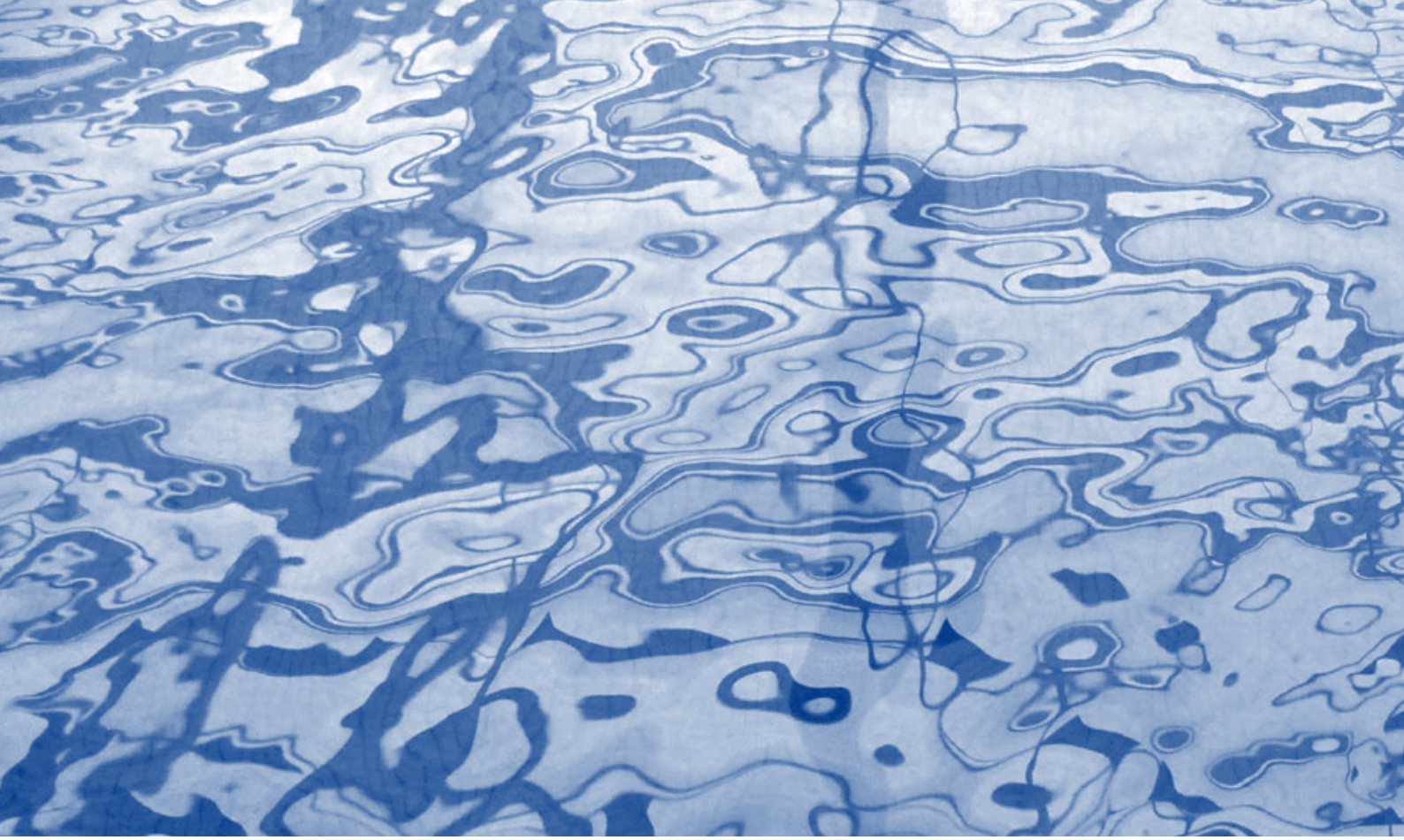
Competition between fishing and other uses

Resolving competition between fishing and other uses of the marine environment



Competition between fishing and other uses

Resolving competition between fishing and other uses of the marine environment

Emma Taylor, New Zealand Ministry of Fisheries

emma.taylor@fish.govt.nz[1]

1 The views presented in this paper are those of the author only and do not represent the official views of the Ministry of Fisheries.

Table of contents

Abstract	v
Introduction	1
What to allocate	3
Who to allocate resources to	9
How to allocate resources	13
Conclusion	17
References	19

Abstract

Fishing can coexist to some degree with other uses of the marine environment, such as the protection of natural character of the coast, marine farming and mining, but competition arises between uses as well as between fishers. Competition for scarce resources should be resolved in a manner that is "fair" and leads to the highest value use of those resources.

The paper notes the wider context for fisheries management and outlines why there is value in considering allocation of resources from an oceans perspective. Competing uses need to be reconciled in order to achieve the highest value uses of oceans resources. Issues that need to be addressed include how tradeoffs should be made between conflicting uses, the tensions between secure property rights and flexibility to provide for change in uses, and how to provide for the national interest. New Zealand's oceans policy is still under development, but experience to date suggests there are a number of complex factors that will need to be addressed in order to progress an allocation policy for the oceans.

Introduction

This paper considers factors that will need to be addressed to develop policy for allocating marine resources within New Zealand's jurisdiction. It builds on work undertaken to date in the development of New Zealand's oceans policy, and explores the question "Once the essential constraints on human behaviour in order to ensure the ecological integrity of oceans ecosystems are in place, how should we share ocean resources between the people who wish to gain benefit from them"?

The Crown decides on what terms to grant access or use of oceans resources, and to whom. For the purposes of this paper, these are termed use rights. Use rights include the access that is defined through predominately planning based regimes as well as through the application of market based instruments. It also includes non-extractive uses, such as fish viewing and recreational boating.

People value and want to use marine space and other resources in a range of ways – both extractive and non-extractive uses. Examples include sailing, fishing, extracting natural gas, occupying space for marinas or marine reserves, and enjoying the natural character and open space of the coast. Some use rights are held by the public, while others are held by individuals or groups. The impact of these ranges from very minor to quite extensive.

The common feature of all use is the occupation of space. Variables relating to the occupation of space include the time for which space is occupied, whether occupation is exclusive, and the extent to which occupation (and impact) derogate from the value that other occupiers may gain.

Some of the uses or values of the oceans are not particularly compatible with each other. While many uses of the oceans can coexist, competition between uses happens most significantly when one use prevents or restricts other activities from taking place in the same area. For example, this arises among navigation, amenity values, fishing and marine farming in a particular spatial

area. Conflict also arises among users competing for the same resource, such as recreational and commercial fishers of inshore fish stocks, and within a single activity when the number of users means that the value obtained by each user from that activity is compromised (e.g. 200 people walking on a beach valued for its solitude). These conflicts affect the value of use rights. Note that this paper uses value in its widest sense, not just financial value.

Conflict, particularly over inshore space, is increasing as New Zealand's population rises and becomes more concentrated in coastal areas. Efforts to establish a representative marine protected areas network are increasing, and Maori (New Zealand's indigenous people) are increasingly looking to use the spatial tools available to them to protect their customary fishing rights. Technological improvements mean, for example, that it is becoming more viable to extract minerals from seafloor depths that were previously inaccessible, and to undertake aquaculture operations further offshore.

In New Zealand, the marine environment is managed by many different legislative regimes and government departments, many of them sector based. There are some mechanisms in place to deal with conflict between activities, for example marine farming can generally not proceed if it would have an undue adverse effect on fishing. However, the level of integration between the statutes is generally poor. It is not clear what activities have priority in what circumstances, and it seems that a "race for space" is intensifying, particularly in the areas of marine biodiversity protection, and customary fishing rights. Improvements to the policy framework, including regulatory reform, are needed to avoid a regulatory failure.

The Crown, as the owner / manager of New Zealand's oceans resources, must decide which of those resources it will allocate to others and under what conditions. The draft New Zealand oceans policy framework, approved in July 2005 as a basis for policy development, provides that resources should be allocated in a way that leads to the greatest benefit from those resources. Developing an allocation model to implement this framework requires consideration of a number of factors, some of which are discussed in this paper.

What to allocate

Use of the marine environment should be managed in a manner that ensures the integrity or capacity of oceans ecosystems. This involves placing limits or constraints on the use of oceans resources. The next key question faced by government, as the owner / manager of oceans resources, is how to allocate (share) use of the marine environment. Allocation decisions are those where the resource owner (or manager) decides how they want their resource to be used (or who they want it to be used by).

Limitations on use rights

The oceans are a significant source of value or wealth, not only in the financial sense such as the income that can be generated from use of its resources, but also for their contribution to social and cultural wellbeing, not to mention the vital life-supporting ecosystem services. It is necessary to gain access to marine resources in order to be able to generate the greatest benefit. Oceans should remain an open resource as far as possible, with careful consideration given to imposing restrictions on how and by whom it can be used.

The government should not, however, allow the public (or certain individuals) unrestricted access to utilise oceans resources if the result would be a loss in overall benefit. Circumstances that may give rise to the need to consider allocating rights include to:

- manage adverse impacts on ecosystem capacity
- manage adverse impacts on other uses or users, or
- encourage investment and economic growth.

These circumstances alone are not sufficient to justify allocating rights. Government intervention can have many limitations if it is not designed and implemented well. Regulation, including allocating rights, should meet the objectives (that is, address the problem) at least cost, and be based on the best available information.

Limits should be effects based

Ideally, the system for allocating the right to occupy space and other marine resources should be effects based. This means that the right to occupy space would be allocated without reference to a particular purpose or activity, as long as the effects of the activity remain within the limits or standards set. These limits should be set following public consultation. In addition to effects on the capacity of the biophysical environment, the impact on other values and uses (both positive and negative) should be considered. The consequences of considering the impact on others need to be explicitly recognised, because it can amount to a "reallocation" of resources. This is discussed further later in this paper.

An effects based approach would provide certainty regarding the maximum level of permitted impact (environmental and other impact), and consistency in how applications are considered (thereby encouraging investment and economic development). It would provide greater flexibility for changes in use over time than a prescriptive, activity specific regime. It may also reduce consultation fatigue, because people can participate in setting the limits rather than in the assessment of each application. However, effects based plans can lack clarity about what can be done where – this uncertainty is undesired by communities and potential users. Particular consideration is needed regarding how to deal with cumulative effects.

Establishing and applying an effects or standards based regime is not straightforward, as demonstrated by New Zealand's experience in implementing the Resource Management Act 1991. It can be difficult to define the appropriate limits, so the level of risk will be a determining factor in how precautionary the limits are. A comprehensive monitoring and enforcement programme is essential, with the limits being reviewed regularly for adequacy. Where there is uncertainty regarding whether the effects of particular activities are likely to breach the set limits, it is appropriate that such activities are subject to a specific approval process. The aim should however be to provide as much clarity as possible regarding what limits can be imposed on uses, and to provide flexibility regarding how constraints are met. A lack of clear expectations about use rights (and therefore how they may be undermined by competing uses), and/or inflexibility regarding how standards are met, decreases the value of use rights.

Where possible, the right to occupy certain spatial areas should be defined, and allow the occupation of such areas able to be transferred between different uses (e.g. marine farm to floating restaurant to tidal energy generation site), subject to compliance with the standards. With community input, particular areas of the marine environment would be zoned as suitable for occupation, and the maximum effects permitted in those areas defined (e.g. high, medium and low impact areas). Where the current rights holder agreed, the right to

occupy that space could be transferred between different users undertaking the same activity, or between different activities, provided that the limits on effects were not breached. Such a system would have benefits in terms of the balance of certainty yet flexibility it provided, but require either a high degree of specificity of effects limits (difficult to achieve) or a process for quickly approving changes in use.

Reflecting the national interest

The Crown has the overall responsibility of ensuring that the use of those resources results in greatest overall national benefit, so it must control the risk of inappropriate decisions being made by those to whom it has delegated its regulatory functions. Decisions on the allocation of marine resources made at any level should be consistent with the directions provided / strategy set at the national level.

The most important use of marine resources is maintenance of ecosystem integrity, and it must not be undermined. If the capacity of the marine environment is not maintained and therefore is not available for future generations, the benefits it is able to generate will significantly decline. If the oceans are well managed, they should continue to generate a "surplus" of marine resources above the level of maintaining ecosystem integrity or capacity.

That "surplus" of marine resources should be shared among other uses/values in a way that takes into account local preferences and effects, but is consistent with directions provided at national level. A hierarchy of values in the marine environment – a graded statement of priorities from a national point of view – should be developed.

Where resources are limited, the uses offering the most value should be provided for in preference to less valuable uses. This hierarchy should be as clearly articulated as possible, noting that it will need to change over time as society's values change. It is likely to include grades of priority uses rather than a strictly linear listing. It should include identification of those activities that are considered sufficiently important or valuable that little or no constraints should be imposed on them, other than those necessary to maintain ecosystem capacity. There is probably general agreement that, for example, nationally important marine infrastructure should be a priority (Ministerial Advisory Committee on Oceans Policy 2001: 23).

Formulating this hierarchy would cause intense debate about what uses, and users, generate the highest value and therefore should have priority access to limited marine resources. It is likely to constitute some mix of multiple uses in a particular spatial area in most but not all cases, but there will not be a

societal consensus on all elements of the appropriate hierarchy. Avoiding this debate will not enable us to develop an allocation regime that can obtain the greatest benefit from use of marine resources. Along with better defined use rights, clear national direction on priorities would provide greater clarity and certainty and therefore put New Zealand in a better position to obtain greatest benefit from use of its oceans resources.

Unreasonable level of impact on existing uses

While the framework for allocating marine resources needs to be adaptable, it is necessary to consider the impact on existing rights holders. It must be clear under what circumstances use rights can be further restricted at any time, without claim to redress. Steps taken to restrict use rights to maintain the capacity of oceans ecosystems should be distinguished from decisions to alter the current allocation of resources in order to provide for the uses or values of others.

In some cases, achieving the highest value uses of oceans resources will require the current allocation of resources to be altered, and significantly impact on existing rights holders. Depending on the effects of the higher value use (e.g. the degree of exclusivity involved), it may require displacement of the current activity altogether. For example, a sewage discharge will generally mean that swimming and shellfish collection in the vicinity is not longer able to occur, and sand mining and scallop harvesting may be incompatible.

A basic principle of the New Zealand system of government is that no person shall be deprived of land by the Crown without receiving full compensation (this is a feature of the Public Works Act 1981). The situation in the oceans differs in that the Crown is the owner of the foreshore and seabed, and rights to use marine resources are not as strong as land ownership rights, but this principle is relevant to the oceans context. Essentially, rights should not be removed without fair compensation. An ability to remove rights arbitrarily would undermine oceans management and the ability of the Crown to deliver on its treaty settlement obligations to Maori. Uncertainty could increase to the point that investment would be undesirable, and there would be a significant overall loss of social, cultural and economic values.

This principle should apply to cases where rights are unreasonably affected as well as where they are removed altogether, with the level of any redress proportional to the loss. It is unfair for one group of people to bear significant impacts on their rights or values in order for another group to receive benefits. This is effectively a reallocation of resources. In general, established rights, interests and values should not be removed or unreasonably impacted by a change in resource use.

It is difficult to define with precision or certainty the threshold of an unreasonable effect on rights, interests and values – it may require an assessment on a case by case basis. It is inappropriate to consider redress for all adverse effects, even in the land context – some effects are minor and it is reasonable for people to make some compromises so that others have their needs and values satisfied.

Transferability of use rights, where it can be incorporated into management systems, should lessen the need for government involvement, but it will not eliminate it. Where the change in use is seen as necessary to obtain higher benefit, but the impact significantly undermines expectations, in general change shouldn't occur unless the affected users agree. The requirement for agreement should be able to be overridden where the new benefit is to be shared by all of the community – consideration should be given to extending the public works approach to the sea. Redress should, prima facie, be provided by those new users who obtain benefit.

Proposed principles – what to allocate

- Oceans should remain an open resource as far as possible
- Restrictions on the use of marine resources may be needed to:
  - manage adverse impacts on ecosystem capacity / integrity
  - manage adverse effects, on other uses or users, or
  - encourage investment and economic growth.
- The system for allocating the right to use space and other marine resources should be effects based, and provide for public participation
- The allocation of marine resources at all levels should be consistent with the directions provided at the national level
- The most important use of marine resources is maintenance of ecosystem capacity / integrity, and it must not be undermined
- Where resources are limited, the uses offering the most value should be provided for in preference to other uses
- Use rights must be able to be restricted at any time, without claim to redress, where necessary to ensure the integrity of oceans ecosystems
- The costs of using resources should be borne by those who benefit from that use - established rights, interests and values should not be unreasonably impacted by a change in resource use.

Who to allocate resources to

The Crown will not allocate ownership of oceans space or other resources to individuals or collectives, but will allocate to others the right to use oceans resources. Use rights can be allocated in three main categories:

- public rights, which are vested in the public generally, such as rights of access and navigation over the public foreshore and seabed
- individual rights, such as those granted by permits, and
- collective rights, namely those granted to or inherent in a group such as customary rights.

Whether a right is public, individual or collective is often based on the concepts of excludability (who can determine who benefits from the resource) and rivalness (whether use is affected by the number of users) (Guerin 2003: 2). For the main part, this paper does not discuss the attributes of use rights such as divisibility, duration, exclusivity, quality of title and transferability nor the categorisation of those rights into public, private, club goods etc. Those concepts are well canvassed in the literature.

Public rights

Allocating rights to the public is appropriate for activities that are largely non-exclusive and cause little impact, that is, where one person using the resource does not adversely affect the use of that resource by others. Examples are rights to swim and dive in the sea, navigation, and less tangible uses of the oceans such as the enjoyment of amenity values. Given the aim of managing use of the ocean to achieve greatest benefit, it is generally not appropriate to justify allocating such rights to specified people only. Public access in and over the marine environment should be restricted only where there are clear benefits of doing so, including where necessary to manage biosecurity, health and safety risks.

Limitations may however need to be imposed on the exercise of public rights in order to protect their value. For example, setting a maximum number of boats that can moor in particular bays, or allocating different parts of a bay to incompatible activities such as waterskiing and swimming. These restrictions affect the nature of the public right, but are necessary in order to provide for the full benefit of that use to be obtained, and to ensure ecological integrity.

Rights are also allocated to the public that involve extraction of resources. The recreational fishing right is a common law right that applies to all. Unrestricted, fishing can have significant impacts on the health of the marine environment. It is necessary to impose restrictions on recreational fishing that effectively constrain the amount of recreational harvest to sustainable limits, and manage the other adverse environmental effects of fishing (for example, the threat to dolphins from set nets). These limits must apply to all recreational fishers in order to be effective.

Individual rights

In order to enable the greatest benefit to be obtained from the use of oceans resources, it is sometimes necessary to allocate the right to use some resources to certain individuals only. This is the case when there are externalities arising from the use of a resource that need to be specifically controlled (ie the effects cannot be adequately controlled by imposing general rules on use), where there is competition for the resource (use by one person would diminish its use by another), and where providing security of right to use will encourage investment and increase efficiency and benefits of use. Often, individual rights will be exclusive or semi-exclusive in their nature.

The advantages of granting individual rights, depending on the nature of the rights that are allocated, can include control over environmental effects (ie use can be effectively constrained within limits), and greater efficiency of resource use. For example, allocation of individual rights to commercial harvest fisheries has been applied with significant success in promoting long-term productivity and the sustainability of a depletable open access resource. The certainty provided by well-defined individual rights also offers advantages in terms of supporting sustainable investment and economic development (Ostrom & Schlager 1996: 137).

Collective rights

Collective rights exist where many of the situations described above in relation to individual rights apply, except that the right to use the resources accrues from being part of a collective rather than an individual. Also called

customary rights, they generally accrue to particular groups of people who have a long history of undertaking that activity, are perpetual in nature, and cannot be transferred to other individuals or groups. Where they exist, they should be recognised and specifically provided for. In New Zealand, the Fisheries Deed of Settlement covers Maori (indigenous) customary fishing rights, and customary fishing rights more generally are encompassed within the public right to recreationally fish. Other marine customary rights, for example those of a more territorial nature, are covered by the Foreshore and Seabed Act 2004.

Proposed principles – who to allocate resources to

- The Crown will not allocate ownership of oceans space or other resources to individuals or collectives, but will allocate to others the right to use oceans resources
- Rights to access and non-exclusive use of marine resources should be granted to all people/the public, and restricted only where there is good reason to do so
- The right to use certain marine resources should be allocated to particular individuals where there are net benefits from doing so, for example to manage environmental effects or increase the efficiency of resource use.
- Where collective or customary rights exist, they should be recognised and specifically provided for.

How to allocate resources

The debate about the advantages and disadvantages of applying planning and market (or rights) based approaches to the allocation of marine resources is often polarised and entrenched. It is not necessary to choose to apply either planning or market based approaches - a combination should be used to allocate marine resources. The following section highlights some of the considerations in determining the appropriate mix.

The role of planning

Planning is an essential component of the regime for allocating oceans resources – it enables government, with input from stakeholders and the public, to set the agenda on key matters such as desired objectives and environmental limits that will guide more specific decision-making. It is recognised that, similar to on land, leaving the allocation of marine resources purely to the "market" would not achieve all of society's goals. Planning is a tool for government intervention that can occur at a variety of levels of government and geographic areas, and cover a range of activities or a particular sector at one time. At an extreme, planning would involve very extensive government regulation and allow little individual freedom.

Planning is a useful tool to consider a wide range of uses at one time, particularly public and collective rights and values, set priorities and indicate how tradeoffs will be made. The wider the scope of a plan the more complex it becomes. There is often a tension between providing communities with the opportunity to "have their say" over what happens in their area of interest, and the need to reflect the national interest. Once put in place, plans tend to be fairly rigid. While this provides certainty, it can be time consuming and costly to amend a plan in order to provide for changing uses or values, so it is appropriate for plans to be as enabling or effects based as possible.

Where the outcomes of a planning based process are uncertain, it can lead to unnecessary divisiveness and cost – with people defending their existing use rights through litigation, and political lobbying. A root cause of many of these problems is that rights, interests, values - and obligations or limits - in relation to the oceans are not defined with sufficient clarity. Greater certainty regarding the nature and extent of rights can however reduce flexibility for a planning process to make trade offs between rights holders.

The role of market based instruments

Market based (economic) instruments have a key role to play, alongside planning, in allocating the use of marine resources. At an extreme, a market based approach would involve minimal government regulation and a high degree of individual choice. There are many different types of market based instruments, including cap and trade systems (such as New Zealand's quota management system for fisheries), cost recovery, transferable permit regimes, subsidies and performance bonds. Market based instruments enable an efficient exchange of information about the value of activities. This means they can be more flexible and responsive than a highly planned regulatory system (transfer of use or user should be allowed with minimal government intervention). Other advantages of market based approaches can include efficiency of resource use, security to support investment and economic development, and the maintenance of environmental limits.

The use of market based instruments is more appropriate for individual rights than for public or collective rights. Rights based systems have a good success record in terms of specific resources (e.g. land, air emissions, fisheries), but it would be very difficult to define use rights for the range of activities in the inshore to the degree that the market could be an efficient allocative mechanism. One of the key problems is the lack of a common currency. It is difficult to assess and integrate non-market values such as the benefits obtained from recreational boating or the visual amenity value of open marine space. The possibility of using space as a currency was outlined earlier in this paper.

A further difficulty in extending market based instruments to collective rights is the question of representation and governance. The question of value can be relatively easily addressed if the decision can be made by one person. In the case of collective rights, a decision to amend those

Proposed principles – how to allocate resources

- Effective management of marine resources requires a combination of planning and market based approaches
- Market based instruments are more appropriately used for individual rights than for public or collective rights

rights can be made through obtaining the agreement of all the individuals in the group that holds the right, or where one person has correctly expressed the views of the group. There is however merit in exploring options to improve representation and governance.

Conclusion

This paper canvasses some of the key considerations in developing an allocation policy for the oceans. It is by no means comprehensive; allocation policy is complex and dynamic and a full discussion would require much greater scrutiny and length than is available in this paper.

In summary, some government interventions to constrain the access to and use of oceans resources are necessary, but should not be overly restrictive in order to enable the full benefits of use to be obtained. The limits imposed on the use of marine resources should be effects based, and cost effective.

Clear national direction is required in order to enable the greatest benefit to be obtained from oceans resources. Consideration should be given to developing a clear hierarchy of uses – essentially this will be a graded statement of priorities from a national perspective. The most important use – maintenance of ecosystem capacity – must not be undermined. Following that, where resources are limited, the uses offering the most value should be provided for in preference to other uses. This is likely to constitute some mix of multiple uses in a particular spatial area in most but not all cases, but there will not be a societal consensus on all elements of the appropriate hierarchy. Hard decisions will have to be made. A range of mechanisms, and both planning and market based approaches will be necessary to implement an effective oceans allocation policy.

References

Guerin, K. 2003. *Property rights and environmental policy: A New Zealand perspective*. New Zealand Treasury Working Paper 03/02. 42pp (available at http://www.treasury.govt.nz/workingpapers/2003/03-02.asp)

Ministerial Advisory Committee on Oceans Policy. 2001. *Healthy sea: Healthy society - Towards an oceans policy for New Zealand*. Oceans Policy Secretariat. 48pp (available at http://www.mfe.govt.nz/publications/oceans/healthy-seas-healthy-society/index.html)

Ostrom, E. & Schlager, E. 1996. The formation of property rights. Pp. 127-156. In: Hanna, S., Folke, C. & Maler, K. (eds.) *Rights to nature: Ecological, economic, cultural and political principles of institutions for the environment*. Island Press. Washington, D.C.