

Assessing the social effects of conservation on neighbouring communities

Guidelines for Department of Conservation staff

DEPARTMENT OF CONSERVATION TECHNICAL SERIES 29

Chris Cosslett, Dianne Buchan, and Joanna Smith

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Assessing the social effects of conservation on neighbouring communities

Guidelines for Department of Conservation staff

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ABSTRACT

Social impact assessment is the process of analysing, monitoring and managing the social consequences of change. Applying this process to its work can help the Department of Conservation foster positive relationships with local communities and improve the effectiveness of its operations by tapping into local knowledge. This document presents a brief overview of the theory of social impact assessment. It then guides the reader through a systematic process of identifying, monitoring, and responding to the effects of conservation projects on those who live and work in neighbouring communities. Social and economic effects are defined and illustrated with examples from New Zealand and elsewhere. The document presents a Social Effects Management Framework—a checklist of potential effects which may result from particular actions or changes instigated by the Department. Possible measures to mitigate negative effects and enhance positive effects are suggested, along with possible indicators for monitoring the effectiveness of mitigation and enhancement strategies.

Keywords: communities, conservation, consultation, economic effects, environmental effects, indicators, mitigation, enhancement, monitoring, social effects, management, assessment, stakeholders, social impact assessment, case studies, New Zealand

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1. Introduction

1.1 WHAT IS SOCIAL IMPACT ASSESSMENT?

Social impact assessment (SIA) is the process of analysing, monitoring and managing the social consequences of development, be it a project, programme or policy. A development may have both positive and negative effects and different individuals, groups and communities will be affected in different ways. SIA endeavours to identify and analyse the ways in which these potential costs and benefits are distributed among the groups and individuals that make up a community.

An important objective of the process is to give a voice to the knowledge and experience of local people who might otherwise have no part in the decision-making process. The process builds on local knowledge and uses participatory processes to analyse the concerns of interested and affected parties. Consultation is therefore a primary tool in the process.

The good practice of SIA accepts that social, economic and biophysical effects are inter-linked. The overarching objective is to bring about a more ecologically, socio-culturally and economically sustainable and equitable environment.

1.1.1 A note on terminology

The Department of Conservation (DOC) has chosen to use the word ‘effect’ instead of ‘impact’ in this document. The Department considers that ‘impact’ has negative connotations whereas ‘effect’ can be considered either positive or negative depending on the context. Note that ‘impact’ is used in reference to the disciplines of social or economic impact assessment, since these are the terms used by practitioners in these fields and in the international literature on these subjects.

1.2 THE RELEVANCE OF SOCIAL IMPACT ASSESSMENT TO DOC’S WORK

1.2.1 Conservation with Communities Strategy

Although there are no statutory requirements on the Department to undertake SIA, it does represent best practice. Furthermore, it is one of the tools that staff can use to implement the Conservation with Communities Strategy. For example, SIA can contribute directly to achieving the following goals:

‘1.2 Understanding Communities: Staff recognise and understand the cultural, social and political context of conservation.

‘1.3 Relationships: Staff build and maintain appropriate and effective relationships with people and organisations who can make a difference to conservation.’

This guide provides support for staff to achieve:

‘1.1.3 Staff Skills: Staff have the skills to understand, inform, educate and work with our communities, and know when and how to engage with them.’

1.2.2 Moral and practical arguments

There are moral and practical arguments for undertaking SIA. Local communities, particularly those with an economic history centred around natural resources, often object to conservation initiatives on the basis that they constrain social and economic development opportunities. Conservation initiatives that do not take account of local needs can impose costs (real or perceived) on neighbouring individuals and communities. Failing to demonstrate the benefits of conservation initiatives to local communities may mean your work is less likely to be supported and may even be actively opposed by local people. Such opposition can increase the cost of implementation and reduce the effectiveness of conservation outcomes.

The SIA process can help build positive community relationships by demonstrating the benefits of conservation for local communities. Costs to both the community and the Department can be significantly reduced or avoided through project design and implementation strategies that take the interests of neighbouring communities into account.

By involving local people in the identification and development of mitigation and enhancement measures, and by maximising benefits for them, community ‘buy-in’ or ‘ownership’ of your work can be enhanced. This can translate into a sense of stewardship among local people, creating added benefits for the Department such as voluntary surveillance and promotion. Such outcomes are documented in many of the case studies presented in this document (see, for example, the mitigation and enhancement case studies in Section 3.4.1).

1.3 THE PURPOSE OF THIS DOCUMENT

These guidelines have been designed to help Department of Conservation staff to undertake SIA as part of the design and management of new and existing conservation initiatives. They guide the reader through a systematic process of identifying, monitoring and responding to the effects of conservation initiatives on those who live and work in neighbouring communities, be they landowners, recreational users, tangata whenua, businesspeople or local authorities. The document is intended for use by staff who have not had specialist training in SIA. It is anticipated that first line (programme) managers will be the primary users.

As well as helping staff conduct basic social impact assessments, the document helps staff to identify the skills needed for more in-depth assessments, and what to seek from external providers when these skills are unavailable in-house.

The guidelines are not concerned with effects at a regional or a national level. Neither do they address effects on other departmental responsibilities such as biodiversity, species recovery, or protection strategies. Nor are they concerned

with assessing the effectiveness of the Department's advocacy and community relations programmes.

Because of the immense scope of activities undertaken by the Department, and because every SIA scenario is unique, it is impossible to prescribe a set of steps that will fit all situations. The process described is simplified and general. Users should treat it as a guide to thinking about the social effects of their actions, not as a blueprint to a fixed procedure.

1.4 THE FORMAT OF THIS DOCUMENT

The document provides guidance on how to identify:

- Possible effects
- The individuals and groups who may experience those effects
- Possible enhancement and mitigation measures that can be taken to strengthen positive effects and reduce negative ones
- How to monitor effects and the effectiveness of mitigation and enhancement measures.

Section 2 presents a brief discussion on the theory and objectives of SIA.

Section 3 presents a step-by-step guide to the SIA process, together with brief outlines of various research approaches that can be used to gather and assess data at each step of the process. Reference is made to key methodological texts. Case studies are used to illustrate each step.

Some aspects of the SIA process demand a high degree of skill. Section 4 provides a checklist to help you decide whether you have the right skills available to undertake a particular assessment in-house, or whether you need to seek specialist assistance.

Section 5 presents further case study examples.

Section 6—the social effects management framework—provides a checklist of potential effects, resulting from particular actions or changes, on neighbouring communities. The framework suggests possible mitigation and enhancement measures for each effect, and possible indicators for monitoring effects and the associated mitigation and enhancement measures.

Appendix 1 briefly describes a range of stakeholder consultation techniques that may be used in the process.

Appendix 2 briefly covers a range of economic valuation methods that may be useful for evaluating certain social effects.

Appendix 3 is a brief commentary on the literature reviewed as part of the background to preparing this guide.

Appendix 4 lists sources of further information on aspects of the impact assessment process. Most of these address specific methodological approaches in detail.

Appendix 5 presents a series of templates that can be used in conducting a SIA (based on the steps described in Section 3).

1.5 THE PROCESS FOR DEVELOPING THIS DOCUMENT

1.5.1 Literature review

A literature review was undertaken to achieve the following:

- Identify the types of approaches previously taken to the social and economic assessment of conservation initiatives (both in New Zealand and overseas) and to identify any useful elements for a standard framework
- Identify the types of social and economic costs and benefits that have accrued to local communities through conservation initiatives
- Identify factors that influence the magnitude of certain effects
- Note the difficulties encountered and the lessons learned in previous exercises

The studies reviewed collectively illustrated a wide range of effects on neighbouring communities—both positive and negative—that can arise from conservation activity. They also demonstrated a range of information sources and methods used, with varying degrees of success, to identify and measure those effects. By far the most frequently identified and measured effects were those concerning employment opportunities and income levels. Other effects noted included changes in community demographics, types of recreation, social structure, property values, traffic, and the incidence of trespass. Many of the cases reviewed have been summarised and presented as case studies in this document. Appendix 3 is a commentary on the literature reviewed.

1.5.2 Field visits

Findings from the literature review were used in designing interview guides for use in visits to six conservation projects around New Zealand. The purpose of these field visits was to catalogue the range of social and economic effects arising from these projects, the stakeholders affected in each case, and the factors influencing the magnitude of the effects. Any mitigation and enhancement measures, and associated monitoring activities, were also documented. The physical and social contexts of each project were analysed and interviews were undertaken with a wide range of affected stakeholders. Interviewees included local staff of the Department of Conservation, operators of local tourism and other businesses, local iwi, community representatives, real estate agents and local authority staff.

The six sites visited were Goat Island (Cape Rodney to Okakari) Marine Reserve, Kawau Island Historic Reserve, Whirinaki Forest Park, Karori Wildlife Sanctuary¹, Kahurangi National Park², and the Otago Central Rail Trail.

¹ The Karori Wildlife Sanctuary is a 'mainland island' located within Wellington City which has been developed and managed by a community trust.

² During the visit to Kahurangi National Park, some data on social effects relating to Abel Tasman National Park was also obtained.

1.5.3 Preparation of the framework and guidelines

The social effects management framework (Section 6) was compiled by summarising the findings from the literature review and the field visits. The guidelines (Section 3) were based on an SIA training course for resource management professionals run by Corydon Consultants Ltd. The training course material was adapted to suit the conservation context in line with the findings of the literature review, field visits, and feedback from the workshop.

1.5.4 Workshop

Following production of an initial draft set of guidelines, a workshop was held with 12 staff from DOC Head Office and several area and conservancy offices to discuss the document. As a result of the workshop, the initial draft was amended, and a summary document for DOC staff use was produced.

2. Social impact assessment— theory and practice

‘Social impact assessment includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment’ (IAIA 2003).

Social impact assessment (SIA) is not simply the task of predicting social effects. It is also about managing those effects once they are identified. SIA is best understood as an overarching framework that embodies the evaluation of all effects on humans and on all the ways in which people and communities interact with their socio-cultural, economic and biophysical surroundings. SIA thus has a wide range of specialist sub-fields involved in the assessment of areas such as: aesthetic effects (landscape analysis), community effects, cultural effects, demographic effects, economic effects, gender-specific effects, effects on health, effects on indigenous rights, infrastructural effects, institutional effects, leisure and tourism effects, political effects (human rights, governance, democratisation etc), poverty effects, resource issues (access and ownership of resources), and effects on social and human capital. As such, comprehensive SIA of large scale proposals cannot normally be undertaken by a single person, but requires a team approach (IAIA 2003).

The primary goal of SIA is to improve decision-making by helping decision-makers anticipate the full range of costs and benefits of alternative courses of action, including the ‘do nothing’ option. The secondary goal is to improve the design and administration of policies or projects in order to ameliorate the negative effects and increase the benefits (Finsterbusch & Wolf 1977).

There are two main levels at which SIA may be employed—at the policy level and at the project level. Assessment at the policy-making stage is aimed at analysing a particular situation or proposal, identifying the need for action and the type of action that would most appropriately address that need. Project level assessment is often confined to determining how a project’s negative effects could best be minimised and its positive effects enhanced. Such analysis may be implemented in anticipation of a proposed development or policy change, or retrospectively to assess effects that have actually occurred as a result of the change.

SIA focuses on the individuals, groups, communities and sectors of society that are affected by change. Recognising that the context of each SIA is unique is very important. Each community has a unique mix of resources, needs, constraints, politics, issues and values that need to be taken into account. The structure, methods, processes and content of each SIA must therefore be unique.

The important features of SIA, as defined by the International Association for Impact Assessment (IAIA) are:

- The goal of impact assessment is to bring about a more ecologically, socio-cultural and economically sustainable and equitable environment. Impact assessment, therefore, promotes community development and empowerment, builds capacity, and develops social capital (social networks and trust).
- The central focus of SIA is a proactive stance to development and better development outcomes, not just the identification or amelioration of negative or unintended outcomes. Assisting communities and other stakeholders to identify development goals, and ensuring that positive outcomes are maximised, can be more important than minimising harm from negative effects.
- The methodology of SIA can be applied to a wide range of planned interventions, and can be undertaken on behalf of a wide range of actors, and not just within a regulatory framework.
- SIA contributes to the process of adaptive management of policies, programs, plans and projects, and therefore needs to inform the design and operation of the planned intervention.
- SIA builds on local knowledge and utilises participatory processes to analyse the concerns of interested and affected parties. It involves stakeholders in the assessment of social effects, the analysis of alternatives, and monitoring of the planned intervention.
- The good practice of SIA accepts that social, economic and biophysical effects are inherently and inextricably interconnected. Change in any of these domains will lead to changes in the other domains. SIA must, therefore, develop an understanding of the effect pathways that are created when change in one domain triggers effects across other domains, as well as the iterative or flow-on consequences within each domain. In other words, there must be consideration of the second and higher order effects and of cumulative effects (IAIA 2003).

3. Guidelines to the social impact assessment process

This section describes six principal steps in the social impact assessment (SIA) process: screening to determine whether a SIA is required; developing project and community profiles; comparing the profiles to identify possible effects; developing mitigation and enhancement strategies; identifying indicators to measure effects; and monitoring outcomes (see Fig. 1). Consultation (Section 3.7) plays a central role in the entire process. Note that a SIA process may not follow these steps in a neat, linear fashion. Ideally, the assessment process should, to some extent, be ongoing and iterative, with previous findings and assumptions being revisited as new information comes to light. For instance:

- The effects identification process (Section 3.3) may reveal shortcomings in the project or community profile (Section 3.2), meaning that additional background information is needed.
- Monitoring (Section 3.6) may reveal new, unanticipated effects, which raise the need for new monitoring mitigation or enhancement measures (Section 3.4).

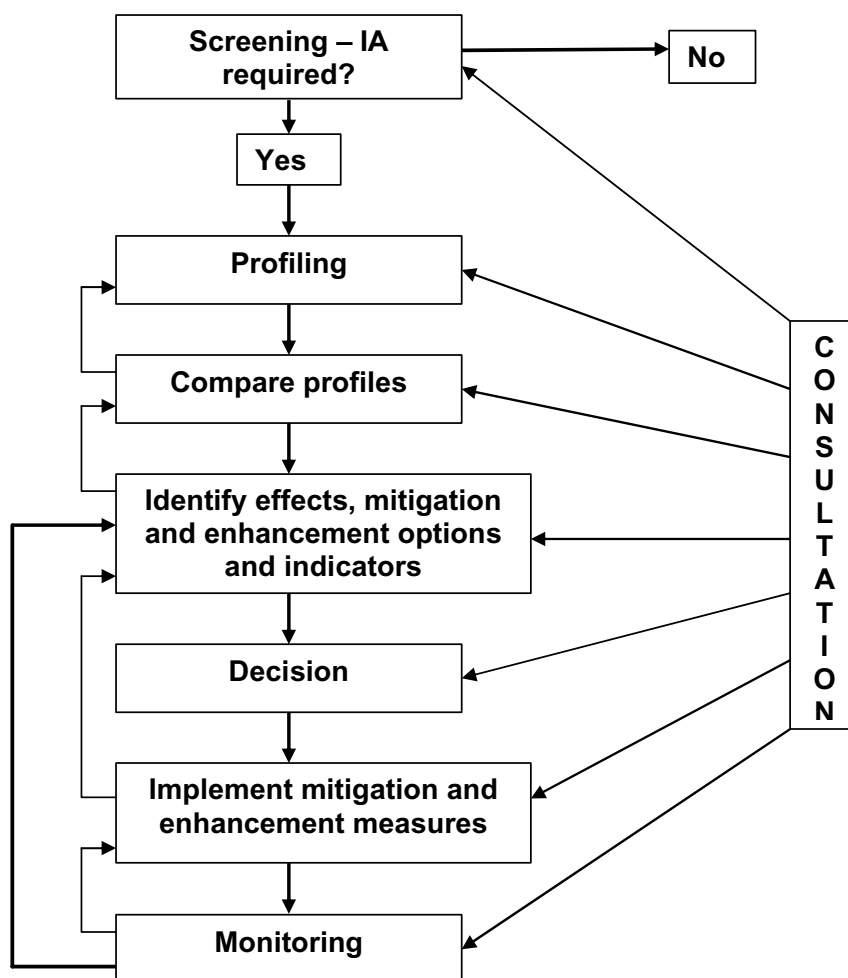


Figure 1. The social impact assessment process.

3.1 STEP ONE — SCREENING

Screening is the process of identifying which projects warrant a SIA and the scale of assessment that will be required. Screening ensures that proposals that should be assessed for their effects are not missed out, but also that assessments are not carried out unnecessarily (Barrow 1997).

Try to pay special attention to cumulative effects. A small project might present little threat and thus be overlooked, but the cumulative effects of more than one such development, separated in time or space, may be considerable. Although your project might seem inconsequential in its own right, for some in the affected community it could prove to be the final straw.

Screening typically employs criteria to determine when a SIA is appropriate. Appropriate criteria for a SIA include (after Barrow 1997):

- The proposal is likely to bring about changes to the quality of life experienced by neighbours and/or residents in the local community (e.g. a change that is expected to increase pressure on roads in the area or on services in the neighbouring town)
- The site affected by the proposal is sensitive (e.g. neighbours currently enjoy a quiet setting which could be adversely affected by new tourism activities)
- The proposal involves known or suspected social costs (e.g. one or more groups within the community will lose access to the area for their recreational pursuits, or neighbours may experience increased incidence of trespass)
- The proposal involves an issue known to be controversial (e.g. aerial sowing of poison for pest control, or control of conservation pests to which a high level of public interest is attached)
- There is a risk that the proposal will contribute to cumulative effects (e.g. an already popular recreational area will be visited by more people)
- There are unattractive input-output considerations (e.g. the development will result in damage to vegetation along boundaries with residential neighbours, or will generate heavy traffic on local roads).

Does your proposal meet any of the above criteria? You may need to conduct some initial consultation with key stakeholders in order to decide. If your proposal does meet one or more of the above criteria then a SIA is warranted. Following steps explain how to do this.

Template

You can use Template 1 (Appendix 5) to record relevant information from your screening exercise.

3.2 STEP TWO — PROFILING

Profiling involves collecting background data on the proposal itself and on the potentially affected community.

3.2.1 Profiling the proposal

The first action is to gather information about all the relevant aspects of the proposal. The end result of this process is called a project profile.

Key questions

What is the objective of the proposal? For example, is it to change the status of a block of land? Is it to develop a new visitor facility or improve accessibility to a recreational resource?

How will the project function (including during the establishment phase and day-to-day operation)? For example, will the establishment phase result in disruption to any existing activities—within or outside the park? Will new controls be imposed on recreational or cultural activities? Will new activities be introduced? Will there be a change in the way pests or weeds are managed?

What geographical area will the proposal affect?

Will the proposal require changes in staff numbers or lead to changes in visitor numbers?

Column 1 of the social effects management framework (see Table 3 in Section 6) lists a range of possible actions/changes that could be involved in a new conservation project. Use the list as a guide to identifying elements of your project that may be relevant to the project profile. Note that the list is not exhaustive—it is designed to guide your thinking about the issues that may be relevant in your case.

Template

You can use Template 2 (Appendix 5) to record the details of your project profile.

3.2.2 Profiling the neighbouring community

The next step is to gather information about the neighbouring community and the ways in which individuals and groups within the community interact with the project area. This involves describing the social characteristics and history of the area, as a baseline for estimating the social effects of change.

Key questions

What are the existing surrounding land uses? For example, does anyone live close to the boundary? Are there farms or forestry areas on the boundary? How close is the nearest urban community?

What level of services and infrastructure is currently available in the area?

What groups have an interest in the area that the proposal will affect? Recreational groups? Volunteer conservation organisations? Tangata whenua and other Maori?³ Neighbours? Local authorities? Others?

How do these groups use or otherwise interact with the affected area? What are their requirements? For instance, do hunters, trampers or mountain bikers visit the area? Do tangata whenua use the area for cultural harvest? Do neighbouring farmers have land management issues that relate to the project area, such as pests, weeds, trespass?

What values do these groups have regarding the affected area? For example do tangata whenua attribute special significance to any aspects of the environment that may be affected? What aesthetic aspects are valued by recreational users, neighbours?

Are there any local industries that rely on the project area? How do these industries relate to the area? To what degree are these industries dependent on their use of the area? How many people are employed in these industries?

Taylor et al. (1995) list appropriate data sources which should be consulted in compiling a community profile:

- Available statistical data, e.g. census reports available from Statistics New Zealand (www.statistics.govt.nz), other statistical data available from other local and central government agencies and private organisations

³ When consulting with tangata whenua and other Maori, you need to take account of relationships which the Department has already established. Your Kaupapa Atawhai Manager can advise.

- Written social data pertaining to the local area, e.g. letters to editors, newspaper articles, written testimonies, histories, graduate theses, annual reports, research studies
- Observation and respondent contact data, e.g. talking and participating with people in the area in their work, leisure and other social settings
- Results of consultation exercises including meetings, interviews and surveys
- DOC staff—these people are a source of descriptive data for the communities within which they live and work

Template

You can use Template 3 (Appendix 5) to record the details of your community profile.

3.2.3 Case studies—profiling

Otago Central Rail Trail

Proposal—The objectives of the project were to convert a defunct railway line to a public recreational route, and to encourage visitors to use the trail for cycling, horse riding, walking, running, etc. Visitor interpretation installations were to be constructed alongside the trail. DOC, as landowner, would cooperate with tourism agencies and businesses in the area to promote the trail. A trust was established to raise money for, advocate for and manage the project. The effects of visitor activity associated with the trail were expected to be felt by all of the communities located along the trail.

Community—Affected stakeholders included neighbouring landowners, residents of neighbouring towns, local businesses (especially accommodation and service industries), recreationists, tourists, and historical (especially rail) enthusiasts. The surrounding land uses comprise mainly pastoral farming, with small rural settlements linked by the rail line itself. Alexandra is the major settlement on the rail trail.

Many of the smaller communities had been in long-term decline as local employment opportunities declined and people moved away. Services available to those who remained were dwindling. The closure of the railway line had put additional pressure on some remaining businesses.

Although Alexandra and Clyde had significant tourism activity and Alexandra had well-established tourism infrastructure, tourism activity and infrastructure in many of the smaller settlements was very limited. Accommodation in the smaller settlements was limited to small-scale facilities (e.g. hotels, backpackers). A range of recreation tourism businesses operated in Alexandra, including transport services for cyclists. Good public transport links existed to each end of the trail, including a railway to Middlemarch from Dunedin, and bus links to Alexandra/Clyde from Dunedin and Wanaka/Queenstown.

The trail runs through a relatively little-known part of Central Otago. Central Otago is renowned for its spectacular scenery, the subject of many of Graham Sydney's paintings. Other parts of Central Otago are popular destinations for tourists and domestic visitors. The recreation opportunities afforded by the trail would suit most levels of ability because it is broken up into many short

sections between towns, with many access points to and from the road network.

Since the rail closure, some neighbouring landowners had been using or would have liked to use the rail land for grazing and/or stock movement.

Taputeranga Marine Reserve, Wellington

Proposal—The objective was to establish a marine reserve on the south coast of Wellington. In area, the reserve would cover 969 ha, stretching along the coast from just east of Red Rocks to the eastern edge of Houghton Bay, with the sea boundary an average distance of 2.3 km from shore.

Establishment of the reserve would mean that extraction or disturbance of marine life within the reserve would be totally prohibited, except for approved scientific research. All forms of fishing (including line fishing from the shore) would be prohibited but non-extractive recreational activities would be permitted. Enforcement of the applicable regulations would be the responsibility of DOC.

The coastal boundaries of the reserve would be clearly marked with signage but the sea boundaries would not be marked.

The marine ecology of the area is considered to be of very high quality from recreational and scientific points of view. Three oceanic currents meet at the south coast, resulting in a rich and varied mix of plants and animals that is unique in New Zealand. The south coast includes complex undersea landforms that combine with the high-energy currents to create many types of habitat.

Wellington's new sewage treatment infrastructure has significantly improved water quality in the area: whereas raw sewage was previously discharged directly into the coastal environment (a short distance to the east of the proposed reserve), now sewage is treated to a very high standard and piped two kilometres offshore.

Community—The proposed reserve is located some 15–20 minutes from the centre of Wellington—easily accessible for a significant proportion of the city's residents.

The coast is heavily used by the public for coastal and marine recreation including fishing, diving, boating, picnicking and other beach-based activities, walking, cycling, trail biking, four wheel driving, rock-pool fossicking and surfing. The south coast is quite exposed, however the area covered by the marine reserve proposal is considered to be a safer setting for coastal and marine recreation than alternative areas to the east or west on the same coast.

A public road runs the length of the proposed reserve's coastal margin and is serviced by a public bus service. Other public facilities in the area include toilets, changing sheds, a surf lifesaving club at Island Bay, and car parking areas.

The predominant adjacent land uses include residential housing (the reserve is adjacent to several hundred homes), public road, and public recreational reserve: 156 000 Wellington City residents live within 10 km of the site.

There are several major infrastructural facilities close to the proposed reserve, most notably Wellington International Airport and Wellington's wastewater treatment plant.

A range of small businesses are located near the reserve including dive shops, cafés, dairies, and shops typical of a suburban shopping centre (Island Bay).

A fleet of small fishing vessels which operate along the Wellington coast and in Cook Strait is based within the proposed reserve area at Island Bay.

A marine laboratory is located adjacent to the reserve at Island Bay (operated by Victoria University of Wellington). Other research institutions based nearby include NIWAR (National Institute of Water and Atmospheric Research), Te Papa, and DOC's Science and Research Unit.

3.3 STEP THREE—IDENTIFYING AND EVALUATING POSSIBLE EFFECTS

Comparing the project profile and the community profile helps to identify where potential effects lie (see Fig. 2). This step involves identifying the social phenomena that may be affected by the change, then predicting and evaluating the specific effects on individuals and communities.

For example, you might have identified several groups within the community who use the project area for recreation. The proposal may involve the restriction of recreational access to certain types of activities. Therefore those participating in the non-complying activities will be affected. Or the proposal may involve upgrading a track from tramping to walking standard. This will improve opportunities for some groups of users, thereby increasing the numbers of people visiting a previously remote area and possibly displacing those users who currently seek solitude there.

Key questions

What activities are likely to be affected by the proposal?

In what ways are they likely to be affected?

Which groups and/or individuals are likely to be affected?

How will these people be affected?

The process of identifying and evaluating effects (after Barrow 1997) may be broken down as follows:

- Identification of possible direct, indirect and (as far as possible) cumulative effects
- Assessment of the significance of each effect (i.e. its extent and importance)
- Evaluation of the likelihood that an effect will occur—the expected frequency or distribution of its occurrence (this can be simply in terms of 'high', 'medium', and 'low')
- A forecast of when or how often the effects might be experienced

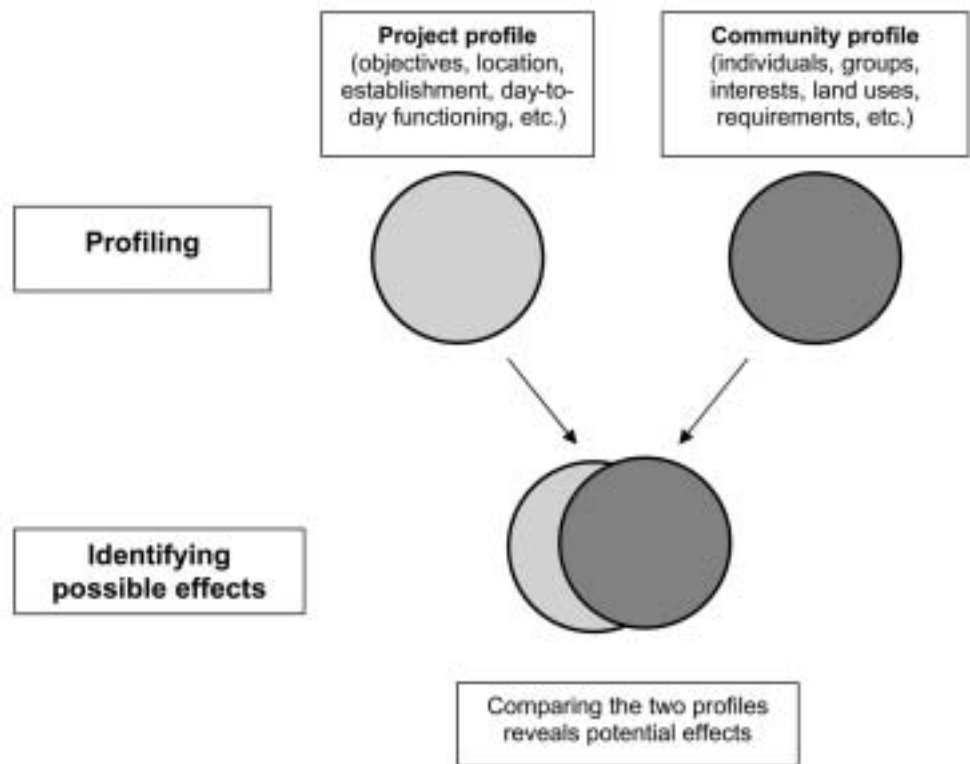


Figure 2. The effects identification process.

The interpretation and evaluation of effects involves the use of both quantitative and qualitative data⁴. The importance of qualitative information should not be underestimated, especially since the quantification of many social effects is not possible. In any case, the separation between qualitative and quantitative measurement is somewhat misleading, since whichever way effects are expressed, they are still based on subjective judgements; the choice of what to measure and how to measure it is influenced by the practitioner’s own values. There is always a danger that attempts to quantify (e.g. by using the methods described in Appendix 2) will obscure the way in which judgements are arrived at, and it is not unknown for the process to be statistically or mathematically dubious (Barrow 1997).

Template
 You can use Template 4 (Appendix 5) to record possible effects, the stakeholders who are likely to be affected, the anticipated significance and likelihood of each effect, possible mitigation and enhancement measures, and monitoring indicators and methods. You can use this template to build an effects management framework for your own proposal (similar to the framework in Section 6).

⁴ Economic valuation methods can be used to quantify some social effects but the techniques are complex and require specialist training. Appendix 3 summarises the main techniques and highlights some of the challenges associated with these approaches.

3.3.1 Types of effects

Effects may be direct, indirect (secondary), or cumulative. For example, the employment of construction workers for the project may mean there is a shortage of these workers for other building projects in the area (a secondary effect); or a relatively small increase in visitor numbers to the conservation project could exacerbate an existing accommodation shortage (a cumulative effect).

Depending on the nature of the proposal and the number of stakeholders with an interest in the project area, there may be a wide range of possible effects. A convenient way of conceptualising social effects is as changes to one or more of the following:

- People's way of life—how they live, work, play and interact with one another on a day-to-day basis
- Their culture—their shared beliefs, customs, values and language
- Their community—its cohesion, stability, character, services and facilities
- Their political systems—the extent to which people are able to participate in decisions that affect their lives
- Their environment—the quality of the air and water; the level of hazard or risk, dust and noise they are exposed to; the adequacy of sanitation; and their access to and control over resources
- Their health and wellbeing (health is a state of physical, mental, social, and spiritual wellbeing, and not merely the absence of disease or infirmity)
- Their personal and property rights—particularly whether people are economically affected, or experience personal disadvantage which may include a violation of their civil liberties
- Their fears and aspirations—their perceptions about their safety, their fears about the future of their community, and their aspirations for their future and the future of their children (IAIA 2003).

Column 2 of the social effects management framework (Section 6) lists effects that may arise from the actions/changes listed in column 1. Note that the list is not exhaustive and your specific case may involve a significantly different list of effects.

3.3.2 Case studies—effects

Otago Central Rail Trail

Social effects of the Rail Trail development have included the following.

Employment and income There has been increased demand for accommodation and services in towns located along the Trail. New accommodation businesses have been established. Some hotel owners and farmers have diversified to provide new accommodation or adapted existing accommodation. Local businesses use the Rail Trail in their advertising and promotion, and now network with one another to take advantage of tourism-related business.

Community structures and services Many of the small communities have experienced a social revitalisation, with increased numbers of visitors and

greater communication among locals. The development of new and improved facilities and services in local towns has benefited locals as well as tourists.

Recreational users Cycle touring opportunities have been improved through upgrading of the Trail and subsequent improvements in local services. Significant new local recreational opportunities have been created.

Infrastructure There have been minor increases in the provision of cabins and camping facilities in small towns.

Neighbours Some neighbouring landowners assumed that following closure of the railway they would gain ownership of the rail land bordering their farms. Some built fences across the rail land which led to minor conflicts with recreational users. Trail bikers occasionally use the rail trail, causing disturbance for neighbours.

Community education/involvement There has been an increase in cohesion and focus among neighbouring communities. For example, communities have been motivated to co-ordinate beautification projects in local towns. Appreciation of local heritage has been enhanced.

Refer to Sections 3.2.3, 3.4.1, and 3.6.3 for more details on this case study.

Karori Wildlife Sanctuary

The Karori Wildlife Sanctuary is a mainland island located in Wellington City and managed by a community trust. The project involved the establishment of a predator-proof fence around a former water supply reserve, elimination of animal pests, habitat restoration, and re-introduction of a number of threatened species. Social and economic effects are listed below.

Employment and income One neighbouring property set up a bed-and-breakfast using the Sanctuary in its promotion. The Sanctuary has led directly to the creation of 11 full time and one part time job, as well as casual summer employment. Night tours to view kiwi are expected to increase demand for overnight accommodation in the city.

Recreational users Access to the valley has been improved for the less physically able. There has been a loss of access for certain user groups (e.g. dog walkers and mountain bikers) and during certain times of the day. Users are now charged for access to the valley.

Infrastructure The access road has had to be upgraded, including improvements to access for private properties.

Neighbours Changes in ownership of the Sanctuary led to changes in pre-existing agreements with neighbours (e.g. arrangements to trim trees to protect neighbours' views, made with the previous land owner, were not maintained). There will be a loss of views from some properties as a result of planting/non-trimming of trees. Neighbours have lost direct access to the reserve because of the fence. There are increased traffic volumes on minor roads, and nuisance caused by cars parked along roadsides. There is increased birdlife in gardens. Neighbours have benefited from a significantly reduced possum population and improved weed control.

Community education/involvement There are now opportunities for locals to become involved in conservation activities through an extensive volunteer programme. There is increased awareness of the benefits and achievements of conservation.

Refer to Section 3.4.1 for more details on this case study.

Establishment of Whirinaki Forest Park

Whirinaki Forest Park was established in the mid 1980s to protect native forest previously administered for timber production by the NZ Forest Service. It adjoins Urewera National Park. Both parks are located in an area of high unemployment and a high proportion of the local population are Maori, of the Tuhoe tribe. There is also a large number of Maori from other tribes who came to the area to work in the commercial forests—these people do not have access to Tuhoe land. New Zealand's largest stands of exotic production forest are located within the Rotorua/Taupo area. The restructuring and privatisation of these forests in the 1980s led to large-scale unemployment and a decline in the wellbeing of the forestry villages of Murupara, Kaingaroa, and Minginui. Effects of the establishment of the park are summarised below.

Employment and income Short-term job opportunities were created for locals in an area where such opportunities were severely limited. There has been significant improvement in the viability of some local businesses (e.g. transport services) and a small improvement in the viability of local retail businesses as a result of visitors, overseas volunteers and DOC staff living locally. There are now opportunities for local businesses (especially visitor accommodation) to use their proximity to the park in their promotion. The magnitude of these effects was limited by: the variety of alternative recreational opportunities in the vicinity; the lack of visitor-orientated services in adjoining communities; and the limited number of concessions awarded to local tourist operations (significant allocations were made to Auckland- and Rotorua-based businesses).

Recreational users Improved access as a result of track construction and maintenance. Opposition to use of 1080 from hunters.

Changes in community structures and services Volunteers from overseas staying in the area have increased the exposure of local residents to outside influences and ideas and created international networks with locals. Volunteers from overseas have increased the demand for accommodation. There has been an increase in the number of tourist-based services in Murupara, and some movement in employment focus from resource extraction to service industry.

Effects on tangata whenua Greater protection of plants used for medicinal and nutritional purposes. Initial opposition to use of 1080—resolved through consultation (see details in Section 3.4.1). Frustration among some at the limited influence accorded to iwi in the management of the Park.

Effects on neighbours Reduction in pest problems as result of DOC's pest control. Opportunities to provide visitor accommodation and transport services have been taken up.

Social and economic effects of Punakaiki National Park
(Stephens & Wells 1983)

Stephens and Wells looked at the regional economic and social effects of establishing a national park at Punakaiki compared with the benefits accruing from using part of the area in question for logging. This case study highlights many important considerations in the design of such a study.

An estimate of *possible annual visitor numbers* to the Park was made by considering the factors influencing the level of usage of national and regional parks in general, including: proximity to population centres and established tourist routes; availability of nearby service towns; access points to the park; availability of adequate accommodation; and types of recreation opportunities available (this was considered to be the most influential factor).

The change in *visitor numbers and likely length of stay* was assessed in order to assess the likely expenditure effect on the region. Length of stay was found to be an important consideration in addition to gross visitor numbers, as this has a significant effect on expenditure patterns. Certain types of visitors are more likely to alter their touring patterns and length of stay, so analysing the current composition of visitors can be useful. Independent travellers and recreational visitors making specific visits to the park were found to be the group most likely to increase their length of stay and adapt their travel. Demand for accommodation was expected to increase by 20,000 bed-nights across a range of styles and standards of accommodation. Because existing services (sewage, water, hospitals, schools, rail and air) were all under-utilised, it was considered that an increase in visitor numbers could be accommodated without the need to expand services. In some areas, reticulation infrastructure needed replacement but the small rating base presented an impediment. An expanded tourism industry was seen as providing a partial solution to this problem. It was predicted that a new petrol station, general store and other tourist-related businesses would be required.

Other economic and employment stimulus to the adjacent communities was expected to arise from: construction during the development phase; on-going park maintenance and administration; and development of new walks and landscaping.

Employment effects—The study focused on the likely *addition* to employment from the designation of the area as a national park, as opposed to estimating total expenditure. The rationale for looking at employment rather than expenditure was that employment can be expected to have a greater regional effect as wages are more likely to be retained by the local economy than the initial expenditure injection from visitors.

The study examined the likely composition of employment (e.g. tenure, diversity, qualifications required) in order to judge the effect on the area concerned. This is more useful than looking purely at the number of jobs, because it can imply more about the likely effects on the region. If the additional employment is, for example, largely seasonal (e.g. workers on ski-fields), then it may attract workers from outside the area who take much of their earnings with them when they leave. If the work requires qualifications or skills that are unavailable within the region, then workers may need to be

brought in from elsewhere. Note that importing labour need not be detrimental to the local economy, as a multiplier effect (see Appendix 2 for an explanation of multipliers) would still result from the expenditure of these workers.

The authors made several findings specifically related to employment. From examining staffing levels in existing businesses it was estimated that a total of 19 new full-time and 29 new part-time private sector jobs would result from a national park designation at Punakaiki. Additional staff requirements within the National Park were expected to increase the total number of jobs generated to approximately 60. Based on the experience of the tourism sector at the time (taken from Department of Labour employment survey figures) it was estimated that at least half of the new jobs would be taken up by women. The survey of ten national parks found that in parks close to service towns, park-related building construction contracts were taken up almost entirely by local, private contractors.

Designation of Te Waipounamu—South West New Zealand World Heritage Area

(Eijgelaar & van Poelgeest 2001)

This was a draft thesis for a BSc Hons degree. It identified social and economic changes that had taken place in the communities surrounding the World Heritage Area since its designation ten years previously. Much of the area was already protected at the time of the designation. The major change resulting from the World Heritage designation was an injection of state funding into the area (mainly in Haast). This was to be used for the promotion of employment and community viability—to assist with the transition from resource extraction as a major source of employment to tourism and service industries. Other areas where former state production forests had been incorporated into the DOC estate (most significantly Tuatapere) were not compensated.

The study identified a number of trends:

- A shift from dominance by primary industry towards service industry businesses
- An increase in total labour force, and specifically in the employment of women
- Population increases in the West Coast towns and a population decline in Tuatapere
- An increase in tourist accommodation in Haast and the glacier towns
- A doubling of housing values in Haast
- A decline in social contact among locals and a change in the ‘traditional’ lifestyle in Haast
- Effects of environmental protection measures on local employment opportunities (e.g. restricting the sphagnum moss and firewood harvesting carried out by locals; DOC visitor-based activities were perceived as employing mainly non-locals)
- The perception by some sections of the community that resources had been ‘locked up’

See Section 3.4.1 for further details of this case study.

The effects of parks on property values

(Crompton 2001)

Through an analysis of 25 earlier studies of the economic effects of specific parks, this study sought evidence to support the theory that properties adjoining parks are valued higher, resulting in higher property taxes (rates), which in turn provides increased revenue for the local authority concerned. (This process of capitalisation of parkland into the value of nearby properties is termed the 'proximate principal'.) The study also assessed the validity of the claim that, since publicly-owned land is exempt from rates, the creation of state parks increases the burden on ratepayers and in some instances may lead to the demise of communities. This study is an example of the application of the hedonic pricing technique (see Appendix 2).

Findings—The real estate market consistently demonstrates that many people are willing to pay a larger amount for a property located close to a park than for one that is not. The authors suggest that a positive effect of 20% on property values adjoining a passive park area is a reasonable guideline. Parks with natural landscapes (e.g. forests, hills, lakes, wetlands) tend to produce the greatest value differentials.

The authors note that increased property values are not regarded as beneficial by all neighbouring residents. Those who have lived in the area a long time and who have no intention of moving may see no personal benefits accruing to them from the higher land values, yet these higher values result in increased rates charges. There was evidence that in the case of farm properties or large residential properties with recreational amenities on-site, there may be no proximate value benefits because proximity to open space has little additional appeal. A range of negative effects (including noise, artificial lighting, litter, anti-social behaviour, etc.) may have a negative effect on some property values.

The studies tend to refute the conventional wisdom that the creation of a large state park will result in a net reduction in the value of an area's rating base. In addition to the proximate value benefits (leading to possible increased rates take from neighbouring properties), state parks often bring additional revenue benefits to local government because they receive payments in lieu of rates. Local authorities may also benefit from the economic contributions that arise from increased visitor expenditure in the area.

Limitations of this research, in relation to New Zealand—The results of this study should be treated with some caution in relation to the New Zealand context. While the proximate principle may apply in the context of communities located adjacent to a park, many of New Zealand's parks are relatively isolated, so the 'direct' benefits of being located near a park (e.g. protection of views, local recreational opportunities) will apply to relatively few private properties. Many of the studies reviewed refer to parks in an urban context, rather than in rural areas where most DOC parks are located. Nevertheless, our field work produced evidence of the proximate principle in the case of both Kahurangi and Abel Tasman National Parks.

Economic effects of Mount Cook National Park

(Kerr et al. 1986)

This study, based on 1984 data, had three objectives:

- To estimate expenditure within the Mackenzie Basin by visitors to Mount Cook National Park
- To derive economic and labour-related multipliers for the regional economy (see Appendix 2 for a discussion of multipliers)
- To estimate the value of the National Park to visitors using the travel cost method (see Appendix 2 for a discussion of the travel cost method)

A visitor survey was conducted over nine weeks, distributed throughout the year. To avoid skewing the sample, the authors prepared a seasonal visitor profile then sought to take a representative sample, taking account of holiday periods, long weekends and times when specific activities might predominate.

The authors found that the average adult visitor spent \$58 in the region. The direct effect of this was estimated to be \$18, and the indirect plus induced effects to be \$40 (refer to Appendix 2 for a discussion of direct and indirect effects). Different visitor types exhibit different expenditure characteristics, depending on, for example, mode of travel and place of origin. The authors found that one extra job was created in the region for every 869 visitors. For every dollar paid in wages to park staff, a further 20 cents was generated in household incomes within the region (multiplier 1.2—see Appendix 2 for an explanation of multipliers). One additional job was created in the region for every \$144,000 (net) paid by the park in wages.

3.4 STEP FOUR—DEVELOPING MITIGATION AND ENHANCEMENT MEASURES

Having identified the proposal's likely positive and negative effects, you can now use that knowledge to work out how to maximise the benefits to the community while minimising the negative effects on the community.

Column 5 of the social effects management framework (Section 6) presents possible mitigation and enhancement measures that could be introduced in response to the effects identified in column 2. **Note that these are provided only by way of example, to guide your thinking in this area.** The specific mitigation and enhancement options appropriate to your project will depend on the precise way in which the community and project profiles interact and on your own practical, financial and political considerations.

Potential mitigation and enhancement measures are likely to be raised by participants during consultation undertaken as part of the effects identification process. It may be a good idea to ask participants in the consultation process how their concerns might be addressed. It is critical, however, that you make clear to them the constraints (practical, financial and political) that will influence your ability to adopt their suggestions.

Some of the mitigation and enhancement measures you identify may be minor and can be easily accommodated within the existing proposal. Others may

necessitate significant changes to the design of the project, or to the way in which the project will be managed and/or operated. Procedures for including such measures will need to be approved at the appropriate level and worked into project plans.

Note that DOC need not be solely responsible for the mitigation and enhancement measures identified. As demonstrated by the Otago Central Rail Trail and Karori Wildlife Sanctuary case studies (below), many other sectors of the community (including, for example, local councils, voluntary community groups, recreational groups and the business community) may be able to help boost the project's positive effects and/or mitigate its negative effects. Being aware of what can be done by way of mitigation and enhancement will enable you to make appropriate suggestions to other agencies regarding actions they could take.

Template

You can use Template 4 (Appendix 5) to create an effects management framework. The template includes space for recording possible mitigation and enhancement measures for the effects you identify.

3.4.1 Case studies—mitigation and enhancement

Otago Central Rail Trail

DOC and other agencies have actively supported local efforts to capitalise on the benefits accruing to local communities from the trail, including community efforts to beautify local towns and enhance the trail environment. The Department now maintains historic buildings, including the 'Graham Sydney' railway goods shed, which were restored by the community. The local Lions Club, together with the local communities, runs an annual duathlon on the trail. DOC provides assistance with organisation, management support, and backup for the race. DOC staff also participate in the race, which enhances relationships with the community. The Rail Trail Trust publishes a colour brochure which is the key promotional tool for the trail, being distributed throughout New Zealand and overseas. The brochure contains advertising space for over 30 businesses located along the trail. DOC provides assistance with production of the brochure. DOC staff also work with landowners to address issues of fencing and gates across the trail.

See Sections 3.2.3, 3.3.2, and 3.6.3 for more details on this case study.

Karori Wildlife Sanctuary

The original (design) alignment of the sanctuary's predator-proof fence would have impacted severely on the views from a group of homes on the Sanctuary boundary. The owners of these homes voiced their concerns during community consultation over plans for developing the Sanctuary. The visual impact on these properties would have been so significant that some of the property owners were prepared to oppose the entire sanctuary project in order to prevent the fence being built in the proposed location. The problem was resolved when the sanctuary managers decided to realign the fence where it

passed these properties. This made the fence slightly more expensive to build, but it greatly improved neighbourhood support for the sanctuary project.

Construction of the predator-proof fence curtailed recreation opportunities for some groups who had previously used the area. Mountain bikers were excluded from the Sanctuary altogether, while access for runners and walkers was restricted to a single entry gate (prior to construction of the fence it had been possible to enter and leave the valley via numerous points). Partly as a response to this issue, the Wellington City Council developed or facilitated the development of new recreation opportunities nearby, including the Makara Peak Mountain Bike Park.

See Section 3.3.2 for more details on this case study.

Possum control, Whirinaki Forest Park

DOC had planned a five-year programme of aerial 1080 drops to control possums in Whirinaki Forest Park. At first, local iwi objected in principle to the use of 1080 in the forest. After consultation efforts by DOC, however, the iwi agreed to the use of aerial 1080 applications to kill possums in remote areas where ground treatment methods were impracticable. In more accessible (front country) areas, it was agreed that ground control methods (trapping and poisoning) would be used.

The remote treatment area, however, included a number of sites sacred to local iwi (mountain tops and waahi tapu) and iwi objected to aerial application of poison on these sites. To address this issue, the iwi supplied a map of these sites to DOC staff, and the sites (including buffer areas) were excluded from aerial treatment. These sites were treated using ground control methods which were acceptable to the iwi.

This process of consultation and negotiation of acceptable solutions has helped increase iwi support for the work of the Department. The process had the additional community benefit of creating local employment. The local polytechnic trained some unemployed people in ground control methods. These people were employed by DOC to undertake control on the areas excluded from aerial treatment.

See Section 3.3.2 for more detail on this case study.

Designation of Te Waipounamu—South West New Zealand World Heritage Area

(Eijgelaar & van Poelgeest 2001)

Eijgelaar and van Poelgeest assessed the social impacts on local communities of the designation of the World Heritage Area. They identified a range of possible measures that could enhance the benefits and/or mitigate the negative effects of the designation, including:

- Improved promotion of the World Heritage area to tourists
- Better co-ordination of tourist operations to increase community benefits and balance the interests of environmental preservation with tourism development

- Providing business skills/management support in conjunction with any support package provided (eight of the ten businesses funded from a compensation package did not survive)
- The need for DOC to take some responsibility for addressing the negative effects of increased tourism (e.g. increased waste generation)

See Section 3.3.2 for more details on this case study.

3.5 STEP FIVE—IDENTIFYING INDICATORS TO MEASURE EFFECTS

Depending on what you identify in the profiling and effects identification stages, you may decide that it is sufficient to limit your assessment to a relatively simple process of identifying the likely effects, making some amendments to your proposal by way of mitigation and enhancement measures, and establishing an ongoing process of consultation with key stakeholders in order to identify any new problems arising from the project. Alternatively, you may decide to monitor some or all of the changes that result from your project. In any case you will need to monitor the effectiveness of any mitigation or enhancement measures you adopt. In order to monitor you will need to identify appropriate indicators, measure them, and assess them relative to a baseline established before any changes are made.

Indicators are pieces of specific information that reflect the status of large systems. They provide a way of seeing the big picture by looking at smaller pieces of it. They tell us which direction a system is going: up or down, forward or backward, getting better or worse, or staying the same. Indicators are typically used to measure progress towards the achievement of outcomes. A single indicator by itself will not generally give a comprehensive measure of whether or not progress is being made. In most cases a suite of indicators will provide a better picture.

A good indicator is:

- *Relevant*—it must be related to the condition you are trying to measure, and to showing how changes resulting from your project affect the condition
- *Affordable* and easy to collect
- *Auditable*—an outside person or agency should be able to verify the reliability of the indicator
- *User-friendly*—the indicator should be easy to interpret and accepted as a valid measure of the condition it targets
- *Comparable across time*—the means used to measure the indicator should remain constant over time

Practicality must guide your use of indicators because they do have a number of limitations:

- Indicators are a simplification of reality and cannot describe all aspects of every process
- Some issues, such as changes in vehicle traffic or property values, can be easily quantified. Others, such as effects on people's enjoyment of their

surroundings, will rely on more qualitative and subjective measures. Focusing too heavily on quantifiable issues rather than the potentially more difficult qualitative issues can distort the assessment (refer to Section 3.3).

- Many indicators are sensitive to changes over time. In some cases, measurement over a long time period will be necessary before the indicator can be usefully and reliably reported on (Berghan & Shaw 2000).

In the SIA process there are two instances in which you may need to use indicators:

- To describe predicted effects (changes)
- To measure actual effects relative to the baseline (see Section 3.6 Monitoring)

The social effects management framework (Table 3 in Section 6) provides ideas on possible indicators for measuring various effects, as well as possible sources of such data. Once you have determined the types of effects that are likely to result from your proposal (Table 3, column 2), look at the corresponding indicators in column 6. Remember that these are suggestions only and are intended to guide your thinking in this area. The indicators you select must be appropriate in the context of your unique situation.

Selecting the best indicators can be challenging. Here, as much as at any other point in the process of assessing effects, you need to think creatively. At this point it may be useful to consult a specialist in this area. Contact your Conservancy Advisory Scientist for advice on measurement techniques, including indicators.

Template

You can use Template 4 (Appendix 5) to create an effects management framework. The template includes space to record monitoring indicators and techniques for the effects you identify.

3.6 STEP SIX — MONITORING

Monitoring involves measuring the actual effects of your actions, and feeding information about these back into the decision-making process so that objectives and operations can be adjusted to address any adverse effects (see Fig. 1). For every enhancement or mitigation action taken, you need to define how the effectiveness of that action will be measured (i.e. what indicators to use—see Section 3.5), and establish a process for measuring the outcome of that action at specific points in time.

Once you have identified appropriate indicators, you can use these to measure the social effects of your actions. To do this, you first need to measure the state of each indicator prior to making any changes. This initial measurement is called the *baseline*. Changes in your indicators revealed by future measurement can then be compared with the baseline to reveal trends. For instance:

- If you are interested in trends in land use or house prices in the neighbouring area, obtain the relevant data from observation and mapping, records of real estate agents and/or the local council before the project starts, and then repeat the same measurements at intervals thereafter to track the changes.

- If you are interested in effects on tangata whenua, you can establish a programme of meetings with local representatives to get their feedback on an ongoing basis.

Monitoring should **begin as early as possible** (prior to making a start on the project), to provide baseline data from which effects can be measured. As Taylor et al. (1995) state, monitoring should ideally be closely linked to the initial SIA work conducted in the planning stage of a project or programme. The community profile, for instance, can provide some baseline data for future monitoring.

3.6.1 Responding to monitoring results

Monitoring may reveal effects resulting from your project that you had not anticipated. In this case, you need to back up and go through the effects identification stage and the mitigation and enhancement stage again. Once the process of assessing effects is underway, the latter three stages of the process can become a continuous, reiterative loop, with monitoring providing feedback so that the project can be fine-tuned in response to information about its effects (see Fig. 1).

If your monitoring reveals that an enhancement or mitigation measure has **not** produced the expected result, then the strategy should be reviewed and amended accordingly.

3.6.2 Key considerations

One of the biggest challenges to effective monitoring lies in isolating the effects of the project from those of other factors. How can one be sure, for instance, that an increase in visitor numbers to the local town results directly from the track upgrade just completed? Would the increase, or some of it, have occurred anyway? What other factors might have contributed to the change? One needs to think through these issues carefully when choosing indicators and designing appropriate monitoring.

Systems for the collection, storage and analysis of data are important aspects of a monitoring system. They should build on those used in the process of developing a community profile, including any files and databases established at that time. The need to plan for monitoring in this way is a further reason for establishing the monitoring as early as possible in the assessment process (Taylor et al. 1995).

3.6.3 Case studies: monitoring

Otago Central Rail Trail

Monitoring the effects of the Rail Trail has been undertaken by DOC and other parties. All of the resulting information is available to DOC staff. DOC has installed track counters to monitor visitor numbers on key sections of the trail. These counters are checked and the data recorded by people from the local communities. In the summer of 2001/02 DOC undertook a survey which sought feedback from visitors about their experiences and perceptions of the trail.

Survey forms were administered by accommodation businesses along the trail. Some local accommodation businesses maintain records of customer numbers, including the proportion of visitors using the Rail Trail. A Lincoln University student recently undertook research on the trail for a thesis on benefits-based management. The research comprised interviews with trail users, local businesspeople, community leaders, local authority staff, and staff from DOC and the Rail Trail Trust.

See Sections 3.2.3, 3.3.2, and 3.4.1 for further details of this case study.

Wellington regional parks visitor monitoring

The Wellington Regional Council conducts a biennial survey of perceptions and satisfaction among visitors to its regional parks. Survey kiosks containing survey forms, pens and return boxes are installed at park entrances. Respondents are self-selecting and the survey is self-administered.

Respondents are asked to provide information about themselves (demographic data and details of their activities in the park). They are asked to rate their satisfaction with park facilities and services, and with the park environment in general, using a scale of 1-10. Space is provided for suggestions and general comments. The survey data provides feedback by which the Council can monitor visitor responses to park management activities.

A variation on this approach would be for researchers to conduct face-to-face interviews with park visitors. By using this method, a more representative sample could be achieved and more detailed information could be obtained from respondents.

Effects of ending the logging of Pureora Forest Park

(Dawson 1979)

This thesis assessed the effects of changing the orientation of the Pureora forests from commercial exploitation to recreation management and conservation. This case study is particularly interesting in that the initial effects assessment research was followed up to compare previously predicted costs to the community with the actual costs, and to assess the effectiveness of cost-reduction strategies. The discrepancies between predicted and actual effects (Table 1) highlight the importance of monitoring and feeding back information on the actual effects.

3.7 THE ROLE OF CONSULTATION IN SOCIAL IMPACT ASSESSMENT

At each step of the SIA process it is necessary to gather data. Consultation is a key tool for gathering relevant information. For example, a primary method of identifying the effects on your neighbouring community is to consult with potentially affected stakeholders. Consultation also plays a role in compiling the community profile, identifying indicators, and the design of mitigation and enhancement measures and monitoring. It can also provide information needed

TABLE 1. DISCREPANCIES BETWEEN PREDICTED AND ACTUAL EFFECTS.

PREDICTED EFFECTS	ACTUAL EFFECTS
Loss of wages for those laid off	Workers found alternative employment elsewhere, generally with higher wages
Reduction in commissioning of engineering and other mill-related services	It was assumed this was less than had been predicted because of the redeployment of services elsewhere
Loss of rates revenue for District Council	It was assumed that the District Council would take action to recover some revenue from DOC
Loss of income for electricity companies and local businesses	It was assumed these would find new customers
Loss of freight business	It was assumed that 75% of labour, capital and plant employed by the freight industry would be deployed elsewhere
Loss of surplus earned by capital, no income would accrue from the sale or reallocation of mill equipment	Consideration was being given to the sale of mill equipment and housing stock
The population of Barryville would be reduced to nil	This happened
The school roll would be reduced and teaching staff reduced to sole charge	This happened
Pre-school and play-centre would close	The roll of the pre-school declined but it stayed open. The play-centre closed
Pureora store would close	The store stayed open with the husband taking on alternative employment to supplement family income
Loss of transport services	The NZ Railways bus service ceased, but the rural delivery truck service continued
Loss of rugby club as membership fell	The club continued

to monitor changes. The indicators/monitoring column of the social effects management framework (Section 6) suggests instances where consultation with specific groups may be an appropriate source of data.

There are a variety of consultation techniques, described briefly in Appendix 1. The techniques you choose will depend on:

- What information you are looking for
- Who is to be consulted
- How many people are to be consulted
- Time constraints
- Other resource constraints including those of the other parties

A key thing to bear in mind is that consultation is a process of two-way communication that involves talking with parties, providing relevant information, keeping an open mind, taking notice of what is said, and not making the decision until consultation is completed. The judge in the Wellington International Airport versus Air New Zealand (RMA 1991) case provided what is generally considered to be a landmark definition of adequate consultation:

‘Consultation must be allowed sufficient time and genuine effort must be made ... To ‘consult’ is not merely to tell or present. Nor, at the other extreme,

is it to agree ... Implicit in the concept is a requirement that the party consulted will be (or will be made) adequately informed so as to be able to make intelligent and useful responses ... Any manner of oral or written interchange which allows adequate expression and consideration of views will suffice ... In some situations adequate consultation could take place in one telephone call. In other contexts it might require years of formal meetings. Generalities are not helpful.'

Whatever consultation method(s) you use, you need to ensure respondents understand the proposal. You may need to provide a profile of the project (make sure it is clear and easy to understand—visual aids are good—but it must be detailed enough so that people can grasp the implications of the project for themselves). Ask them who they think is likely to be affected and in what ways, and how effects might be mitigated or enhanced.

Identifying who to consult is best done using a simple process known as **snowballing**. Talk to the people you know will have an interest—start with your regular contacts in the community, such as recreation and environmental groups, neighbours, tangata whenua representatives, and so on. Each time you talk to a person, ask them which other groups or individuals should be consulted. This may put you in contact with groups and individuals you were not previously aware of.

A successful consultation exercise requires careful planning and specific skills. For guidance on consultation practice, see the Department's consultation policy. Appendix 4 lists sources of further information on consultation processes. In some instances an independent process facilitator may be appropriate (see Section 4). Your Community Relations programme manager may be able to provide assistance.

Appendix 1 describes specific consultation techniques.

4. Identifying the skills needed for the job

As explained in Section 1.3, these guidelines are intended for use only in simple social impact assessment (SIA) contexts. Some assessments are complex, requiring a high degree of skill. You will need to judge whether you have the requisite skills to carry out a particular assessment. If you decide that you need more help, there are three options to consider:

- Undertake SIA training
- Seek help from a suitably experienced colleague
- Seek help from an external SIA practitioner

Below is a range of possible circumstances under which you might need specialist help, either from within or from outside the Department. If you are unsure, talk to your Conservancy Advisory Scientist. Examples of circumstances

under which a social impact assessment may be complex, requiring specialist skills are:

- There are large numbers of neighbouring landowners and the project is likely to affect neighbours (e.g. land management conflicts, trespass, changes in property values, etc.)
- There are other stakeholder interests that may be significantly affected by the project (e.g. recreation, cultural, scenic values) and the numbers involved are potentially large
- Local industries have a relationship with the project area (e.g. there are tourism-related businesses located near the project area; concessionaires use the area; local businesses use the area in their promotion). The significance of this factor will depend partly on the proportion of the local population employed in these industries, and on the extent to which these industries rely on income generated within the project area or on tourists who visit the area
- An economic impact assessment is required (e.g. to assess the significance of new business opportunities likely to arise as a result of the project)
- You lack sufficient data to compile a community profile that adequately covers the relevant aspects, and cannot obtain the information you require by interviewing people in the community (or perhaps you just need help compiling a community profile)
- Data from questionnaire surveys or other extensive public consultation processes is required
- There is a history of controversy associated with the site or the type of work proposed
- You consider it unlikely that you will be able to communicate with all affected stakeholders and resolve their concerns to their satisfaction
- It is important from a public relations point of view that the SIA is seen to be undertaken by an independent third party

5. Further case studies

This section presents additional case studies, some of which cover the full social impact assessment process.

Designation of Kaburangi National Park

(Taylor et al. 1999)

Kahurangi National Park was gazetted in 1996. In 1997/98, Taylor et al. undertook an assessment of the social and economic effects that the formation of the park had had on neighbouring communities. Profiles of each community were developed from census data and covered:

- Population changes between census years (numbers, sex ratios, age, ethnicity)

- Employment status (proportions of wage and salary earners, unemployment rates, occupational groups)
- Industry types
- Household incomes and income support
- Education levels
- Household tenure

The report by Taylor et al. also included a general statement on the dynamics of each community and the attitudes of residents towards development. This was based on:

- Documents prepared by the Buller District Council as part of its district plan preparation
- Township profiles prepared by the West Coast Regional Council
- Interviews with local individuals, interest groups, and agencies

Taylor et al. drew on a wide range of data to measure the park's effects. Data included: DOC employment rates and types of expenditure; visitor centre numbers; and hut and track use data, which were analysed for trends.

Estimates of direct and indirect expenditure were made from secondary data and field interviews, and compared with expenditure multipliers (see Appendix 2) provided by the West Coast Regional Council. Multipliers used were: 1.56 for cafes and motels; 1.66 for transport; and 1.76 for business services. The multiplier for building and construction was expected to be higher. Overall, the multipliers averaged 1.6.

Tourism sector data included data on changes in visitor numbers at visitor information centres in the neighbouring communities, demands on tourist accommodation, demands on tourist operations, and numbers employed in tourist-related businesses.

Interviews were conducted with key individuals and groups including community leaders, interest group representatives, central, local and regional government agencies, tourism operators and other businesspeople.

Findings—The key neighbouring communities (Collingwood, Takaka, Tapawera, Murchison, and Karamea) have relatively high proportions of self-employed people and employers, reflecting a high incidence of farm- and tourist-based businesses.

At the time of the 1993 study it was estimated that the park would create 50 direct and 30 indirect jobs. By 1998, tourism business had grown significantly in Golden Bay and to a lesser extent in Murchison. Kahurangi National Park was a key feature in the promotion of the top of the South Island. The authors anticipated that the projected employment benefits would be exceeded.

As a consequence of the increased significance of tourism employment, the authors anticipated a shift in emphasis from production to service work in the local communities, involving a shift from full-time to part-time work, and a shift in the participation rates of men and women.

There was increased demand for all types of walking opportunities from both domestic and international visitors.

Community concern about the lack of investment by DOC in existing and new facilities was identified. A need for more information about the Park and better distribution of that information was also identified.

The local population, which had previously been in decline, stabilised during the 1990s but was ageing as young people left the area.

Taylor et al. identified a number of important social issues resulting from the designation of the Park:

- New restrictions on pre-existing helicopter tourism operations in part of the park (now a wilderness area) and conflicts between the use of helicopters and park visitors seeking peace and solitude
- The exclusion of mountain bikers under the new designation, leading to a marked reduction in the number of cycle tourists coming through some of the neighbouring towns
- Pressure on access roads and limitations on road maintenance funding
- Increasing conflicts between tourist traffic and local traffic
- The impediment posed by the development of the National Park to a proposed new link road from Golden Bay to the West Coast
- The removal of a Recreational Hunting Area designation from part of the Park, which was of concern to recreational hunters
- Increased demand for white water rafting operations (including helicopter access for the same) and associated effects on other Park visitors
- Effects of increased fishing pressure on the trout fishery
- Concerns about the sustainability of an existing eeling operation and the role of the National Park in protecting eel habitat
- Problems with visitors gaining access to the Park across private farmland, necessitating the construction of a new length of track
- Limited community involvement in the development of the Park—particularly track and hut construction and maintenance
- Inconsistencies and problems in the allocation and management of concessions to tourist operators
- Concern among neighbouring landowners that DOC would not have the resources to effectively control pests and weeds, particularly around the perimeter of the Park
- Concern that the National Park status would create barriers to hydro-development, mining, forestry and sphagnum moss collection, with consequential large opportunity costs
- Potential for the expected increase in visitor numbers to lead to an increase in social conflicts between park users

In addition to the social effects identified by Taylor et al., Corydon Consultants identified a range of other effects during the field work for this project.

Effects on employment and income

- Establishment of small accommodation businesses—backpackers, home-stays etc.—near the boundary (there was some speculation as to whether this reflected increased demand or simply an expectation of demand by those establishing the businesses)

- Greater demand for guided tramping and fishing services

Effects on tangata whenua

- Increased complexity of procedures for getting permission to harvest plant material for cultural purposes
- Prohibition of commercial eel harvesting in key waterways (which by definition includes harvesting for trade with other iwi)
- Cultural concerns regarding greater use of 1080

Effects on recreational users/environmental lobby groups

- Increased competition for huts and other facilities resulting from increased visitor numbers
- Concern that the change in status would result in a shift of focus towards providing high class facilities at the expense of backcountry facilities and opportunities
- Loss of access for users with dogs
- Increased opposition to 1080 use by the anti-1080 lobby (the use of poison was now considered more abhorrent because of the land's status as a national park)
- Increased support from conservation groups, e.g. Forest and Bird, for pest control work (increased importance because of national park status)

Effects on property values

- Increased demand for small blocks bordering the park, resulting in a significant increase in the value of these blocks

Effects on neighbours

- Upgrades of some access roads resulting in improved access for some neighbours
- Noise effects on neighbours of concessionaire businesses offering helicopter access to clients
- Increased pressure for access across private land in some key areas
- Some activities (e.g. lighting fires on neighbouring properties) are now more strictly monitored and regulations more rigorously enforced

Effects on community education/involvement

- Increased interest among local residents in being involved in voluntary conservation work

Establishment of Goat Island Marine Reserve, Leigh

Project profile—Goat Island (or Cape Rodney-Okakari Point) Marine Reserve was established in 1975—the first marine reserve in New Zealand. In area it covers 5 km of coastline and the sea out to 800 metres from shore. Activities permitted within the reserve include anchoring boats, swimming, snorkelling, and scuba diving. Fishing is prohibited. Connected to the marine reserve is a public walkway along the coastline. The University of Auckland has a marine laboratory overlooking the reserve which is a centre for marine scientific study. Some of the scientists are also voluntary rangers.

The reserve is located one and a half hour's drive from Auckland City. Provision is made for parking a limited number of cars. Toilets and changing rooms are

provided on-site but no drinking water or refreshments are available. Snorkel hire and glass bottom boat tours operate seasonally. Small grassed and beach areas near the car-park are available for picnicking and sunbathing.

Community profile—Leigh is a small town predominantly servicing the surrounding rural area. Increasingly, as a result of the marine reserve and other recreational opportunities, it is becoming a holiday centre. There is a range of accommodation available in the Leigh area, from hotels to back-packer accommodation and camping grounds, as well as some cafes, restaurants, and basic shopping facilities.

There is a huge demand for outdoor recreation opportunities near Auckland. People are prepared to travel relatively long distances for such opportunities, particularly during weekends and holidays. A range of other significant recreational opportunities are available in the area.

Effects—A range of social effects of the marine reserve's establishment were identified:

Employment and income New retail and service outlets have been established in Leigh and Warkworth in response to an increase in visitor numbers, some of which can be attributed to reserve visitation. Existing retailers have experienced improved profitability (some now sell products relating to the marine reserve).

Recreational users Over-crowding at peak periods has reduced the enjoyment of some visitors. Restrictions on fishing were initially resented by some local recreational fishermen but are now largely supported as the wider benefits have been recognised.

Community structures and services Awareness of the area at a national level has increased as a result of park promotion. There is now a greater variety of retail and service outlets available, especially in neighbouring Warkworth, as a result of an increase in visitor numbers, partly attributable to reserve visitors.

Neighbours There has been a significant increase in trespass onto adjoining farmland during peak times, when visitor numbers outstrip the capacity of the beach area. There has been a huge increase in traffic volumes on the local rural road at peak times.

Community education/involvement Awareness among the local community about marine life and the value of conservation has increased, facilitated in part by the maps and species data produced by the marine scientists at the laboratory. A sense of pride in the reserve has developed among the community—including those who initially opposed it.

Mitigation and enhancement—Any proposals to expand visitor facilities at the reserve would have to be weighed against the effects of greater visitor pressure on the resource. Creating more marine reserves in the Auckland area would help to spread visitor demand.

Monitoring—A traffic counter is located on the road to the reserve.

Establishment of Rakiura National Park

(Allan 2000)

This report was prepared by the Southland District Council to raise awareness of the likely effects of the proposed national park on the Stewart Island community, and to use in seeking government assistance in addressing those effects.

Community profile—The report outlines the character and demographics of the Stewart Island community. This includes building trends and changes in the ratio of visitors to permanent residents over the preceding ten years. Facilities, attractions and services (transport and accommodation) are described.

Economic profile—The numbers employed in the main industry sectors are listed. These figures are not broken down by sex. The growing importance of tourism to the island's economy is highlighted.

Visitor profile—Numbers of visitors to the island are estimated based on visits to the visitor information centre (adjusted to exclude DOC staff but not repeat visits), as well as ferry and aircraft passenger numbers (excluding an estimated proportion of locals). The types of visitor (free independent traveller versus organised tour patrons) and country/region of origin are also recorded.

Estimate of economic contribution—The average length of stay is estimated and daily expenditure per visitor calculated on the basis of a 'typical' itinerary. Additional full-time jobs arising from park development are calculated on the basis of one job per \$40 000 generated by visitors. Secondary employment is estimated using a ratio of 33 indirect to 67 directly generated jobs. (This was reduced from the 50 : 50 ratio used in regions with high levels of visitors because of the high level of dependence Stewart Island has on support services located off the island.)

It is noted that job growth resulting from the national park would occur largely in the service sector. Therefore new opportunities would mainly favour women and those prepared to work part-time.

Effect scenarios—Two scenarios were developed: one based on current trends (the 'do nothing' option) and one based on the National Park being created. The latter was expected to lead to a rapid increase in visitor numbers, particularly those staying overnight.

Issues identified—Anticipated effects of an increase in visitor numbers on the Island's infrastructure were documented. A range of services and facilities were identified as needing to be upgraded or developed to cope with the increased pressure, including: water supply, sewerage, waste management systems, storm-water systems, footpaths, power supply, local walking tracks, weed control, and the quarry site (which would need to provide aggregate for new developments).

In addition, it was noted that changes to the District Plan would be required to accommodate the need for more commercial activities, and that a concept plan to control the effects of development on the landscape would be required. The costs of consulting with local iwi, and with the community in general, on these developments was also noted.

Economic contribution of Westland National Park

(Pearce 1982)

The aim of this study was to estimate the economic contribution of the Westland National Park to the local and regional economy. This work was particularly valuable in terms of identifying a range of difficulties that can be encountered in using particular techniques for surveying visitors and calculating visitor numbers.

Methodological issues—Visitor interviews were undertaken at four locations during the three seasons—peak, intermediate and off-season. It was intended to conduct 100 interviews at each location but this figure was not achieved because of limitations of time, variations in visitor numbers at each point, and poor weather during one of the months concerned. The sample framework suggested selecting interviewees at 15 minute intervals (rather than, for example, selecting every fifth person or group). This sampling technique led to an under-representation of peak-time and coach passenger visitors.

Vehicle counters were placed on the glacier access roads to record total vehicle numbers. The counters occasionally malfunctioned and in one case there were problems sorting local traffic (visiting the refuse tip) from visitor traffic. To estimate the number of glacier visitors, the numbers of occupants in each vehicle were counted over two days during each of the three survey periods, and the total number of vehicles for each survey period multiplied by the corresponding average occupancy figure.

Since travel schedules for coaches showed that almost all those visiting the glaciers also visited Shantytown (another local attraction), the number of coach travellers recorded at Shantytown was used to calculate the number of coach visitors to the glaciers.

It was intended that 'electronic eye' counters operating on the doors of the Franz Joseph park headquarters and the Fox visitor centre would be used for visitor counts. Several problems were experienced with these devices, including: the recording of non-park visitors (e.g. staff and local residents); multiple recording of people coming in and out several times, or visitors standing in the doorway; and simple malfunctioning.

The total amount of revenue coming into the region as a result of the park was calculated by adding together a range of income streams. Visitors were asked about the expenditure they incurred/expected to incur while in the area. Most visits were for less than four days and most visitors therefore had little difficulty providing expenditure estimates. For those travelling in a group, total group expenditure was divided evenly among the number of people in the group to derive individual expenditure. Expenditure was calculated on a per night basis and divided into: meals and food; accommodation; transport; flights and walks; gifts and souvenirs; and 'other'.

Pre-paid expenses (e.g. to tour operators) were calculated separately. Discounts and variations in rates charged to different operators for accommodation made it difficult to calculate an average rate. The proportion of tourists staying in each type of accommodation (as revealed by the survey results) and the total

number of package tourists (figures provided by Shantytown) were then used to estimate total accommodation expenditure.

Park staff salaries were added to provide an estimate of expenditure directly related to the Park. Note however that a substantial proportion of this income could be expected to be spent outside the region (leakage). To assess the extent of this leakage, a survey of local businesses was undertaken. This survey sought to determine the proportions of expenditure by these businesses that remained in the region as opposed to being spent elsewhere. Numerous problems were encountered with this survey, including:

- Some businesses were reluctant to complete the questionnaire, others could not be contacted
- Records provided by those willing to participate were often incomplete, or else it was difficult to break down expenses into those spent inside or outside the region
- Due to the small size of the community there was difficulty in maintaining the confidentiality of the data

Findings—Almost all local expenditure by local businesses was in the form of wages. Therefore the most direct benefits to the local community, excluding profits to the business proprietors themselves, resulted from employment generated by tourism.

Most of the motels and shops were operated by owner/managers and their spouses, and therefore some of the business profits could be expected to be spent locally. A significant proportion, however, would likely be spent outside the region, given the limited retail opportunities available in South Westland. Expenditure beyond the local communities would be on rates, electricity, postal charges, trades people, wholesale suppliers, souvenirs, fuel, insurance, mortgage repayments and general retail shopping.

Expenditure patterns differed dramatically between people staying overnight and those passing through; between New Zealanders and overseas visitors; between visitors of different nationalities (those from USA and Canada spent the most); between users of different travel modes (those in rental cars spent the most); and between visitors using different types of accommodation (those in hotels spent the most).

The research found that many visits to the Coast are multi-purpose—people tend to visit the coast and the glaciers as part of a longer holiday. Thus there is a danger of over-estimating the expenditure effects of visitation to the glaciers.

6. Social effects management framework

The social effects management framework was developed through a review of past experience, both in New Zealand and overseas. The first step was a review of relevant literature (see Section 1.5.1). The effects, indicators and mitigation measures identified in the literature were then verified and substantially augmented by information collected during field visits to six conservation initiatives (see Section 1.5.2).

The results of this work gave rise to a list of effects that have resulted from specific actions by the Department, as well as factors contributing to the magnitude of those effects. This list forms the basis for the framework (see Table 3, next pages). Note that the framework is **not** exhaustive, it is based on a limited set of case studies and is intended as a guide to your own thinking about these factors in relation to your project. Of the possible mitigation and enhancement measures (Table 3, column 5), some examples were drawn from case studies, others are our own suggestions. Most of the monitoring indicators and measures (column 6) are our own suggestions.

6.1 USING THE FRAMEWORK

Column 1 of the framework lists possible actions by DOC, as well as some primary level changes that may result directly from an action by the Department, each of which are likely to give rise to social and economic consequences for neighbouring communities:

Actions by DOC

1. Land purchase/change of land status
2. Imposition of new controls on recreational activities (e.g. resulting from a change in land status)
3. Imposition of new controls on cultural use (e.g. resulting from a change in land status)
4. Preservation/protection of natural resources from economic exploitation
5. Development/improvement of visitor facilities
6. Improved accessibility of entry points
7. Development of special needs tracks
8. Development of new educational opportunities
9. Granting of consents for commercial recreational use of a protected area (including helicopter access for fishing, hunting etc.)
10. Revegetation (facilitating/planting)
11. Intensified predator control (e.g. mainland island)
12. Construction of a security/predator-proof fence
13. Increased/more public use of 1080
14. Reintroduction of threatened species
15. Initiation of a volunteers programme

16. Introduction of a system of co-management with the local community and/or local Maori
17. Employment of additional staff to manage and maintain the conservation area

Primary effects which produce secondary effects

18. Increasing visitor numbers
19. Intensification of private subdivision/residential development on the boundary of the conservation area which precludes use of access points that have historically been available

If your proposal is similar to one or more of these actions, then start at that item(s) in column 1 (note that column 1 also lists some primary level effects which may produce secondary effects).

A range of effects that may result from the action/primary effect are listed in column 2, starting on the same row as the action/primary effect. Note that the effects pertaining to particular actions are not exclusive; several actions may produce similar effects, therefore there is some repetition throughout the table.

While column 2 lists possible effects, the list is not exhaustive and your specific case may involve a significantly different list. You need to consult with your affected stakeholders to identify potential effects specific to your situation.

The stakeholders who may be affected by each effect are listed in column 3. Thinking about your specific situation, are any of these stakeholder groups likely to be affected? Are there any others who may be affected? A fuller description of the affected stakeholder groups listed in column 3 is provided in Table 2 (note that others beyond those listed here may also be affected). Possible factors influencing the magnitude of each effect are listed in Table 3, column 4. Column 6 gives some ideas about indicators you could use to measure each effect.

TABLE 2. STAKEHOLDER GROUPS REPRESENTED IN COLUMN 3 OF THE FRAMEWORK (see Table 3, on following pages).

LISTING (in the framework)	STAKEHOLDER GROUP REPRESENTED
Neighbours	Neighbouring property owners/occupiers
Maori	Tangata whenua and other Maori
Business	Local business operators
Recreation	Recreational user groups (existing and future)
Eld/Disab	Elderly/disabled
TLA	Territorial local authorities
Pac. Is	Pacific Islanders
Community	Local communities as a whole
Training	Local training providers

TABLE 3. THE SOCIAL EFFECTS MANAGEMENT FRAMEWORK. (See Table 2 for an explanation of the stakeholders in the Groups listed in column 3.)

1. ACTION/ PRIMARY EFFECT	2. POSSIBLE EFFECTS	3. AFFECTED GROUP(S)	4. FACTORS CONTRIBUTING TO MAGNITUDE OF EFFECT	5. POSSIBLE MITIGATION/ ENHANCEMENT MEASURES (<i>indicative</i> only)	6. POSSIBLE INDICATORS, MONITORING TECHNIQUES (INFORMATION SOURCES)
Actions/changes by DOC					
1. Land purchase/ change of land or sea status	Change in agree- ments/understandings with neighbours, tangata whenua, and current users	Neighbours Maori Recreation	<ul style="list-style-type: none"> •Number of neighbouring properties •Scope of agreements/understandings •Extent to which Maori rely on the area for customary harvest, etc. •Sense of ownership of area among tangata whenua and local users 	<ul style="list-style-type: none"> •Regular (e.g. twice-yearly) meetings with neighbours and/or local Maori representatives to discuss land management issues 	<ul style="list-style-type: none"> •Number of complaints/incidents involving conflict between DOC and neighbours or tangata whenua or previous users concerning land management issues and restrictions on use (consultation feed back; complaints log) •Level of support from neighbours and tangata whenua for regular meetings (as demonstrated by attendance numbers)
	Change in rating base for local authority/ies	TLA	<ul style="list-style-type: none"> •Size of land area involved •Previous ownership/use •Potential of land for development •Financial viability of local authority/ies •Effects on neighbouring property values 	<ul style="list-style-type: none"> •Provide a grant to local authority in lieu of rates •Increase in neighbouring land values may redress part or all of the shortfall (see below) 	<ul style="list-style-type: none"> •Change in rates levies on neighbouring land (review rating records) •Difference between annual grant made by DOC to TLA and rate take that would have applied under previous regime
	Change in neighbour- ing property values as a result of natural character being protected	Neighbours	<ul style="list-style-type: none"> •Visual/recreational values of the conserva- tion area for neighbouring properties •Previous level of protection of views/access •Pressure for subdivision/residential developments •Location of private properties relative to the protected area •Implications for land use activities on neighbouring properties •Quality of road access to the conservation area and adjoining properties 	<ul style="list-style-type: none"> •Consult with neighbours on attri- butes of the area which they particularly value and, if possible, work to preserve these 	<ul style="list-style-type: none"> •GV of properties relative to others in the district (Valuation NZ records) •Sales price of affected properties relative to other properties in the district (consult local real estate agents; website for sales history data at www.propertystuff.co.nz) •Change in demand for neighbouring properties relative to others in the district (consult local real estate agents)
	Higher profile for the area creates opportunities for new tourism-related businesses/marketing	Business Maori Neighbours	<ul style="list-style-type: none"> •Location of community relative to protected area (See Action/Change number 5, below) 	<ul style="list-style-type: none"> •Encourage the generation of ideas and networking among local busi- nesses and others by providing them with information on proposed conservation developments (or by encouraging appropriate agencies to facilitate discussion) 	<ul style="list-style-type: none"> •Numbers of businesses using protected area in their marketing (consult local business association) •Level of promotion of area by travel and tourism related services (consult tourism promoters, tourist operators)

	Increased certainty of access/protection for the future (e.g. creation of a national park)	Recreation Neighbours Community Maori	<ul style="list-style-type: none"> •Public interest in land for recreation, scenic values, etc. •Pressure for subdivision/building development on the boundary •Extent of protection provided by previous ownership regime 	<ul style="list-style-type: none"> •Ensure any increase in protection of public access is highlighted in information about the conservation development, especially in the early stages 	<ul style="list-style-type: none"> •Existing pressures on resources of protected area; investigate history of area, particularly past proposals to use natural resources, restrict access, construct buildings, roads etc (consult with TLA, environmental organisations, and local news media)
2. Imposition of new controls on recreational activities (e.g. resulting from a change in land or sea status)	Restriction and/or prohibition of certain activities (e.g. loss of access for certain users/during certain periods)	Recreation Maori	<ul style="list-style-type: none"> •Intensity of use of area prior to change •Types of activities precluded by new status (under legislation/policy) •Availability of comparable alternatives in the area 	<ul style="list-style-type: none"> •Development of alternative opportunities in proximity •Adopt process of rolling reviews for the CMS to enable DOC to respond to opportunities for increased usage and access as they arise •Allow 'prohibited' uses on occasional, managed basis (e.g. organised mountain bike rides 1 day per month) 	<ul style="list-style-type: none"> •Incidence of non-compliance with any restrictions/prohibitions (incident records) •Changes in levels of patronage of alternative facilities available (e.g. visitor counts)
3. Imposition of new controls on cultural use (e.g. resulting from a change in land status)	Restriction and/or prohibition of certain activities. More formal application procedures for cultural permits. Increased difficulty for local Maori to fulfil cultural harvest requirements, and for other cultures to maintain traditional diets	Maori Pac. Is Asian communities	<ul style="list-style-type: none"> •Extent to which local Maori and other ethnic groups rely on the protected area as a source of food, medicinal plants, etc. •Availability of alternative sources within rohe of individual iwi 	<ul style="list-style-type: none"> •Provision/negotiation of comparable alternative sites within rohe of affected iwi •Recognition of the role of specific resources for cultural purposes by adjusting the permit system at the local level to meet the needs of Maori •Confirm appropriate methods of harvest with tangata whenua and other groups 	
4. Preservation/protection of natural resources from economic exploitation	Loss of local primary sector jobs Change in demographic and employment structure (more female-oriented and part-time work) with a decline in resource-extractive industry and an increase in service industries from growth in tourism and conservation-related work Increased unemployment among males and/or movement of male pop. to other areas in search of work	Community Maori Business (natural resource-based)	<ul style="list-style-type: none"> •Number of people previously employed in industries affected •Extent to which new local employment opportunities can compensate for lost jobs •Number of visitors attracted by the new conservation initiative •Number of existing businesses and range of services available 	<ul style="list-style-type: none"> •Promote area for tourism •Encourage local businesses to capitalise on the proximity of the conservation initiative by obtaining concessions, advertising their proximity, etc. •In the case of a marine reserve, promote the benefits of marine reserves as a seeding area for areas available for harvest 	<ul style="list-style-type: none"> •Proportion of local population engaged in each employment sector (census data available from Statistics NZ) •Numbers of jobs advertised in each employment sector (Work and Income NZ records; situations vacant adverts in local papers) •Proportions of workforce that are male and female (census data; household surveys) •For marine reserves, increases in take from adjoining areas (local fishing industry records, interviews with recreational fishers) •Changes in numbers of businesses based on extraction of the types of resources protected by the conservation initiative

(Continued next pages)

Table 3. *Continued*

1. ACTION/ PRIMARY EFFECT	2. POSSIBLE EFFECTS	3. AFFECTED GROUP(S)	4. FACTORS CONTRIBUTING TO MAGNITUDE OF EFFECT	5. POSSIBLE MITIGATION/ ENHANCEMENT MEASURES (<i>indicative</i> only)	6. POSSIBLE INDICATORS, MONITORING TECHNIQUES (INFORMATION SOURCES)
5. Development/ improvement of visitor facilities	Improved rec. opportu- nities for groups requiring high level of facility provisn	Recreation Eld/Disab	<ul style="list-style-type: none"> •Extent of development existing previously •Previous accessibility of sites of interest 	<ul style="list-style-type: none"> •User surveys to determine types and standards of facilities preferred 	<ul style="list-style-type: none"> •Quality of opportunity/experience for these groups (consultation with relevant groups/ clubs; on-site user surveys)
	Deterioration of visitor experience for user groups seeking back- country/wilderness experience	Recreation Maori	<ul style="list-style-type: none"> •Extent of development existing previously •Extent of change in visitor numbers resulting from improvements •Availability of alternative opportunities covering applicable categories of the Recreation Opportunities Spectrum 	<ul style="list-style-type: none"> •User surveys to determine types and standards of facilities preferred •Set aside appropriate areas for back-country/wilderness experiences •Provide/maintain a range of levels of facility—including basic, simple huts in quieter areas 	<ul style="list-style-type: none"> •Quality of opportunity/experience for these groups (consultation with relevant groups/ clubs; on-site user surveys)
	Increased visitor numbers (primary effect 18, see below)		<ul style="list-style-type: none"> •Extent to which area is promoted •Accessibility of the area •Suitability of recreational opportunities for tourists 	<ul style="list-style-type: none"> •Refer to items listed under primary effect 18 (see below) 	<ul style="list-style-type: none"> •Refer to items listed under primary effect 18 (see below)
	Facilitating access by undesirable recreation- ists (e.g. motorised recreational users) through widening/ upgrading of tracks	Neighbours Recreation Maori	<ul style="list-style-type: none"> •Location of tracks relative to residential areas •Levels of track use by other recreational forms •Types of activities previously undertaken in area (e.g. passive v. active) 	<ul style="list-style-type: none"> •Install barriers at entry points •Patrol tracks (e.g. voluntary rangers) •Talk with groups (e.g. trail bike, 4WD clubs) about the need to exclude 'rogue' individuals from the area, poss. involve groups in voluntary patrolling 	<ul style="list-style-type: none"> •Quality of opportunity/experience for legitimate users (consultation with relevant groups/clubs; on-site user surveys) •Number of complaints from neighbours (consultation with neighbours; complaints log)
6. Improving accessibility of entry points	Increased visitor numbers (see primary effect 18, below)		<ul style="list-style-type: none"> •Extent to which the area is promoted •Quality/range of user facilities •Nature of entry points and tracks within the area 	<ul style="list-style-type: none"> •Focus on priority areas for roading/entry point improvements 	<ul style="list-style-type: none"> •Refer to items listed under primary effect 18 (below) •User survey to identify priority areas
7. Development of special needs tracks	Improved access for the less-able	Eld/Disab	<ul style="list-style-type: none"> •Proximity to intensive residential areas/ major tourist destinations •Availability of alternative opportunities for these groups 	<ul style="list-style-type: none"> •Provide dedicated use by those groups •Promotion of new services in conjunction with support groups and service providers for the less-able 	<ul style="list-style-type: none"> •Quality of opportunity/experience for these groups (consultation with relevant groups/ clubs; on-site user surveys)
8. Development of new educa- tional oppor- tunities	Increased awareness in local community about the value of the natural resources concerned and the importance and benefits of protecting them	Community Maori	<ul style="list-style-type: none"> •Extent to which the area is accessible •Existing level of awareness and sense of guardianship 	<ul style="list-style-type: none"> •Conservation programmes with local schools/groups •Publicity in local papers about activities and achievements in conservation area 	<ul style="list-style-type: none"> •Level of awareness of conservation initiative among locals (consultation with local community, e.g. random or targeted surveys) •Number of schools that use opportunities (e.g. by using educational materials from DOC, organising school visits) •Changes in nos. volunteering for cons. work •Decline in vandalism/non-compliance

9. Granting of consents for commercial recreational use of the protected area (including helicopter access for fishing, hunting, etc.)	Detraction from the experience of other users of the area Noise effects from helicopters on neighbouring properties	Neighbours Recreation Maori	<ul style="list-style-type: none"> • Presence of high quality fishing, hunting, tramping opportunities (especially marked where these opportunities are only available over a limited area) • Extent to which the area is already used for recreation • Nature of existing use (e.g. remote experience or highly modified?) 	<ul style="list-style-type: none"> • Imposing/enforcing limitations on where helicopters can operate • Air access strategy • Consultation with neighbours and local recreational users regarding concession conditions and limits on the numbers of consents granted 	<ul style="list-style-type: none"> • Quality of opportunity/experience for these groups (consultation with relevant groups/clubs; on-site user surveys) • Nos. of complaints from visitors/neighbours regarding annoyance/dissatisfaction with experience (complaints fielded by info. centres, tourist operators, DOC complaints log; visitor surveys; comments in hut books)
	Competition with local users for huts and other facilities	Recreation	<ul style="list-style-type: none"> • Extent to which facilities are located in popular but isolated fish/hunt/tramping areas traditionally used by those travelling on foot • Extent to which level of facility provision has been tailored to lower numbers (including level of development/maintenance of tracks) 	<ul style="list-style-type: none"> • Place limits on hut use as concession conditions • Require concessionaires to provide their own accommodation 	<ul style="list-style-type: none"> • Level of displacement of local/'traditional' users (consultation with clubs; visitor surveys; hut book records) • Total numbers of visitors to facilities (hut book records; on-site surveys)
	Positive spin-offs for local economy from helicopter-based tourism	Business Community	<ul style="list-style-type: none"> • Extent to which helicopter tourists stay in the local area, employ local guides, etc. 	<ul style="list-style-type: none"> • Networking among relevant local businesses to encourage co-ordination of services 	<ul style="list-style-type: none"> • Number of customers of commercial operators who stay overnight/use other businesses (customer/visitor surveys) • Experiences of local businesspeople (interviews)
	Opposition from commercial operators to large-scale pest control strategies	Business	<ul style="list-style-type: none"> • Extent to which game sought by concessionaires is subject of pest control 	<ul style="list-style-type: none"> • Include education material on need for pest control in information that operators distribute to customers 	<ul style="list-style-type: none"> • Number of complaints from commercial operators (complaints log)
10. Revegetation (facilitating/ planting)	Increased property values for neighbours	Neighbours TLA	<ul style="list-style-type: none"> • Proximity of residential development • Extent to which views are improved by vegetation change • Extent to which environment outside the protected area is enhanced by improvements inside the protected area (e.g. bird spill-over) • Pre-existing property values 	<ul style="list-style-type: none"> • Develop areas visible from adjoining properties or along boundaries in ways that enhance views • Consult with neighbours over planting plans to identify opportunities and concerns 	<ul style="list-style-type: none"> • GV of properties relative to others in the district (Valuation NZ records) • Sales price of affected properties relative to other properties in the district (consult local real estate agents; website for sales history data at www.propertystuff.co.nz) • Change in demand for neighbouring properties relative to others in the district (consult local real estate agents)
	Impeding views from neighbouring properties	Neighbours	<ul style="list-style-type: none"> • Quality of views from neighbouring properties • Height of expected vegetation in the view shaft relative to height of existing vegetation 	<ul style="list-style-type: none"> • Meetings with neighbours to agree on principles of planting/revegetation to minimise effects • Development of a landscape planting plan 	<ul style="list-style-type: none"> • Satisfaction level of neighbours (consultation, site visits with neighbours)

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Table 3. *Continued*

1. ACTION/ PRIMARY EFFECT	2. POSSIBLE EFFECTS	3. AFFECTED GROUP(S)	4. FACTORS CONTRIBUTING TO MAGNITUDE OF EFFECT	5. POSSIBLE MITIGATION/ ENHANCEMENT MEASURES (<i>indicative</i> only)	6. POSSIBLE INDICATORS, MONITORING TECHNIQUES (INFORMATION SOURCES)
	Increased costs of pest and weed control for neighbouring properties (e.g. where natural re-vegetation is allowed to take place adjacent to the boundary)	Neighbours	<ul style="list-style-type: none"> •Nature of vegetation change along property boundary (e.g. change from pasture to scrub) •Extent of weed and pest control undertaken by DOC on its own land •Requirements of local/regional councils as to control of weeds/pests on private land 	<ul style="list-style-type: none"> •Negotiation of agreements with neighbours regarding co-ordinated/co-operative management of pest and weed issues 	<ul style="list-style-type: none"> •Satisfaction level of neighbours (consultation, site visits with neighbours) •Numbers of positive reports from regional pest/weed control officers (consult with councils, review regional pest animal/plant management strategies)
11. Intensified predator control (e.g. mainland island)	Increased birdlife in adjoining properties	Neighbours Community Maori	<ul style="list-style-type: none"> •Proximity of properties to boundary •Presence of birds that travel outside protected area 	<ul style="list-style-type: none"> •Publicity about increases/new types of birds in area as an indication of conservation success 	<ul style="list-style-type: none"> •Experiences of neighbours (consultation, site visits with neighbours)
	Danger of domestic animals being caught in traps/poisoned	Neighbours	<ul style="list-style-type: none"> •Number of residential properties in the vicinity •Extent to which domestic animals are left to wander unsupervised •Type of traps/poison being used 	<ul style="list-style-type: none"> •Use methods that minimise danger to pets •Clear and comprehensive communication with neighbours 	<ul style="list-style-type: none"> •Numbers of neighbours with each type of potentially affected pet (consultation, site visits) •Level of control by neighbours over pets (consultation, site visits with neighbours) •Level of awareness/concern among neighbours about risks (consultation, site visits)
	Neighbouring properties benefit from reduced pest numbers	Neighbours	<ul style="list-style-type: none"> •Land uses on adjoining properties •Number of neighbouring properties •Magnitude of pest problem 	<ul style="list-style-type: none"> •Agreements with neighbours to treat affected areas of private land in conjunction with operation on protected area 	<ul style="list-style-type: none"> •Nos. of pests killed/time spent on pest control by neighbours (consult neighbours) •Changes in costs of pest control by neighbours (consultation) •Numbers of pests killed/time spent on pest control by regional pest control operators (consultation with operators)
12. Construction of a security/predator-proof fence	Loss of direct access to area from neighbouring properties	Neighbours Recreation	<ul style="list-style-type: none"> •Availability of alternative recreation opportunities in the immediate vicinity •Popularity of area for recreation 	<ul style="list-style-type: none"> •Provision of access through fence for local residents •Provision of alternative comparable opportunities in nearby locations 	<ul style="list-style-type: none"> •Changes in opinions of affected groups (annual meetings with neighbours and recreational clubs; on-site visitor surveys regarding adequacy of access) •Changes in numbers using alternative opportunities (visitor counts; consultation with recreational groups)
	Impeding of views from neighbouring properties	Neighbours	<ul style="list-style-type: none"> •Proximity of houses to the fence •Location of fence relative to views 	<ul style="list-style-type: none"> •Siting of fence-line in less-obtrusive locations 	<ul style="list-style-type: none"> •Satisfaction level of neighbours (consultation, site visits with neighbours)

	Reduction in property values	Neighbours	<ul style="list-style-type: none"> •Extent to which house prices reflect benefit of direct access to area being fenced off •Extent to which views are impaired by fence 	<ul style="list-style-type: none"> •Sensitive location of fence-line and boundary planting •Provision of access through fence for local residents 	<ul style="list-style-type: none"> •GV of properties relative to others in the district (Valuation NZ records) •Sales price of affected properties relative to other properties in the district (consult local real estate agents; website for sales history data at www.propertystuff.co.nz) •Change in demand for neighbouring properties relative to others in the district (consult local real estate agents)
13. Increased/more public use of 1080	Community opposition to use of 1080	Neighbours Maori TLA Community Business	<ul style="list-style-type: none"> •Extent of activities already associated with 1080 use in local area (e.g. commercial forestry) •Level of local community/NGO opposition to 1080 •Attitude of local Maori towards use of 1080 •Proximity of private properties to treated area •Sensitivity of adjoining uses (e.g. residential, food production, or water supply are likely to create high level of concern) •Use of treated area/waterways by local Maori •Type of protected area (e.g. 1080 use in national parks more abhorrent) 	<ul style="list-style-type: none"> •Hold face-to-face discussions with neighbours about pest control programme during design phase, make adjust. where poss. to address concerns •Use alternative methods where poss. •Work with local Maori to identify waahi tapu/other areas to be avoided •Train locals as pest-control contractors to treat areas of particular concern using alternative methods •Provide public information about need to use 1080, and limitations of other methods 	<ul style="list-style-type: none"> •Complaints fielded by DOC offices (record in complaints log) •Letters to editors (monitor newspapers) •Views of key stakeholder groups including recreational clubs, Maori groups, neighbours, etc. (consultation with key representatives)
14. Reintroduction of threatened species	Enhanced birdlife/amenity in adjoining properties	Neighbours Maori	<ul style="list-style-type: none"> •Proximity of residential property to b'ndary •Presence of birds which travel outside protected area/produce audible birdsong •Previous diversity/density of bird population 	<ul style="list-style-type: none"> •Publicity about increased bird populations as an indicator of conservation success 	<ul style="list-style-type: none"> •Experiences of neighbours (consultation, site visits with neighbours)
	Increased public interest/awareness of conservation in general and the initiative in particular (primary effect 18, see below)		<ul style="list-style-type: none"> •Extent to which reintroduction is publicised 	<ul style="list-style-type: none"> •Publicity about increased bird populations as an indicator of conservation success 	<ul style="list-style-type: none"> •Refer to items under primary effect 18 (see below)
15. Initiation of a volunteers programme	Opportunities for locals to become involved in conservation Increased sense of local ownership/stewardship towards conservation area Opportunity to tap into a wider range of skills/people-power for the achievement of conservation objectives	Community Training Maori	<ul style="list-style-type: none"> •Proximity of residents to conservation area •Level of interest, skills, and available time within community to participate in such a programme •Level of skills, commitment and time in the local conservancy to initiate and manage such a programme 	<ul style="list-style-type: none"> •Promotion of volunteer opportunities •Development of systems, structures and training to facilitate volunteer programme •Employment of a local volunteers' co-ordinator 	<ul style="list-style-type: none"> •Numbers of local people volunteering for conservation work (DOC records) •Time spent by volunteers working on projects (DOC records) •Range of skills brought to DOC by volunteers (volunteers questionnaire) •Level of satisfaction among volunteers with their experience (volunteers questionnaire)

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Table 3. *Continued*

1. ACTION/ PRIMARY EFFECT	2. POSSIBLE EFFECTS	3. AFFECTED GROUP(S)	4. FACTORS CONTRIBUTING TO MAGNITUDE OF EFFECT	5. POSSIBLE MITIGATION/ ENHANCEMENT MEASURES (<i>indicative</i> only)	6. POSSIBLE INDICATORS, MONITORING TECHNIQUES (INFORMATION SOURCES)
	Influx of volunteers from overseas, which changes nature of the community, and increases demand for accommodation and other services (primary effect 18, see below)	Community Training Business Maori	<ul style="list-style-type: none"> •Extent to which local community is used to hosting outsiders •Availability of existing services and accommodation relative to demand 	<ul style="list-style-type: none"> •Provide social events to introduce volunteers to local people and help integrate volunteers into community •Use experienced local volunteers to train volunteers from overseas (to reduce demands on DOC staff) •Aim for set number of volunteers from overseas each year to assist local businesses in their planning 	<ul style="list-style-type: none"> •Refer to items under primary effect 18, (see below)
16. Introduction of system of co-management with the local community and/or local Maori	Increased sense of local ownership/stewardship towards conservation area. Opportunity to tap into wider range of skills, resources and people-power for the achievement of conservation objectives	Maori Recreation Community	<ul style="list-style-type: none"> •Level of interest and skills in the community to participate in such a programme •Level of skills and commitment in the local conservancy to initiate and participate in such a programme •Existence of major companies and/or other resource-rich bodies that are interested in participating 	<ul style="list-style-type: none"> •Training courses for staff and locals so they can meet the requirements of successful joint management •Ensuring the process for formulating agreements between DOC and locals is culturally appropriate •Developing incentives for companies, etc. to contribute resources 	<ul style="list-style-type: none"> •Opinions of key stakeholders regarding conservation work (consultation) •Numbers of people volunteering for conservation work (DOC records) •Numbers of hours donated by volunteers (DOC records) •Level of satisfaction among management partners with the processes (regular evaluation sessions) •Level of commitment to process among partners (records of meeting attendance, time, and resources contributed)
17. Employment of additional staff to manage and maintain the conservation area	Increased income for the surrounding community from staff associated with the conservation initiative	Community Business	<ul style="list-style-type: none"> •Extent to which local staff support local businesses •Number of employees brought into the area (as opposed to employing locals) •Distance of staff accommodation from local and regional centres •Range of goods and services available locally 	<ul style="list-style-type: none"> •Providing staff accommodation within local communities •Negotiate staff 'deals' with local businesses 	<ul style="list-style-type: none"> •Changes in income of local businesses (interview local businesspeople) •Observations by local businesspeople regarding level of expenditure by staff (interview businesspeople) •Reported expenditure patterns by staff (staff survey)
	Contribution by new staff to community life	Community	<ul style="list-style-type: none"> •Extent to which new staff get involved with community activities/mix with local people 	<ul style="list-style-type: none"> •Encourage socialising between new staff and local people •Encourage new staff involvement in local social/cultural/sport and recreation 	<ul style="list-style-type: none"> •Reported level and type of engagement by new staff with existing community (staff survey)

Primary effects which produce secondary effects					
18. Increasing visitor numbers	Increased demand for local accommodation, services Opportunities to establish new businesses New employment opportunities Social and economic revitalisation of local communities	Business TLA Community Training Maori	<ul style="list-style-type: none"> •Extent to which community was previously isolated from tourist market (e.g. whether or not on existing tour bus route) •Isolation of community from service centres •Number of existing businesses and range of services available (particularly food shops, restaurants, recreation, craft) •Ability of local businesses to adapt/diversify to take advantage of new opportunities (e.g. local accomm. businesses providing pickup/drop-off services for trampers/guided trips) •Presence of entrepreneurial people in the local community •Proximity of local communities/businesses to the protected area and particularly to main entry points •Type of accomm. demanded by visitors (e.g. backpackers versus lodge accomm.) •Presence of local homes/businesses able to expand to offer new services (e.g. backpackers, home-stays, roadside trading) •Availability of other attractions to keep visitors in area •Range of attractions in protected area •Land-use policies of local territorial authority •Size of communities (co-ordinated action more likely/successful in smaller communities —key contacts easily identified and people are familiar with one another) 	<ul style="list-style-type: none"> •Networking among local businesses for referrals •Promoting local businesses based on their proximity to conservation area •Encouraging local businesses to take up concession opportunities •Business training to enable/encourage locals to estab./improve businesses •Local training programmes for guides and other services associated with the protected area •Work with local authorities to encourage/support development of appropriate new businesses •Promote protected area in conjunction with local businesses including tourism services •Provide diversity of uses and attractions, e.g. reconstructing historic sites in or near the protected area •Site information centres in adjacent communities if possible, and site entry points positioned to encourage public to visit adjacent communities •Support local businesses where possible by encouraging staff to 'buy local' 	<ul style="list-style-type: none"> •Numbers of visitors to the area and changes in reasons for visiting (records of local accommodation firms, other tourism businesses and visitor centres) •Numbers of enquiries for accommodation (as above) •Numbers of businesses catering to visitors (chambers of commerce or local business association; your own observation) •Incomes of local businesses catering to visitors (records of business owners) •Numbers of tourism-related training courses offered at local training centres •(In relation to social and economic revitalisation): Level of community-focussed voluntary activity in local community (interviews with local voluntary groups, e.g. Lions, Rotary; interviews with local TLA representatives; your own observation)
	Increased demand for higher quality service (meals, accommodation, etc.)	Business	<ul style="list-style-type: none"> •Extent to which businesses face a change from a static local clientele to increased numbers of outside visitors •Extent of changes in the type of visitors, e.g. backpackers versus coach tourists 	<ul style="list-style-type: none"> •Satisfaction surveys of DOC visitors about local services and facilities (developed together with local business operators). Feed info. back to businesses •Encourage networking between operators so they can support one-another by integrating services •Training courses in service provision (e.g. Kiwihost) 	<ul style="list-style-type: none"> •Satisfaction levels expressed by DOC visitors (DOC visitor records) •Extent of collaboration between local businesses (local business association, DOC staff observation) •Changes in standards of local services (local business association, DOC staff observation)

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Table 3. *Continued*

1. ACTION/ PRIMARY EFFECT	2. POSSIBLE EFFECTS	3. AFFECTED GROUP(S)	4. FACTORS CONTRIBUTING TO MAGNITUDE OF EFFECT	5. POSSIBLE MITIGATION/ ENHANCEMENT MEASURES (<i>indicative</i> only)	6. POSSIBLE INDICATORS, MONITORING TECHNIQUES (INFORMATION SOURCES)
	Decline in standards of service provided by local businesses (accommodation, food)	Business Recreation Community	<ul style="list-style-type: none"> •Unscrupulous or unprofessional operators trying to make ‘quick buck’ •Growth in visitor numbers too rapid for existing services to cope •Inability of local businesspeople to adapt to meet new standards demanded 	<ul style="list-style-type: none"> •Encourage networking among business operators to ensure quality standards are maintained •Provide opportunities to up-skill (e.g. Kiwihost) 	<ul style="list-style-type: none"> •Number of complaints recorded at visitor centres/accommodation booking centres •Number of courses and other training initiatives offered locally to encourage high standards of service
	Change in local towns away from focus on primary productn/resource-extractn, to service industries Decline in social contact/changed social structures among locals from changes in job focus Pop. increase relative to growth in tourism service sector	Community	<ul style="list-style-type: none"> •Number of visitors attracted by the conservation initiative •Extent to which community was previously isolated from tourist market •Number of existing businesses and range of services available 		<ul style="list-style-type: none"> •Proportion of local population employed in each industry sector (census data from Statistics NZ) •Rate of population change relative to recent historical trends (census data from Statistics NZ; records kept by TLA) •Changes in number of active community groups/events
	Pressure on existing local authority funded infrastructure and services resulting from increase in permanent and tourist population	TLA Community	<ul style="list-style-type: none"> •Number of visitors attracted by the conservation initiative •Condition and capacity of existing infrastructure 	<ul style="list-style-type: none"> •Keep TLA informed (e.g. through participation in Annual Plan and LTCCP processes) of proposed developments and predicted visitor numbers so that provision can be made to accommodate changes in infrastructure requirements 	<ul style="list-style-type: none"> •Cost or frequency of TLA maintenance (consult with TLA staff) •Visitor numbers at certain sites (manual visitor counts; electronic counters) •Numbers/nature of complaints from visitors and locals about inadequacy of infrastructure (records of visitor centres, business assns; local media reports)
	Increased traffic—increased noise/dust/danger for residents of previously quiet roads/increased conflict between residents and visitor traffic	Neighbours TLA Business Community	<ul style="list-style-type: none"> •Extent of residential development along access roads •Condition of access roads (width, surface, steepness, windiness) e.g. many overseas drivers are not used to unsealed roads •Nature of traffic depends on the types of opportunities available (e.g. buses in the case of mass-tourism; camper vans; private vehicles used by trampers) 	<ul style="list-style-type: none"> •Roading improvements (possibly in conjunction with local authorities/ Transit NZ) •Dust mitigation measures (e.g. watering or spreading oil on roads in front of the most affected houses) •Install traffic calming measures (although these may disadvantage locals) •Sensitive location of car parks •Encourage local operators to provide return transport services for visitors (e.g. buses/vans) 	<ul style="list-style-type: none"> •Traffic levels on key roads (manual/electronic counts) •Numbers of accidents/incidents on key roads (Police records/TLA records) •Numbers of complaints from local road users (TLA records; local media reports; issues raised at community meetings; records of complaints to DOC)

	<p>Increased competition for recreation facilities (huts, tracks)</p> <p>Increased pollution</p> <p>Increased conflict related to crowding</p> <p>Local (traditional) users may now feel 'excluded'</p>	<p>Recreation</p> <p>Neighbours</p> <p>Community</p> <p>Maori</p>	<ul style="list-style-type: none"> •Extent to which locals used the area previously •Capacity of the area/existing facilities to absorb visitors without detracting from quality of the experience 	<ul style="list-style-type: none"> •Construct additional facilities •Develop tracks to limit conflict (e.g. by designating certain tracks for different levels of experience/activities) •Investigate mechanisms for reducing pollution (including increased supervision and public education) 	<ul style="list-style-type: none"> •Numbers of visitors using tracks/huts (track counters, hut book records) •Quality of recreational experiences of local/regular/'traditional' users (consultation with local clubs; on-site visitor surveys)
	<p>Increased competition for track use between previous non-recreational users (e.g. local farmers) and new recreational users</p>	<p>Neighbours</p> <p>Recreation</p>	<ul style="list-style-type: none"> •Extent to which tracks provide links for use by non-recreational users (e.g. linking stock grazing areas) •Availability of alternatives 	<ul style="list-style-type: none"> •Working with neighbours to find solutions such as installing gates/stiles on tracks 	<ul style="list-style-type: none"> •Experience of users/neighbours (consultation with local clubs; on-site visitor surveys; consultation with neighbours)
19. Intensification of private subdivision/residential development on boundary of conservation area precluding use of accessways that have historically been available	<p>Loss of privacy/trespass problems for residents if park users continue to use traditional tracks (concerns over security, privacy, stock-worrying, etc.)</p> <p>Reduced access opportunities for those who have traditionally used the area</p>	<p>Neighbours</p> <p>Recreation</p> <p>TLA</p> <p>Maori</p>	<ul style="list-style-type: none"> •History of public access across adjoining land •Presence of tracks (e.g. farm access) across private land to the protected area •Ease of access across the boundary •Proximity to/visibility of dwellings from protected area/access tracks •Sensitivity of new landowners to loss of privacy (e.g. they may have moved there to 'get away from people') •Subdivision policies of the territorial local authority (e.g. degree of support for life-style subdivisions) 	<ul style="list-style-type: none"> •Provision made for public access near points of interest e.g. as condition of subdivision consent •Signage to identify tracks and private property boundaries •Construction of tracks/public access points away from boundaries with private owners •Discuss with developers ways to design subdivisions, etc., to reduce potential conflicts between visitors (to the protected area) and future residents 	<ul style="list-style-type: none"> •Reported incidents between visitors and adjoining owners (records of complaints to DOC, tourist information centres; consultation with neighbours, recreational clubs)

7. Acknowledgements

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Appendix 1

CONSULTATION TECHNIQUES

Below is a brief overview of a range of consultation techniques (Appendix 4 lists recommended sources of further information on consultation).

A1.1 Questionnaires

There are two basic methods when it comes to questionnaires: self administered and interview.

Self-administered questionnaires can be delivered or mailed to each respondent selected for the survey, or they can be filled out by a group of people gathered in one place. These are relatively cheap to administer so a large sample size is relatively easy to achieve. They are also more effective in dealing with 'sensitive' issues because the anonymity of respondents can be assured. Thirdly, there is no interviewer bias in the way responses are recorded. However, if questionnaires are to be administered by mail the response rate is likely to be significantly lower than for interview-type questionnaires. Respondents are self-selecting which can produce significant sample bias. It is critical that the questionnaire is unambiguous and easy to understand, since there will be no-one around to help if respondents are unsure.

Face-to-face or telephone interviews provide more flexibility because the interviewer will be on-hand to answer any questions the respondent may have. Therefore interviews can range from highly structured (where the exact wording and question order must be followed) to a check-list (where each question must be covered but there is flexibility in terms of the order and wording of questions). Interviews usually produce a higher response rate than self-administered questionnaires. They are better for dealing with complex issues. Respondents need not be literate. Depending on the context in which they are administered, they can be longer than self-administered questionnaires. Also, interviewers can make important observations about the respondents and their surroundings, and can probe in order to get answers of more depth.

The design of questionnaires presents many pitfalls. It is important to ensure that the questions you ask will elicit the information you need. It is very important to test (or pilot) a questionnaire with a group of people representative of the target audience before you finalise it. Statistics New Zealand provides free assistance to government departments with the preparation of questionnaires.

A1.2 Written submissions

Written submissions have a number of advantages. As with postal questionnaires, people have the time to give a considered response and to clearly explain their point of view. Submissions enable the generation of both qualitative and quantitative data. On the other hand, respondents are self-selecting and significant sample biases can result. Processing large numbers of detailed submissions is very time consuming.

With submissions you need to be clear about what you are seeking feedback on (and provide clear background information) and set a realistic timeframe for responses, taking into account the needs and constraints of those being consulted. It is critical that the process of summarising submissions is impartial, to ensure the validity of the results.

A1.3 Public meetings

This is the most common form of public ‘consultation’. Rarely does it qualify as true consultation in the sense of two-way communication—it is more often a method of informing. The downside of public meetings is that they can exacerbate divisions within communities and increase opposition to proposals or towards organisations. However, public meetings have their place in the range of consultation techniques used, provided they are well-organised and appropriately facilitated. A successful public meeting doesn’t just happen. Successful meeting organisation demands a high degree of skill, particularly when the subject of the meeting is controversial.

A1.4 Open houses

The ‘open house’ was developed as a more constructive alternative to the public meeting. The venue is usually a well-known local space, e.g. a room in a library, school, or church. Open houses are typically run over long periods of time (e.g. 2–9 p.m.) so that as wide a cross-section of the community as possible can attend. Display panels and other visual aids are used to present key information about the proposal, and staff are on hand to provide information, answer questions and gather comments. The primary character of an open house is free-flowing conversation directed by the visitors (source: Connor 1997).

A1.5 Advisory and focus groups

Focus groups comprise a sample of an affected population. As such, a focus group can be made up of representatives of the population as a whole or you can have a series of focus groups, each representing different groups within the affected population. Participants can be selected on the basis of age, particular interests, gender, geographical location—any shared characteristic that is relevant to the issue you want information about. Prepare an interview guide beforehand to ensure all the important points are covered in the meeting.

Advisory groups are made up of people with specialist knowledge, experience or sectoral interests. These types of groups are particularly appropriate for getting input to policy development. When a wide range of perspectives needs to be accommodated, or particularly complex issues need to be discussed, having a group that can participate in a series of meetings is useful. Meeting over an extended period can facilitate more informed discussion and debate among the participants as they become familiar with the range of perspectives that need to be considered in reaching a decision.

Appendix 2

ECONOMIC VALUATION METHODS

Economics is primarily concerned with maximising the wellbeing of society through the efficient allocation of the benefits accruing from resources. The benefits accruing from natural resources can include both primary and secondary benefits.

Primary benefits are the first round effects resulting from the presence of a natural resource, such as recreational opportunities afforded by a national park.

Secondary benefits are the ripple effects from that first effect, such as employment opportunities in the local area generated by visitor expenditure.

In assessing the effects of a conservation initiative on local communities, what we are chiefly interested in from the economic perspective are the **secondary effects**, i.e. the effects on local employment, output and income. It is important to focus any research of this type on the additional, incremental change (e.g. extra visitor days) that is generated **by virtue** of the project.

Economic impact assessment is concerned with things that are quantifiable. The attraction of quantitative values is that they are easily replicable, and they provide a means of comparing the value (e.g. in dollar terms) of things that are otherwise very different from one another. Quantitative valuation is directly applicable to resources that are traded in markets. It is, therefore, a straightforward matter to describe some indicators in dollar terms, such as property values, wages, and turnover by local businesses.

Many of the effects with which SIA is concerned, however, do not apply to things that are traded in markets, thus they do not have an observable price. As an example, dollar equivalents can be used to describe the harvest value of a forest's timber, and therefore the loss of commercial opportunity when it is decided to preserve rather than harvest that forest. Other effects associated with such a policy change cannot, however, be easily quantified. Examples include benefits to recreationists of having access to newly protected areas, the protection of flora and fauna, and effects on the self-esteem of local people who were previously employed in the timber industry.

To overcome this difficulty, economics uses the presumption that the value of some non-market environmental benefits can be revealed by people's willingness to pay for those resources (or alternatively, their willingness to accept compensation for the loss of those resources). A range of methods that employ this reasoning are discussed briefly below. Although none is perfect, some valuation is arguably better than none, particularly if it enables comparisons to be made over time. As mentioned (Section 3.5, above), however, a single indicator should never be relied on by itself. Observations of such economic indicators must be reinforced by other data, such as consultation findings. It is dangerous to assume that one set of data is more reliable than another, simply because it is expressed in the form of numbers while the other is in qualitative form.

Economic analysis methods are complex and their implementation requires specialist training. It is not the intention here to describe these processes in detail, but rather to give a basic overview of how the various approaches work. If you are seeking specialist help to undertake an economic impact analysis it will be an advantage to be familiar with these concepts.

A2.1 Measuring primary benefits

The primary benefits of a natural resource can be divided into two broad areas: use values and non-use values.

Use values are those benefits that accrue directly to the user of the resource. For instance, natural resources can have productive value for commercial enterprises such as forestry, hunting and fishing. Where markets exist for these activities, we can look at the values that are commercially ascribed. Other use benefits do not have a commercial value. Key examples include recreational use and cultural harvest. Where markets do not exist, alternative valuation techniques can be used to estimate the value of these benefits. Among the more popular techniques are Contingent Valuation, the Travel Cost Method, and Hedonic Pricing (see below).

Non-use values (sometimes called passive values) are those benefits that accrue above and beyond the direct use of the resource. Non-use values can accrue to people who may never even visit the area. Because these benefits are less tangible than those from the direct use of a resource, they are more difficult to measure (although they are arguably captured to some extent by Contingent Valuation—see below). **Option values** accrue to people who are not current users of a resource but would like it maintained for potential future use. **Existence values** are not associated with use at all—this describes the benefit some people get from simply knowing the resource is there (existence values are behind many people’s support for protecting whales, for instance). **Bequest values** relate to the satisfaction people get from knowing that a resource will be available for future generations to enjoy (Kahn 1998).

A2.1.1 Contingent valuation

Contingent valuation (sometimes called ‘expressed preference’ valuation) involves asking people directly what value they place on a particular resource. By asking people their willingness to pay (WTP) for a resource (or alternatively, asking what they would be prepared to accept by way of compensation for its loss), it is assumed that an estimate can be made of the value placed on the resource (including non-use values—see above). There are a number of potential problems with this technique:

- Respondents’ difficulty understanding the WTP principle—the hypothetical nature of the questions means that answers are often a poor representation of true value
- Expressed values tend to differ widely depending on whether willingness to pay or willingness to accept is used as an indicator
- Part-whole bias—the values expressed in relation to a part or the whole of a resource are often roughly similar

- Vehicle bias—statements of value can vary depending on the hypothetical vehicle for payment used in the questions
- Starting point bias—the use of starting bids tends to sway results (Turner et al. 1994).

A2.1.2 *Travel cost method (TCM)*

The TCM assumes that the value which recreational users attribute to a resource is reflected by the amount they are prepared to spend on getting there (the ‘Mount Cook National Park’ case study in Section 3.3.2 employed this technique). This cost includes both direct travel costs (e.g. bus fares, accommodation, meals) and the opportunity cost of their time. The latter is usually valued at some fraction of work-time earnings. In conducting this analysis it is important to take account of such factors as the individual’s level of income and spending power, and the number of comparable alternative recreational opportunities available to them. Potential problems with this method include:

- Ignoring or underestimating the cost of time spent travelling leads to a significant underestimation of value
- Many visits are made as part of multiple-purpose journeys, so it is necessary to divide the total cost of the journey by some percentage
- Some fixed expenditures (e.g. skis) are not site or visit-specific, and cannot be wholly attributed to one resource area
- Availability of substitutes—a visitor with comparatively little interest in the site may nevertheless incur great cost in getting there if there are no alternatives (Turner et al. 1994).

A2.1.3 *Hedonic pricing*

It is widely accepted that property values can be influenced by proximity to parks (see ‘The effects of parks on property values’ case study in Section 3.3.2). Isolating exactly how much of a property’s value stems from its location, as opposed to other influences, is difficult to determine. **Hedonic pricing** assumes that if you control for other variables (such as the number of rooms, access to services, work, etc.), then house prices will reflect environmental quality. Difficulties with this method include:

- It is not user friendly—a high degree of skill is required to separate out the other influences
- Limited liquidity of the housing market—the method assumes that people are free to buy wherever they want, constrained only by their income (Turner et al. 1994).

A2.2 Measuring secondary benefits

A2.2.1 *Economic impact analysis*

Economic impact analysis estimates the effects of expenditure on a target area. It involves measuring the changes in economic activity (output), employment and income that result from a change, or assessing the properties of these that can be attributed to the presence of the natural resource. It depends on the initial level of expenditure as well as the subsequent rounds of spending this

induces, and also the extent of ‘leakages’ of expenditure from the economy of the area concerned.

Economic impact analysis can be used to assess the localised effects of a conservation initiative on a local community’s economy. The successive effects on expenditure can be broken down as follows:

- **Initial/direct effect**—initial injection from, say, visitor spending
- **First round/indirect effects**—first round of purchases by those firms receiving the initial injection
- **Industrial support/production induced effect**—second and subsequent rounds of spending
- **Consumption/income induced effect**—the increase in output associated with increased demand from households (due to increased income from previous rounds of spending).

For example, if there is an increase in demand for tourist accommodation, there will be an increase in the supply of accommodation as providers react to meet the increased demand (the **direct effect**). As these accommodation suppliers increase their provision of beds, they need to purchase more accommodation units, furniture, food for catering, etc. This increase in demand continues on down the supply chain (the **indirect effect**). As a result of the direct and indirect effects the level of income throughout the economy will increase. A proportion of this increased income will be re-spent on final goods and services (the **induced effect**).

A number of case studies presented in this document describe efforts to measure the economic contribution by various parks to their local regions. The ‘Westland National Park’ case study in Section 5 is particularly useful in that it describes many of the difficulties encountered when attempting this type of analysis.

A2.2.2 Multiplier analysis

An extension of economic impact analysis is multiplier analysis. Economic impact multipliers estimate the extent to which initial expenditure ripples through the economy. They are used to estimate the total effect of a particular industry on the local, regional or national economy.

Economic impact multipliers are usually derived from input-output (IO) tables. An input-output table shows, in monetary terms, the flows of goods and services between industries and also between industries and demand sectors; namely consumers, government, investment, stocks, tourists and exports. IO tables show how the outputs from each sector are distributed amongst other sectors, and the portion that flows out of the economy altogether. These linkages allow estimates to be made of the extent to which a particular industry contributes both directly and indirectly to the various demand sectors.

Multipliers are expressed in terms of a numeric value, greater than 1.0, representing the ratio of the total effect (the sum of the direct, indirect and induced effects) to the initial or direct effect. For example, in the ‘Economic Impacts of Mount Cook National Park’ case study (Section 3.3.2) it was estimated that for every dollar paid in wages to park staff, a further 20 cents was generated in household incomes within the region (a multiplier of 1.2). Other

case studies that refer to multipliers are Punakaiki National Park (Section 3.3.2) and Kahurangi National Park (Section 5).

IO tables are produced by Statistics New Zealand at the national level. In order to derive regional-level multipliers, the national matrix can be adapted according to the features of the regional economy.

There are a number of caveats associated with the use of economic multipliers. One is that the national IO tables, from which the regional multipliers are derived, are only published sporadically. Moreover, the coefficients are likely to be out of date even before they are published. The tables produced by Statistics New Zealand in 1991, for instance, pertained to the year ended March 1987. There are a number of technical and theoretical drawbacks of IO tables that mean that resulting multiplier analysis should be treated with caution.

Appendix 3

COMMENTS ON THE LITERATURE REVIEWED

Studies undertaken in New Zealand over the past 20 years have identified a wide range of effects of conservation projects on local communities. There are, however, some significant gaps in the literature which became apparent as a result of the field work undertaken for this project.

A3.1 Measuring economic effects

In estimating economic effects of conservation initiatives in New Zealand, far more weight has been given in the literature to visitor expenditure than to any other factor. Other economic effects considered to a lesser extent included:

- Numbers of people employed (directly and indirectly) and their incomes. Economic impact assessment may conclude that it is more useful and theoretically sound to look at the value of additional employment rather than gross job numbers, especially in areas where jobs will be lost from some sectors due to the conservation initiative
- The value of tourism compared with other major industries in the area—again this is especially relevant in areas where traditional industries may be closed down or reduced as a result of the conservation initiative
- Incomes of local tourism-related businesses
- The extent of revenue leakage

None of the New Zealand studies reviewed gave any consideration to the economic effects on neighbouring properties, either in terms of changes in land value or the effects of new controls on land use.

A3.2 Effects on tangata whenua and/or other Maori

None of the literature reviewed made reference to effects on Maori, either in terms of their traditional use of affected areas, effects on their economic opportunities, or on kaitiakitanga of the land and resources concerned.

A3.3 Effects on neighbouring landowners

Only one of the New Zealand studies (Taylor et al. 1999) mentioned the effects of conservation initiatives on neighbours. Our field visits confirmed that effects on neighbours can be significant, especially in terms of problems with trespassing, privacy and security concerns, increased traffic volumes on local roads, changes in pest control practices, and the implications for domestic pets.

Appendix 4

SOURCES OF FURTHER INFORMATION

A4.1 General publications on managing stakeholder relationships

Campbell-Hunt, D. 2002: Developing a sanctuary: The Karori experience. Victoria Link Ltd, Wellington.

Department of Conservation July 2000–June 2001: Conservation Action. Te Ngāngahau ki te Kura Taiao. Working with Communities. Department of Conservation, Wellington.

Borrini-Feyerabend, G.; Farvar, M.T.; Nguingiri, J.C.; Ndangang, V.A. 2000: Co-management of natural resources: Organising, negotiating and learning-by-doing. GTZ and IUCN, Kasperek Verlag, Heidelberg, Germany.

A4.1.1 Internal DOC Documents

Community Involvement in Volunteer Activities. QD number C1051. Review date February 2002. Available via docnet.

Guidelines for Community Relations in Consultation Projects. QD number CR1293. Effective date 26 January 2000, review date 26 February 2001. Available via docnet. DME number WGNHO-54146.

A4.2 Consultation

Centre for Research, Evaluation and Social Assessment 1998: Community consultation by the Department of Conservation: An independent review. Department of Conservation, Wellington.

Connor, D.M. 1997: How to prevent and resolve public controversy. Connor Development Services, Victoria, BC, Canada.

Corydon Consultants (year??): Stakeholder consultation: Principles and guidelines. Corydon Consultants, Wellington.

Ministry for the Environment 1991: Consultation with Tangata Whenua. A guide to assist local authorities in meeting the consultation requirement of the Resource Management Act 1991. Ministry for the Environment, Wellington.

A4.2.1 Internal DOC Documents

Consultation Guidelines. QD number C1213. Effective from 14 September 1999, review date 14 November 2002. Part of National Policy and Procedure Manual. Available via docnet (nppm). DME number WGNHO-10788.

Consultation Policy. QD number C1212. Effective date 14 September 1999, review date 14 November 2002. DME number WGNO-10803.

A4.3 Social impact assessment

Barrow, C.J. 2000: Environmental and social impact assessment: An introduction. Arnold, London, UK.

Burdge, R.J. 1999: A community guide to social impact assessment. Revised edition. Social Ecology Press, Wisconsin.

Burge, Rabel J. 1998. A Conceptual Approach to Social Impact Assessment: Revised edition. Social Ecology Press, Wisconsin.

- Dale, A.; Taylor, N.; Lane, M. (Eds) 2001: Social assessment in natural resource management institutions. CSIRO Publishing, Collingwood, Victoria, Australia.
- IAIA 2003: International principles for social impact assessment. International Association for Impact Assessment, Fargo, USA.
- Maturin, S.E. 1983: Social impact assessment and indigenous forest management planning in New Zealand. *Technical Paper No. 1983/1*. Commission for the Environment, Wellington.
- Taylor, N.; Buckenham, B. 2003: Social impacts of marine reserves in New Zealand. *Science for Conservation 217*. 58 p.
- Taylor, C.N.; Bryan, C.H.; Goodrich, C.G. 1995: Social assessment. Theory, process and techniques. 2nd edition. Taylor Baines & Associates, Christchurch, NZ.
- Vanclay, F.; Bronstein, D.A. (Eds) 1995. Environmental and Social Impact Assessment. Wiley & Sons: Chichester, Sussex, UK.

A4.4 Economic valuation methods

- Department of the Environment, Sport and Territories 1995: Techniques to value environmental resources: an introductory handbook. Department of the Environment, Sport and Territories, Canberra, Australia.
- Kahn, J.R. 1998: The economic approach to environmental and natural resources. 2nd edition. Dryden Press, Fort Worth, TX.
- Tietenberg, T. 1996: Environmental and natural resource economics. 4th edition. Harper Collins, New York.
- Turner, R.K.; Pearce, D.W.; Bateman, I. 1994: Environmental economics: an elementary introduction. Harvester Wheatsheaf, New York & London.
- Lists of other publications can be found on the International Association for Impact Assessment's website: www.iaia.org [as at 4 December 2003].

Appendix 5

TEMPLATES

The templates on the following pages can be used: to identify whether or not a social impact assessment of your project is warranted; to compile project and community profiles; and to identify, assess, and manage effects.

Template 1: Screening

Use this template to identify whether or not a social impact assessment of your project is warranted (see Section 3.1). If the answer to any of the questions is 'yes', record the reasons why in the box—this information will help clarify what will be relevant in the following stages of your assessment.

<p>Is the proposal likely to bring about changes to the quality of life experienced by neighbours and/or residents in the local community? (e.g. a change that is expected to increase pressure on roads leading to the area or on services in the neighbouring town.)</p>	
<p>Is the site affected by the proposal sensitive? (e.g. neighbours currently enjoy a quiet setting which could be adversely affected by new tourism activities.)</p>	
<p>Does the proposal involve known or suspected social costs? (e.g. one or more groups within the community will lose access to the area for their recreational pursuits, or neighbours may experience an increase in trespass.)</p>	
<p>Does the proposal involve an issue known to be controversial? (e.g. aerial sowing of poison for pest control, control of conservation pests to which a high level of public interest is attached.)</p>	
<p>Is there a risk that the proposal will contribute to cumulative effects? (e.g. an already popular recreational area will become more popular.)</p>	
<p>Are there unattractive input-output considerations? (e.g. damage to vegetation along boundaries with residential neighbours, or generation of heavy traffic associated with the development stage of the proposal.)</p>	

Template 2: Project profile

Use this template to profile the relevant aspects of your project (see Section 3.2.1).

<p>What is the objective of the proposal? (e.g. is it to change the status of a block of land? Is it to develop a new visitor facility or improve accessibility to a recreational resource?)</p>	
<p>How will the project function (including during the establishment phase and day-to-day operation)? (e.g. will the establishment phase result in disruption to any existing activities—within or outside the park? Will new controls be imposed on recreational or cultural activities? Will new activities be introduced? Will there be a change in the way pests or weeds are managed?)</p>	
<p>What geographical area will the proposal affect?</p>	
<p>Will the proposal require changes in staff numbers or lead to changes in visitor numbers? If so, what changes are likely?</p>	

Template 3: Community profile

Use this template to profile the relevant aspects of the neighbouring community (see Section 3.2.2).

<p>What are the existing surrounding land uses? (e.g. does anyone live close to the boundary? Are there farms or forestry areas on the boundary? How close is the nearest urban community?)</p>	
<p>What level of services and infrastructure is currently available in the area?</p>	
<p>What groups have an interest in the area that the proposal will affect? (e.g. recreational groups? Volunteer conservation organisations? Tangata whenua and other Maori? Neighbours? Local authorities? Others?)</p>	
<p>How do these groups use or otherwise interact with the affected area? What are their requirements? (e.g. do hunters, trampers, mountain bikers visit the area? Do tangata whenua use the area for cultural harvest? Do neighbouring farmers have land management issues that relate to the project area, such as pests, weeds, trespass?)</p>	
<p>What values do these groups have regarding the affected area? (e.g. do tangata whenua attribute special significance to any aspects of the environment that may be affected? What aesthetic aspects are valued by recreational users, neighbours?)</p>	
<p>Are there any local industries that rely on the project area? How do these industries relate to the area? To what degree are these industries dependent on their use of the area? How many people are employed in these industries?</p>	

Template 4: Effects identification, assessment and monitoring

Use this template to develop a social effects management framework for your own project. Start by listing the potential effects you identify and the stakeholders potentially affected (you may need to use many sheets).

Possible effect <ul style="list-style-type: none"> • What activities are likely to be affected by the proposal? • In what ways are they likely to be affected? 	Level of significance of effect (hi, med, low)	Likelihood of effect occurring (hi, med, low)	Stakeholder(s) affected <ul style="list-style-type: none"> • Which groups and/or individuals are likely to be affected? • How will they be affected? 	Possible mitigation/enhancement measures	Possible indicator(s) and monitoring method(s)