The Value of Conservation

Not a "lock-up" of resources but a "lift-off" for their sustainable development: May 2007

Harry Broad (*), Geoff Butcher (**), John Waugh (***), Bernie Napp (****)

(*) Harry Broad, strategic issues manager, Department of Conservation, Wellington; (**) Geoff Butcher, economist, Butcher Partners, Christchurch; (***) John Waugh, hydrologist, Ashburton (****) Bernie Napp, senior adviser, Department of Conservation, Wellington

ABSTRACT

As part of growing public debate on sustainability in New Zealand, the Department of Conservation commissioned studies in 2004-2006 on the regional economic impacts of selected activities and ecosystem services on public conservation land.

In particular, claims had been made that public conservation land is a "lock-up" of resources and an unnecessary deadweight economic loss to the national economy.

Tourism and recreation spending were calculated for Abel Tasman National Park, Queen Charlotte Track and Fiordland National Park using economic impact analysis. For conservation lands on the West Coast of the South Island, economic impacts arising from mining and other activities were also included. A study of Te Papanui Conservation Park calculated the economic value of freshwater provided by this catchment. Whangamarino Wetland was studied for its flood water storage services.

The studies show that conservation also makes a significant contribution to regional wealth and employment.

Economic activities arising on public conservation lands on the West Coast led to 1814 extra jobs and extra spending in the region of $221.6 million/year.

The equivalent figures for Fiordland National Park are 1600 extra jobs and $196 million/year extra spending in Southland and Queenstown Lakes Districts; Abel Tasman National Park, 370 jobs and $45 million/year spending in Nelson-Tasman, and the Queen Charlotte Track, 98 jobs and $9.4 million/year in Marlborough.

At Te Papanui, freshwater flows provided to Dunedin residents, to irrigate the fields of Taieri farmers, and to Otago hydroelectricity generators has a net present value of $136 million. The figure equates to a one-off payment to obtain the water supply from elsewhere if Te Papanui water ceased to be available.

By choosing discrete study areas in regions where DOC has a high profile, and by collecting market data, DOC's advocacy on the wider value of conservation to New Zealand has been strengthened.

INTRODUCTION

Towards the end of 2003 a review of pastoral farming lease tenure in the South Island high country began to gain heat in the media. During this time the first 15 properties were nearing completion of tenure review, Land Information Minister John Tamihere had spelled out the Government's intentions for the high country in August 2003, and the Government's High Country Objectives were promulgated in December 2003.

Under the Crown Pastoral Lands Act 1998, the runholders or lessees could negotiate with a Crown agency (Land Information New Zealand – LINZ) the dividing of leasehold land into freehold parcels, in exchange for lands with high conservation and/or landscape values to return into full public ownership.

In so doing, the runholders could diversify away from pastoral farming on the freeholded land, if they wished, into activities such as subdivision, tourism and viticulture, subject to local planning requirements. It sounded like a good deal, so why the fuss?

At issue for the runholders is either that they were not getting enough freehold land out of the deals, or that some of the runs were unsuitable for being split up in this way. Farmers who did not wish to pursue tenure review, including for this reason, also feared that their lease rents would be raised. (On 7 May 2007 pastoral lease rents were indeed raised, by an average of six times, to reflect "amenity values" of high country landscapes.)

The runholders' response was a media and lobbying campaign. It was alleged by the runholders that the Department of Conservation would be unable to manage new conservation lands flowing out of tenure review, and that DOC's "land grab" in the high country was a "lock up" of resources. By implication, the farmers knew more about managing land than DOC did, and would be more likely to do a good job of it, e.g. by using stock to control weeds, which DOC could not afford to do using other methods.

The Department was concerned that the views of a vocal minority, over time and if unchallenged, could influence mainstream public opinion on conservation, which had hitherto been overwhelmingly positive towards the Department. It was also concerned that the high country debate was being misrepresented.

To illustrate, the nature of the debate, specific examples of criticisms of DOC are given below in Arial font, with DOC's observations included where relevant:

> "DOC at the moment spends 20 cents per hectare on weed control. Molesworth [a 180,000 ha landholding, now managed by DOC as a farm park] at present spends $1.30 plus per hectare. The land management nowhere near compares." - **Federated Farmers High Country committee secretary Bob Douglas, Ashburton Guardian, 20 Oct 2003**

Fact: The 20 cents a hectare is divided through the entire South Island, including land not managed by DOC, and in the case of DOC-managed land includes lakes, glaciers, mountain tops, dense forests and other places where there are no weeds. The comparison is inappropriate.

> "It has been estimated 500,000 stock units earning about $30 million in revenue a year will go." - **Neal Wallace, reporting for the Otago Daily Times, 24 Oct 2003**

Facts: Revenue is not the same as profit, and farmers will be pursuing other economic activities. Because farmers would only go into tenure review if the opportunity costs worked in their favour, farmers are making the decisions about stock losses, not the Government which is what the story implied.

> "It is difficult to see how New Zealand can improve its wealth while continuing to **lock up** half its land mass in Conservation Estate, and placing all the keys in the hands of a single government department, overseen by a Minister with a personal power of veto." **– commentator Owen McShane, 2003**

Fact: DOC manages around one-third of New Zealand, much of which has no alternative economic use, not least because it is legally protected. Furthermore, this land is open to public access, which is in itself a source of economic value.

> "DOC has a well-deserved reputation as the most irresponsible landowner in New Zealand." – **National MP David Carter, Otago Daily Times, 13 Feb 2004**

Fact: DOC spends more on weed control per hectare per year than any other organisation in New Zealand.

> "In relation to extra land targeted for conservation [in tenure review] … the value of economic production foregone unnecessarily would be a **dead-weight loss** to all New Zealanders." – **Michael Hyndman reporting to the High Country Accord in April 2004**

Fact: On the other hand, public will gain access as of right to new areas of land, and there will be new economic opportunities, on and off the public conservation estate, e.g. tourism and recreation.

> "Under this policy, which has had little public discussion, vast areas of pastoral lease land are being nationalised. You will appreciate the scale of the **land grab** when you see these maps." - **Geoffrey Thomson, Trustee and Spokesman, High Country Accord, addressing the High Country Heritage Forum, Christchurch, 1 June 2004**

> "New Zealand would be one of the world's wealthiest countries if there were more access to the 84 per cent of West Coast land DOC administers." - **Buller Mayor Pat O'Dea, Radio NZ, 8 June 2004**

> On tenure review: "The merino industry … may lose 30-40 per cent of its sheep." – **Peter Crone, president of the National Council of New Zealand Wool Interests, NZ Farmers Weekly, 28 July 2004**

> "The Labour Party … may be learning it can't **lock up** the conservation estate. It is too valuable an economic resource." **Commentator Colin James, Business Herald, 23 Sept 2004**
>
> On tenure review: "Labour's real and secret objective - plain and simple - is to take land out of farming and put it into parks and reserves … this is a deliberate, planned Government **land grab**." – **National Party leader Don Brash addressing the Federated Farmers High Country Annual Conference, Molesworth Station, 16 March 2005**
>
> The Labour Government's South Island high country **land grab** will **lock up** $53 billion worth of minerals," – **ACT Party list MP Gerry Eckhoff, 13 May 2005**

Facts: The $53 billion is the value in the ground, most of which will never be extracted, and 96% of the figure relates to lignite in two areas where active exploration of the opportunities is underway. Also, more than 90% of formal access arrangement applications to mine on DOC-managed land have been approved by the Minister of Conservation or delegated authority since the Crown Minerals Act was passed in 1991.

> "The Tenure Review process has now been corrupted by the agenda of [Prime Minister] Helen Clark and DOC, who are using the opportunity to **lock up** a lot of the South Island high country and take it out of productive agriculture. A massive **land grab** is occurring. A series of up to 20 high country parks are proposed." – **National MP David Carter addressing the National Party Canterbury-Westland Regional Conference, 6 May 2006**

Fact: The high country parks will fall out of tenure review, depending on the deals reached between farmers and LINZ, which are on the basis of willing buyer and willing seller. It's not a case of the Government forcing tenure review.

> On tenure review: "If any land is taken out of productive agriculture and retired into the DOC estate, then New Zealand clearly loses the economic benefit the farming of that land has delivered … New Zealanders need to have a serious debate about the quantity of land in the DOC estate, and recognise the ongoing cost of such a **'lock-up'** policy." **- David Carter MP addressing the National Party Annual Conference, 23 July 2006**

The above statements present a partial snapshot of tenure review media coverage, to highlight the matters at issue for the purposes of this paper. In many cases, the Minister of Conservation or the Department responded in the media to the allegations made, having made a deliberate and considered decision to challenge them. But it became clear that the Department needed to do more than that; it was important to be able to show that conservation did indeed lead to economic benefits for regional economies.

The approach taken was to choose parts of the public conservation estate that had a big impact on regions, and choose economic impact analysis, a method that would deliver results to which people could easily relate. Christchurch economists Butcher Partners were commissioned by DOC to produce the studies.

Stated-preference valuation techniques such as contingent valuation were discarded as an option because the numbers produced are difficult to ground in reality – it was judged that the method would not work as well for advocacy.

The question of cost-benefit analysis did not arise because when land is legally protected, there is no alternative use. In essence, the question becomes: does public conservation land have non-zero value? If yes, what is an approach to that value?

Conservation lands on the West Coast of the South Island were chosen for the first study, largely because public conservation land accounts for 84 per cent of the region's total area. It was expected that the economic impacts of tourism and mining, in particular, would be significant. The study was completed in March 2004 (but was released to the media in June, occasioning the radio comment by Buller Mayor Pat O'Dea reproduced above).

Abel Tasman National Park and the Queen Charlotte Track were the subject of a second study, completed in May 2005. With 180,000 visitors to the national park, and 30,000 walking the busiest section of the QCT each year, the focus was on tourism impacts on the regions of Nelson-Tasman and Marlborough, respectively. A similar line was taken with a study of Fiordland National Park, completed in August 2006.

A different approach was adopted in studying the water supply services provided by Te Papanui Conservation Park in Otago. Here, Butcher Partners measured the value of water in terms of costs that would be incurred to Dunedin City Council, hydroelectricity generators and Taieri farmers needing water to irrigate their fields if the water supply ceased to exist. This study was completed in late 2005.

Because of the limited range of "ecosystem services" covered by the economic impact studes and the avoided-cost study, namely, in relation to tourism and recreation, and supply of water flows, current efforts are aimed at finding other types of conservation values for study.

For example, Whangamarino Wetland in the North Island was chosen for a study of its contribution to the flood control scheme on the Lower Waikato River. Ashburton hydrologist John Waugh was commissioned by the Department to report on this, which he did in April 2007. This work was incorporated into a DOC report on the economic value of Whangamarino Wetland, including the value of duckshooting, completed in May 2007.

ECONOMIC IMPACT ANALYSIS

This method measures the total dollars spent in a region that would not have been spent if the national park/conservation area did not exist. One advantage of measuring economic impacts for DOC is that the results can be expressed in ways that are familiar to non-economists:

- **Jobs:** number of employees and self-employed persons expressed as full-time equivalents (FTEs).
- **Household income:** what households earn before tax.
- **Value added:** household income plus returns to business capital, i.e. wages, taxes, interest, depreciation, self-employed income and profits.

- **Output:** total turnover, that is, the sum of value added, and purchases from suppliers.

Calculating economic impacts entails chasing the money-go-round in a regional economy, that is, counting what tourists spend on tourism businesses, and what they buy from their suppliers, and so on. The flow-on effects are derived from the direct spending using formulas known as **multipliers**.

Multipliers are based on economic models of regional economies. For instance, on the West Coast, the average multiplier for all types of employment in respect of public conservation land is estimated to be 1.26. That means that if there are 1442 jobs directly related to conservation, the total number of jobs generated in the region is 1814. The additional 372 jobs include the extra retail staff, hairdressers, bankers, builders, petrol station workers and so forth needed to service the 1442 workers.

Using economic impact analysis, it is possible to estimate how much extra money is pumped into a local economy, the number of new jobs created, and the contribution to a region's household income and to business profits as a result of a national park or conservation area.

WEST COAST PUBLIC CONSERVATION LAND: MARCH 2004

The West Coast covers 1.9 million ha of land managed by the DOC West Coast/Tai Poutini Conservancy, around 84 per cent of the region's total area. It incorporates parts or all of Kahurangi, Paparoa, Arthur's Pass, Westland and Mt Aspiring National Parks, as well as a number of forest parks.

The study found that economic activities arising in relation to public conservation land made a significant contribution to the West Coast economy – 15 per cent of the 12,341 full-time job equivalents in the region in 2003, 13 per cent of total household income, and more than 10 per cent of total gross output.

Today the figures would be significantly larger, with new developments occurring on public conservation land, and projected increases in tourism to the West Coast. Tourism to the West Coast grew by 31 per cent in volume and around 10 per cent in value between 2000 and 2003, and a Lincoln University survey has found that more than 65 per cent of visitors to the West Coast have public conservation land as their prime reason for visiting. DOC employs 150 staff on the West Coast. As at 2003 there were 58 mining concessionaires, and 682 holders of non-mining concessions, mainly for tourism, farming, gathering sphagnum moss, electricity transmission lines and telecommunications.

Data for the study came from DOC expenditure figures, estimated value of DOC concession operations, and regional tourism figures. Butcher Partners also updated economic models for the region, and developed new economic multipliers for tourism, farming, the mining industry and DOC activity to calculate indirect and induced impacts on the regional economy.

West Coast conservation land
Impact on the West Coast in 2003

DOC spending	$13.0m
Jobs	1814
Output	$221.6m
Value added income	$117.7m
Household income	$62.1m

ABEL TASMAN NATIONAL PARK & QUEEN CHARLOTTE TRACK: MAY 2005

The Nelson-Tasman and Marlborough regions were selected for further economic impact studies to add to the results for the West Coast. In the cases of Abel Tasman National Park and the Queen Charlotte Track, tourism is the focus.

Visitors were surveyed on what they spent during the 24 hours prior to getting to the site (to establish average expenditure in the region), expenditure at the site, expected duration of stay at the site and in the region, and how long visitors would have stayed in the region had they not been able to visit the site (to avoid counting tourism expenditure that would have occurred in any case).

Concessionaire activities (e.g. water taxis, kayak hire) and some DOC activities, which were estimated separately, are funded by visitor spending. Tourism spending on these activities was not counted to avoid double counting.

At Abel Tasman, visitors were divided into walkers, kayakers and Totaranui campers. Average daily spending figures were calculated for each group and then multiplied in each case by the numbers of visitors and the average time spent on each activity.

Abel Tasman National Park

At 22,530 ha, the headlands straddling Tasman and Golden Bays form the smallest of New Zealand's 14 national parks. Abel Tasman is best known for the 51km coastal Great Walk, taking in bush and forest-fringed golden sands and turquoise waters, granite headlands and islands, with ample camping and tramping facilities along the route.

The area attracted around 180,000 visitors in 2004, including 75,000 day walkers, 24,000 overnight trampers, 29,000 kayakers, 10,000 day boat users, and 10,000 staying at Totaranui, as well as 30,000 visits to the park by private boat, and 10,000 visitors using only the beaches and not the walking track.

Abel Tasman National Park
Impact on Nelson-Tasman

DOC spending	$1.2m/yr
Jobs	370
Output	$45m/yr
Value added income	$18m/yr
Household income	$11m/yr

Queen Charlotte Track

A water taxi ride away from Picton, the 71km track spans forested and farmed public conservation land and private land between Ship Cove and Anakiwa. Part of the attraction is the water taxi service, offering access to several landing points and a backpack-carrying service, allowing visitors to choose the number of days they wish to spend on the track. The private huts and lodges en route offer a wide range of accommodation standards.

The track is open to mountain-bikers, except along the busy Ship Cove-Punga Cove leg between 1 December and 28 February, making the Queen Charlotte one of the few dual-use tracks in the public conservation estate. It is also one of the few tracks where people can walk comfortably side by side.

Around 30,000 people walked or mountain-biked the busiest section in 2003–2004. There were 53,000 visitor-nights spent on the track in a year, and 12,000 visitor-days for people not staying overnight. The track directly supports more than 10 private accommodation businesses and three water taxi companies.

Queen Charlotte Track
Impact on Marlborough

DOC spending	$0.2m/yr
Jobs	98
Output	$9.4m/yr
Value added income	$4.3m/yr
Household income	$2.5m/yr

FIORDLAND NATIONAL PARK: OCTOBER 2006

At 1.26 million ha, Fiordland National Park covers 15 per cent of public conservation land in New Zealand. Indented by fiords and splashed with lakes, this mountainous and forested region epitomises wild, untouched nature.

Fiordland National Park is part of Southwest New Zealand/Te Wahi Pounamu, listed as World Heritage in 1986 and doubled in area in 1990. This status recognises the region's outstanding glaciated landforms, and native flora and fauna. Around 700 species of plant are found only in Fiordland.

Following the methods used in the Abel Tasman National Park/Queen Charlotte Track study, surveys of visitors and tourism concessionaires have formed the basis of a study of the economic impacts of Fiordland National Park on the Southland and Queenstown Lakes District economies.

The wider regional focus takes in the importance of Milford/Piopiotahi, with at least 450,000 visitors a year arriving by road or air from Queenstown and Te Anau to view Mitre Peak and, perhaps, take a boat trip on Milford Sound.

Attractions include the world-renowned Milford and Routeburn Tracks, and the Hollyford and Kepler Tracks, as well as the Dusky Sound and Hump Ridge walks, the

crossing of Lake Manapouri to Doubtful Sound, scenic flights over the park, and hunting, fishing and rock climbing opportunities.

Fiordland National Park receives around 33,000 overnight visitors and 560,000 day visitors a year, 80 per cent of whom are from abroad.

Fiordland National Park
Impact on Southland and Queenstown Lakes Districts in 2005

DOC, spending	$8.8m
Jobs	1600
Output	$196m
Value-added income	$78m
Household income	$55m

To measure the impact of Fiordland National Park on the national economy, an additional set of survey questions were asked to determine whether the park is good for New Zealand as a whole, not just Southland and Queenstown Lakes..

Ten per cent of overseas visitors to the national park surveyed said that in the absence of the park they would have stayed a shorter time in New Zealand and a further 12 per cent said that they would not have come to New Zealand at all.

Specifically, foreign overnight visitors to Fiordland said that they would have stayed an average of 2.8 nights less in New Zealand, and foreign day-visitors said that they would have stayed an average of 1.6 nights less in New Zealand, if the park weren't there.

Beyond Southland and Queenstown Lakes Districts, Fiordland National Park generates an extra 155 jobs in New Zealand and extra spending of $32 million.

Another way of interpreting the results is to look at the direct spending in New Zealand as a whole by overseas visitors as a result of Fiordland National Park and this figure is $100 million of foreign exchange earnings

In addition, Fiordland National Park contains the Manapouri hydroelectric power scheme which generates around 5,025 GWh/year (worth $300 million a year).

TE PAPANUI CONSERVATION PARK: LATE 2005

The conservation values of the South Island high country were defined in the Crown Pastoral Lands Act 1998 as public access and recreation opportunities, native species, historic and cultural heritage, and landscapes. A significant omission from this list are ecosystem services. These can be of high economic value to regions, as a study of Te Papanui Conservation Park's water supply services has shown.

Te Papanui Conservation Park occupies 22,000 ha of tussocklands 60km northwest of Dunedin. Much of this land was on the former Rocklands Station, now transferred into DOC management via tenure review of the pastoral lease.

In approaching a valuation of Te Papanui's water supply, Butcher Partners Ltd asked: if the water supply were suddenly removed, how much would it cost the biggest users to get the water from somewhere else?

The resulting value of the water supply was $11 million a year (in 2005 dollars) to provide water for Dunedin residents, hydro-electricity generators in the region, and to irrigate the fields of Taieri farmers. This figure equates to a one-off payment in 2005 of $136 million. The key point illustrated by the study is this: just because current users do not have to pay for Te Papanui water does not mean that it does not have value. Furthermore, the fact that this land is now protected has economic implications.

To determine how much better off people in the region are from Te Papanui water, a study would be needed to compare water levels and quality with continued farming at Te Papanui with a change of land-use.

Te Papanui Conservation Park
net present value of water in 2005

Dunedin's drinking water	$93m
Hydro-electricity	$31m
Irrigation of Taieri farms	$12m
Total	**$136m**

WHANGAMARINO WETLAND: MAY 2007

In December 1989 a 5923 ha portion of Whangamarino Wetland became formally recognised under the United Nations convention on world wetland conservation (Ramsar, Iran 1971). The Ramsar designation was inspired by the native species and ecosystem values, in particular, the diverse and numerous water birds, including herons and bittern, rails, waders and waterfowl.

By legally protecting New Zealand's second largest wetland, society has recognised the "non-use" values of the native species and ecosystems therein. But there are other economic values to society that flow from this northern Waikato site.

Of particular importance is the role of Whangamarino Wetland within the flood control scheme on the Lower Waikato River. Its water storage function during peak flows has led to avoided costs in public works and reduced damage to surrounding farmland during large floods, of which there have been several in the last decade.

The flood control scheme managed by the regional territorial authority, Environment Waikato, reproduces the natural water storage functions of Whangamarino Wetland (and Lake Waikare, a shallow lake immediately to the south of the wetland) but in a more controlled way.

Artificial canals now speed the movement of water from Lake Waikare to Whangamarino Wetland. Control gates at the western outlet of the wetland prevent backflow from the Lower Waikato into the wetland during floods. Conversely, once the peak has passed the gates are opened to allow water to flow from the Whangamarino into the Waikato.

The Waikare-Whangamarino system can store up to 94.8 million cubic metres of water, which exceeds the total live storage of the eight Waikato hydro dams (61 million cu.m.). The system

lowers the flood peak in the Waikato by 40cm to 60cm, enough to reduce the chances of serious damage to surrounding land.

During a "100-year flood", as occurred on 12 July 1998, excess water from the Waikato River flowed across a spillway into Lake Waikare. Peak flow of the river at this location was 1565 cumecs during this event, of which 200 cumecs discharged into Lake Waikare.

Without the Whangamarino control gates, this event would have flooded an extra 73 square kilometres of land adjoining the wetland. At a farmland damage estimate of $515 per hectare (1998 $), total additional farm damage (over the 7300 ha) would have reached an estimated $3.8 million (1998 $) or $5.2 million in 2007 dollars. (Unavoidable flooding did occur of 6700 ha of farmland.)

In the wet years of 1995 and 1996, there were nine flood events on the Lower Waikato where the peak flow at Ngaruawahia exceeded 793 cumecs, all of which would have would have resulted in the Whangamarino control gates being closed, and flood run-off being stored in the wetland until peak flows had passed.

The 29 February 2004 flood on the Waikato River almost spilled water over the Rangiriri Spillway and the Whangamarino control gates would have been closed during the flood peak.

The capital cost of constructing the scheme was around $16 million spent over 22 years (1961-1982), equivalent to a total replacement cost in 2007 dollars of $195 million. Such works would include the Rangiriri Spillway and its stopbanks, the Lake Waikare and Whangamarino control gates, as well as other stopbanks and river-containment earthworks.

If Whangamarino wetland didn't exist, the regional council would be faced with constructing stopbanks along the lower course of the river at a cost running into the many millions of dollars.

DISCUSSION

The economic impact studies showed that significant economic benefits flow into regions from the conservation areas selected.

In the case of Fiordland National Park, it was further shown that the benefits to the region were not taken from somewhere else. There was an additional gain for New Zealand in terms of gross output and jobs, beyond the benefits to Southland and Queenstown Lakes Districts.

Of the $100 million/year of foreign exchange spent in relation to Fiordland National Park, $12.5 million would be collected by the government as GST, which compares favourably with the $8.8 million that DOC spent on managing Fiordland National Park in 2005. This is a way of saying that Fiordland National Park more than pays its way from a government point of view, on tourism and recreation benefits alone.

It must be stressed that the studies have looked into only a small subset of the ecosystem services that public conservation lands in New Zealand may be expected to provide. When publishing these results, DOC has been at pains to explain qualitatively the broader context of conservation.

For example, the reports have been summarised in a brochure to raise public awareness of the ecosystem services that nature provides to society, often for free and often taken for granted. This information has also been included in DOC annual reports, other Ministerial and government briefing documents, and in discussions with stakeholders, e.g. the tourism sector and the Treasury, and in the Conservation Minister's speeches.

The work has come at a strategically important time for the Department. General Policies promulgated in May 2005 link the Conservation Act 1987 (and other legislation) to its regional conservation planning tools, and require DOC to avoid adverse effects of its management on ecosystem services.

Assessing the effects of current management on ecosystem services, and taking ecosytem services into account when managing the public conservation estate, are current issues for the Department. Progress will take time to achieve because of the science component, to be linked into a new priority-based system for managing natural heritage, not least to improve the cost-effectiveness of the Department's work.

Meanwhile companies are seeking green marketing opportunites on the public conservation estate, and DOC is working on joining a whole-of-government commitment to sustainability. As well, a government grant cheme started in 2000 is providing more incentives for community-led volunteer conservation work on private land.

The need for advocacy remains while other work proceeds. But it has taken time to convince the media that conservation is worthwhile.

The first study, of the West Coast, reported in the Press, Christchurch on 8 June 2004 prompted accusations by local and central government politicians, and pro-business NGOs, that the benefits of conservation had been "overplayed". The Press editorial of 10 June accused the Government of "spinning" the report's findings.

DOC and the Minister of Conservation responded that the report was never intended to argue that conservation was necessarily the best use of land, only that conservation land is not "locked up" and is not "economically useless".

By and large, the reports have helped DOC counter the lock-up myth. But they have also been used by the high country farmers to argue that more of the high country should be allocated into private ownership.

For example, the High Country Accord commissioned Lincoln University in 2005 to determine whether private ownership of land provided more certainty for investors in tourism infrastructure. In support, the direct output of Cardrona and Waiorau ski fields of $20.1 million a year was compared with the equivalent figure produced for the 1.9 million ha of West Coast conservation lands of $15.2 million/year from tourism operations. The study was published in September of that year.

In response, DOC argued, with economist Geoff Butcher's help, that there are 18 skifields on public conservation land, suggesting that public ownership of land is no impediment to investment. The comparison between the West Coast and east of the main divide was inappropriate because the lack of skifields on the West Coast has to do with climate, and not land tenure.

Media coverage reporting farmers' views seems to have moved on from the lock-up and land grab claims to a debate over rentals and who owns pastoral leases.

CONCLUSION

Questions are being increasingly asked on the value New Zealanders get out of public funding of conservation. In response, DOC has found it helpful to place conservation in a broader context than traditionally defined – that there is more to conservation than iconic native birds and backcountry huts and tracks.

Benefits to society from natural habitats include flood and erosion protection; provision of water quality and quantity, and fish and game; as a backdrop to New Zealand's "clean, green" image; as well as opportunities to pursue health and wellbeing.

With the completion of the Whangamarino Wetland report, in which awareness has been raised of values such as flood protection, duck shooting, carbon sequestration and cultural harvesting, the challenge now is to identify new areas for study

REFERENCES

- Butcher, G., 29 September 2005: Peer Review of Napp Response to Lincoln University Report "Economic Benefits and Costs if Freehold versus Crown Ownership of High Natural Value Land with Ecnomic (or Productive) Values". Department of Conservation, Wellington.

- Butcher Partners Ltd, 31 March 2004: Regional Economic Impacts of West Coast Conservation Land. Department of Conservation, Wellington.

- Butcher Partners Ltd, July 2005: Regional Economic Impacts of Abel Tasman National Park and Queen Charlotte Track. Department of Conservation, Wellington.

- Butcher Partners Ltd, 2005: Economic Benefits of Water in Te Papanui Conservation Park. Department of Conservation, Wellington.

- Butcher Partners Ltd, October 2006: Regional Economic Impacts of Fiordland National Park. Department of Conservation, Wellington.

- Cabinet Business Committee, 13 April 2006: Government Objectives for the South Island High Country: Annual Reports CBC (06) 101. Cabinet Office, Wellington.

- Cabinet Business Committee, 15 December 2003: Government Objectives for the South Island High Country CBC (03) 91. Cabinet Office, Wellington.

- Department of Conservation, 30 April 2004: Curly Questions: "DOC can't manage the land that it has, especially with weeds and pests, so why give it any more?". Department of Conservation, Wellington.

- Department of Conservation, 28 May 2004: Department of Conservation Briefing on the High Country. Department of Conservation, Wellington.

- Department of Conservation, 2005: Conservation General Policy. Department of Conservation, Wellington.

- Hyndman, Michael B, 19 April 2004: Effectiveness of the Government's Strategy for Achieving its Goals for the High Country. High Country Accord, Christchurch.

- Lincoln University, final draft 4, 12 April 2005: Economic Benefits and Costs of Freehold versus Crown Ownership of High Natural Value Land with Economic (or Productive) Values. High Country Accord, Christchurch.

- Logan Hugh, 10 July 2003: Tenure Review and High Country Conservation Parks (briefing to the Minister of Conservation). Department of Conservation, Wellington.

- Petrus, Rachel, 30 March 2005: South Island High Country Objectives: Review of Valuation Methodology in Tenure Review, Terms of Reference. Land Information New Zealand.

- UMR Research, December 2003: Omnibus Results: Favourability Rating and Public Ownership of High Country Land. Department of Conservation , Wellington.

- Waugh, J., 2007: Report on the Whangamarino Wetland and its Role in Flood Storage on the Lower Waikato River. Department of Conservation, Wellington.