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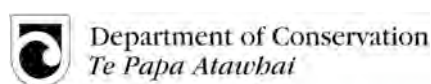
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Funding conservation opportunities: Who should pay? What should they pay?

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Abstract

This paper explores the vexed question of payment for access to the conservation estate. Although access is provided free of charge, the Department of Conservation makes various charges – such as trout fishing licences, hut charges and concession fees. This paper explores the theoretical issues of relevance in determining appropriate pricing regimes and discusses their implications for the Department, visitors, service providers and the wider community.

Key words: conservation, cost recovery, New Zealand, public goods, recreation

Introduction

New Zealanders are accustomed to visiting conservation amenities for free. While the Department of Conservation (DOC) charges for some services, such as huts and camping, the right to free entry into conservation land is protected by legislation. Systems such as New Zealand's, where conservation is paid for almost solely out of general taxation, almost inevitably end up under serious funding pressure (Van Sickle & Eagles 1998).

DOC is New Zealand's conservation management authority. Its mission is to "conserve New Zealand's natural and historic heritage for all to enjoy now and in the future" (Department of Conservation 2007a). DOC administers most of New Zealand's Crown land which has been set aside for scenic, scientific, historic, cultural recreational reasons. In total, DOC has almost a third of New Zealand's land area under management. This includes nearly 4000 reserves covering forest, maritime parks, marine reserves, river margins, coastline and several offshore islands.

This paper addresses the issue of who should pay for recreational use of the conservation estate. It explores the way recreational use is currently funded and compares this to Australia, Canada and the USA. A theoretical framework is developed in order to evaluate the current situation, and where changes can be made.

Theoretical Framework

In a recent Treasury policy paper, Guerin (2006) used the goal of "maximising the net benefits to New Zealanders from use of public resources". This appears to be an appropriate goal for this paper and would promote the welfare of New Zealand society as a whole. The optimal system of managing conservation land varies with social and environmental conditions. Factors to be considered are the degree to which the use of the land and amenities can be monitored, cost of collecting information, rates of recovery or change in the natural landscape, populations that may use the resource and the technology available for management (Dietz et al. 2003).

Should We Charge Users?

In the literature, arguments in favour of user fees appear to fall into three categories fairness, efficiency, and revenue collection. Cullen (1998) argues that New Zealand's present system of zero entry fees for conservation sites is not equitable. Taxpayers, residents, users and non-users are treated the same. There is already a significant time and travel cost involved in visiting national parks. To accept that the present system is fair is accepting that access to these

parks should be allocated by price. Travel subsidies would be needed if we were to try and make national parks equally available to all. Many argue that, because users of national parks are either higher income, or students with higher expected future income, charging the taxpayers to provide free entry to these areas is unfair (Cullen 1998, Kerr 1998). Rather, users should have to bear the cost of their use of conservation resources (Hartley 1997:xi).

The case presented by the efficiency argument is that charging for conservation experiences will lead to the right amount of goods and services being provided. Charging can also increase accountability as people usually want to know where their money is going (More 1999). The price people are willing to pay will give information on what the use of an area is worth to them. Combined with survey data on how non-users value the amenity, this could help separate use and non-use values. Espey (2006) considers that if the marginal cost of an additional visitor to a public recreation or conservation area is positive, then charging an entry fee equal to that marginal cost is efficient. If however the marginal cost of an additional visitor is zero, then it would not be efficient to charge for entry. In most conservation sites in New Zealand the marginal cost of more visitors is not zero. There are congestion costs and the damage that high use may do to the environment. There is also the cost of collecting rubbish and providing facilities to cope with more visitors.

Collection of revenue provides an important motive for introduction of user fees by conservation management authorities. Many park management authorities around the world have turned to user fees, when government funding is insufficient for their needs (Van Sickle and Eagles 1998).

Fee proponents argue that user fees: (a) promote equity by charging users directly, (b) increase economic efficiency, and (c) generate needed revenue (More 1999). However, More (1999) argues that charging for conservation opportunities has a negative impact on the poor in society. He states that the equity argument fails to consider the effect of fees on people at the margin, particularly the working class and ignores the existence of non-use values.

Non-use values represent the value that people derive from a conservation area independent of direct use. People who do not even visit a conservation area are able to gain non-use value. Many studies have shown that people gain value from the existence of an area, the option to use it, and bequest values even if they have never used and may never use the amenity (More 1999, Eagles et al. 2000). Many who support user fees (e.g. Cullen 1998) also accept the existence of non-use values, supporting a case for some conservation funding from general taxation.

If the population receives benefits, irrespective of use, general taxation may be the best funding mechanism, it may also be the only viable approach when it is difficult to determine who values the conservation estate and to what extent. However existence of non-use values does not provide an argument against introduction of user charges since such charges would by definition be aimed at recovering some of the use values enjoyed by visitors to the conservation estate. It is further argued that user charges are fairer, in that those who receive benefits pay.

What Pricing System?

Most “user pays” systems in conservation involve either collecting an entry fee, or charging for specific facilities and services. However, monitoring costs and the cost of collecting information and transaction costs can significantly affect the viability of any user pays system. The remoteness and size of the area under management are key determinants of monitoring costs. If it is difficult or too expensive to monitor visitor numbers in an area, the compliance rate of any payment system will be impossible to measure. This would also make enforcement challenging as many users may slip through unnoticed. Revenue collection will diminish if many users are able to avoid charges; weakening one argument in support of the user pays system. User pay systems, as opposed to funding by taxation, also create fairness. However if compliance rates are low then the system may be just as unfair as any tax-funded system. When choosing a pricing scheme it is important to recognise that these factors may undermine arguments supporting a user pays system.

The case of recreational fishing in New Zealand provides an example of the difficulty of influencing recreational use. Considerable expenditure is devoted to estimating stock levels and growth rates in order to set sustainable catch limits for the commercial fishing industry. But most recreational fishers do not report their catch, so little is known about the true impact that recreational fishing has on fish stocks (Lock and Leslie 2007). Lack of information and the high cost of monitoring and enforcement would present serious difficulties in any attempt to introduce a licence system for recreational fishing.

In contrast, determining the effect tourists have on a wetland walk would be a much simpler task. The cost of mitigating the damage from tourists by constructing board walks and tracks can easily be measured. The cost of repairing any damage, or the estimated loss in value of the conservation amenity from visitor damage, could also be taken into account when creating a user pays pricing system.

Rates of natural change are of greater importance in determining the pricing system for some conservation amenities, such as the marine environment, and less important in other areas. Information on how human use impacts on the natural environment should also be taken into

account when setting charges or levies. Often an activity is inevitably going to take something from, or damage the natural environment. In this case the scale of the damage and the rate at which this damage or loss recovers is very important. This measure of damage can then be used to set a maximum desirable level of use and any pricing system should be structured accordingly (Dietz et al. 2003).

Willingness To Pay

Kebede, Ngandu, Schelhas & Batalia (2006) studied the demand for access to Tuskegee National Forest in the USA, and made an interesting observation. Users surveyed who lived close to the park were less willing to pay an entry fee than those who had travelled farther to get there. Those who have travelled have already paid a significant price to use the park in terms of travel time and cost. They are a self-selected group of people who are willing to bear a cost to use conservation land. This explains why they are more willing to pay an entry fee, as the charge for conservation opportunities is likely to be a small proportion of their overall cost for most people. This concept has some interesting implications for New Zealand. For example, a three-day hike requires the opportunity cost of the next best use of the person's time, the cost of getting to the location and the cost of supplies and equipment for the trip. These costs mean that there are people who would get benefit from using conservation land but who don't use it because the costs are higher than the benefit. A person who perceives benefits from hiking greater than the initial costs would be more willing to pay a small fee to use the conservation land. The fee would seem less significant in terms of the overall cost of the trip and probably still be less than the benefits hiking brings to the user.

Public Goods

Many consider conservation to be a public good; therefore, by charging for it, those who aren't willing to pay are excluded and society would lose welfare. As previously discussed, there are already those who are excluded by the cost. The two characteristics of a public good are non-rivalry and non-excludability (Pindyck and Rubinfeld 2001:644). In reality, most goods fall somewhere along a scale of non-rivalry and non-excludability, rather than being pure public or private goods. Where they fall on the scale can help us understand the most efficient way of providing them. It can be argued that activities such as maintenance of biodiversity and species recovery programmes have strong properties of non-excludability and non-rivalry. It is not possible to exclude people from gaining non-use value from the knowledge that species are recovering. Likewise, the marginal cost of one more person gaining utility from this knowledge is zero. These activities are public goods and can efficiently be funded through general taxation.

However, provision of recreational opportunities such as huts, tourist concessions, visitor centres, and to some extent, access to tracks, are often rival goods—consumption by one person reduces the amount available to others. It can also be argued that there is scope to make these goods more excludable. Then it would seem these goods have properties more like private goods, which suggests that social benefits may be increased by recovering at least a proportion of costs from users.

New Zealand Experience and DOC

The National Parks Act (1980) states that “the public shall have freedom of entry and access to the parks, so that they may receive in full measure the inspiration, enjoyment, recreation, and other benefits that may be derived from mountains, forests, sounds, seacoasts, lakes, rivers, and other natural features”. Similarly, the Conservation Act (1987) contains the phrase “Except [in special circumstances covered under the act] the entry to and use of conservation areas by the public shall be free of charge”. This presents serious barriers to charging for conservation opportunities. It does not however, prevent an expansion of the current system of charging for some services (Haque 2006).

Kerr (1998) sees free use as a subsidy, and hard to justify in the case of conservation. The cost of using many national parks and other conservation opportunities in New Zealand is borne largely by taxpayers. Also other users, who are willing to pay, may have a lower quality experience due to the increased use of an area caused by free access. Everyone pays for the opportunity, subsidising those who actually use it. According to Cullen (1998), surveys have consistently shown that the average income of conservation land users is much higher than that of the general population. This means that park users of above average income are being subsidised by non-park users. Kerr (1998) argues that this translates to the idea that the rich are being subsidised by the poor. This argument weakens, however, when you consider that the rich pay more tax.

While the existing users of parks have a high average income, Bowker, Cordell and Johnson (1999) show that of these park users, the higher their income, the more likely they are to support user fees. Finding that willingness to pay user fees is positively correlated with income, implies that these fees would have more of an effect on people from the poorer segments of society, who already chose to use the park. This seems to back up More’s (1999) argument that even small user fees affect people at the margin. It is important to note that the study by Bowker et al. (1999) was conducted in America; however it is feasible to suggest a similar pattern might apply to New Zealand users of the conservation estate.

The opportunity cost of having the land as a reserve should be considered under any management regime. If the land has been set aside from other uses, then either the government or a private individual has decided that enough welfare is being gained to justify having the area as a reserve. If society values having these reserves then at least some of the cost should be born by the taxpayer. This could be achieved simply by holding land as a reserve and forgoing the return that could be made off it by the next best use. Individuals however also gain benefit when they visit these sites or engage in recreation in the public domain. Therefore the relevant question is should they then also contribute to at least the financial cost of having and maintaining these reserves?

Many private landowners have set aside land for reserves of varying sizes. Some have even gifted land for conservation purposes. Te Kauri Park on State Highway 31, was first established in 1962 with 41.5 acres donated by Douglas and Ngaire Anderson to the Hamilton Junior Naturalist Club. The Park, currently totalling 2718 acres, is now administered by DOC. Management is shared with the Hamilton Junior Naturalist Club, who still freehold the land in the centre of the Park, and the Te Kauri Lodge (Hamilton Junior Naturalists Club 2007). Such an example also highlights how clubs and societies can have an important role in managing conservation resources. The 'Junats', as they are known, are very conservation minded and are regularly involved in planting, track maintenance and other conservation activities both inside and outside of Te Kauri Park. They receive funding from membership fees, donations and renting out the lodge to tourists and educational groups.

It is hard to experience what Te Kauri Park has to offer without staying at the lodge. Even the lodge itself is an attraction, not only as a base to enjoy the Park, but also for its onsite museum. For this reason, collecting fees from visitors at the lodge is an effective way of recovering some of their costs from users of Te Kauri Park. More funding is obtainable through donations, grants and memberships. This shows how a combination of user fees, and harnessing of non-use values, can be effective in managing conservation land and amenities.

This way of managing conservation land has also been adopted by DOC to some degree. Many of the amenities, such as huts, carry a charge. This helps recover some of the cost of providing certain experiences from the users. Haque (2006) argues that while the current heavy subsidisation of conservation opportunities is unjustified, entry charges are not an appropriate solution for the majority of New Zealand's conservation land. Instead an expansion of the current system of user charges is proposed.

International Experience

Australia

All Australian states and territories use some form of user pays system in conservation. There are charges for camping, leases and licences, entry into certain areas and other services or facilities. Many of the national parks require you to buy a vehicle pass for entry. The goals of the user pays system in Australia are “cost-effectiveness, improved park management, better visitor facilities and services, and positive public attitudes towards the agency and protected area management” (Queensland Parks and Wildlife Service 2000:3).

In Tasmania, entry fees apply to all twelve national parks. Passes can be brought from booths at the park or before arrival through travel agents and visitor centres. Daily or annual passes are available. Compliance rates vary widely with close to 100% for easily monitored sites with booths at every entrance. Compliance of nearly 100% is also achieved with guided tours, campgrounds and commercial operations, whereas rates as low as 50% have been estimated for areas with honesty boxes and self registration. In Tasmania the revenue to cost of collection ratio is about 3.5:1, but the ratio is as high as 20:1 in other areas (Queensland Parks and Wildlife Service 2000).

Revenue raised also varies over time. The Ayers Rock National Park recouped 83% of its management costs from user fees before 1991. Between 1991 and 1992 however, user revenue accounted for only 64% of management costs. Kosciusko National Park recouped 95% of their management costs through user fees in the same year. Many other areas recovered much lower percentages of their costs. The average rate of user fees revenue across Australia was less than 25% of the annual management costs (Walpole et al. 2000).

There is room for improving the efficiency of the existing system through increased enforcement and ease of buying passes. Tasmania however, like the rest of Australia, has found the user pays system to be effective in producing the desired outcomes (Queensland Parks and Wildlife Service 2000).

Canada

Since the late seventies, as the demand on parks in Canada has increased, there has been a shift towards the use of more tourism-based fees and charges. In general, there has been a trend away from government funding in the form of general taxation, to raising income from fees charged for the use of services and facilities by park visitors (Van Sickle and Eagles 1998). In 1998, Canada passed new national parks legislation in order to allow Parks Canada to

implement new management policies. This new style of management resembled that of a private company. It involved more revenue recovery from tourists, the ability to borrow money against this revenue, more standard accounting practices and the ability to keep and invest all revenue received (Eagles 2002). The model implemented by the Canadians, is to charge for specific facilities provided to tourists in parks, such as camping sites and lodges, in order to recover a proportion of the costs associated with the park.

The United States of America

In the USA, revenue from users accounts for around 18% of park budgets, which is marginally higher than in Canada (Eagles 2002). The USA has a similar system of charging for facilities provided to park users as in Canada. Kebede et al. (2006) study the case of Tuskegee National Forest in Alabama. The forest does not currently provide any amenities for visitors and does not charge for entry. The purpose of their study was to evaluate the non-market demand for services and facilities at the forest and gauge the willingness of visitors to pay for these services. They found that generally visitors would be willing to pay fees if facilities such as drinking water, flush toilets, electricity and sanitary facilities were provided at campsites. There was a definite demand for these services.

Implications for DOC, Service Providers, and the Wider Community

Kerr (1998) believes that New Zealand tourists are not offended by having to pay to visit national parks overseas. This implies that it would then be reasonable to collect money from foreign tourists. Notably, there has not been a backlash from New Zealanders who pay to use DOC facilities. User fees on conservation land could increase equity and allow increased level of service and benefit in New Zealand, but they are not necessarily the most efficient way of providing conservation amenities.

If we accept Guerin's (2006) goal of "maximising the net benefits to New Zealanders from use of public resources", there are some clear implications for New Zealand. The reality is that it would not be efficient to charge for some services provided by DOC due to high monitoring costs and low marginal cost per visitor. For remote national parks, where there are few visitors relative to the land area, it would not be efficient to charge entry fees. In the absence of congestion, one person using the resource would not reduce others enjoyment of it. It would also not be economic to exclude people from this resource. Thus many national parks in New Zealand fit the definition of a public good, as outlined in Pindyck and Rubinfeld (2001:644).

A DOC hut, on the other hand, is efficient to charge for. The DOC hut does not fit the definition of non-rival. There would be a capacity limit and the more users the less utility each user would get out of staying there. It would not be economic to have someone living at each hut to make sure everyone pays however there are other ways to prevent DOC huts becoming non-excludable. Allowing travellers to book over the internet or phone in advance would ensure that if anyone was squatting in a hut then DOC would be informed when the paying customers arrived. This method is already used in some areas by DOC. For example, if you want to walk the Milford Track in peak season an online booking is required. A pass allowing you to stay at the huts costs \$120 for an adult in peak season and \$30 off peak (Department of Conservation 2007b).

DOC however states that “fees for the use of recreation facilities and services is heavily subsidised to foster participation by many people”. The decision to “heavily subsidise” goods like Huts and Campsites should not be taken lightly. Subsidies cause more people to use a good than is efficient. This is because the price does not reflect the real cost of providing the good. If DOC finds the social goal of not having certain groups excluded by the price important, then consideration should be given to using discounts. DOC already provides discounts on services such as huts to members of approved ‘Recreation Associate’ organisations and school groups (Department of Conservation 2007b). Using discounts as a mechanism to foster more participation by certain groups, especially educational groups, would be an effective way of meeting this social goal without the use of heavy universal subsidies.

A good example of where it is efficient for DOC to charge the full cost of providing a facility is the issue of permits for commercial activity on DOC land. DOC issues many permits for activities such as trail bike riding, hunting and caving to commercial operators. DOC already charges concession fees for the privilege of obtaining commercial benefits from public land (Department of Conservation 2007c). The aim, in DOC’s pricing strategy, should be to recover the benefit of people undertaking that activity on conservation land. For example, an average consumer may be willing to pay \$20 to climb indoors or on an artificial climbing wall. They may also be willing to pay \$250 to spend a day climbing outdoors on conservation land. A proportion of this should go to the operator to cover their costs and make a profit, and a proportion should go to DOC to cover the benefit that is being obtained from holding the activity on conservation land.

Charging user fees for entry into conservation land in New Zealand will often not be efficient. There is, however, scope to expand the current user pays system and to cease or reduce universal subsidies for facilities provided by DOC. As shown, user pay systems are efficiently

working in Australia, Canada and the USA. An expansion of the current system, currently predominately taxation funded, could increase equity, efficiency and revenue.

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