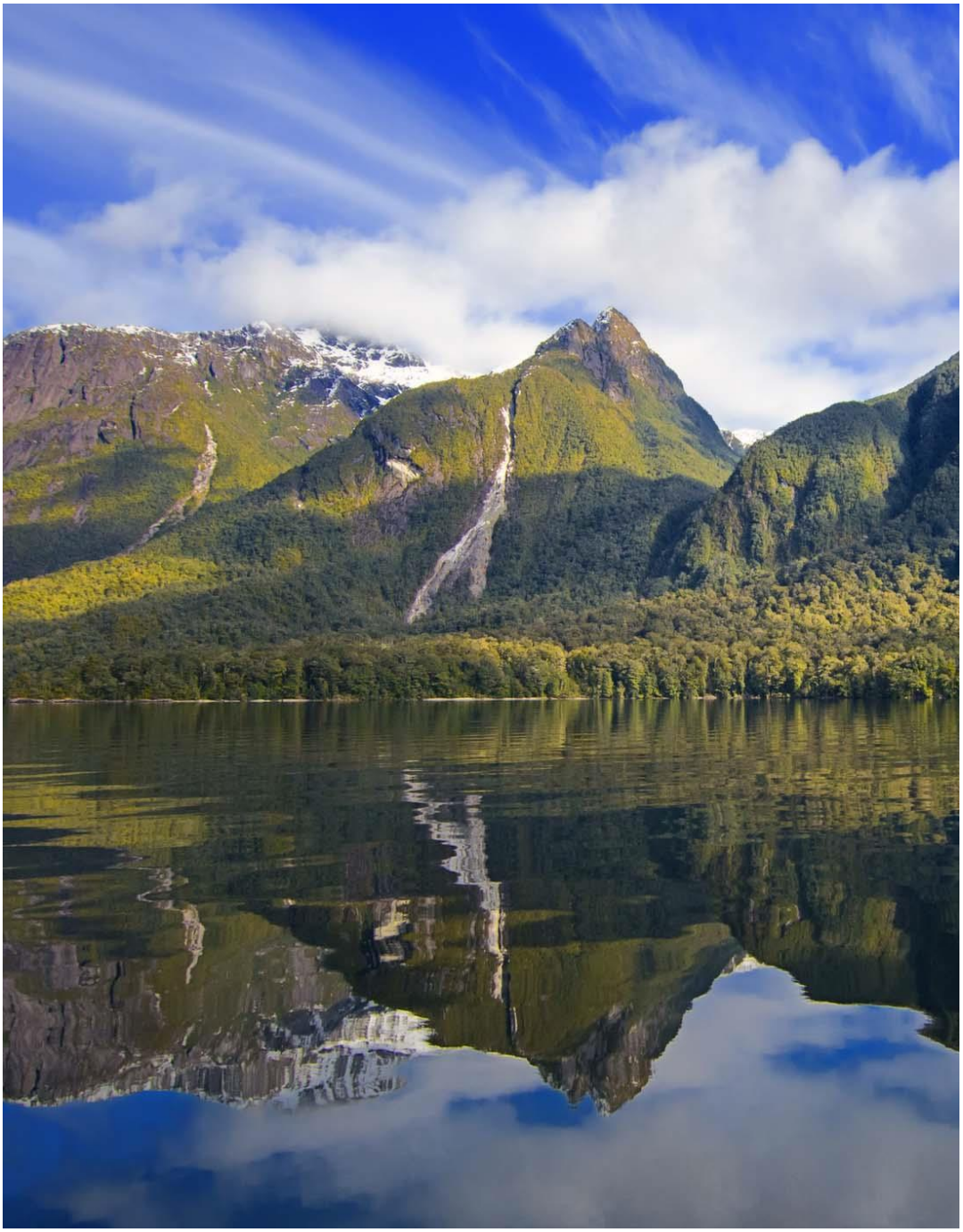
OVERVIEW

Green Border Control

Issues at the Environment/Economy Border



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An Overview of the full paper:

Green Border Control: Issues at the Environment/Economy Border

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Cover Image: Lake Manapouri, an early environmental border issue for New Zealand

Overview

1. Concepts

- This paper engages with the issues that arise when the monetary values of the market come up against the non-marketed, non-monetary values which the natural world provides to human society. The contests, negotiations, and striking of deals at the boundary between the market and the environment that make up the arena of "resource management" are echoed in a wide range of what we describe as "border issues" that arise in the vicinity of the boundaries that divide human social life into multiple realms or "spheres", each with its own distinctive practices and sets of values.

- Each individual within a society inhabits multiple spheres – market, family, political community, professional, aesthetic/spiritual, sporting and recreational activities, and so on. Each is continually engaged in the process of balancing the often-conflicting demands and values of these different spheres, playing simultaneous roles as consumer, citizen, family member, inhabitant of the natural world, and many others. At the society-wide level, these spheres of existence are reflected in institutional structures and processes that have evolved to promote human well-being in a multidimensional sense. The monetary values of the market sphere comprise only one part of a complex social whole, and the reduction of all human life to the single metric of money turns out to be impossible without losing essential elements of what it means to be human. Another way of putting this is that the separation of spheres, the identification and honouring of each sphere's particular values and practices, and the effective maintenance and policing of the borders that maintain separation, all seem central to the effective functioning of human society and the pursuit of "the good" for its members.

- Because many of the things that contribute positively to human well-being are not secured through the market, and are inherently incapable of being correctly priced, the legitimate sphere of the market is, and has to be, bounded. The market must interface at arms-length with other spheres of human life, whose values and aims are often incommensurable in the sense that they cannot all be measured and compared in terms of a single metric such as money. "There are things that money can't buy", and confronting this issue of incommensurability is at the heart of the statutory and institutional arrangements that each society erects along its internal borders. Incommensurability produces "hard cases" for tribunals, courts, local councils, central government – indeed, for anyone charged

with adjudicating between conflicting sets of values that are not reducible one to the other.

- Two issues frame the discussion in the paper: first, what institutional arrangements best meet the need to accommodate competing values from different spheres of social life, when those values cannot all be reduced to a single measuring-rod such as money; and second, how those values can most effectively be articulated and taken into account, given that many of them are incommensurable with one another.

- Many writers in philosophy and law have addressed these issues in relation to the interaction between the market sphere and spheres such as justice, morality, family values, and human rights. The focus in this paper is on the conflicts that arise at the boundary between the market sphere and that of the environment, and on the institutions that mediate between those two spheres in the New Zealand context.

- In a world of incommensurability, decision-makers must cope with the irreducible multiplicity of values. Some strategies are therefore required to support their public deliberations and practical reasoning - the essential processes by which legitimate actual decisions are reached. The paper focuses on two sets of such strategies at the general level and in the particular field of resource management.

    - The first is a diagnostic or forensic process of sorting hard cases out into three general categories, to each of which a particular type of solution is suited.

    - The second is the full but not exclusive use of all available quantitative information on the respective values at stake (qualitative considerations also form part of the information set). This is not to be confused with cost-benefit analysis, because cost-benefit is a technique designed specifically to work with monetary values, and is therefore useful only in the quantification of market-related values. Quantification of non-market values must unavoidably use other metrics that are meaningful in the non-market context.

2. Spheres and Boundaries

- The existence of distinct spheres of social life, within each of which particular values are pursued and realised, has been a recurrent theme in both economic theory and ethical philosophy. In economics, Adam Smith wrote on “moral sentiments” and emphasised the importance of keeping politics free of corruption by money and the market; Alfred Marshall emphasised the limits of economic analysis and its separation from religious, artistic and military affairs; Amartya Sen insists on the coexistence of “pluralities of values” and the need for choices to be

made amongst competing goods whose values cannot be reduced to a single metric such as money. Ronald Coase argued that the firm as an organisation is to be understood as a sphere of entrepreneurial activity directed by non-market principles and insulated from market forces. Along the same lines Elinor Ostrom has demonstrated the possibility of collective action to solve the "tragedy of the commons" and other problems of environmental management, provided there are effective boundaries around the collective enterprise, to keep wider market forces at bay.

- In the words of philosopher Michael Walzer, "good fences make just societies". Institutional boundaries provide the framework for the rule of law, the definition of property rights, the efficient operation of markets to provide those human needs that are best served by commodity production and exchange, and the protection of non-market activities and values from the encroachment of market forces and commodification where such encroachment is subversive of key human values.

- Ethical philosophers have been attracted to the question of "what money cannot buy". Michael Walzer, Michael Sandel, Russell Keat, Judith Andre and Glenn Cohen are among those who have analysed the phenomenon of "blocked exchanges" – institutionally-embedded prohibitions on the extension of the market into spheres of human life where it undermines and corrupts core human values and where human well-being is best advanced by rejecting the proposition that everything can be reduced to a money value.

- If not all values can be expressed in (or reduced to) money, or any other single universal metric, there are two important implications. First, market mechanisms cannot be called in to solve all problems of decision and choice. Second, the issue arises of whether "incommensurability" prevents the making of rational choices; here the general philosophers' answer is no, and economist-philosopher Amartya Sen notes that choice among incommensurables is ever-present and is a central reason for maintaining the institutions of democratic politics, in order to resolve choices amongst incommensurables through processes of public reasoning and deliberation.

- An important implication of incommensurability is that "specific performance" will often be preferable to the payment of monetary damages when, for example, environmental damage is caused by a commercial operator in the market sphere. The requirement that courts and governments ought to impose on polluters, Cass Sunstein argues in an important paper, is physical restoration of the natural ecosystem rather than estimation of money damages, whether these are set to make good those people directly affected, or to compensate for the monetised value of the natural assets lost. This points to an important class of cases in which

direct regulatory requirements are superior to price instruments as the means of securing environmental compliance.

- Mark Sagoff applies these high-level economic and philosophical debates to the particular issues that arise in management and protection of the natural environment, where decision-makers must balance the market value of commercial, profit-driven use of resources against competing values such as stewardship, sustainability, respect, and aesthetic appreciation of nature for its own sake. He concludes that monetary measures such as "willingness to pay" (WTP) are not effective in capturing the values that underpin legislated boundaries blocking the encroachment of markets into highly-valued parts of the natural realm, and that consequently techniques such as cost-benefit analysis have strictly limited application in environmental decision-making.

3. Diagnostics: A Hierarchy of Situations

- When incommensurable values confront one another, the strongest situation arises when one value, by common consent, "trumps" its rivals. The image of trumping originates with the legal philosopher Ronald Dworkin in his book *Taking Rights Seriously*, where he argued that "rights are trumps". A trumping situation results in blocked exchange: the rival values are foreclosed and the trump value prevails. The role of an adjudicator encountering this situation is simply to enforce the blocked exchange outcome.

- The philosopher James Griffin identifies two other possible cases: discontinuity, and trade-off. A discontinuity situation is one in which conflict among incommensurable values can be resolved by imposing a threshold level of protection for one of the values, leaving other contending values to be maximised subject to the threshold constraint. In resource management terms, this amounts to the imposition of physical limits/standards, or to the enforcement of specific performance requirements such as strict liability.

- A trade-off situation is one where the adjudicator cannot apply the rules of thumb that apply in the other two; here a dispassionate weighing-up of competing values must be undertaken, and some balance struck, by the exercise of judgment. The legitimacy of the resulting outcomes depends in large part upon the transparency and fairness of the procedures followed.

4. Diagnostics: The Production Possibility Frontier

- The "production frontier" or "production possibility locus" found in introductory economics texts is a conceptual boundary between what is feasible and what is not feasible, given limited resources and a given production technology. The shape of this frontier determines the nature of the choices confronting a decision-

maker faced with a tradeoff between two competing claims on a given resource. Conventionally this diagram is constructed for two commodities, which exchange in the market at well-defined prices – in other words, the two are commensurable in money terms if money is the market medium of exchange. Conventionally also the frontier is assumed to be convex outward which means that the tradeoff steepens as more and more of the scarce resource is devoted to specialisation in one of the two goods. These two assumptions underpin standard economic theories of how competitive market prices are determined.

- The concept of the possibility locus can, however, be applied to situations where either or both of those two key assumptions of standard economics do not hold. Where two goods are non-commensurable – for example where a commercial development competes with the non-market values yielded by some area of land such as part of the conservation estate – the allocation decision lies outside the reach of the market and has to be made administratively, by a planner or tribunal weighing up the market and non-market values. In this situation the issue can still be framed in terms of the production-frontier diagram, but with the provisos that
    - it is no longer possible to interpret the slope of the locus in terms of relative market prices, since only one of the goods trades in the market, and
    - the shape of the frontier may not be the orthodox textbook one.
- The diagram can be constructed for the case of "non-convexity of the production set", where there are strong negative externalities from one of the goods to the other. A classic paper on this in the economic literature, by Baumol and Bradford, concludes that activities with very strong negative environmental interactions need to be geographically separated, and notes the problem of possible irreversibility of industrial location if later developments prove an initial zoning decision to have been the wrong one.
- The non-convexity case in its most extreme form captures the **blocked exchanges** discussed by philosophers because of the outright incompatibility of, for example, slavery and human dignity, or bribe-taking and good government. The tradeoff between release of genetically-modified organisms and maintenance of GE-free agricultural status of a territorial unit is equally extreme: the possibility frontier coincides with the axes of the diagram, and the choice is a stark either-or one with very high stakes.
- Non-convexity is the economist's way of representing high-stakes choices where competing claims cannot be balanced at some optimal mid-point. A review of recent Environmental Court decisions reveals a number that seem to indicate non-convexity: examples are the 2012 refusal of consent for mussel farming at Port

Gore in the Marlborough Sounds, and the 2008 decision halting a proposed Hilton Hotel development on the Wellington waterfront.

- Many other Environment Court decisions, however, involve a convex production frontier with incommensurable competing values; here the typical outcome does involve striking some sort of balance. Examples are the limiting of jetboat access to the Wilkin River and of helicopter use at Arthurs Point; the 2011 decision upholding and strengthening District Plan limitations on commercial development of the Mackenzie Basin; and the 2012 decision in favour of the Manawatu-Wanganui Regional Council's Proposed One Plan to limit nutrient runoff from farms in order to protect the region's rivers and lakes.

- Analysis of the last of these decisions in terms of the production-frontier diagram shows the way on which an enforceable specific-performance requirement of the sort advocated by Sunstein can provide an incentive for pro-environment technological progress, as commercial producers must innovate to raise their output and profitability within the constraint imposed by the nutrient limit. As a general principle, when confronting a tradeoff between incommensurables, there is a strong case for applying specific-performance requirements to protect the non-market value, while leaving producers of the marketable good free to devise the most efficient response; this is the case often made for cap-and-trade schemes, but rests critically on the clarity and effectiveness of the cap. Simply leaving market forces free to operate without a well-defined limit protecting the relevant non-market values leads not to efficient outcomes but to environmental degradation.

- These exampes of **discontinuity** are compatible with either convexity or non-convexity of the production frontier, so long as absolute priority is assigned to non-monetary values up to a threshold stated quantitatively in terms of a metric that accurately captures those non-monetary values. So long as that threshold is secured, market development is left free to operate in the remaining resource space. Technical progress then provides the only way to expand the scale of market production, given the constraint on resource depletion.

- The more common **tradeoff** situation in resource management decisions corresponds to the economist's standard case of convexity in the production possibility set, with resource allocation decisions revealing an implicit relative price between the monetary and non-monetary values at stake. A "shadow price" of the resource in monetary terms can be inferred once the decision is taken, but cannot be calculated prior to the decision and so cannot be a central input into the adjudication process. Once limits are set, the degree to which the market domain can safely be relied upon to improve the efficiency of resource allocation depends in part on the extent to which there is confidence that the ecosystems

and other systems impacted are understood, and that the effects of interventions can be appropriately predicted. The more there is uncertainty or ignorance, the more inappropriate will it be to allow property rights (the basic requirement for markets to function effectively) to be devolved from the commons or the state to private individuals or corporates.

5. Cost-benefit Analysis and Contingent Valuation

- Cost-benefit techniques are not readily extended to situations requiring choice between incommensurable values. When the two competing values in a tradeoff are incommensurable – as is the case in many decisions involving profit-driven appropriation of natural systems with non-marketed value – the main use of cost-benefit analysis is to weed out projects that are non-viable in money terms irrespective of how they impinge on non-market values.

- Where a commercial project is viable in monetary terms but requires the sacrifice of non-marketed environmental values, there is a temptation (and often a tendency) to push out the boundaries of cost-benefit thinking by seeking to monetise (express in monetary terms) part or all of the non-market values at stake. Techniques such as Contingent Valuation (CV) purport to achieve this by eliciting from the general public statements of "willingness to pay" (WTP) or "willingness to accept payment" (WTA) in relation to the protection of non-marketed values, and treating the resulting numbers as if they have the same probative status as hard commercial data on the project itself. This process amounts to a denial of incommensurability – a claim that all relevant values can validly be converted to the single metric of money so that all decisions can be reduced to selecting the "highest valued" alternative.

- In New Zealand the Environment Court has in recent years encouraged parties appearing before it to engage in such pushing-out of the boundaries of monetisation. However the High Court, in a 2010 decision on the Project Hayes windfarm in Central Otago, rejected the placing of undue weight on cost-benefit conclusions based on inappropriate monetisation, and insisted instead on the proper weighing and balancing of incommensurable values stated in their own terms.

- Subsequently the Environment Court decisions on the Maniapoto Basin (2011) and the Manawatu-Wanganui Regional Council's "Proposed One Plan" (2012) have stepped back from monetary calculation to application of specific-performance requirements to embody and protect non-market values.

- Contingent Valuation has been the subject of an extensive debate among economists in the past two decades, since attempts to estimate the monetary cost

of the 1989 Exxon-Valdez oil spill in Alaska produced figures ranging from $3.8 million (the direct loss of recreational value to fishers) to $4.9 billion (the US population's passive contingent valuation of the natural ecosystem, estimated using survey techniques). A major report by an expert panel appointed by the US National Oceanic and Atmospheric Administration (NOAA) concluded that contingent valuation studies could be informative if rigorously conducted to strict methodological guidelines, but that their results could be no more than "the starting point of a judicial process of damage assessment".

- Three major shortcomings of CV have been highlighted in the literature. First, the assumption that individuals have fully-developed preferences over the complete range of values, including all non-marketed values, flies in the face of both experimental evidence and the most basic principles of democratic decisions-making, which rests on the notion that preferences regarding many collectively-enjoyed goods are formed through the process of public deliberation in the course of which individuals are expected to form their views on the basis of arguments heard. Second, asking survey respondents to state a monetary WTP or WTA, with respect to goods whose values are incommensurable with money, produces responses that do not obey the economist's axioms of rational choice and which will often be entirely arbitrary, given that morally-meaningful money values cannot be stated. Third, behavioural economists have identified empirically a wide gap between WTP and WTA which is not predicted by neoclassical economic theory but clearly reflects a real-world psychological aversion to loss. CV studies using WTP (the most common measure) in situations involving choice between marketed and non-marketed values are therefore likely to exhibit strong pro-market bias.

- The shortcomings of techniques available to date for assigning monetary values to non-marketed goods and services point strongly towards the importance of specific-performance regulatory measures which can both ensure physical protection of the non-market values and allow market forces to search out technologically-creative ways to operate within the resulting physical constraints. Environmental regulatory limits are in this sense an incentive to accelerate technical progress in the economy.

6. Green National Accounting

- The shortcomings at the microeconomic level of contingent valuation, and of other similarly-motivated techniques of monetisation of non-monetary values, carry over to the numerous attempts to value nature at macroeconomic level, where again the boundaries of what can be valued in market terms have been pushed by many researchers. The tendency for national governments to give dominant status to monetary measures such as GDP when making policy decisions

has led naturally to a quest to bring important non-market goods and services within the ambit of national accounts and to assign them monetary valuations that policymakers will respect.

- While understandable, the attempt to produce "green national accounts" is fraught with methodological and theoretical difficulties. Most successful have been programmes that limit themselves to the restricted goal of constructing "satellite accounts" for environmental services that lie close to the borders of real-world markets, an exercise for which the United Nations has produced an official methodology: the SEEA (System of Environmental-Economic Accounting). The key precedent is the inclusion in existing national accounts of the imputed rental value of owner-occupied housing; but the difficulty of further extending the boundaries of national accounting is highlighted by the activities that remain excluded, such as unpaid housework, subsistence agriculture, and voluntary activities.

- A crucial unresolved issue for green accounting is whether and how to measure, in monetary terms, resources appropriated from nature. These are generally unpriced in the hands of the original appropriator, so that the market values realised from their exploitation accrue as a rental component in the profit stream of the enterprises involved. Those market values, however, in no way correspond to the unmonetised opportunity cost of the resources if retained in their natural state. Even more problematic are services rendered by nature which do not pass through markets, which are appropriated by human society collectively rather than individually, and which consequently are unrecorded and unvalued. Examples are the atmosphere's role in sustaining life and climate; the waste-disposal services of natural ecosystems; and the aesthetic services provided by natural landscapes.

- Attempts to assign monetary values to these services highlight the difficulty of integrating them with conventional accounting. One example, the 1997 Costanza *et al* monetary valuation of the world's total ecosystem services to humanity, produced a figure of $33 trillion per year, nearly double the global Gross National Product of $18 trillion. Notionally passing these services through the market and charging them as a cost to the human economy would make the latter unsustainable in its present form – a conclusion which the authors intended their readers to draw. Another way of expressing this is that services which are freely provided and unvalued would be extremely costly to replicate if this were even possible, such that allowing them to deplete would clearly be a route to economic collapse as well as environmental crisis.

- A further difficulty with macroeconomic valuations of nature is the importance of natural services that do not and should not pass through markets at all, because

they lie in non-market spheres of social experience and have to be valued according to non-monetary criteria.

- Statistical excursions beyond the boundaries of existing national accounts have been most successful when their goals have been strictly limited and their reach has involved only very marginal pushing of the boundaries. In the New Zealand context one example is the estimation of the economic cost of pests, which has produced estimates of the order of 1-2% of GDP. Another was the initial development by Statistics New Zealand around 2000-2002 of satellite accounts for environmental protection expenditure, minerals stock valuation, valuation of freshwater flows, and energy inputs to the New Zealand economy – all one-off statistical initiatives that were quickly abandoned in the face of subsequent government cost-cutting.

- The major review of national accounting by the 2009 Stiglitz Commission (set up by French President Sarkozy to consider the limitations of national accounts in capturing actual human happiness and welfare) highlighted the fact that human well-being is multidimensional and that many of the key dimensions are incommensurable and not reducible to monetary values, or indeed to any single quantitative metric. Assessing quality-of-life therefore requires a plurality of indicators; summary measures including GDP, the Human Development Index, average life-satisfaction, and a wide range of environmental indices, all fall short in key dimensions, and cannot be reconciled into any overarching quantitative indicator.

- The Commission report focused heavily on attempts to measure environmental performance in ways that could be incorporated into monetary aggregate indicators of economic performance, and reviewed a large number of proposed measures including the Index of Well-being, the Green Human Development Index, the Environmental Sustainability Index (ESI), the Environmental Performance Index (EPI), the Sustainable Measure of Economic Welfare (SMEW), the Indicator of Sustainability of Economic Welfare (ISEW), the Genuine Progress Indicator, the System of Eco-Environmental Accounting (SEEA) with its concepts of green GDP and green NNP; Adjusted Net Savings (ANS); and the ecological footprint (EF). When plotted against one another these “green” accounting magnitudes failed to exhibit any significant correlation, reflecting the fact that as measurement strays away from things that are traded in markets, or whose economic contribution can be estimated from the market prices of goods in which they are embodied, the more the resulting monetary measures become arbitrary and/or normatively loaded, and hence unlikely to command consensus respect in the way that “objective” measures such as GDP can do.

- The Commission's key conclusion was that rather than seeking a single unifying statistic, a better approach is the production of a "dashboard" of key statistics which a policymaker can observe in real time, and thus evaluate simultaneously a whole range of incommensurable but important matters, including the state of the environment measured in physical rather than monetary terms.

- New Zealand environmental statistics have fallen far short of providing a full dashboard of this sort, notwithstanding Statistics New Zealand's production of a set of indicators supposedly linked to sustainable development that are presented on the department's website in a rough dashboard form. The more systematic *State of the Environment* reports have been produced only twice in the past two decades and have now been officially abandoned, despite OECD criticism of the poor quality of NZ environmental accounting. A 2011 Government discussion document, *Measuring Up*, admitted the lack of a statistical base that could underpin the country's "clean green" branding, and foreshadowed a new Environmental Reporting Act, but this has not been proceeded with.

7. Applying the Theory to Current Issues

Proposals for Reform of the RMA

- The Resource Management Act is a crucial statute governing the procedures and content of adjudication at the economy/environment boundary. Its legitimacy in this role rests heavily upon the way it directs the relevant authorities to "recognise and provide for", "take account of" or "have regard to" a wide range of values from spheres other than the market. Those values are not generally reducible to the measuring rod of money, but many can be quantified, understood, and respected in their own terms, drawn from the relevant spheres of human activity and well-being.

- The strongest language in this context is that of section 6 dealing with "matters of national importance" - many of which involve non-market values - and is significant in a statute that generally opens matters up to tradeoffs (for economic gain). By requiring authorities to "recognise and provide for" these matters, the section points the way to the possibility of discontinuity thresholds and even blocked exchange as appropriate responses to market-based demands for access to key resources.

- The Government has put forward a proposal to amend section 6 by effectively merging its matters of national importance with "other matters" to be considered in section 7. The proposal is to then have a "single section that lists the matters that decision-makers would be required to 'recognise and provide for'".

- The government argues that: “There is concern that the predominance of environmental matters in section 6, and the hierarchy between sections 6 and 7, may result in an under-weighting of the positive effects (or net benefits) of certain economic and social activities.” The clear effect of its proposal however is that exchanges that were previously blocked or restricted (as a result of environmental matters in section 6 having to be valued ahead of economic matters) would not be in future. In addition, the list would remove matters material to boundary adjudication, including: 7(aa) the ethic of stewardship and 7(d) intrinsic values of ecosystems.

- The government argues that removing the current hierarchy between sections 6 and 7 would “support more balanced decision-making” and would “ensure the list of matters contained in the Act better reflect today’s values”. The balance proposed here is to allow tradeoffs where blocking and thresholds would otherwise capture and protect the non-market interests and values that are to be adversely affected by an activity. However, no evidence has been provided by the government to date that the removal of the block to such exchanges would “better reflect today’s values”.

- The government has argued that such value judgements are the role of “publicly-accountable, elected representatives”. But local government’s elected representatives would have a more circumscribed role than at present. Central government would make decisions that are “nationally important”, or involve “nationally-significant values”, or simply “where consistency outweighs the value of local specificity”. Thus the proposal seems set to reduce to an unknown degree the scope of the current rights under the RMA for communities to block exchanges at the district and regional level. This has constitutional implications and will also be important to the extent it involves decisions that pass risk to the community.

- The important result from this study in relation to RMA reform is that there will be cases in which the tradeoff approach is not appropriate and where it will be better to draw “lines in the sand” marking the boundary within which market forces are to be restricted. Insofar as RMA reform seeks to shift the market/environment boundary without good reason, it runs the risk of draining legitimacy from the established channels of adjudication, opening space for the contest of incommensurable values to shift to other arenas.

- In order to inform a discussion on the proposed amendments, it will be helpful to represent the RMA as it stands in terms of where boundaries have been drawn and show the effect of proposed boundary shifts that open new areas to tradeoffs. The matters currently included in the less negotiable “matters of

national importance" block in section 6 should remain there (and others might be added).

Oceans – EEZ Legislation Test Case

- Law governing the EEZ was passed last year in the face of widespread criticism of the process to be used to assess applications for ocean activities outside the 12 mile limit. A key issue is the lack of certain definitions (e.g. what constitutes an economic benefit to New Zealand, and hence what is to be counted in any cost benefit assessment produced as quantitative evidence in favor of a project), and the absence of clear principles to guide decision-making, reflected in the general use of the expression "take into account" without any process specified for how to undertake that task, or what weight to place on competing incommensurable values.

- These are among the pointers strongly suggesting that the first successful application to the EPA under the EEZ law will trigger an important court challenge. Any challenge is restricted to considering points of law, meaning that definitions and process issues will be among the most important.

- The wording of, and Parliamentary debates on, the legislation therefore require careful scrutiny to determine whether, and to what extent, it leaves open the way to decisions matching the blocking and discontinuity categories discussed in this paper.

- A second step would be to look at what limits UNCLOS and other international marine treaties place on New Zealand's sovereign right to undertake activities within the EEZ. If the treaties can be deemed to apply for EPA purposes, irrespective of the EEZ legislation, or if section 11 is found to give force to them (it is somewhat ambiguous), then a series of boundaries can be established that would be beyond the reach of the EPA to make tradeoffs.. They would have the effect of setting a ceiling on the environmental costs that could be incurred in certain respects, or simply barring particular environmental impacts. An application violating these requirements should then fail to gain approval as a matter of process.

- As the EEZ legislation simply sets out a list of matters to take into account (and some scant information sufficiency principles), there is considerable room for work on boundary setting that takes the international treaty matters and certain other matters of importance and looks at how to set boundaries that the law could reasonably be expected to defend. In particular, it would look at which matters would be best treated outside the cost/benefit framework that the EPA often uses, and should thus not be monetised.

- The legislation provides for bonds to be set so as to ensure conditions are performed. However, unless the bonds are set to a high enough level, then their economic effect can amount to that of a fine as once the cost of performance exceeds that of the bond, the commercial incentive is to simply forfeit the bond. This underlines the importance of ensuring that other sections of the Act are also utilized: that security is sought from the company itself and more importantly that an appropriate third party guarantee is obtained (sections 65 2(d) and (e)).

Mining Applications Under the RMA

- Schedule 4 of the Conservation Act provides a direct example of how areas containing mineral resources can be excluded from mining, and the reaction to proposals to remove this demonstrated there was widespread public support for holding that boundary.

- The proposal to establish an opencast coal mine at Denniston has already represented a major test of the RMA, with the outcome of the Supreme Court appeal on whether climate change is to be taken into account still unknown at the time of writing. The substantive case on the mining consent application will presumably be heard under the existing version of the Act so that the existing versions of sections 6 and 7 will apply.

- The case highlights the question of how climate-change impacts are to be brought into the resource management procedures. They were legislated out of the RMA's scope of consideration on the basis that an effective national economic instrument would separately internalize that particular set of costs. As the envisaged level of pricing never eventuated, and with the ETS most recently having been put into in a comatose state at a time when carbon prices have dropped to 20c/tonne, it is clear that the argument for the exclusion of climate change externalities on the grounds of duplication is void. With such a conspicuous market failure in an area where the market was supposed to operate, there would seem to be a strong case for at least allowing a dual responsibility to be set between the ETS and the RMA. In other words, payments made under the ETS with respect to the activity could be counted in the RMA assessment, but this would not limit an RMA hearing from assessing the full climate change impacts.

Limits to Tourism

- The tourism sector presents some of the most difficult resource management issues confronting New Zealand. The sector's contribution to the balance of payments and Gross Domestic Product are sufficient to make it a central player in

the market sphere, but its impacts on the environment have been growing rapidly to the point where several issues that could previously be resolved by tradeoff decisions seem likely to shift into the discontinuity space, requiring absolute limits to be imposed on some tourism operations, with consequent rationing of access.

- The economic importance of tourism means that there will be strong lobbying pressures and more aggressive resource consent applications, both pointing towards progressively more pro-market tradeoffs. These pressures are likely to be increasingly serious as the funding constraints on the Department of Conservation make that agency more dependent on corporate goodwill and financial contributions.

- Pro-actively identifying defensible boundary limits on expansion of the tourism sector is therefore likely to be a worthwhile exercise. It would involve measures such as tightening-up provisions in national park plans and district plans, and arguing forcefully the case for thresholds and occasionally blocked exchange before the RMA hearings.