objector to demonstrate so the system shifts the burden of proof from the objector to the appropriator to show there was no intent to abandon.

variety of excuses, each case being judged on its own merits. These are listed in *East Twin Lakes Ditches and Water Works Inc. v Board of County Commissioners*.¹¹⁰ *Haystack Ranch, LLC v Fazzio* case discusses repairs and maintenance of diversion structures:

The current owner argued that he rebutted the presumption of intent to abandon by repairing some of the diversion structures and trying to put the water rights to their historical use... These activities would have overcome a presumption of intent to abandon had the previous owners undertaken them... such “activities constitute only an attempt to revive what was already dead.”¹¹¹

Attempts to put the water to the beneficial use for which it was appropriated were also accepted by *Haystack* as an excuse. *Haystack* had been successful in having its water right removed from the abandonment list, and also had tried to get alternative points of diversion authorised by the state: “We agree with *Haystack*’s analysis that these actions can constitute proof of an attempt not to abandon.”¹¹² The *Haystack* case also mentions the non-appearance of the water rights on the state engineer’s abandonment list as a possible excuse:

We observe that the division engineer’s removal of the water rights from the abandonment list is evidence that the water court may consider in determining whether an abandonment has occurred. However we conclude that the division engineer’s decision alone is not sufficient...¹¹³

¹¹⁰ *East Twin Lakes Ditches and Water Works Inc. v Board of County Commissioners*. 76 P.3d 918, at 922. (Colo. 2003).

¹¹¹ *Haystack Ranch, LLC v Fazzio* 997 P.2d 548, at 554 per Martinez J (Colo. 2000). (reference omitted).

¹¹² *Ibid*, at 554. In *Haystack*’s case though these actions took place after the water rights were abandoned by the previous owner and so could not be resuscitated.

¹¹³ *Ibid*, at 555.

Evidence of attempts to sell a water right has been held to rebut the presumption of abandonment. In *People ex re. Danielson v City of Thornton*,¹¹⁴ the presumption of abandonment was rebutted by the production of three documents outlining the proposed sale of the water right. In *City & County of Denver v Snake River Water Dist*, the Colorado Supreme Court stated: “[d]iligent efforts to sell a water right are evidence of intent not to abandon.”¹¹⁵ The leasing of water rights has also been accepted. In *Beaver Park Water, Inc. v City of Victor*¹¹⁶ the water right owner was facing an action of abandonment. The Supreme Court pointed to a list of uncontested points raised in defence, including the fact that the water rights were leased for 50 years in 1949. This was accepted. However: “[g]enerally, the reasons underlying the nonuse period are only relevant to the question of intent to abandon and will not alone rebut a *prima facie* showing of abandonment.”¹¹⁷ The last excuse mentioned in the *East Twin Lakes* case is the thorny matter of economic or legal obstacles to exercising the water right. In that case, the appropriator (Lake County) had tried for some 30 years to raise sufficient funds to enable it to line its ditch (approximately 6 miles), in order that the appropriated water could be used. The intention to line the ditch was abandoned after about 20 years, and the non-use carried over for about another ten years. In the end, the water right was sold, but faced a claim of abandonment. The Supreme Court found that abandonment had not occurred. Although there were a number of reasons the Court held to be indicative of a lack of intent to abandon, the Court found the presence of legal or economic obstacles to be a valid

¹¹⁴ *People ex re. Danielson v City of Thornton* 755 P.2d 11 (Colo. 1989).

¹¹⁵ *City & County of Denver v Snake River Water Dist*. 788 P.2d 772 (Colo. 1990) at 778 per Lohr J. Given the Supreme Court constantly abjures speculation, that word does not appear once in the judgment.

¹¹⁶ *Beaver Park Water, Inc v City of Victor* 649 P.2d 300 (Colo. 1982).

¹¹⁷ *Ibid*, at 303 per Hodges CJ.

reason.¹¹⁸ The Court had previously accepted this excuse. In *Hallenbeck v Granby Ditch & Reservoir Co.* the Court had found:

“...reasonable justification for non-use may very well exist where it can be shown that economic, financial or legal difficulties or natural calamities prevented the storing of all the water that was originally decreed.”¹¹⁹

However, Justice Hobbs delivered a strong dissenting judgment.¹²⁰ His point was that the ditch could not deliver the water to its place of use, and, in truth, the owners simply did not want to make the investment which an actual water user would be required to make to maintain the priority of the water right. He found that the Water Court had given weight to the ranch manager’s request to fund the necessary improvements despite the owner’s affirmative decision not to.¹²¹ Further, his judgment notes that the Court has traditionally accepted economic difficulty as a justifiable excuse for non-use in very limited circumstances, for instance the Great Depression, and shortages during World War 2. “Run of the mill” economic difficulties have not been recognised by the Colorado Supreme Court.¹²²

It is submitted that, in order for the doctrine to have some real teeth, Justice Hobbs’ interpretation of the evidence of a presumption of abandonment is the correct one. In general, the fact that the partnership may have experienced financial hardship does not provide comfort to those competitors unable to gain use of the water, which remained unused. The fact that the right was leased to

¹¹⁸ *East Twin Lakes Ditches and Water Works Inc. v Board of County Commissioners*. 76 P.3d 918 at 925 per Rice J. (Colo. 2003).

¹¹⁹ *Hallenbeck v Granby Ditch & Reservoir Co.* 420 P.2d 419. (Colo. 1966) at 426 per Stoon CJ.

¹²⁰ Chief Justice Mullarkey and Justice Kourlis “joined in the dissent”.

¹²¹ *East Twin Lakes Ditches and Water Works Inc. v Board of County Commissioners*. 76 P.3d 918 at 926 per Hobbs J.

¹²² *East Twin Lakes Ditches and Water Works Inc. v Board of County Commissioners*. 76 P.3d 918, at 927-928 per Hobbs J.

another is of no consequence because he was unable to use the water as well. Justice Hobbs concluded his remarks by stating that the fact that the State Engineer did not place the relative right on the abandonment list is a purely administrative matter, and has nothing to do with the owners' intent.¹²³ The *East Twin Lakes* case demonstrates neatly why states have overwhelmingly opted for the forfeiture procedure with its more predictable outcome, especially in those states which severely limit statutory defences. The other point is that water rights are property rights, and, as such, if their status is plainly defined and definite, so too is their attractiveness in a market transaction.

Clearly, then, a statutory forfeiture provision would engender more certainty into proceedings attacking an unused water right, as well as more certainty of tenure in the event of a sale. A ten year period, as under common law abandonment processes, may also be regarded as too long. The more definite action of forfeiture, if seen in context, is an important tool in the process of getting rid of old rights which in western water law clutter the allocative landscape. It is not just the state water engineers who have their focus on those rights, but also other potential water rights competitors.

Depriving water managers of statutory forfeiture for the oldest water rights and relegating them to the less predictable, less uniform, and ultimately more expensive process of proving intentional abandonment erects inefficient and unnecessary hurdles in the path of rational water management.¹²⁴

¹²³ See *Haystack Ranch, LLC v Fazzio* 997 P.2d 548 at 555 per Martinez, J (Colo. 2000). (stating that such actions alone by the Engineer are not sufficient to overcome the presumption).

¹²⁴ Janet C. Neuman and Keith Hirogawa "How Good is an Old Water Right? The Application of Statutory Forfeiture Provisions to Pre-Code Water Rights" 4 (2000-2001) U Denv Water L Rev 1 at 27 (footnote excluded).

10.2 Forfeiture in New Zealand

In a New Zealand context, as in the United States, it must be remembered that it is the State's duty to manage the country's common water resources for the benefit of everyone. Like the American system, our Resource Management Act provides for termination of a consent. Section 125 generally provides that a consent will lapse if not given effect within 5 years from the date of its commencement. "Given effect" has been held to be a matter of degree which will vary from case to case. If the remaining matters are of such a nature that it could not be reasonably held that there had not been compliance with the terms of the consent, the that consent may be regarded as having been effective. In any event, the Resource Management Act does not use the words "failure to complete" which suggests some lee-way is appropriate.¹²⁵ The 5-year time limit may be extended if certain statutory requirements are met including whether "substantial progress" has been made in giving effect to the consent.¹²⁶ "Substantial progress" does not mean the majority of work needed to completed because the implementation of a consent is a continuing process. More important is a continuity of progress. Councils are able to take into account practical and economic realities of constructing and completing a major development.¹²⁷

Section 126, on the other hand, provides generally that a consent that has been exercised in the past but has not been exercised for a period of 5 years thereafter, the consenting authority may cancel the consent.¹²⁸ Research for this thesis has revealed that only four of the allocating authorities in New Zealand have ever exercised the power under s126 and only 3 or 4 times at the most, although one Council has cancelled 32, all unused. None of those Councils

¹²⁵ See *Goldfinch v Auckland City Council* [1998] NZRMA 97.

¹²⁶ Section 125(1)(b).

¹²⁷ See *Body Corporate 97101 v Auckland City Council* [2000] NZRMA 202.

¹²⁸ There are saving provisions in the section in favour of the consent-holder: see sections 126 (2), 357A, 358.

believe consents may be partially cancelled. This is probably bureaucratically sound, because clearly not all consents under the Act are in respect of water (which may be only partially but at the same time effectively exercised), and councils probably strive for a consistent application of policy towards the statutory provision.¹²⁹ Further, in terms of consents for the extraction and use of water, councils will certainly look at the historical water usage at the time an application for renewal is made. Given that consents may have a life of 35 years, and also given both the increase in demand for water and the likely deleterious effect of climate change on supplies where droughts are likely to be more frequent and of longer duration, a drastic rethink both of New Zealand's water management system and allocative approach to water resources is entirely appropriate.

An effective American-style "use it or lose it" forfeiture policy including stringent application of sections 125 and 126 of the Resource Management Act and a conscientious control of wasteful practices would both enhance the dictates of efficiency and the interests of future generations which after all are the basic philosophies behind the Resource Management Act. The shadow of forfeiture would certainly focus a water permit-holder's attention on effective and proper use of a water resource, especially in catchments that are fully allocated.

¹²⁹ It might be problematic to partially cancel a consent to a subdivision.

11 Chapter 11

11.1 Conclusion

This research has identified that New Zealand has adopted a somewhat haphazard legal approach to water management. Water has been simply allocated without any thought to the efficiency or otherwise of its utility. With the advent of water markets, the lesson from the Americans – especially the stark difference between general Colorado water markets and those of the Colorado-Big Thompson system – suggests New Zealand must keep transaction costs to a minimum, but, more importantly, we must introduce an American-style beneficial use doctrine to reign in not only abuse of water rights but also flagrant inefficiency. We must insist that rights are actually used and not parked up, and used as effectively as practicable. Abandoning the first-in-first-served process will deliver a message of some consequence that the management of water resources must be taken seriously by applicants. Given the allocative state of our catchments, that model will die out naturally anyway, as water available for new allocations dries up. The market system will be an essential tool to re-distribute water rights already allocated.

It is quite some progression from viewing our watery planet externally from the vaults of space to ultimately making a commitment to efficiently and sustainably husband its freshwater resources, which, after all, entail only about 2.5% of Earth's total water stock. It is a true voyage of discovery, though, comprising an examination of the twin processes of efficiently re-allocating permits which allow the extraction of freshwater, but at the same time ensuring that those who have the privilege of acting as temporary guardians of this resource as a consequence of their allocated water rights do so in a responsible, pragmatic and efficient manner. It is a journey which follows the trail blazed by *Our Common Future* and New Zealand's commitment to Agenda 21 in 1992, and the prescription to adopt a more sophisticated approach to both economic and environmental matters. Water in New Zealand has historically been allocated irrespective of the effective use or otherwise of the water, contrary to the intent of

the Resource Management Act. It has been argued that New Zealand's first-in-first served policy of resource allocation is not the best model for such matters,¹ especially in the case of non-fungible resources. This thesis has argued that this needs to change, and, in the re-allocative process, New Zealand needs to adopt an American-style beneficial use doctrine. The simple fact is that necessity compels change and adaption to new realities. The twin realities of increased demand for water brought about by a greater population and more intensive farming practices coupled with climate change realities are manifest arguments for a more thoughtful and sustainable approach to freshwater management. The Americans adopted a first-in-first-served system, but the beneficial use acted as auditor to monitor water use. The Colorado-Big Thompson system in keeping with the rest of the western states is very strict on the beneficial use requirement but its systems allow it to keep transaction costs to a minimum. Our Resource Management Act contains a prescription for sustainable management and the introduction of water markets coupled with a beneficial use concept are both tools useful towards achieving this instruction. Admittedly there is the still unresolved debate as to whether the Act's principles favour economic development or the environment, but it has been argued in chapter 2 that the environment must take precedence because economic development ultimately derives from it.

In truth, environmental constructs should not be political footballs to be kicked about. Of course, in times of economic hardship, attempts will invariably be made to sacrifice environmental matters on the altar of economic expediency. Environmental bottom lines need to be entrenched. Hence, sustainability is a moral contemporary discussion as much as anything else; and, however it is defined, the objective remains constant. Ultimately the bio-system, including the myriad of life forms human and otherwise which comprise that structure and on which we all utterly rely, suffers the distress of human mismanagement. The

¹ See Chapter 3 *supra*.

natural environment is currently supplying the needs for over 7 billion humans but that figure is projected to approach 10 billion by the year 2050.² In this context, how natural resources – especially water resources – are used is a fitting and proper question to be addressed by the sustainability debate.

The National Policy Statement for Freshwater Management issued in 2011 (some 15 years after the *Fleetwing* decision), and the second Statement which came into effect on the 1 August 2014, both make it clear the Government wants the first-in-first-served model to be abandoned and it requires allocating authorities to change their Regional Plans to adopt a more efficient and effective method of allocating access to freshwater.³ More importantly, however, in terms of re-allocation of water permits, the Statement requires allocating authorities to ensure provision is made in regional plans for the inclusion of criteria by which approvals of transfer of water permits are to be decided, including an improvement to maximise the efficient allocation of water.⁴ There is, therefore, a possible foundation from whence a water market system might spring, and following on from that a beneficial use requirement to properly husband the transfer process. The Third Report of the Land and Water Forum in 2012 made it clear that water markets were desirable.⁵ The Government has signalled the same thing: since 2011 it has committed around half a billion dollars towards water-related projects. This is a serious amount of money which demonstrates the Government is taking water infrastructure very seriously. Clearly water storage and delivery systems are essential where possible if an established effective water market is to become established and thrive.

² See Rachel Becker “World Population Expected to Reach 9.7 Billion by 2050” National Geographic <www.news.nationalgeographic.com>.

³ Objective B1; Policy B2.

⁴ Policy B4.

⁵ Paragraphs 64-68.

11.2 Beneficial Use and the Resource Management Act

New Zealand needs to introduce a beneficial use doctrine to oversee the inevitable process of re-allocation of water permits. The key is to keep transaction costs and delay to a minimum. There is little point in finding a requirement for water in the spring or summer if the transaction is not concluded until the winter. There is no reason why our own beneficial use doctrine cannot subsist together with the effects-based system required by the Resource Management Act, given the Act's concern for future generations contained in section 5(2) (a), and the efficiency requisite in section 7(b). The effect would be that a particular water permit allowing an appropriator to extract water for a beneficial use as included in a Regional Plan would only be granted provided the effects of that use were within the parameters anticipated by the Resource Management Act. In any event, the title of the Act is the Resource *Management* Act and this legal management should in the case of water extend to include a beneficial use doctrine. The approach approved by the Court of Appeal in the cases so far is not a sustainability discourse. Essentially what the Court is saying is that if an applicant is early enough in the allocative queue that person will have a significant distributive advantage over later applicants who will be required to demonstrate different criteria than those earlier applicants. Circumstances change and to be fair it is entirely probable that the Court of Appeal in the *Fleetwing* decision did not in any way foresee in 1997 the change in demand for access to natural resources like water currently experienced by allocating authorities.

As already noted,⁶ the Government has sent signals that it favours economic instruments in the form of tradable water permits, by requiring allocating Councils make provision for the transfer of water permits in their Regional Plans, and by providing seed money for the establishment of the

⁶ See also Chapter 3 *supra*.

necessary infrastructure in the form of storage and delivery systems. Such an initiative had been on the legislative horizon for some time. In 2004, the Water Programme of Action inter-departmental working group, building on a Ministry for the Environment technical report of the same year, had favoured the encouragement of water permit transfers: “Enhance the transfer of allocated water between users...central government facilitation and encouragement for local councils to consider water transfers”.⁷ Of course, such a provision in Regional Plans might present extra challenges to councils in administering and monitoring the transfer process.

In addition New Zealand does not have a history in water markets (although there are a few special cases in existence already) and it is natural that a water market system may be regarded with some suspicion, especially by farmers who, if the American experience is instructional, may be fearful that municipalities and industry will price access to water out of the agricultural market. There is also the question of change, and how it might affect social cohesion: there may be disruption by economic changes involved. However, faith in water markets may increase as catchments are closed off to new applicants and a re-distribution of permits in whole or in part becomes fundamental. Markets may not be suitable for all of New Zealand’s catchments however, many of which are small in size and in which transaction costs might figure as a major factor.

Having said that, tradable water permits have the potential to be less bureaucratic and much quicker than the traditional regulatory approach as they give more autonomy to the participants, but they must be framed within robust regulatory minimum water levels and flows which are essential for appropriate

⁷ “Freshwater for the Future: Issues and Options, a Public Discussion Document of New Zealand’s Freshwater Resources” p 21, “Action 7”.

environmental protection. Not insignificantly, markets may engender a collegial community of interest among the market players, which is the case with the Colorado-Big Thompson project. The major advantage of water markets however is where demand for water exceeds supply. It will be a process of division, not multiplication. Simply issuing new permits is not feasible and a market re-allocation of existing permits in whole or in part may be the best solution for those seeking access to water.

It is probably fair to say that, in the western United States, up until about the 1970s the emphasis was on developing new water supplies by constructing dams and reservoirs; but, from that point on, the concern has been with reallocation of supply through water markets. The relative success of the fisheries quota system in New Zealand suggests we have the ability to initiate a workable system from scratch.⁸ New Zealand has a robust legal infrastructure and there is no reason why a water market system could not be parachuted into the system. Clearly, section 122 of the Resource Management Act (“Consents not real or personal property”) will have to be addressed to give water permits some proper and easily understood property definition, which the legal system will protect.⁹ It is notable that the then-Minister for the Environment, the Honourable Nick Smith, announced on 21 January 2015 that one of the areas of change the government anticipates for the Resource Management Act is that of giving greater weight to property rights under the Act.¹⁰ The “take” and “use” components of a water consent would need to be separated. Under a beneficial use model, the “use” component would be an element of the application anyway, in the sense that the consent would be to take water for a beneficial purpose, and,

⁸ See Tietenberg & Lewis *Environmental & Natural resource Economics* (9th ed, Pearson Education Ltd, Harlow, 2014) at 370-372.

⁹ A point made by Gregory J Hobbs Jr. “Priority: The Most Misunderstood Stick in the Bundle” (2002) 32 *Envtl Law* 37 at 51.

¹⁰ Nick Smith “RMA Reform Agenda Outlined” (21 January 2015) New Zealand Government <beehive.govt.nz/release/rma-reform-agenda-outline>.

if not so used, or wasted, the right would be reviewed and possible forfeited in whole or in part.

The market system with its element of self-interest suggests participants would, more as a by-product of their activities, help preserve a natural resource. Vendor and purchaser both carefully calculate the risks and opportunities involved and accordingly it is vital that information to make such a decision be readily available, but, equally as important, the parties must have confidence in the accuracy of that information. The initial experience in Chile – where some corporations hoarded huge quantities of water rights for purely speculative purposes – suggests a cautious and temperate approach to a market reform in New Zealand. The lesson learned from Chile is that a totally free market model of water management is not necessarily compatible with an integrated management of water resources. “Although this approach [The Chilean free-market system] has some economic benefits, its institutional consequences have led to serious structural problems in management and regulation.”¹¹ The zeal of the 1981 water reforms was somewhat muted by the necessary further reforms in 2005. In essence, those reforms needed to address among other things issues of speculation by introducing graduated fees for unused water rights, as well as issues of environmental sustainability.¹² A totally *laissez faire* system, clearly, is not appropriate; and Chile’s experience suggests eschewing an anti-speculation – and it must be said a forfeiture policy – is extremely unwise. In terms of sustainability, at least New Zealand has requirements such as those contained in the National Policy Statement for Freshwater Management 2014,¹³ reiterating the requirements of section 30 (1) (e) Resource Management Act 1991 which address minimum water levels and flows (provided these requirements are not violated);

¹¹ CJ Bauer *Siren Song: Chilean Water Law as a Model for International Reform* Resources for the Future, Washington, 2004 at 120.

¹² Environmental concerns were novel in Chilean water law.

¹³ Policy B1.

but a domestic beneficial use doctrine will shore up our approach to sustainability by eschewing waste, non-use and speculation. The doctrine would emphasise that the right to access to water carries with it a well-understood requirement to use that water responsibly. The ripples of abuse of water rights spread very wide, and the introduction of water markets predicated on a beneficial use doctrine would go a long way to preventing such abuse.

11.3 Beneficial Use and Efficiency

The efficiency of legislation and the system it establishes (for any institution) is determined by the transaction costs of that institution. The opportunity costs of using, selling or leasing an allotment will be its value to another party who appraises it more highly and pays appropriately for its use. It is this calculus which drives rational economic decisions. Transaction costs which may vary from time to time are a vital component in this equation. In Chile, as it will be in New Zealand, geography to a large extent dictates from area to area what these costs will be. The Chilean policy of dramatically reducing government involvement in transactions had the potential to limit the exposure of the parties to these costs.¹⁴ Generally, in the western United States, water market transaction costs can be extremely high (and it has to be said the beneficial use requirement can add substantially to these costs), and this contrasts dramatically with the model demonstrated by the Colorado-Big Thompson system.

It is interesting to note that both the Chilean and the Colorado-Big Thompson models were constructed, rather than having evolved; the former based on economic theory, the latter on experience. Although not strictly a biocentric objective in the sense of actively husbanding and protecting the

¹⁴ Given it was no longer prepared to provide the relative infrastructure as it traditionally had (Water Code 1981 Article 5 (41)) the government's success in this regard is open to debate. See generally EF Madden "Chilean Water Policy –Transaction Costs and the Importance of Geography" <<http://shelf.library.cmu.edu/HSS/2010/a1424318.pdf>>.

environment – the Colorado engineers are able to calculate how much water will be stored in the various reservoirs and distribute it accordingly – a system of successful integration of a low transaction cost market and efficient and practical management. The Colorado-Big Thompson is not typical of a general western American water market; however its model would suit New Zealand conditions quite well. Neither has to worry about injury to junior appropriators. In New Zealand the permit holder has to operate within appropriately-imposed minimum water levels and flows. Provided the process of transfer of legally robust rights is simple enough, and the infrastructure costs (which are highly unlikely to be totally externalised) are kept to appropriate levels, there is no reason why a market system should not succeed;¹⁵ but, as already noted, this will require some co-operation from the relative councils. These councils could promote the market model by including on their websites information through which vendors and purchasers can get in touch with one another, as is the case with the Colorado Big-Thompson project. Charles Howe makes the point that elsewhere in Colorado there is a general lack of this basic information:

Neither the State Engineer’s office nor the water courts have publically available centralized databases of the names of water right owners, making it difficult to contact owners. Water rights transactions and ownership are recorded at the county level like real estate transactions; however, the lack of a more centralized system to account for water rights whose above- and below-ground tributaries span multiple counties complicates interpreting these records. Equally important, sale prices are not recorded, complicating the problem of “price discovery” (figuring out what a reasonable offer to buy or sell might be).¹⁶

As noted above, a beneficial use doctrine has the potential to drive up transaction costs. Howe makes the point that “In Colorado [that is outside the

¹⁵ Predictability of supply once the annual allotment has been calculated is an advantage the Colorado-Big Thompson project has that few water systems can match.

¹⁶ Charles W. Howe “Reconciling Water Law and Economic Efficiency in Colorado Water Administration” (2012-2013) *16 University of Denver Water Law Review* 37 at 40.

Project] transaction costs create substantial barriers to market transactions while the “beneficial use” and the closely related “anti-speculation” doctrine substantially narrow market scope.”¹⁷ However, it is important for New Zealand to introduce a domestic version of a western American-style beneficial use doctrine for a number of reasons. First, such a requirement would assist stressed water sources “meet the reasonably foreseeable needs of future generations”¹⁸ as well as “the efficient use and development of natural and physical resources”¹⁹ Equally as important, New Zealand has not historically had much experience in water markets but with human nature as it is and the introduction of a market model, precautions must be taken to protect water resources from the ravages of potential abuse. It is not only impropriety from “big business” that the resource needs to be protected from, but also abuse by small permit holders up and down the country. Water is a common resource managed by the regional councils on behalf of the Crown, which suggests it would be unconscionable that the resource should be abused in that way. If a resource is commonly held, everyone should have a duty of responsible stewardship and to avoid abuse, and to protect as well as encourage its use and governance by responsible resource management by every user. Howe again:

The origins of both doctrines [beneficial use and anti-speculation] historically lay in concerns about the monopolisation of unused water supplies. Common-sense beneficial use requirements prevented early settlers from claiming entire streams and promoted efficiency of use by discouraging “waste” and threatening forfeiture of the right.²⁰

The beneficial use doctrine, then, has several functions, and these functions are as applicable in the United States as they are in New Zealand. In the

¹⁷ Ibid, at 38-39.

¹⁸ Resource Management Act 1991 section 5 (2) (a).

¹⁹ Ibid, section 7 (d).

²⁰ Ibid, at 41. Sandi Zellmer makes the point that there is no Wal-Mart, ExxonMobil, or General Electric of the western water world. See Sandi Zellmer “The Anti-Speculation Doctrine and its implications for Collaborative Water Management” (2008) 8 Nev L J 994 at 1023.

first place, it is a husbandry of a valuable and scarce resource and a method of reducing its exposure to the shock of abuse. Secondly, it is supposed to be an efficiency tool governing the utility of water resources, although just how effective it has been in this regard is open to debate. Thirdly, there is an element of distributive justice in the doctrine as although the initial allocation has been assigned on a first-come-first-served basis, the system has the potential to weed out those who have the rights but who will not use them – or indeed will abuse them – and ensuring that those delinquent rights are then made available to others for appropriation. The concept is a good example of how the law may adapt to new and changing circumstances. In its youth, the American court system was faced with a problem of some moment and was able to cobble together some legal principles to reflect the factual situation presented by both nature and the human demands of it. The application of the notion has been remarkably consistent throughout the various states and from this point of view may be considered to be quite robust. Certainly, in one sense it has proved to be somewhat flexible; and uses once decreed not to be beneficial are now regarded as such. The best examples are recreation, species habitat protection and other environmental matters. As Justice Hobbs states:

In 1965 the Colorado Supreme Court declared that the maintenance of instream flow “is a riparian right and is completely inconsistent with the doctrine of prior appropriation.” However in 1979, the Court upheld the constitutionality of Colorado’s 1973 statute which allowed the Colorado Water Conservation Board to make and enforce minimum stream flows and lake level appropriations in priority for the purpose of preserving the environment to a reasonable degree. The environmental era had intervened.²¹

Flexibility gives the concept currency and contemporary relevancy. The courts “...have allowed the list of acceptable uses to evolve and change along

²¹ Gregory J Hobbs Jr “Colorado Water Law: An Historical Overview” (1997-1998) 1 U. Denv Water L Rev 1 at 22.

with the evolution in values... and understanding about the importance of water...”²² In addition the flexibility of the system is “internal” in the sense that it does not dictate how users are to conduct their business (for example it does not instruct farmers when and how to irrigate their crops) and as such there is a natural internal tension between this pliability and the efficiency ingredient encapsulated in the doctrine. Too much prescription would turn the concept into a bureaucratic nightmare with enforcement problems. Generally speaking, if a user conforms broadly to accepted local practices, there is not likely to be a problem. In truth the flexibility notion should encourage innovation and conservation practices but in fact it does not and as a result water conservation statutes have appeared in several states. The problem is the threat of speculation which sits firmly within beneficial use doctrine.

11.4 Protection from Speculation

In New Zealand, the idea of speculating on water rights has historically never been a problem because a flourishing general market for water rights has not existed. However, with the introduction of active water markets it is likely that speculation will be an issue which needs to be addressed, or at the very least steps taken if it were ever to become an issue. Riparianism in a sense acted as its own auditor, and speculation under that system would be very difficult anyway; but with the passing of the Water and Soil Conservation Act 1967 effectively extinguishing riparian rights, no robust American-type beneficial use doctrine was introduced. As noted, there was a beneficial use ideal attached to that Act, but totally different to the American notion. As New Zealand did not regularly trade in water rights there was no problem. However that situation is in the process of change.

²² Janet C. Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Law” (1998) 28 *Envtl L* 919 at 947.

The Bench in the early Colorado case of *Coffin v Left Hand Ditch Co*²³ was arguably concerned to protect water supplies from the control of the few. John Locke's view that natural resources are acquired by the expenditure of work, and limited to the amount a person could actually directly use found its way into the beneficial use doctrine:

...the abrogation of riparian ownership of surface waters was a manifestation of anti-monopolism and anti-speculation ideology, directed against the potential concentration of water wealth in the hands of those who could afford to buy up the riparian lands of the arid-country streams.²⁴

Such precautions are quite appropriate given human nature, generally, and, specifically, the experience in Chile. The Colorado Supreme Court has consistently demonstrated an unswerving philosophy of enforcing the anti-speculation doctrine, even in the case of municipalities.²⁵ As demonstrated, the doctrine can be flexible as well. The progressive growth doctrine will allow claimants including developers to perfect their water right in the future by documenting their anticipated need for water and hold onto their unused rights in the meantime without fear of losing priority or suffering forfeiture of those rights. The proviso is that they demonstrate a bona fide intent to use the water, and proceed with due diligence. The growing communities doctrine (which only applies to municipalities) is a widely-recognised component of western water law and allows municipal water right owners to maintain more water rights than they are currently using for future population projections without the fear of a claim of abandonment or speculation. Conditional decrees allow complex developments to proceed. Under this notion, the water court recognises a priority date for a new

²³ *Coffin v Left Hand Ditch Company* 6 Colo. 443 (1882).

²⁴ David B Schorr "Appropriation as Agrarianism: Distributive Justice in the Creation of Property Rights" (2005) 32 *Ecol L Q* 3 at 33.

²⁵ There was a jocular exchange between Charles Wilkinson and Gregory Hobbs in 1991 as to whether the prior appropriation doctrine was in fact dead: see 1991 21 *Envtl Law* xxix, and 1087.

appropriation but conditional on the claimant demonstrating a plan to divert, or otherwise capture and control water and making diligent progress towards putting the water to beneficial use.²⁶ “Each of these exceptions serves as a safety-valve of sorts, alleviating the impediments posed by the anti-speculation doctrine...”²⁷, in certain cases.

There has been some criticism of the anti-speculation rule in America. The main objection is that the rule fosters covert activity – by generally prohibiting an appropriator from reserving water for future use, the rule encourages potential speculators to conceal use by wasting resources in the form of constructing of works that are either unjustified or premature.²⁸ Neuman is of the opinion that this assertion itself is somewhat speculative, there being no statistics to back it up making it difficult or impossible to prove. Individuals might overstate their requirements somewhat but this is quite different from large scale speculation: “...it is hard to imagine that a large number of individual western irrigators are consciously and intentionally irrigating *only* with an eye towards selling off their water rights...”²⁹ Another criticism is that the doctrine discourages forward planning, but the exceptions above suggest otherwise. Further, a study by the University of Arizona and the Bren School of Environmental Management found that “almost half of all transfers in the twelve

²⁶ There are other exceptions for example foreign (or developed) water (water that a party has caused to enter the supply stream that would not have otherwise entered and Indian Reserved Water Rights. Sandi Zellmer is of the opinion that the former is in need of reform. See “The Anti-Speculation Doctrine and its implications for Collaborative Water Management” (2008) 8 Nev L J 994 at 1029.

²⁷ Sandi Zellmer “The Anti-Speculation Doctrine and its implications for Collaborative Water Management” (2008) 8 Nev L J 994 at 1013.

²⁸ See Stephen F Williams “The Requirement of Beneficial Use as a Cause of Waste in Water Law Development” (1983) 23 Bat Resources J 7 at 12-13.

²⁹ Janet C Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use” (1998) 28 Env'tl 1 919 at 968-969.

western states took place in one state – Colorado. The lion’s share of these transfers involved the Colorado-Big Thompson Project.”³⁰

Professor Neuman is of the opinion that the anti-speculation doctrine has been generally successful. “The beneficial use requirement has fairly effectively achieved the purpose of preventing outright speculation in western water resources.”³¹ Doubtless the anti-speculation rule will continue to develop in the west, as it would if adopted in New Zealand. “But the time for rescission of the anti-speculation doctrine has not yet come, and perhaps it never will.”³² The doctrine is an efficiency discourse in the sense that it tries to ensure that water allocations are actually worked; however, the beneficial use system also tries to ensure that individual allocations when worked are done so in an efficient manner by avoiding unnecessary waste.

11.5 Demand for Water

As an efficiency exercise, conservation is essential when there is an increase in demand for water from a static supply. That demand is driven not only by population increase, but also agriculture is becoming more intensive both overseas and in New Zealand. Increased agricultural production entails not just efficient farming practices but also increased stock-feed production. The more crops a farmer can grow – be it grass, forage crops, or whatever – the better; and an increase in production of animal feed or even grain crops for human consumption will require more water. Not being able to rely on simple rainfall, supplementary water is required and the demand for same will likely increase. A prohibition

³⁰ Brewer, Glennon, Ker, and Liebcap “Transferring Water in the American West 1987-2005” (2007) 40 U Mich J L Reform 1021 at 1043. Colorado has the reputation of having the most stringent anti-speculation laws.

³¹ Janet C Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use” (1998) 28 *Envtl* 1 919 at 968.

³² Sandi Zellmer “The Anti-Speculation Doctrine and its implications for Collaborative Water Management” (2008) 8 *Nev L J* 994 at 1030.

against wasteful water uses as incorporated into American water law is an essential tool in curbing extravagance and to give some elasticity to a finite resource. The problem for the American west is that the waste doctrine has not been totally effective. The initial intent was to require an efficient use of water to stretch its distribution as far as reasonably possible and to reward such efficiency with a secure water right. Thus, as much as possible of an arid countryside could be transformed into production by the careful use of an unchanging supply of water. However, the definition of waste in the American west is somewhat nebulous and tends, except in the most flagrant of cases, to err on the side of the wasteful appropriator. For instance the “customary practices” exception to the concept of waste gives comfort to inefficient operations.³³ Custom changes extremely slowly and is not, in the case of water, driven by reasons connected to legal requirements.³⁴ This exception stymies the push to embrace more modern proficient methods. In large measure the customary rule is founded on a simple cost-benefit analysis that the cost of lining or piping delivery systems and indeed installing more modern up to date irrigation systems (for instance trickle systems) was not outweighed by the value of the water thereby saved. The Californian Supreme Court suggested custom should not be seen as an excuse to indulge old-fashioned and wasteful methods.³⁵ Breaking in parched land is no longer a demand in the west.

The challenge for the contemporary America is now the same challenge for New Zealand: to foster efficient production and at the same time protecting vibrant ecosystems that can survive the ravages of human economic drive. New Zealand is potentially in a good position to achieve this end by the adoption now

³³ Janet C Neuman refers to this as the “lowest common denominator standard”: “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use” (1998) 28 *Envtl* 1 919 at 975.

³⁴ *Ibid*, at 940 and 976.

³⁵ See *Tulare Irrigation District v Lindsay-Strathmore Irrigation District* 3 Cal 2d 489 at 567 per Waste CJ.

of our own version of a beneficial use doctrine. The Americans tend largely to pay lip-service to the principle of waste (except in the most blatant of cases) because there wasted water which is not simply evaporated tends to become part of the return flow to then be used by junior appropriators. If return flows are altered, theoretically there could be injury to junior appropriators' entitlements. The equation actually comes down to a question of timing. It may take return flows some years to find their way back to the source, and this may upset the delicate balance of junior allotments. New Zealand is very fortunate in this regard, as we do not have junior appropriators in the American sense, and none of our allocating authorities have needed to worry about return flows except in the case of non-consumptive uses like hydro-electricity. In any event, most of our water infrastructure is recent or indeed yet to be built, so is or will be comparatively modern. There is nothing wrong with forcing modern technology and practices on water users. Such proposals have been retrospectively introduced on other environmental matters (for example air and water quality), and are relevant and appropriate measures in good environmental husbandry which safeguard and sustain water resources "to meet the reasonably foreseeable needs of future generations."³⁶ New Zealand must insist on strong anti-waste criteria. Possibly our domestic waste doctrine could extend water duty for individual crops with a very tight customary practice notion coupled with water conservation measures which would encourage the adoption of more efficient practices. Most importantly, we must not fall into the American trap of operating a system where the meaning and standard of waste is too ill-defined and unclear. It is really a matter of fairness because the consequences of a finding of waste are

³⁶ Resource Management Act 1991 section 5(2)(a).

severe. The somewhat vague definitions of “beneficial use” and “waste” prevent a reliable understanding of what behaviour is acceptable.³⁷

11.6 Forfeiture

Forfeiture is a major sanction under western water law. The consequences are drastic as affected appropriators will have a property right – and possibly a (very) valuable property right – stripped from them. Such an action cannot be taken lightly,³⁸ and would need to be exercised with caution. The western American experience suggests that a statutory forfeiture model would be more effective – and not to mention certain – than the old common law principle of abandonment. Certainty is crucial given the extreme results of forfeiture, not just for the appropriator but also for potential new appropriators who may keep an eye on unused allocations and after five years then apply for the water themselves. While forfeiture on the face of it argues against the requirement that water permits be a secure property right (with all the legal consequences which that entails), these rights have a condition subsequent attached to them which requires the rights to be actually continually exercised. Further, some jurisdictions in America have a series of exemptions which dilute the effectiveness of the process. Idaho is a good example: “...Idaho’s exception-laden forfeiture rule has created a host of water rights that are eligible to be held, unused, to the disadvantage of other water right holders and would-be appropriators.”³⁹ As New Zealand’s catchments near full allocation, forfeiture will be an important tool to ensure those who have allocations actually use them and do not simply needlessly frustrate the aspirations of potential new players who are denied water. At present, the

³⁷ See Janet C Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use” (1998) 28 *Envtl* 1919 at 976.

³⁸ There is provision for such action already in the Resource Management Act 1991: sections 125 and 126. The forfeiture period of 5 years in those sections coincides with the American forfeiture system.

³⁹ Peter R Anderson & Aaron J Kraft “Why does Idaho’s Water Law Regime Provide for Forfeiture of Water Rights?” (2012) 48 *Idaho L Rev* 419 at 446.

Resource Management Act does not provide for partial lapses of consents (sections 125 and 126),but, in the case of water permits, it should. In American terms, astute juniors may scrutinise water use thereby guarding their water expectations and keep their seniors honest – at least theoretically. Such examination may also help allocating authorities tidy up and maintain accurate records which will be hugely valuable in New Zealand to Councils, water users, and potential applicants.

11.7 The Future for New Zealand

A critical aspect of the New Zealand experience is the position of Maori interests. The Maori view is that water is a particular taonga, or treasure and they are the true guardians of it. It is possible to assume a traditional Maori hesitation to the idea of water marketing but having said that Maori do have substantial agricultural interests in New Zealand.⁴⁰ A beneficial use model would enhance responsible management and use of water. Further it would promote and facilitate higher levels of stewardship while allowing a market-based approach to water management. This echoes the principles of obligatory responsible stewardship and management contained in the kaitiakitanga doctrine.⁴¹

While the task in America is to update their beneficial use doctrine to satisfy contemporary needs, New Zealand's duty is to introduce a domestic doctrine from scratch but taking note of the American experience.

Administrative water agencies need to bite the bullet and aggressively enforce against waste and forfeiture, promote conservation, and give clear legal guidance for an updated beneficial use doctrine. Western state legislatures should embrace the responsibility to insure water

⁴⁰ To be fair and consistent, Maori have successfully embraced the marketing of other resources such as fish.

⁴¹ See section 7 Resource Management Act 1991.

supplies for their future citizens, and give courts and agencies a mandate and funding to seek efficiency improvements.⁴²

A New Zealand doctrine will define us as a nation – we have a somewhat undeserved international reputation as a “clean, green” country, and, if we define our doctrine prudently enough, we may go a long way to deserve this reputation. For example, one question is whether or not water used by a coal-fired electricity plant should be classed as a beneficial use in New Zealand. The same question may be asked of nuclear-powered plants. These are legal in New Zealand in the sense that they have not been prohibited by law. The question is whether water used in such an industry might be classified in New Zealand as beneficial. In terms of water storage, New Zealand will decide whether this is simply prudence or a waste of production.

In essence, sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.⁴³

The introduction of a beneficial use doctrine is exactly a process of this sustainable development. The doctrine is exactly within the parameters of the mandates introduced by the Resource Management Act in 1991, including sustainable management, efficiency, and a concern for future generations. The same can be said of a water market system that recycles old water rights. New Zealand’s industrial agricultural model, a component of which is intensive input, invites the moderating and tempering influence of such a doctrine. *Our Common Future* stressed the broad importance of the integrated nature of the environment

⁴² Janet C Neuman “Beneficial Use, Waste, and Forfeiture: The Inefficient Search for Efficiency in Western Water Use” (1998) 28 *Envtl* 1 919 at 995.

⁴³ World Commission on Environment and Development *Our Common Future* (Oxford University Press, Oxford, 1987) at 46.

and international development. The same concerns are relevant at a local level, and these concerns narrate a complex network of relationships between all living creatures (including humankind) and their habitats, and portray a complex calculus comprising matters of engineering (for example modern drip-irrigation techniques), environmental protection (by minimum water levels and flows) and environmental resource management. A beneficial use doctrine has the potential not only to audit the market process but also to some measure manage the interaction and impact of human activities on the environment. The same principles would superintend the activities of the market to ensure the enterprise of the system is not abused and is, in fact, utilised as an auxiliary for Mother Earth – our Blue Marble – which is after all the nest for all living things, sentient or not.

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