

APPENDIX ONE

Mount Aspiring National Park Management Policies

GENERAL

8.1 PRIMARY OBJECTIVES

- PRIMARY OBJECTIVE 1** To preserve in perpetuity the landscape, ecological systems, natural and historic features of Mount Aspiring National Park and as far as possible eradicate introduced plants and animals.
- PRIMARY OBJECTIVE 2** To retain the essential character of Mount Aspiring National Park as a remote, undeveloped, natural area of great beauty and of value for recreation, appreciation and study.
- PRIMARY OBJECTIVE 3** To give the public the opportunity to gain benefit, enjoyment, inspiration and opportunities for recreation from the park to the extent compatible with primary objectives 1 and 2.
- PRIMARY OBJECTIVE 4** To have regard to the Principles of the Treaty of Waitangi as defined by the Court of Appeal (1987).

POLICY All parties in this management plan are subject to the primary objectives above. Management decisions for the park will be guided by the provisions of the National Parks Act 1980, the Statements of General Policy of the NZ Conservation Authority as provided for in Section 44 of the National Parks Act, the management plan and consultation with the board and the appropriate Kai Tahu tribal authority as appropriate.

Activities and facilities within the park will be subject to the maintenance of its essential character.

Provisions for recreation and public enjoyment of the park will be subject to protection of the park's natural features.

EXPLANATION The purpose of national parks is clearly set out in section 4 of the Act, in which primacy is given to protection of their natural state and intrinsic worth. Public use is conditional on the preservation of the native plants and animals and the general welfare of the parks.

Provided that all management decision are made with reference to the four primary objectives, preservation of the special values for which the park has been set aside should be assured.

Where appropriate, the relevant section of the General Policy for National Parks (NPRA Policy) is cited.

The Principles of the Treaty of Waitangi as defined by the Court of Appeal, are the principles of government, self management, equality, reasonable cooperation and redress.

8.2 ADMINISTRATION

OBJECTIVE *To administer and manage the park as a single distinctive entity in accordance with the National Parks Act and provisions of this management plan.*

POLICY The distinctive, unified character of the park will be recognised by the four field centres and two conservancy offices, with regular communication and cooperation being maintained between staff in them. The unified treatment of signs, publications and facilities and other management functions will foster the image of a single identity for the park within the Department of Conservation.

Close liaison will be maintained with the managers of Fiordland National Park, which bounds the park to the south-west.

The Otago Conservation Board will have jurisdiction over the whole park, including the area in the West Coast Conservancy, and will hold meetings from time to time in locations readily accessible to the people of the West Coast.

Cooperation and communication will be maintained with neighbouring local authorities and land owners/occupiers and West Coast and Southland Conservation Boards.

Changes to park bylaws will be made as and when required. The appropriate local authority will be consulted with regard to standards required for buildings prior to their being approved by the Regional Conservator.

The department will consider the need to hold all that land in Wanaka designated as Mount Aspiring National Park Headquarters, with a view to the sale of any portion which is surplus to the needs of that function.

EXPLANATION Regular discussion of matters of mutual interest can overcome any tendency for a reduction in the park's uniformity which may arise from its management being divided between two conservancies and four field centres. Uniformity of signs and written material, as well as management will ensure a single identity.

The effects of activities in the park can spill over into neighbouring areas, including Fiordland National Park. This is particularly the case with the Routeburn Track but applies also to functions such as wild animal and weed control, provision of access, etc. Close liaison with local authorities and landholders is consequently necessary.

Land within Wanaka township is designated as Mount Aspiring National Park Headquarters in the Wanaka District Plan. With the introduction of management from individual field centres, the park headquarters at Wanaka no longer serves as the control centre for the whole park. Policy coordination and oversight is provided by the management plan and the conservation board.

The department believes there is surplus land in the block at Wanaka which neither meets the criteria for national parks nor is necessary to its present function. This land could be sold, with the remainder retained with the designation as Mount Aspiring National Park Headquarters and Visitor Centre (Wanaka). This would be done in consultation with the board, and it would require an Act of Parliament.

Section 7 of the National Parks Act requires that national park management plans are consistent with approved conservation management strategies. Amendments to this plan may be required once a Conservation Management Strategy is prepared and approved. Amendments to this plan will be undertaken in accordance with the procedure outlined in the Act.

8.3 ZONING

OBJECTIVE *To control the impacts of use and the extent of any development or modification, using zoning as the basic means of control, in order to ensure protection of the park's values.*

POLICY The extent to which the impact of uses is compatible with maintenance of the natural values will be the fundamental factor in deciding zoning.

Zoning will be the principal means of separating incompatible uses such as aircraft and isolation, natural values and the impact of people.

Zoning will form the basis for decisions on:

- the degree of modification which is acceptable
- design and extent of tracking and associated huts
- types of concessions and associated conditions
- the extent of finance and effort expended on protection, eg, on monitoring wild animal control and weed control
- aerial access.

There will be three zones:

- Wilderness
- Low Impact
- Moderate Impact
plus a Specially Protected Area (gazetted under Section 12 of the National Parks Act 1980). - These are shown on Map 2.

EXPLANATION Zoning is the method used in planning by local authorities in New Zealand to differentiate between permitted uses of land in any district. It gives a clear unequivocal signal as to what can be expected and is easily understood. Zoning is equally appropriate for use in national parks and is generally used, so will continue to be applied in the park. The zones are separate classifications for the purpose of this management plan and have no basis in the National Parks Act 1980.

Although submissions on the discussion paper supported the current system of zoning for Mount Aspiring National Park, there was some criticism of the names because "Natural Environment A and B" convey little meaning. So that the names describe the essential characteristics of the zone, they have been changed to ones which describe the permitted level of use and relate directly to the level of impact which is considered acceptable.

The remote heart of the park with its high peaks, snowfields, glaciers, and untracked terrain is unspoilt and exemplifies what is meant by wilderness. The name wilderness will be retained and will receive the highest level of protection. A buffer zone that allows a limited amount of impact, will be used to protect the wilderness core. This is provided

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

for by the Low Impact Zone and by the nature of the land west of the main divide, which is protected under the Conservation Act. A moderate degree of impact will be permitted in the remaining area of the park to allow a greater range of recreation • the Moderate Impact Zone.

The rugged forested and mountain core of the park remains much the same as the Wilderness Zone in the current, operative management plan. The zone has been extended to cover the Red Hills addition. It also covers the streams forming the headwaters of the Pyke River in order to protect access to the Olivine Ice Plateau. The Drake Range in the north has been excluded from the wilderness, having fewer wilderness values.

Extensions of Low Impact zoning on either side of the Arawhata and Waitoto Valleys reflect their easier access and potential for some limited modification in the form of huts, tracks and limited air and jet boat access and to allow some concession operations.

Zoning in the vicinity of Colin Todd Hut poses a problem. The hut is generally considered necessary for safety reasons, as it provides shelter for those returning from ascents of Mount Aspiring before the crossing of the Bonar Glacier, often at the end of a long day. Huts, however, are not allowed in the Wilderness Zone. For this reason, and in recognition of the high level of use of this locality, the Low Impact Zone has been extended to cover the Bonar Glacier.

Submissions on whether to retain Colin Todd Hut or remove it to Bevan Col were very evenly divided and its retention with Low Impact Zoning was based on safety considerations.

In conformity with its function as a buffer protecting the Wilderness Zone, the Low Impact Zone surrounds the Wilderness, corresponding to Natural Environment A in the current plan. Changes have been made, however, to expand the area where lesser impacts are appropriate in the south, ie, the whole of the Dart Valley below Dart Hut is now Low Impact to preserve its tranquillity and degree of challenge; the area upstream of Shovel Flat is Low Impact to buffer the Wilderness.

The Moderate Impact Zone is much extended from the current Natural Environment B in that it extends west to cover the entire northern part of the park. This liberalisation will afford an opportunity for greater tourist use of the north through concessions, jet boat services and air access. For the same reasons the Haast Range is zoned Moderate Impact. This will also provide easier access to a point from which the Red Hills can be seen and provide a base for excursions to that area.

Further liberalisation could extend to the area between the Okuru and Waitoto Rivers, so extending the area available to major concessions, including those using aircraft, and where a higher level of development generally is possible. At present isolation ensures that use is at a low level, but with the development of tourism based on Haast this could change.

8.3.1 WILDERNESS ZONE

OBJECTIVE *To preserve the unmodified, essentially mountainous core of the park as a wilderness where human impacts are as far as possible absent and isolation and self-sufficiency can be experienced.*

POLICY Further protection will be sought by pursuing the gazettal of the area as wilderness in accordance with Section 14 of the National Parks Act 1980.

No buildings or other structures will be allowed except those required for research which cannot be carried out anywhere outside the Wilderness Zone, animal control purposes and essential management and these shall be temporary and removed on termination of the work.

No caches or dumps will be allowed except as above for buildings.

No tracks or routes will be constructed.

All rubbish will be taken out by those who brought it in and all equipment will be removed.

No powered vehicles or boats will be permitted.

No aircraft landing permits will be issued other than for essential management, research and SAR.

No aircraft drops will be permitted.

Guiding concessions may be permitted, but limited to a maximum party size of six. Conditions of the licence may limit frequency of use in order to reduce impact.

Private groups will be encouraged to limit their party size to six people.

The appropriate Regional Conservator will closely manage commercial use through the number of permits issued.

SAR will be allowed under the control of the NZ Police advised as appropriate by the field centre manager.

Where there are identified wild animal control problems, approval may be given by the Regional Conservator to private hunters to carry out organised animal control operations with the assistance of helicopters where necessary. Such operations will be subject to close monitoring, performance assessment and review.

NPRA Policy 6.1, 6.3, 8.2.

EXPLANATION "Wilderness" is the internationally recognised term for large areas left in a state of nature. The National Parks Act provides for gazettal of wilderness and management must be in accordance with section 14 of the Act.

With its large area, unmodified alpine core, and diverse landscapes, the proposed wilderness area in Mount Aspiring National Park qualifies as wilderness, and could be gazetted as such. A comprehensive case for a wilderness area to include the Olivines was argued by the Wilderness Advisory Group in 1983 and this proposal builds on that.

It is recognised that gazettal as wilderness carries the danger of over-emphasising the wilderness values, making the zone more attractive and therefore endangering the very values it is there to protect, but it will be called wilderness anyway. As public submissions supported gazettal, on balance it has been considered best to afford it the greater protection that gazettal as wilderness would give it. It is intended to proceed with the process of gazettal.

Most scientific study requires shelter and as study is likely to be in the best interests of the park, provision of shelter is to be allowed provided it is removed at the end of immediate use. Specific approval is required. All equipment also must be removed after use.

The impact of concessions should not be any greater than that of ordinary individuals, provided numbers in each group are limited to the size normally found in private parties. Limitations on private use can only be encouraged, whereas a measure of control on commercial use is possible to avoid over-use. Concessions may in fact lead to greater safety for those using the area.

Over-use of the Wilderness Zone must be prevented as this will downgrade its quality.

SAR, including the use of aircraft and search dogs, is necessary to safeguard human life.

Essential management covers SAR and emergency flights for fire fighting or medical reasons or control of introduced plants or animals.

8.3.2 LOW IMPACT ZONE

OBJECTIVE *To provide a buffer between the Wilderness Zone and Moderate Impact Zone, in which modification is kept to a minimum to provide for the protection of the wilderness while providing limited facilities to enable normal enjoyment of the park.*

POLICY Basic tracks and routes including strategic bridging may be provided. See section 8.18.

All new huts shall be small (maximum normally 12 bunks), and toilets and camp sites may be provided. All such buildings will be sympathetically sited.

An exception to this is the Daleys Flat Hut in the Dart Valley which may have a maximum of 40 bunks.

Occasional aircraft landing, by permit only, will be allowed (one pick-up and drop-off per permit), specific as to time and location. See criteria in 8.16. No concessions for aircraft use will be granted.

The appropriate field centre manager shall grant permits only in accordance with the criteria in 8.16.

No commercial jet boat access will be permitted except for essential management and on the Pyke River in association with commercial eeling. Changes to park bylaws will be sought to control the use of private jet boats.

Signs may be provided for safety purposes only. See 8.36.

No buildings or other structures other than the above, will be allowed, except for temporary structures for research, wild animal control or essential management.

Concessions will be allowed as per Wilderness Zone policy except that party size shall not exceed 12 persons. Private groups will be encouraged to limit their party size to 12 people.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

Existing grazing licences will be allowed to continue, subject to conditions in the licence set by the appropriate Regional Conservator. See section 8.28.

NPRA Policy 25.2.

EXPLANATION This should be an area of very little modification, serving as a transition zone or buffer between the Wilderness Zone (where there is no change from the natural state), and the Moderate Impact Zone (where a reasonable amount of impact may be acceptable). Some development of facilities is necessary to provide a base for use of the wilderness and to allow uses appropriate to the zone itself.

This replaces the Environment A Zone of the 1981 management plan, and has been reduced in area in the north of the park to allow for greater variety of uses near State Highway 6 and on the north-west fringe.

The Dart Valley has been zoned Low Impact to retain one attractive valley, of value to experienced trampers, free of commercial operations on any but a scale indistinguishable from private parties. Daleys Flat Hut site is an exception to the hut size policy because of the anticipated increase in numbers of those using the Dart Track.

8.3.3 MODERATE IMPACT ZONE

OBJECTIVE *To allow a greater degree of impact in the more accessible areas of the park and more varied uses than elsewhere, while retaining the essentially unmodified character of Mount Aspiring National Park.*

POLICY Tracks, including those with well-formed surfaces, bridges where necessary and routes may be provided, subject to the primary objectives of the park (see 8.1), the Conservation Management Strategy and available finance.

Huts may be provided at strategic locations to shelter those using the tracks/routes (maximum of 80 bunks per locality including concessions). See 8.20.

Airstrips and helicopter landing sites, boat ramps and jetties may be permitted, with the appropriate Regional Conservator's approval.

Aircraft landings will be by permit or concession only (to cover one pick-up and drop-off), issued by the appropriate field centre manager and subject to conditions. The appropriate field centre manager shall grant permits only when satisfied that other park users will not be significantly inconvenienced. See 8.16.

Jet boat access will be by permit or concession issued by field centre managers. See section 8.17.

Buildings (other than huts) and other structures such as new telecommunication equipment may be permitted only with the appropriate Regional Conservator's approval in accordance with the policies of this management plan. Parking, picnic places, camp sites, toilets, interpretation and information may be provided in accordance with the primary objectives and policies in this management plan. See 8.4 and 8.33.

Concessions may be permitted, including the provision of facilities in accordance with policies of the management plan.

Existing grazing licences will be allowed to continue subject to conditions in the licence set by the appropriate Regional Conservator. See section 8.28.

NPRA Policy 25.2, 31.1, 31.2.

EXPLANATION Facilities are often needed to enable the full enjoyment of the recreation resources of the park and these can be provided without unacceptable environmental degradation if care is taken in their provision. Policies for this zone have been designed to allow such uses within the limitations set by the primary objectives. Limitations on scale, design and conditions on permits are seen as the best means of achieving this.

Possible conflict between uses will largely be resolved by the appropriate Regional Conservator acting in accordance with the management plan.

NB: See Map 1 for airstrips and appendix IV for tracks.

8.3.4 SPECIALLY PROTECTED AREA

- OBJECTIVE** *To preserve intact, with a minimum of human interference, the area so gazetted.*
- POLICY** Entry shall be by permit only issued by the appropriate Regional Conservator in consultation with the Kai Tahu Maori Trust Board.
- NPRA Policy 6.2.
- EXPLANATION** One area has been set aside for the protection of archaeological and cultural material. The area has been gazetted in terms of Section 12 of the National Parks Act 1980.

PROTECTION : NATURAL ENVIRONMENT

8.4 LANDSCAPE

- OBJECTIVE** **To retain the high quality of the natural landscape of the park.**
- POLICY** All forms of development shall require the approval of the appropriate Regional Conservator.
- The impact of any development or changes, including huts, tracks, bridges, shelters, picnic places and camp sites, boat ramps or jetties, fences, etc, will be assessed for their impact on the landscape prior to their construction.
- Construction may proceed only if it harmonises sufficiently with the surrounding landscape, through careful siting, use of natural materials, and colours within the range occurring naturally in the vicinity, so as to make the impact insignificant.
- Site development plans will be required for all facilities of significant size or impact.
- Use of high-quality design and materials will be promoted.
- Earth and vegetation disturbance shall be kept to a minimum in development of facilities.
- Sites damaged by development shall be rehabilitated as near as possible to the natural state.
- Exceptions to the above policies will be allowed for safety reasons only.
- Approval of the appropriate Regional Conservator may be sought for limited removal of vegetation adjacent to tracks and huts to open up significant views.
- NPRA Policy 8.5, 24.1, 25.3, 25.4, 25.7.
- EXPLANATION** The high quality of the park's landscape is one of Mount Aspiring National Park's principal attributes. While the ideal would be to leave it unscarred by any development, this would limit use too severely. Development includes all changes to the natural appearance of the park, eg, track formation, huts, signs, fences, etc.
- By careful consideration of the impact of development on the landscape, detrimental effects can frequently be overcome, for example, by careful choice of colour and shape. See 5.3.4. The quality of design and materials used often determines how well objects fit into the natural landscape.
- Some facilities such as alpine huts and route markers must be highly visible for safety reasons. In these instances, a conscious decision should be taken that such must be the case. For all other facilities specific attempts to reduce visual impacts should be made.
- The appreciation of landscape is an important facet of the park's use. There may be instances where this can be facilitated by judicious removal of trees to open up significant views. Such opportunities to increase the enjoyment of the landscape should be considered on a limited scale. The approval of the appropriate Regional Conservator is required where a specific exception to the primary objective of preservation is warranted.
- State Highway 6 is a special feature of the landscape, requiring appropriate consideration. See 8.15.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

8.5 WATER

OBJECTIVE *To manage the park in such a way that the high natural quality of water is maintained, whether as snow, ice, in rivers, lakes or groundwater.*

POLICY Wherever possible pollution of waterways by silt eroded from tracks and high-use areas will be prevented.

Pollution of waterways by human waste will, as far as possible, be prevented by provision of toilets in high-use areas and encouragement of burial of excrement or removal of wastes in vehicles for disposal outside the park at appropriate facilities.

Toilets will be located so as to avoid pollution of waterways.

Encouragement will be given to the provision of facilities for disposal of camper van wastes along State Highway 6, by local authorities and private companies, in consultation with Transit New Zealand, including the use of signs at picnic areas, indicating the location of disposal facilities.

The threat to the high quality of water in the park by organisms such as giardia protozoa will be publicised along with general education about water quality.

The use of soap and detergents in waterways will be discouraged.

The impact on water quality will be considered when stock limits are set for grazing licences.

The department will encourage the safe transport, containment and disposal of fuel in vehicles, buildings, boats and aircraft.

NPRA Policy 13.1, 13.2, 24.2(ii), 28.5.

EXPLANATION To the tangata whenua water represents the life blood of the environment, therefore every effort will be made to maintain its purity. At present, water quality in the park is believed to be very high, notwithstanding the presence of giardia protozoa in some samples taken from the Dart catchment in 1990. In remoter areas the water continues to be safely drunk without treatment. However, this situation can change surprisingly quickly in local areas as the giardia experience shows.

Construction of tracks can impact on water quality by upsetting natural drainage and activating soil displacement and landslips. Steps should be taken during construction and maintenance to limit the extent of soil displacement.

The presence of grazing animals also has the potential to significantly degrade water quality both through trampling and soil disturbance and through the introduction of faecal coliforms.

Fuel in jet boats and aircraft is a potential source of water pollution and special care is required to avoid accidental spillage.

8.6 INDIGENOUS VEGETATION

OBJECTIVE **To allow the indigenous vegetation of the park to exist and develop to its fullest natural extent, by protecting it from the impact of introduced plants and animals and damage by park visitors.**

POLICY The number and range of exotic animal species will as far as possible be reduced to a level which the vegetation can sustain without degeneration. See 7.1, 8.9.

Exotic plant species will as far as possible be controlled. See 8.8.

The risk of trampling and other damage to vegetation by the public will be reduced wherever possible by the careful siting of tracks and facilities, and the dissemination of information on the value of park vegetation.

The collection of plant species will be prohibited except where specific permits have been issued by the appropriate Regional Conservator for approved scientific research, traditional harvesting or education purposes or for rehabilitation of areas within the park. People requiring specimens will be encouraged to obtain them from sources other than the park. See 8.32, 8.39.

The use of alternative fuels in preference to wood will be encouraged.

The destruction of vegetation during construction and maintenance of facilities will be minimised as far as possible, and genetic material sourced appropriately in the park will be used for rehabilitation.

Special provision for management of threatened plants will be made as and when required.

NPRA Policy 8.9.

EXPLANATION The natural vegetation of the park is one of its principal values, both for its own sake and for the character it gives to the landscapes of the park. It is, however, subject to degradation as a result of animals grazing it, introduced species competing and perhaps crowding out indigenous species, and damage by people trampling or removing vegetation.

To maintain and where necessary enhance the vegetation, harmful impacts of introduced animals, plants and park visitors have to be controlled as far as possible.

8.7 INDIGENOUS ANIMALS

OBJECTIVE *To protect indigenous animals from the impact of introduced animals and park visitors and prevent the loss of their habitat.*

POLICY Species will be managed in terms of the relevant DOC policies and species recovery plans.

Special provision for management of threatened animals may be made as and when required.

The taking or disturbance of indigenous animals will be prohibited unless carried out under a permit issued by the appropriate Regional Conservator. See section 8.38.

Salmonids, where present, are accepted as an exception to the need to protect indigenous animal species, subject to the above policy.

Rivers free of introduced species shall be retained as such, with no introduction of exotic/introduced species such as salmonids.

EXPLANATION The National Parks Act, section 60, makes it an offence to take or disturb indigenous animals.

Where they exist, salmonids are recognised as an accepted addition to the park, of value to many visitors. In rivers where salmonids have not been introduced, the natural state will be preserved, with no introduction of salmonids.

8.8 INTRODUCED PLANTS

OBJECTIVE *To prevent the degeneration of indigenous vegetation brought about by competition from exotic species.*

POLICY Priorities will be set for control of introduced plant species that:

- target those areas where particular plant associations or single species are threatened and as far as is feasible eradicate the weed species;
- limit the spread of weeds from existing infestations;
- eradicate weeds from areas with low infestations to the extent possible.

A higher priority will be given to the control of aggressive introduced plants in the Wilderness and Low Impact Zones.

Use of airdrop packaging which might contain seed is prohibited.

The removal of all packaging from supply drops will be mandatory.

All construction machinery brought into the park will be washed down to the satisfaction of the appropriate Regional Conservator before entering the park to avoid the introduction and dissemination of weeds.

Equipment used for construction, maintenance and vegetation control will be washed down to remove seeds, etc, before use on new sites.

Obligations under the Noxious Plants Act will be met by the department as far as is practicable.

Herbicides may be used where no effective alternatives are available, subject to strict controls for the protection of indigenous plants, animals and park users.

The use of biological control methods may be used under permit issued to a Crown Research Institute by the

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

appropriate Regional Conservator provided that:

- a The general principle of biological control was approved by the National Parks and Reserves Authority (this issue is at present before the New Zealand Conservation Authority).
- b The species proposed for release has been the subject of an Environmental Impact Assessment or Report which has shown that it is host specific and will pose no danger to native species.

(Any species proposed for release will have been the subject of an Environmental Impact Assessment for other agencies such as Ministry of Agriculture and Fisheries or its successor, and the Ministry for the Environment).

The use of biological control methods may be acceptable provided the method used has been approved by an official body and the agent is released as part of a structured programme.

The growth of indigenous vegetation will be encouraged as a means of controlling introduced exotic species.

Monitoring will be carried out. See 8.37.

Encouragement will be given to landholders neighbouring the park to control weeds on their land. Grazing licensees may be called upon to assist with noxious weed control.

NPRA Policy 9.3, 9.6, 9.7, 9.8, 21.5.

EXPLANATION The introduction of exotic plants to the park, which can establish themselves and compete with the indigenous plants, is a significant factor in degrading the park.

The cost and logistics of eradicating these weeds are such that there is no hope of clearing the park entirely, given present methods, so effort must be concentrated where it can be most effective • that is, by targeting those confined areas where a particular community or a single species is at risk, or where an area is small enough to allow successful containment or outright eradication.

Submissions supported the use of biological control, provided it is carefully researched and managed. This means that only agents which have been thoroughly researched for their effects should be used, eg, where the Crown Research Institute or MAF (or its successor) have approved them for use. So that there can be continuing oversight of use, such agents should only be used in a planned and methodical way.

As areas of bare ground are more easily colonised by weeds, one of the better ways of preventing their establishment is by encouraging indigenous plants to grow.

8.9 INTRODUCED ANIMALS / WILD ANIMAL CONTROL

OBJECTIVE *To eradicate introduced animals where feasible and, where this is not feasible, to control populations at levels low enough to maintain natural ecosystems.*

POLICY Commercial helicopter hunters and possum trappers will be allowed to operate, by permit only, in most areas of the park. Commercial hunters are requested to shoot any thar, chamois, pigs and/or goats they encounter in the park and advise the nearest Department of Conservation office of this as soon as possible.

All introduced mammals will be reduced to the lowest attainable level, in accordance with DOC operational plans.

In the case of white-tailed deer in the stewardship area of the Dart Conservation Area, if that area is added to the park, then the department will seek the assistance of recreational hunters to control the herd.

A higher priority will be given to control of introduced animals in the Wilderness and Low Impact Zones. See 8.3.1.

White-tailed deer will be controlled in accordance with a wild animal control plan for Otago. If the Dart Conservation Area is added to the park, then the department and the board will recommend to the New Zealand Conservation Authority that it exercise its discretion under Clause 4(2)(b) of the National Parks Act to manage the herd within this area for recreation purposes.

Recreational hunters will be actively encouraged to control wild animals, and report the presence of thar, chamois, pigs and/or goats in the park.
Thar, pigs and goats will be targeted for complete eradication.

Control of Canada geese will be exercised to assist the Otago Fish and Game Council in their efforts to keep Canada geese numbers at manageable levels.

Should any species of wild animal require urgent control because of disease or if the above objectives are not being met, the department may implement or allow other control practices. These may include the use of hand-laid poison baits for ungulate control or aerially-applied poison baits for possum control.

If wild animal control is needed in the Specially Protected Area, this will be undertaken by the department or organised under its supervision.

Deer pens will not be permitted in the park. Existing pens will be removed.

Monitoring of the impact of introduced animals on plant and animal communities will be continued. Priority will be given to the impact of possums and their westward and southern migrations. See 8.37.

Poisoning to control animal numbers may be carried out if required, subject to strict controls for the protection of indigenous animals and park users.

Effort is to be made to minimise the spread of wild animals from the park to neighbouring land, and vice versa, with the exception of salmonids.

The appropriate Wild Animal Control Plan, when approved, will apply within Mount Aspiring National Park. To the extent that any inconsistencies arise, the policies of this management plan will prevail.

No horses, cats or dogs (except as provided for in 8.23, 8.26 and 8.28) will be permitted in the park.

Permits for recreational hunting may be obtained from the field centres at Haast, Makarora, Wanaka and Glenorchy.

NPRA Policy 9.4, 9.5, 9.6, 10.4.

EXPLANATION Introduced animals such as deer, chamois, possums, pigs, hares, etc, are foreign to the park. Moreover, they cause very substantial damage to the vegetation. Possums are also a vector for the transport of bovine tuberculosis. The fear is that possums in the park may cause the introduction of tuberculosis to herds of domestic animals within and bordering the park which are currently free of tuberculosis. Control of possums has become an increasing problem in recent years with the fall in value of skins.

Numbers of thar, pigs and goats are such that eradication is feasible. Thar eradication will be in accordance with the thar management plan.

The Otago and West Coast Fish and Game Councils are the managers for sports fish and game in the park.

Section 4(2)e of the National Parks Act requires that introduced animals "shall as far as possible be exterminated". But it is recognised that in most cases extermination is not possible except in limited areas or for certain species such as goats, thar and chamois. The department will seek the lowest levels attainable with available technology and resources.

Wild animal control is the responsibility of the department. The draft Wild Animal Control Plans for Otago and West Coast Conservancies jointly cover Mount Aspiring National Park, so the relevant policies in the plans have been incorporated here to avoid confusion.

It should be noted that the current moratorium on the commercial helicopter hunting of thar does not apply within Otago Conservancy.

White-tailed deer may be hunted in the park but there is presently a moratorium on hunting them in the adjoining Dart Conservation Area. White-tailed numbers are believed to be increasing. Consistent policies towards white-tailed deer in adjoining areas are considered desirable.

See 8.26.

8.10

FIRE

OBJECTIVE

To minimise the risk of destruction by fire of natural features and facilities in the park and of human life.

POLICY

Park users will be expected to exercise every caution in the use of camp fires and in compliance with the park bylaws (appendix I).

All fires either in or threatening the park will be extinguished without delay.

Fire-fighting equipment will be provided, to the extent that funds allow, at strategic locations throughout and adjacent to the park, including hand tools at all huts.

In the event of fire, suppression of the fire will be given priority over all other activities except the saving of human life.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

Strategically-located, positively-worded warning signs will be erected at roadsides, picnic areas, huts and other high-risk locations, in conformity with the policies of this plan.

There will be close cooperation and liaison with neighbouring land owners and local authorities with regard to fire control and suppression.

NPRA Policy 14.1, 14.2.

EXPLANATION Fire is a potential threat to park values and the safety of visitors. This makes it imperative that the risk of fire is reduced as far as possible by avoiding the use of open fires for cooking; taking prompt action in the event of fire; having the equipment to fight fires and assist escape; and providing warnings that will help to prevent the occurrence of fires.

The Department of Conservation is the fire authority for the park and the land within 1 km of the park boundary. Beyond this, the local authority is the relevant authority. The department maintains liaison with all local authorities.

8.11 WASTE DISPOSAL

OBJECTIVE *To prevent the depositing of untreated waste material in the park, including unused equipment and rubbish, and to control toileting.*

POLICY Toilets will be provided in places of high public use or where water quality is likely to be adversely affected.

Professional advice will be sought for the design of sewage effluent disposal systems, to ensure that pollution of ground or surface water bodies does not occur, and innovative means of disposal are sought.

Efforts will be made to educate park visitors on how to dispose of waste, in accordance with the Environmental Care Code. The use of bags to carry out rubbish will be promoted at visitor centres and in huts.

The "pack out what you pack in" rule will be promoted for rubbish.

Removal of all rubbish and appropriate waste management will be a condition of concessions and supply drops.

Camper van drivers will be requested not to dispose of wastes within the park.

Local authorities will be encouraged to ensure that there is provision for camper van waste disposal at convenient localities on tourist routes adjacent to the park, in consultation with Transit New Zealand.

EXPLANATION The quality of the natural environment of the park and of the experience it can afford is very easily degraded by inadequate disposal of waste. Litter is unsightly and a reminder that one is not alone with nature. Faeces are both unpleasant and a health hazard.

The cost of removing rubbish from the park is too high for it to be possible anywhere other than from roadsides. Reliance must therefore be placed on visitors removing their own rubbish.

Toilets can be provided in high-use areas and every effort will be made to do so, but this still leaves the problem of disposing of effluent in an environmentally acceptable manner. To date, solar toilets have proved sufficiently effective to make it possible to contemplate treatment of sewage, including the possible option of removing it in dried form from the park.

Concessionaires, equally, must take responsibility for wastes generated by their activities. This will be a condition of their concession.

Individuals must be educated and encouraged to deal appropriately with their own wastes.

If the park is to remain uncluttered it is essential that disused equipment be removed. This will normally also apply to the wrecks of aircraft

PROTECTION : HUMAN ENVIRONMENT

8.12

NOISE

OBJECTIVE *To recognise that unnatural noise is a factor which detracts from enjoyment of the park, and to limit noise as far as possible in conformity with zone objectives and policies.*

POLICY The degree of noise generated by concessionaires' activities will be considered as part of the approval process and, where appropriate, conditions will be imposed to limit the impact of noise on other users.

Design of huts, location of tracks and other facilities will seek to minimise the generation and impact of noise.

Activities which are noisy shall be restricted to those times of day and of the year when they will be heard by the least number of visitors. See sections 8.16 and 8.17.

Commercial jet boat access will not be allowed in the Low Impact Zone. See section 8.3.2.

NPRA Policy 24.6.

EXPLANATION Noise is subjective, with some people finding noise very much more disturbing than others. The park should be one place the public can rely on to find peace, solitude and tranquillity.

It is recognised however that noise is an inevitable consequence of some activities appropriate to the park. This applies particularly to aircraft and jet boat access and to the use of machinery for certain recreational activities and for management purposes.

The impact of noise can be minimised by restricting its occurrence to particular areas or times of the day or year when few, if any, people will be disturbed. If individuals can rely on some places to be noise-free, eg. particular valleys, and certain times (early morning, lunch and evening) then noise is more easily accepted outside these places and times.

8.13

HISTORIC

OBJECTIVE *To recognise and seek to preserve all historic features found in the park.*

POLICY Knowledge and appreciation of the historic features of the park will be promoted through appropriate interpretation both in the park and at visitor centres and in brochures.

Aspects of the park's historic significance will be recorded and made available to the public through handbooks and other literature, in consultation with the appropriate Kai Tahu tribal authority.

Some areas and artefacts are of such historic and cultural significance that their protection is best assured by not publicising their location.

Appropriate Kai Tahu tribal authorities will be consulted in the development of interpretative material relating to the historical features of the park.

Appropriate Kai Tahu tribal authorities will be consulted, and involved when and as they wish, in any actions necessary to protect wahi taoka (sacred or culturally sensitive places or objects).

The recording of historic features (including artefacts and relics) will be continued. Kai Tahu will be consulted before publicity is given to any Maori artefacts or relics.

NPRA Policy 17.2.

EXPLANATION Mount Aspiring National Park is largely devoid of historic artefacts, but there is a long tradition of use of the park as a route across the main divide, used particularly by the Maori people (moa hunters and pounamu traders), by early European explorers and subsequently by mountaineers.

Thus, much of the history of the park is intangible and available only as written accounts and descriptions.

As the official representative of the tangata whenua of the park, the Kai Tahu Maori Trust Board will be consulted to ensure the appropriate treatment of cultural material.

PARK USE

8.14 ACCESS

OBJECTIVE *To ensure that there is sufficient access to the park to provide for public use and enjoyment of the park, in conformity with the primary objectives.*

POLICY There will be no increase in the extent of formed park roads within the existing park boundaries.

The cooperation of local authorities and Transit New Zealand will be sought to obtain improved access to the park's boundaries through the provision of all-weather roading and parking particularly in the Dart and Matukituki Valleys and on the Jackson River Road.

Completion of sealing of the Haast-Wanaka Highway will be promoted.

The scenic value of roads such as the Haast-Wanaka Highway, the Queenstown-Glenorchy Road, the roads through the Dart and Matukituki Valleys will be recognised.

The cooperation of landowners and leaseholders will be sought to facilitate improved access to the boundaries of the park where roads or public tracks are absent. Ongoing liaison will be maintained with them.

Clear sign-posting will be used to inform the public that they are entering the park. The cooperation of the appropriate authorities will be sought in sign-posting routes to the park.

The park's values will be advocated through interpretative material available in centres outside and at some distance from the park boundary, such as at Haast, Wanaka and Queenstown.

See also 8.16 and 8.17.

Note: Mountain bikes are not permitted in the park (see Bylaw 8.)

NPRA Policy 19.2, 19.3, 19.6.

EXPLANATION Section 55 of the National Parks Act provides for roads within parks, whose construction requires the consent of the Minister given in accordance with the management plan. Such roads must be distinguished from public roads, over which the Minister and the management plan have no jurisdiction, and which do not form part of the park. Any new public roads would require the exclusion of land from the park in terms of section 11 of the National Parks Act. This requires an act of parliament.

State Highway 6 and the Routeburn Road are not part of the park, but are legal roads and road reserve. In addition Queenstown Lakes District Council is responsible for roads giving access to the park in the Matukituki, Rees and Dart Valleys and for the Routeburn Road.

Upgrading of these roads and of the road from Paradise to Chinaman's Flat on the Dart River would attract more people to the park. Access from State Highway 6 is excellent with 66,000 vehicles currently using this route per year.

In some valleys, such as the Matukituki, foot access to the park is across leasehold land. Public use for access could be controlled by marking these routes with poles or some other means for the benefit of both the landholder and park visitors.

The proposed Cascade/Hollyford Road, if implemented, would require land to be taken out of the park for the road line. This is a legislative process beyond the scope of this management plan. Should such a road eventuate, the zoning provisions should be reviewed, using the plan review process.

The western boundary is difficult to reach. The Jackson River Road, narrow and unsealed, extends only as far as Martyr Homestead.

Signposting of directions and distances to the park would help to draw more people to it.

8.15 HAAST-WANAKA HIGHWAY

OBJECTIVE *To allow for the provision of an efficient road of state highway standard, that links Otago with Westland and is safe for all users and in harmony with the high natural values of the land through which it passes.*

8.15.1 POLICY - GENERAL

State Highway 6, the Haast-Wanaka Highway, as it passes through Mount Aspiring National Park will be recognised and promoted as a Heritage Highway and significant tourist route, linking South Westland with Otago.

State Highway 6 will be considered as all that area surveyed as legal road. Where the highway alignment is not consistent with the road reserve, it will be a nominal 10 m either side of the centreline of the carriageway plus any other additional or lesser areas which are necessary to ensure safety, good visibility and a safe surface.

Transit New Zealand will be encouraged to maintain ongoing consultation with the department on matters relating to improvement, maintenance and emergency works for the highway.

The department will consult with Transit New Zealand on matters relating to access to the park, parking and signs and any other mutual concerns.

8.15.2 POLICY - SAFETY

The department will recognise the need for an adequate roading standard. This will essentially be two 3.5 m lanes, with concrete water tables where appropriate and extra width where this is essential for safety or stability reasons. The department will advocate lesser widths to protect landscape or other natural values where safety is not compromised.

The department will recognise the need to ensure adequate visibility for road users and pedestrians and the need for adequate sight distances for all accesses on to the highway.

8.15.3 POLICY - MAINTENANCE

The need to effect emergency repairs in a short time-frame will be recognised. The appropriate Regional Conservator will take urgent action to obtain the necessary approvals to avoid the escalation of damage, and Transit New Zealand and their contractors will be encouraged to do likewise.

Consultation will be sought with Transit New Zealand as to the species to be used in revegetation to ensure the use only of species compatible with vegetation indigenous to the park.

Encouragement will be given to Transit New Zealand to give due care and attention to tidy up works following repair and maintenance and to carry out such work promptly.

The department will consult with Transit New Zealand over the establishment of guidelines for vegetation removal, for trimming consistent with the needs of safe passage and for restoration following road improvement and maintenance. The department will advocate that a minimum of vegetation trimming be carried out.

The department will request consultation with Transit New Zealand for berm mowing and removal of wind-blown or wash-out material or emergency removal of slips.

The need for new sources of gravel and rock for road maintenance and of fill material, is recognised and will be permitted provided the consent of the appropriate Regional Conservator is obtained and extraction does not result in adverse impacts on natural processes, scenic quality or the enjoyment of park users. As far as possible operations will be screened from the normal view of park users.

Care will be taken to ensure that all roading material used within the park is free of weeds and their seeds. See also section 8.8.

Where significant impacts on the natural values or enjoyment of the park are likely, an environmental impact report will be required before approval is given for extraction of gravel, rock or fill, or the establishment of storage depots.

Except in emergencies, storage of stockpiles of gravel, rock or fill will be in locations agreed to by the appropriate Regional Conservator, out of direct sight of road users or of park facilities such as picnic places, tracks, huts or parking places.

Where works extend outside the normal road reserve (eg. stop bank maintenance) there will be detailed consultation with the department with regard to design and execution of the work before it begins.

Material cleared from the road reserve will be carted to spoil dumps at locations agreed to in consultation with the department.

Care will at all times be taken to ensure that toxic substances or other material likely to cause pollution do not enter the water courses of the park.

8.15.4 POLICY - ROADSIDE FACILITIES

There will be consultation between the department and Transit New Zealand when consideration is given to the provision of new facilities or modifications to existing facilities adjacent to State Highway 6.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

The department will encourage the provision of parking areas at convenient locations to allow road users to stop, park safely and be given the opportunity to appreciate the park.

Rest areas, lookout points and interpretation points will be established and managed at appropriate locations along State Highway 6 by agreement between Transit New Zealand and the department.

Locations will be determined by visitor use patterns and the presence of features of interest.

Departmental signposting within the road reserve will conform to Transit New Zealand standards and will be kept to a minimum.

Departmental traffic signs will be in accordance with the Manual of Signs and Markings.

8.15.5 POLICY - GRAZING

Where stock grazing is permitted in the park, the department will require that road boundaries be fenced by the lessee to a standard which ensures the safety of road users.

The grazing of road reserves will be subject to agreement between the department and Transit New Zealand and subject to Section 3.4 of the State Highway Policy.

Grazing will not be permitted by the department where this may result in a loss of stability to batters or roading support.

See 8.28.

NPRA Policy 19.1, 19.4.

EXPLANATION As one of only four road crossings of the main divide, State Highway 6 is a significant component of New Zealand's road network. It is an important tourist route, the main access through the South West New Zealand World Heritage area, and provides an excellent opportunity for the motorist to appreciate the scenery of the park and to gain access to north-east areas of the park.

All of State Highway 6 comes under the jurisdiction of Transit New Zealand and not the Department of Conservation. Some lengths of State Highway 6, however, may not be within the legal road reserve, as the road reserve varies in width, depending on the nature of the terrain and the batters required. Consequently it is not practical to use the legal road reserve as the definition of the state highway. For convenience a line 10 m from the centre line will be used to define the highway.

The particular needs of a state highway with regard to safety and maintenance must be catered for, but this can be done in a manner which is compatible with national park status and values. Transit New Zealand has incorporated the "Guidelines for National Parks and Reserves Roading" (agreed to between the National Roads Board and National Parks and Reserves Authority in 1980) into its "State Highway Policy and Procedural Manual 1989". These require that there is dialogue between Transit New Zealand and the managers of the park where major works are involved. Dialogue is also needed for day-to-day management issues, eg, vegetation trimming. Frequent communication between the department and Transit New Zealand is seen as the most effective means of ensuring that the needs of the park and the state highway are reconciled.

Transit New Zealand has supplied details as to its requirements for State Highway 6 and these have been expanded to incorporate management requirements needed to maintain park values.

The intention of the above detailed policies is to guide the actions both of Transit New Zealand and of the department so that a balance is achieved between the needs of the highway and of the national park.

8.16 AIR ACCESS

OBJECTIVE *To permit the landing of aircraft only where it is justified by:*

- *search and rescue*
- *essential management needs*
- *recreation, research and commercial purposes where other park users are not significantly inconvenienced or natural features degraded, in accordance with the primary objectives and policies of this plan.*

POLICY For the purpose of this management plan aircraft include fixed-wing aircraft, helicopters, microlites and gliders.

Parapents and hang gliders will be permitted in the park provided that they are taken in on foot.

Aircraft will be allowed to land anywhere in the park for SAR purposes, in accordance with Air Transport regulations and under the control of the NZ Police.

Aircraft will be allowed to land anywhere that is essential for management purposes, including authorised wild-animal control, research, supply of materials for construction, maintenance and provision and location of personnel, provided prior consideration is given to the need to preserve park values.

The appropriate field centre manager will ensure that the timing of aircraft use is such that the least number of people will be inconvenienced. Aircraft landings for recreational or other uses not included above will be by permit or concession licence only and subject to conditions on permits and concessions, in accordance with zoning provisions.

Time, place, number, stipulated flight paths and landings will be used as a means of limiting the impact of aircraft. In the granting of permits the presence of other park visitors in the area will be a factor in the decision. Monitoring of landings and written complaints from park visitors will also be used to guide decisions on where and when to grant permits. See 8.12.

Field centre sectors and airstrips are shown on Map 1.

Permits and concession licences may be given in accordance with zoning provisions as follows:

Wilderness	No permits and no landings other than SAR, wild-animal control, essential management and research which cannot be conducted outside wilderness areas.
Specially	Individual permits for single flights will be given only with the Protected Area appropriate field centre manager's approval for bona fide visitors.
Low Impact	Landings will be by permit only for times and places specified in the permit, issued by the appropriate field centre manager having due regard to safety, other park visitors and the need to preserve park values, especially the qualities of tranquillity and remoteness.
Moderate Impact	Landings will be by permit or concession licence for times and places specified in the permit/licence issued by the appropriate field centre manager having due regard to safety, the needs of park visitors and the need to preserve park values.

For landings in high use areas¹ no permits will be given for weekends, public holidays, or during the period 15 December to 15 January.

Aircraft landings are prohibited within 500 m of the Routeburn Track, except for the track concessionaire and park management purposes.

Air drops will be controlled by permit as above for aircraft landings. There will therefore be no air drops in the Wilderness Zone, except for emergencies.

Aircraft use for wild animal control will be in accordance with the policy for wild animal control. See 8.7.

In the Young Valley above Ram Flat permits and concessions for aircraft landings will only be granted for the period 15 November to 15 December and 15 January to 15 March.

See also Bylaw 10.

NPRA Policy 21.2, 21.4, 21.5.

EXPLANATION Control of air space is the responsibility of the Civil Aviation Authority of the Ministry of Transport under the Civil Aviation Act 1990. Unless they are landing, aircraft are not permitted to operate below 500 feet (152 m) above ground level. Park managers can control only the landing of aircraft for which permits are required. There can be no control of overflying except through the limited control exercised through conditions on landing permits.

As the zones have been established to reflect the degree of impact which is appropriate to their natural features, zoning is considered a suitable basis for the control of aircraft.

The current management plan allows aircraft landing in the north-east sector only. This is seen as excessively restrictive and it is considered that sufficient control can be exercised through permits or concession conditions, so aircraft landing is based on zoning which in turn is based on the acceptable level of impact.

The Young River above Ram Flat provides a wilderness fishery of high quality. To allocate the opportunity to fish this river between those seeking aircraft access and those who seek a guarantee of aircraft-free fishing, aircraft access for angling has been restricted to the less popular part of the fishing season.

Park bylaws forbid the hovering of an aircraft over any part of the park.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

8.17 JET BOAT ACCESS

OBJECTIVE *To permit the use of jet boats on rivers in the park to facilitate access where park values are not at risk.*

POLICY Jet boat access by concessionaires in the Moderate Impact Zone only may be permitted, with conditions as to time, place and number of trips established to limit the impact on other park visitors.

No jet boat access by concessionaires will be allowed in the Low Impact Zone.

Provision of landing facilities or jetties will require the approval of the appropriate Regional Conservator.

Changes to the park bylaws will be sought to control the use of private jet boats in the park.

NPRA Policy 23.1, 23.2.

EXPLANATION Jet boats, like aircraft, are intrusive because of the noise they generate, their potential for bank degradation and disturbance of bird and fish habitat, but are accepted as a convenient means of gaining access to parts of the park, especially on the west side and in the Makarora catchment.

To limit the impact of commercial jet boats, their use is confined to the Moderate Impact Zone with conditions set to control their use.

8.18 WALKS, TRACKS AND ROUTES

OBJECTIVE *To provide for the appreciation and enjoyment of the park by pedestrians with a range of physical abilities, without compromising park values and in accordance with zone objectives and policies.*

POLICY Entry to the park will be free in accordance with Section 4(2)e of the Act.

Walking (including use of wheelchairs and skis) will be the only means of movement on land within the park.

Vehicles will be confined to the existing public roads which do not form part of the park, ie, State Highway 6 and the Routeburn Road.

Track design will take account of the landscape characteristics in the vicinity and minimise the impact on landscape and vegetation as far as possible.

A range of degrees of difficulty will be provided to cater for the least to most experienced walkers and trampers, with those for the least able commencing adjacent to roads. See 8.23.

Tracks will be classified and maintained to national track standards. See Appendix IV.

See Appendix IV for schedule of tracks and routes and track standards.

Tracks will be managed according to the distinctive character of each track and in accordance with its grading, ie:

- a There will be no tracks or marked routes within the Wilderness Zone.
- b Tramping tracks and marked routes only, with strategic bridging, may be provided in the Low Impact Zone.
- c Paths, walking tracks, tramping tracks, and marked routes, with bridging as appropriate, may be provided in the Moderate Impact Zone.

Track usage will be monitored to ascertain the degree of satisfaction with the walking experience it provides and the status of tracks will be reviewed accordingly. See section 8.37, 8.38.

Where satisfaction is shown to be deteriorating due to increased usage, numbers will be controlled by:

- providing information and facilities for, and encouraging the use of, alternative tracks in the park, where these can accommodate increased numbers without substantially altering their character;
- encouraging the use and development of tracks outside Mount Aspiring National Park.
- developing new tracks and facilities within the park in accordance with zoning policy, as finance allows. Public opinion will be sought for major tracks. See 6.7.
- limiting the amount of accommodation provided in huts and at camp sites;

The department will investigate the options for new tramping opportunities in the Young/Blue Valleys, including strategic bridging to link the Young and Blue Pools Tracks. See 6.7.2.

The public will be informed of the temporary closure of tracks or routes at the commencement of each track and at visitor centres. Permanent closure of tracks will require public notification.

NPRA Policy 18.1, 18.2, 18.3, 18.5, 19.6.

EXPLANATION Apart from State Highway 6 and the short stretch of the Routeburn Road within the park, there are no roads in the park, and these are, strictly speaking, not in the park as they are legal road and not national park. Walking has always been the principal mode of travel in the park and this should continue in order that the remote, unspoilt, tranquil nature of the park can be preserved.

It is recognised, however, that not everyone has the ability to reach the remoter parts of the park. Opportunities should be given to the less able to experience the park by providing shorter, easier tracks and by permitting limited access by jet boat or aircraft to the more remote parts.

Tracks should cater for the least to most experienced walkers. Tracks have been classified to conform to the national track standard and give visitors an indication of what they can expect. This is an important factor in promoting public safety.

Access to the Wilderness Zone is limited to the provision of tracks and routes from a number of points on its perimeter in the Low Impact Zone. See Maps 2 and 3.

The impact of tracking on the landscape can be substantial or limited, depending on the particular route taken, materials used and extent of use. Careful blending of the track into the topography and use of natural materials found in the vicinity can do much to make tracks less visible from a distance. Use of natural stone facing on large drains and retention of natural rock steps help to make tracks appear more natural. See 5.3.4.

8.19 ROUTEBURN TRACK

OBJECTIVE *To provide a high-use, through-route, walking opportunity for users with little to moderate experience, with overnight accommodation, while at the same time maintaining the natural setting for which the track is renowned.*

POLICY The Routeburn Track will be recognised as a focus for overseas tourists with particular consideration given to catering for people who may not speak English well and may not have the same expectations as New Zealanders.

Overnight accommodation will be recognised as a legitimate expectation. In the meantime, however, until monitoring provides clearer direction it will be necessary to inform users of the pressures on hut accommodation and the possibility of some huts being full.

The attention of walkers will be drawn to the danger from avalanches, ice and snow, and from rapid weather change.

The public will be warned of the change in character of the track in the winter season by designating a high season (late spring, summer, early autumn) and a low season (remaining cold months), for reasons of public safety.

There shall be no use of DOC huts by concessionaires between 1 November and 30 April.

Huts will be staffed in the high season. During the low season there will be no staff on the track and self-sufficiency will be mandatory.

Management of the Routeburn Track will be carried out in consultation with Southland Conservancy.

The maximum party size for concessionaires will be 20 persons.

Encouragement will be given to the use of alternative tracks in the upper Wakatipu area.

During the term of the plan it may be necessary to implement a booking system for accommodation on the Routeburn Track.

The provisions of Policies 8.16 (aircraft access), 8.20 (huts) and 8.21 (camping) apply to the Routeburn Track.

EXPLANATION Because of its popularity, the Routeburn Track is a special feature of the park and so needs special management.

One of the principal implications of its popularity is the use of the track by people who do not know what to expect, either through language barriers, inexperience or ignorance of New Zealand mountain conditions.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

These difficulties can often be overcome by making special efforts to inform visitors of conditions in a manner they can understand.

Popularity also means that at times a greater than optimum number of people wish to use the track. See 4.3.2.

While the amount of accommodation provided can be expanded, there is a limit to the extent to which this can be done without degrading the scenic and other natural values of the park. In addition, there is evidence that apart from the physical capacity, which is at its limits for some of the huts, there are social stresses arising from crowded huts, and that users' experience of the track is diminished by having to hurry for a bunk. A booking system would smooth out the demand between huts and provide an element of assurance which is currently lacking, and overall would improve the experience for track users by allowing the demand to be managed. If a booking system is introduced the principle will be adopted of not allowing bookings for future seasons during the current season. This would ensure that New Zealanders are not disadvantaged by advance bookings from overseas.

8.20 HUTS

OBJECTIVE *To provide acceptable, basic overnight accommodation for the convenience and safety of trampers using tracks and routes.*

POLICY

Huts, shelters and toilets will be the only permanent buildings in the park.

Huts will provide shelter, a place to sleep, cook and wash and a toilet (or toilets).

Huts will be provided on walking tracks and high-use tramping tracks at locations a maximum of one average day's walk from road end or nearest hut.

Hut design and management will reflect the general nature of the track as well as health and safety considerations. Huts will be modest, but designed to be pleasant both in appearance and in use. Professional design input will be required for all new huts.

No more than 20 beds/bunks will normally be provided in any new hut in the Moderate Impact Zone and no more than 12 in the Low Impact Zone; bunkrooms will be separate from living quarters except for emergency use of mattresses and in small huts with less than 12 bunks; wardens quarters will be separate from track users', wherever possible.

Where the level of usage warrants staffing by wardens, wardens will staff huts at a ratio not exceeding one per 40 bunks.

Accommodation will be provided for a maximum of 80 people at any one location on walking tracks and high standard tramping tracks; 24 on tramping tracks; and 12 on routes in the Moderate Impact and Low Impact Zones (with the exception of Daleys Flat where the maximum number will be 40). No huts are allowed in the Wilderness Zone.

Information on likely availability of accommodation will be given at the commencement of the relevant walk/tramping track and at visitor centres and elsewhere as appropriate in the high season.

Huts may be provided by concessionaires in the Moderate Impact Zone only.

Where concessions are using DOC huts, they will do so on a first-come, first-served basis and occupy no more than 50% of beds/bunks.

Huts will be used to provide information and interpretation to park visitors. Presentation will aim for a good standard. See 8.36.

Hand-held fire fighting equipment will be provided in each hut.

Camping sites may be provided adjacent to hut sites.

Temporary huts for research and management purposes must be approved by the appropriate Regional Conservator and may be subject to special conditions and removed at termination of operations.

No further club huts will be permitted in the park and existing club huts will be maintained to an acceptable standard.

NPRA Policy 24.1, 25.2, 25.4, 25.6.

EXPLANATION Submissions to the discussion paper indicated that the existing unsophisticated huts were what was desired for Mount Aspiring National Park. There has been dissatisfaction, however, with certain aspects, such as overcrowding, noise, wet clothing.

The above policies are designed to provide a minimum standard for huts. The standard should reflect the character of the tramping track or route, with the more popular, well-developed tramping tracks providing larger scale facilities with wardens in attendance. Wardens are employed to collect fees, keep huts clean and tidy, supervise rubbish removal and disposal, and provide weather information. They may also help with track maintenance.

Larger huts are recognised as providing a less pleasant experience and are not considered to be in keeping with the remote, unspoilt character of the park. Smaller buildings, sympathetically sited, are advocated. Safety in such isolated country needs to be particularly provided for, eg, ease of egress in the event of fire.

To avoid the growth of small "villages", and retain a natural quality, a limit has been put on the number who may be accommodated in any one location.

As isolation and long days, with unremitting public contact make the warden's daily living conditions stressful, separate quarters should be provided for them to ensure adequate rest and privacy.

The demand for a somewhat higher standard of accommodation may be satisfied by concessions. However the commercialisation that this could entail is not in keeping with the character of the park, so a limit of 50% of total accommodation for concessionaires in DOC huts has been set. See section 8.19 for Routeburn Track policy.

The huts are seen as appropriate places for interpretation and information, keeping the need for signs and other informative material to a minimum in unmodified areas. Visitors also have more time to read and assimilate information when staying in huts and are most likely to have had their interest aroused by their walk. Poorly presented material can have a negative effect, however, so care needs to be exercised to keep even simple requests and advice neat and attractive.

Fire is a constant threat to huts. Management must provide for this by provision of fire equipment such as fire extinguishers, escape means, warnings and careful design and location of cooking facilities and stoves.

8.21 CAMPING

OBJECTIVE *To accommodate those who wish to camp in the park provided the primary objectives of the park are not compromised.*

POLICY Camping will be permitted in the park with the following exceptions:

- within 500 m of the Routeburn Track, except at designated camp sites
- on areas of fragile vegetation, sign-posted as such
- in day-use shelters
- all other areas identified by the appropriate Regional Conservator as susceptible to damage.

Designated camp sites may be provided in the vicinity of tracks and huts to cater for the needs of those wishing to be self-sufficient. Such sites will have a supply of water and a toilet. Individual camp spaces may be demarcated and a hardened surface provided.

Camp sites will be located out of sight of the track. Changes to park bylaws will be sought to give effect to these restrictions.

NPRA Policy 25.10.

EXPLANATION Camping is a popular alternative to use of huts which is in keeping with the remote, natural character of the park. The number of visitors wishing to camp is expected to increase, so provision must be made for them. There are, however, certain areas where camping would downgrade park values either with respect to the enjoyment of other park users or because of the risk to vegetation, water quality, etc.

The Routeburn Track is one such area. The numbers using the tramping track and the concentration of suitable camping places in areas such as the highly visible Harris Basin has meant that it is no longer possible to allow uncontrolled camping near the track without encouraging a visual intrusion on the otherwise entirely natural landscape and causing a risk to public health.

The restriction on camping within 500 m of the Routeburn Track will keep camp sites away from the immediate vicinity of the track yet at a distance which can reasonably be policed. The only location where camping will be allowed close to the Routeburn Track in Mount Aspiring National Park is in the area provided for camping at Routeburn Flats.

With an increase in park usage, locations close to saddles are at risk of being over-used to the detriment of the vegetation, which does not recover easily at high altitudes. Such areas may have to be closed to camping, eg, Rees Saddle, Cascade Saddle. Such closure will be subject to bylaws.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

8.22 PICNIC PLACES

OBJECTIVE *To maintain roadside and road-end picnic areas for the convenience of visitors and to encourage appreciation of the park.*

POLICY Parking and picnic facilities, equipped with tables, benches and toilet, will be provided where possible at road ends, and at points of interest along State Highway 6. See section 8.15.4.

Where appropriate, short walks out of sight of the road will be developed and maintained to enable closer contact with the natural environment.

Interpretation boards may be provided to illustrate particular values in the locality, to provide education and advice of assistance in park management. See 8.36.

NPRA Policy 24.3.

EXPLANATION The value of State Highway 6 as a means of introducing people to the park can be enhanced by encouraging travellers to stop and picnic. The opportunity then presents itself to inform visitors about the park and to take them into it along short walks. These have proved very popular in recent years. See 2.3.1.

There is less opportunity elsewhere, but road ends are an obvious location for provision of picnic facilities, including toilets and interpretation.

8.23 DISABLED PERSONS

OBJECTIVE *To provide opportunities for the disabled to enjoy the qualities of the park within the limitations imposed by terrain.*

POLICY Roaring Billy and Thunder Creek Falls are tracks suitable for negotiation by wheelchairs and will be maintained as such.

New toilets adjacent to parking places will be designed to accommodate wheelchairs.

Guide dogs on a leash will be allowed in the park for the purpose of assisting those with impaired sight.

The design and placement of interpretive material will consider the convenience of the disabled.

NPRA Policy 18.4, 20.1, 20.2.

EXPLANATION The steep terrain of most of the park and limitations on mechanised transport make it generally unsuitable for the disabled. This does not mean that the disabled should be neglected, as there are places where special provision can be made to enable them to experience some of the enjoyment the park provides.

Ease of access makes State Highway 6 a focus for such facilities, which include interpretive displays.

8.24 COMMERCIAL ENTERPRISE

OBJECTIVE *To grant concessions, licences and permits for commercial activities which enhance the opportunities for enjoyment or assist in the protection of park values, provided that they do not conflict with the primary objectives of the park and the objectives and policies of this plan.*

POLICY Concession licences and leases will be in accordance with the National Parks Act and provisions of this management plan and the General Policy for National Parks with respect to recreation/tourism business operations in protected areas.

The primary objectives of the park will guide decisions on the suitability of concessions. See section 8.1.

Conditions will be imposed by the appropriate Regional Conservator, having regard to the primary objectives, submissions from the public for each concession, with bonds imposed where appropriate.

Categorisation into major, minor, temporary and trial will be used to determine whether concessions are appropriate in a particular zone, with reference to zone objectives and policies.

Major concessions will be permitted in the Moderate Impact Zone only.

Guiding concessions may be permitted, limited according to party size as follows: Wilderness Zone, six persons maximum; Low Impact Zone, 12 persons maximum.

In the Wilderness Zone only concessions with a maximum party size of six, which are not noticeably different from private groups, will be granted. See 8.3.1.

Operations will be low-impact and in keeping with the park's unspoilt character.

Caches and dumps may be allowed in the Low Impact and Moderate Impact Zones.

Examples of concessions which are appropriate in the park are:

- guiding concessions for walking, mountaineering, climbing, hunting, fishing, canoeing, rafting, ski touring
- special-interest tours, educational excursions
- jet boat and aircraft access in accordance with zone policy. See 8.3.

Repeated trips on any one day to a single location to provide access is not considered appropriate because of the degree of disturbance caused. The Siberia airstrip will be an exception to this policy.

Heliskiing is to be confined to the Moderate Impact Zone, and will be permitted only when it can be shown that other park visitors and park values are not affected in an adverse or significant way.

Major and minor concessions will be subject to a process of public consultation. Temporary and trial concessions may not require public consultation.

Concessionaires may be asked to provide toilets at their expense, where the need is justified on environmental grounds, in accordance with zone policies.

A balance between private and commercial use will be maintained by limiting the extent of commercial operations to a size which ensures that they do not differ from private groups.

Where concessions are using DOC huts, they will do so on a first-come, first-served basis and occupy no more than 50% of beds/bunks.

Advertising of goods and/or services will not be permitted within the park.

Competitive events may be permitted for recognised activities provided that they conform to conditions set by the appropriate Regional Conservator for each event. In setting conditions consideration will be given to the impact on both park values and other park users.

Commercial operations shall be monitored where appropriate for their impact on park values and the cost of this will be a charge on the operator. See 8.37.

The grant of a concession is no guarantee of an exclusive right to an activity as each will be looked at on its merits and in relation to the primary objectives of the park.

Leases other than for grazing will be granted only if clearly in accordance with the policies and principles of this management plan. Where this is not the case an amendment to the plan will be required.

The external effects of any commercial enterprise on State Highway 6 will be discussed with Transit New Zealand.

Sphagnum moss gathering will not be permitted.

NPRA Policy 26.1, 26.3.

EXPLANATION The conduct of any trade, business or occupation within the park requires a licence (section 49 National Parks Act 1980; section 50 requires a lease or licence to cover use of buildings). These are granted with appropriate conditions.

Commercial operators can assist in increasing the extent and degree of enjoyment of recreation in the park by encouraging those who are otherwise unlikely to take part in an activity. This is especially the case where the concessionaire provides expertise (eg, guided climbing, fishing, hunting, natural history) or provides equipment such as canoes or rafts, or where easy access is provided to otherwise remote areas (eg, by jet boat or aircraft).

There is, however, the danger that commercial use will introduce large groups of people to areas which cannot sustain them for reasons such as the damage they would cause through trampling vegetation, aggravating problems of overcrowding, introducing an unwanted level of noise, destroying solitude, etc. See 5.3.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

These adverse impacts can often be overcome by the imposition of suitable conditions, eg, covering numbers, time and location. The appropriate Regional Conservator will decide the conditions and whether to grant a concession after the public have been consulted.

NPRA Policy 8.5.

8.25 FILMING

OBJECTIVE *To allow use of the park for commercial filming provided it does not conflict with the primary objectives of the park and is in accordance with zone policies.*

POLICY Filming for commercial purposes including advertising and production/feature films, will be allowed under permits issued by the appropriate Regional Conservator.

Consideration will be given to each individual proposal and conditions may be set to minimise impacts and ensure adherence to the primary objectives and zone policies.

Charges will be in accordance with the conservancy guidelines for charges for filming.

EXPLANATION The spectacular and varied landscapes of the park provide locations for commercial filming which are increasingly in demand. This activity can be compatible with park values provided it is carried out with care.

Each proposal will have to be considered in relation to the scale and nature of the intending filming, the area to be used and the means of access.

As filming is a commercial activity a charge will be made for it.

8.26 COMMERCIAL HUNTING

OBJECTIVE *To permit commercial hunting in the park in accordance with the primary objectives and policies of this management plan.*

POLICY Commercial hunting of wild animals will be by permit only (in accordance with the Wild Animal Control Act), issued by the appropriate Regional Conservator to holders of Wild Animal Recovery Licences, subject to conditions. The department's Wild Animal Control Plans will influence the issuing of permits.

White-tailed deer may not be recovered under Wild Animal Recovery licences.

Possum hunting will be by permit only, issued by the appropriate Regional Conservators subject to conditions.

Camps, shelters and portable freezers may be permitted, subject to conditions. Their removal prior to the termination of the period covered by the permit will be required. A bond may be required to ensure compliance.

Dogs may be permitted to assist in hunting operations with the approval of the appropriate field centre manager where no effective alternative exists and no vulnerable wildlife is present.

Use of aircraft for commercial hunting may be permitted, subject to policies for air access with permits issued by the appropriate field centre manager.

See 8.9.

NPRA Policy 10.3.

EXPLANATION As commercial hunting can assist in the task of controlling introduced animals, it is in the best interests of the park to permit commercial hunting.

Experience has shown that when market prices fall, causing a reduction in hunting, wild animals numbers increase. In recent years this has been the case with possums in particular. See 5.2.

The need to preserve the integrity of the park makes it essential that activities are controlled by conditions imposed on hunting permits and by ensuring that support facilities such as camps are removed when no longer in active use.

White-tailed deer are to be managed as a recreational resource. Commercial hunting of them is therefore not appropriate.

8.27 COMMERCIAL FISHING

OBJECTIVE *To permit sustainable fishing of indigenous fish, in accordance with the General Policy for National Parks.*

POLICY Commercial fishing operations, for eels and whitebait, may be licensed subject to conditions, where there is an established tradition of fishing and the resource has been demonstrated to be capable of sustaining the level of catch stipulated in the licence.

EXPLANATION Commercial fishing for eels and whitebait on the western margins of the park has existed for many years. The MAF is examining the degree of sustainability of this fishery at the time of writing. If stocks prove sustainable this traditional use may continue.

NPRA Policy 11.5.

8.28 GRAZING

OBJECTIVE *To permit grazing only in areas which have been traditionally grazed and where the continuation of grazing is necessary to honour the undertaking given to neighbouring landholders before the creation of the park, and to minimise as far as possible the adverse impacts of such grazing on park values.*

POLICY The undertaking given to neighbouring landholders at the creation of the park, to allow the continuation of grazing on specific pasture areas within the park, will be honoured. The areas to which the undertaking applies are set out in Appendix II. Grazing otherwise will not be permitted.

Such grazing will only be allowed in the park under licence issued pursuant to Section 51 of the National Parks Act 1980 for periods of five years, subject to conditions determined by the appropriate Regional Conservator.

Grazing will be phased out where possible, for example by compensation or as part of a voluntary surrender or termination of licences in accordance with provisions of this policy or the terms of the licence. See section 8.37.

In setting conditions and stock limits, consideration will be given to the impact of stock on indigenous vegetation, pasture grasses, water quality and use by park visitors.

Strict limits will be placed on the numbers of animals grazed under each licence.

Such grazing will be confined to areas of existing pasture.

Topdressing and/or oversowing will not be permitted.

Grazing licences do not restrict the right of access by members of the public.

Mechanised improvement of stock access tracks will not be permitted, but maintenance by mechanical means may be approved by the appropriate field centre manager.

To prevent the infiltration of feral goats, grazing of domestic goats will not be allowed.

All grazing-licence areas will be inspected regularly to ensure that licence conditions are being met. See section 8.37.

Where conditions are being contravened a verbal request followed by a written warning will be sent to the licensee requesting compliance.

Where there is material and persistent non-compliance with licence conditions, the licence will be forfeited and stock removed.

Where a licence has been forfeited, no subsequent licence will be issued to that licensee on the land subject to the forfeiture.

Where land has not been grazed under licence for a period of 10 years the rights to traditional grazing will lapse.

Where feasible, fencing of riparian strips will be carried out to prevent stock entering water courses and damaging river banks.

Where fencing is required within the park the costs will be borne by the licensee. Fences will at all times be maintained by the licensee to be an effective restraint on stock.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

Close liaison will be maintained between the department and licensees to avoid misunderstandings and limit the degree of any conflicts which may arise between use for grazing and for protection and enjoyment.

Horses and dogs will be permitted only in accordance with the conditions of individual grazing licences.

NPRA Policy 12.1.

EXPLANATION Prior to the park's formation, issues arose as to whether or not any land having grazing value should be included in the park. Some grazed areas were included in the park in return for an undertaking that would allow such grazing to continue.

Grazing of domestic stock is an activity which is not compatible with national park values. However, as part of the decision to create Mount Aspiring National Park an undertaking was made to allow the continuation of grazing in those areas covered by the park which had traditionally been grazed. These are mostly valley grasslands, which are also main access routes for park users. The precise terms of the undertaking were never recorded in writing but its existence is generally accepted.

It is recognised that grazing has adverse impacts on park values, notably through pollution of water courses, the introduction of weed species, the alteration of the natural vegetation, the spread of manure and pugging of damp areas, making for an unattractive environment for park users. Control on the numbers and type of stock grazed will therefore be exercised to limit the extent of these impacts.

The incompatibility between grazing and national park status can result in conflict between both parties. This can frequently be avoided by maintaining dialogue and making an effort to understand each other's problems.

Opportunities will be sought to end grazing in the park, so that the extent of grazing is limited as far as possible.

Fencing is a further means of limiting impacts and will be used wherever possible.

8.29 MILITARY MANOEUVRES AND TRAINING

OBJECTIVE *To permit military manoeuvres and training where these are compatible with the objectives and policies of this management plan.*

POLICY Military manoeuvres and training, in accordance with the Military Manoeuvres Act 1915, may be permitted by the appropriate Regional Conservator, subject to conditions.

The number of personnel and duration of activities shall be limited to levels compatible with park values and use by other visitors.

Activities shall be limited to the usual activities allowed in the park, eg, climbing, tramping, camping, and they are to be adequately supervised.

No vehicles may be used.

EXPLANATION The park may provide the only suitable conditions for particular kinds of training and manoeuvres for the Armed Forces of New Zealand. The General Policy for National Parks makes provision for these, subject to their being in accordance with the management plan.

The department has an agreement with the armed forces to permit the use by military personnel of land administered by the department, for special training. In return, the armed forces assist with certain difficult management problems, eg, fire control, engineering works.

NPRA Policy 32.1, 32.2.

8.30 MINING

OBJECTIVE *To give due weight to the effects of any proposed mining and the extent to which the park values can be protected and maintained when considering requests for access arrangements under the Crown Minerals Act 1991.*

POLICY In considering any application for an access arrangement there will be an evaluation of the effects of the proposed activity, taking into account the extent to which any effects can be avoided, remedied or mitigated without compromising the natural values and the purposes of the National Parks Act. In considering the application full consideration will be given to any compensation offered and whether a clear net conservation benefit can be achieved.

Mining in Specially Protected Areas, the Wilderness Zone and high-use areas of outstanding scenic, scientific or cultural value will normally be inappropriate due to the effects of mining on the values of the area/zones concerned and the purposes for which they are held or managed.

Environmental impact assessment procedures will be required for exploration and mining.

Close liaison will be maintained with the Energy and Resources Division of the Ministry of Commerce with regard to all mining privilege applications in the park.

For sand and gravel, see 8.15.3.

EXPLANATION The Crown Minerals Act 1991 requires that minerals permits be obtained from the Ministry of Commerce for the mining of all Crown owned minerals. Access onto land for mining in a national park requires the agreement of the Minister of Conservation.

Section 61 of the Crown Minerals Act states that the Minister shall have regard to the objectives of the Act (ie, National Parks Act) and any management plan and safeguards against adverse potential effects.

Access arrangements can be made subject to conditions or declined outright. The high natural values of the park and the destructive nature of mining make it unlikely that access for mining will be agreed to unless the impact on park values is small in relation to the net benefit to the nation.

Although there are useful minerals in the park, particularly in the ultramafic rocks of the Red Hills, none has so far been found in quantities which would warrant mining, with the possible exception of greenstone (pounamu).

8.31 POUNAMU (GREENSTONE)

OBJECTIVE *To recognise the special value of pounamu.*

POLICY The Waitangi Tribunal's recommendation that pounamu (greenstone) be recognised as belonging to the Kai Tahu iwi will, if adopted by the Government, be given effect in this plan, subject to the plan's policies and principles. See 5.5.1.

EXPLANATION Pounamu (or greenstone) is different from other minerals on account of its great cultural significance for the Maori people. At the time of writing, the government has not yet given its decision on the Waitangi Tribunal's recommendation that pounamu be recognised as belonging to the Kai Tahu iwi. This management plan will implement the outcome of that decision once made.

8.32 TRADITIONAL HARVESTING

OBJECTIVE *To recognise and allow traditional Maori use of material from the park where this can be carried out without significant damage to park values.*

POLICY Gathering of materials for traditional Maori uses will be by permit only, issued by the appropriate Regional Conservator in consultation with the appropriate Kai Tahu tribal authority.

Permits will be issued only where:

- a there is no alternative source outside the park
- b no rare, endangered or locally uncommon species or species protected under other legislation are concerned
- c there is a justified need to use the resources from within the park (eg, no other sources are available or suitable)
- d use is not excessive and sustainability of the resource is retained
- e gathering is supervised by the department
- f there is no intention to derive commercial gain or reward.

NPRA Policy 8.11, 11.5.

EXPLANATION Certain materials found in the park, such as eels and flax, have significant traditional uses for the Maori people. As section 5 of the National Parks Act 1980 allows the cutting or taking of plant material and the trapping, hunting or killing or taking of animals only with prior written consent, a permit from the appropriate Regional Conservator is required for gathering material from the park.

Restrictions on such gathering is necessary to ensure the materials are available to future generations.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

8.33 SAFETY

OBJECTIVE *To promote safety in the park to the extent compatible with the remote nature of the park and the objective of fostering self reliance.*

POLICY Search-and-Rescue operations will be conducted under the direction of the NZ Police without hindrance, assisted by Department of Conservation staff as appropriate.

Department of Conservation staff will alert the police without delay in the event of SAR incidents.

Visitors will be expected to be responsible for their own safety, but park management will promote safe practices through advice, interpretation and education.

Warnings of hazards will be given when considered necessary by park managers. Hazards such as ice and slips on tracks, avalanche danger, dangerous river crossings, will as far as possible be sign-posted.

Weather forecasts will be provided at visitor centres.

The Avalanche Atlas of the Routeburn Track (B Fitzharris and I F Owens, NZ Mountain Safety Council 1990) will be used as the basis for management of avalanche hazards in this part of the park.

Controlled snow releases may be carried out as necessary to prevent avalanche hazards to tracks and huts.

Search dogs will be permitted in the park for SAR operations and training sessions authorised by the appropriate Regional Conservators.

Radio communication will be provided between staffed huts and field centres.

Structures such as huts and bridges will be periodically inspected and maintained in a safe condition or rendered unusable until repair or removal.

Commercial operators will be responsible for the safety of their clients and for warning them of possible dangers. Operators will have to show that their emergency procedures and equipment are satisfactory as a condition of approval for their operation.

Emergency procedures, personnel and contacts will be identified in huts and at field and visitor centres. Consideration will be given to installing flood level indicators to provide warning of floods, as finance allows, in consultation with regional councils.

Firearms may only be taken into the park by holders of a valid hunting permit or wild animal recovery permit.

EXPLANATION There is an element of risk in all outdoor recreation activities. It is therefore not possible to guarantee visitor safety. The onus is on park users to obtain and heed the advice of staff on safety matters, but in the end individuals are responsible for their own safety.

NPRA Policy 10.1, 10.2, 28.1, 28.3, 28.4.

8.34 TELECOMMUNICATION FACILITIES

OBJECTIVE *To allow telecommunication facilities only where essential and in accordance with the National Parks Act and provisions of this management plan.*

POLICY An effective radio network will be provided where practical in the park, to assist in park management, search and rescue and fire control.

Huts staffed by wardens will have radio communication.

The use of the park for private or commercial radio broadcasting or communication will not be approved unless the proposal is directly related to an activity which is related to the park, eg. direct broadcasts of a recreation activity such as competitive events.

Facilities for radio-electric and electronic communication should, as far as possible, be outside the park and will only be permitted in the park where, in the national interest and on technical grounds they must be located in the park and this can be achieved with minimal impact on the environment as shown by a full Environmental Impact Assessment.

Telephone lines will be required to be located within a road reserve. The department will seek support from the road controlling authority for those lines to be placed underground.

EXPLANATION Licences may be issued by the Minister of Conservation (delegated to Regional Conservators) under section 49(b) of the National Parks Act 1980 for the use of any part of the park for radio-electric or electronic communication facilities. This would include radio, television and telephone transmitting and receiving equipment.

To protect the park from the visual intrusion of telecommunication facilities, permission for them to be sited within the park will only be given where the appropriate Regional Conservator has been convinced that there are no alternative sites outside the park and that they can be accommodated without significant impact on park values and are warranted in the public interest.

The value of radio communication for management and safety reasons is recognised and, as far as practical, radios will be provided. The difficulties in providing serviceable equipment in isolated areas must limit the extent of their provision. Wardens have radios at Falls, Flats, Dart, Shelter Rock and Daleys Huts which are not available for public use.

8.35 NEW ACTIVITIES

OBJECTIVE *To consider new activities not envisaged at the time of writing of the plan, provided they comply with the primary objectives of the park and all other objectives and policies appropriate to the activity proposed.*

POLICY New activities may be considered for inclusion in the park on a case-by-case basis subject to their impact on park values.

Where it can be shown that the new activities are not incompatible with the three primary objectives of the National Parks Act and the General Policy, such activities may be allowed by the appropriate Regional Conservator.

The public will be notified and public comment sought for activities which could cause material alteration or permanent damage to the park, or which could permanently affect the rights of the public in respect of the park. Such activities will require preparation of an environmental impact assessment or report.

EXPLANATION The term of the park management plan is 10 years. It is not possible to foresee what new activities may be developed in that period. The primary objectives of the park will provide guidance in assessing the compatibility of such activities with park values.

8.36 INTERPRETATION AND INFORMATION

OBJECTIVE *To provide interpretation and information material to a good standard to increase public interest in and awareness of Mount Aspiring National Park and of the natural environment generally.*

POLICY Because of the special character of the park, interpretive facilities will generally be focused on visitor centres and peripheral points such as track entries and picnic places. Displays will be provided at Haast, Makarora, Wanaka and Glenorchy, and some supporting information will be available in Queenstown.

The Makarora Visitor Centre and its displays will be upgraded as part of the South West New Zealand World Heritage development. The displays in the Wanaka Visitor Centre will be replaced and updated as funds permit. Interpretive material will be maintained in high use huts.

On-site interpretation will be developed at suitable sites along the Haast-Wanaka Highway as part of its development as a heritage highway. Other roads beyond the park boundaries (such as the Matukituki Valley road) may lend themselves to interpretation of features which are characteristic of the park. Self guiding interpretive walks are at Makarora, Blue Pools, and Camerons Flat, and others will be developed as appropriate, including the Haast Pass alpine walk.

Otherwise, signs will only be provided where required to:

- give warning of hazards (see 8.33)
- give necessary directions
- draw attention to significant features which would otherwise be overlooked.

Interpretive displays and signs will be to a good standard, durable, and maintained in good condition.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

Off-site interpretation and information will be by means of pamphlets on specific topics such as the major tracks and natural features of interest along them, and information on flora and fauna, geology, impacts on ecosystems and giardia. Appropriate Maori names and greetings will be included in literature on the park. A Kai Tahu perspective will be presented in new material. Consideration will be given to producing translations of pamphlets into, for example, Japanese or German, where the need has been identified. All maps used will be drawn to scale and the scale will be clearly shown, with the exception of illustrative sketch maps. A new handbook for the park will be produced.

Information on the park will be available from field centres and the Otago and West Coast Conservancy offices in Dunedin and Hokitika. The Queenstown Field Centre will include information on Te W hipounamu in its displays.

Memorials will only be allowed in exception circumstances, as determined by the appropriate regional conservator.

NPRA Policy 16.1, 16.4, 17.1, 24.4.

EXPLANATION The park contains a wealth of interesting natural features whose enjoyment can be greatly increased through information services.

Signs and labels are well complemented by pamphlets. Basic information, such as the weather forecast, availability of accommodation and its cost, state of tracks, walking times and distances is essential to the visitors' well-being and enjoyment. This should be available to all visitors, so it may have to be translated.

Larger, more detailed displays are popular and valuable in heightening awareness of the park and what it has to offer. The opportunity of reaching a wider audience can be taken by having displays in the larger centres such as Queenstown and Dunedin as well as in the visitor centres.

Traditional Maori names and material will be used as appropriate to increase bicultural awareness.

It is recognised that an up-to-date handbook is overdue and will need to be produced.

Interpretation and signage has an important role in presenting the park's image, making the quality of production important. This applies not only to major signs and displays but also to small notices.

8.37 MONITORING

OBJECTIVE *To determine the extent of significant change to the park's ecosystems and recreational needs as the basis for appropriate action by management.*

POLICY To the extent possible, data will be collected on a regular basis and maintained in a coherent, accessible manner for assessing:

- distribution and numbers of wild animals and possums
- the impact of wild animals, possums and hares on vegetation
- visitor numbers on main tracks
- hut occupancy
- degradation of high-use areas
- water quality
- the impact of grazing by domestic animals on vegetation
- domestic stock numbers
- the status of threatened species to identify trends
- the extent of weed infestation
- track standards
- climatic change (glaciation)

Priority will be given to monitoring the distribution and numbers of wild animals and possums and their impact on vegetation (possum-free areas will be given special attention) and the impacts resulting from changes in visitor numbers.

From time to time specific monitoring projects will be carried out to establish visitor preferences to ensure that the park is catering adequately for visitor demand.

Monitoring will be managed by Department of Conservation staff with the assistance as required from other institutions.

Where appropriate, photographs should be used as a tool for monitoring.

The cost of monitoring the impacts of commercial operations will be met by the operator. The nature and extent of monitoring will be stated in the conditions of lease, licence or permit.

NPRA Policy 15.7.

EXPLANATION Data on the park has been collected for those aspects where there is an existing source of information, eg, bed nights from hut fees, numbers of hunters from hunting permits, guided walkers from concessionaire returns. There has been very little other data collected specifically to form the basis for good decision-making for management purposes.

There is a lack of accurate information on many aspects, eg, the level of track usage, visitor preferences, the status of weeds, the impact of grazing by domestic animals, the status of rare species, etc.

Cost is, of course, a major factor but greater commitment to collecting meaningful data is essential if the park is to be appropriately managed, especially with increased visitor numbers. The park has a comprehensive series of photographs in its vegetation and glacial photo-monitoring programme, which provides a valuable base for further expansion.

8.38 RESEARCH

OBJECTIVE *To encourage and assist studies which extend knowledge of the natural features and human values of the park.*

POLICY Research projects will be carefully considered by the appropriate Regional Conservator and allowed to proceed only where they can be shown to have no long term detrimental effects on park values.

Structures, huts, shelters and equipment dumps may be allowed but shall be temporary and removed at the end of the study period. As far as possible these shall be located so that they cause minimal intrusion and inconvenience to other park users.

Where specimens with special cultural or spiritual significance are to be taken, Kai Tahu will be consulted.

Priority will be given to research which assists in protection, interpretation and management of park values. Examples of these are:

- to establish which areas are free of possums
- the impact of grazing by domestic stock on the quality and content of grassland vegetation
- the extent and impact of visitor use
- factors controlling the introduction and spread of weeds
- the impact of hares on alpine vegetation
- the characterisation of visitors
- the interaction between exotic and indigenous species
- the archaeological site surveys of the major valley floors.

The results of research will be made available to the department and to the public.

The Otago Conservation Board's scientific advisory group will be available to advise the department.

NPRA Policy 15.1, 15.2, 15.4.

EXPLANATION Research differs from monitoring in that it is carried out to elicit information for its own sake or for a purpose that may be unrelated to the park itself, whereas monitoring measures the degree and rate of change and is directly related to the park and its management.

Research which furthers the well-being of the park should have priority.

8.39 SPECIMEN COLLECTION

OBJECTIVE *To permit the collection of specimens for purposes of scientific study and education in accordance with the primary objectives and provisions of the National Parks Act.*

POLICY Specimens of material indigenous to New Zealand may be taken from the park only as part of an approved programme of scientific research or education. Such collections will require a permit from the appropriate Regional Conservator and be subject to conditions as to person, species, number and size of specimens, locality and time of collection, and consistency with the primary objectives of this plan. Specimens include all animals, plants and parts thereof, soil, stone, minerals, and gravel as well as antiquities or relics. See 8.6 and 8.8.

The results of research will be made available to the department.

NPRA Policy 8.6, 15.5, 15.7.

MOUNT ASPIRING NATIONAL PARK MANAGEMENT POLICIES

EXPLANATION It is an offence under Section 60 of the National Parks Act 1980 to remove or wilfully damage any plants, animals, stone, minerals or relics without authorisation from the Minister of Conservation. That authorisation has been delegated to appropriate Regional Conservators. Section 5 of the National Parks Act provides the required authority for removal of specimens.

It is recognised that it may be advantageous to remove specimens to further scientific knowledge, for educational purposes or for management purposes.

To ensure that permission is not given lightly it shall only be given for bona fide research, educational or management projects. The impact is to be contained by limitations on what can be taken, from where, at what time and by whom.

For the purposes of this plan mineral exploration is not considered to be research.

8.40 BOUNDARY CHANGES

OBJECTIVE *To seek inclusion within the park of any adjacent land in public ownership considered worthy of national park status.*

POLICY Investigations into the inclusion of the following areas as national park will be undertaken when appropriate:

- Dart Conservation Area (including Earnslaw Burn)
- Snowy Creek
- areas of former Haast/Okuru/Arawhata State Forests (including proposed Burmeister Ecological Area)
- Dart River bed
- Upper Albertburn above the top forks.

NPRA Policy 7.1.

EXPLANATION The areas listed above are all managed by the department and carry stewardship status with the exception of the Dart River bed. Inclusion of the Haast/Okuru/Arawhata State Forest blocks would help redress the lack of lowland forest and wetland on outwash terraces in the park. The NZ Conservation Authority is at present investigating the case for giving this area national park status.

Any investigations must be carried out in terms of section 8 of the National Parks Act, which requires public notification.

High use areas include the area within 500 m of all huts, of the Dart/Rees and West Matukituki (below Pearl Flat) Tracks, and of picnic places and those times and places specified by the field centre manager.

APPENDIX TWO

Greenstone/Caples Summary

OTAGO CONSERVATION MANAGEMENT STRATEGY

GREENSTONE / CAPLES SUMMARY

1.0 GEOLOGY SOILS AND LAND USE CAPABILITY

1.1 Regional Geology

The whole region has been heavily glaciated over the last 500,000 years and all major valleys show characteristic U-shaped profiles. Glacial erosion features such as roches moutonnees, glacial striations, cirques, truncated spurs and hanging valleys are abundant throughout the three properties. The Mararoa-Greenstone Saddle area is a classic glacial landscape with both depositional and erosional features, unusual insofar as many glacial features occur in abundance in a small area. Deep, narrow slot gorges are a common feature. Depositional landforms such as moraines, kettle lakes and outwash gravel plains are common, especially in the Mararoa Catchment. An extensive kame field¹ is located near the Dart River bridge and is listed in the Geopreservation Inventory as being of national importance. This feature is very vulnerable to modification through inappropriate land uses. In combination with the distinctive, brightly coloured Kay Creek rocks these features make this part of the region of unusual interest.

Running from the road end in the Routeburn south through Scotts Basin into the Caples Valley and into the Greenstone Valley at the Big Slip is a band of faulted and sheared serpentine and other unusual rocks known as the Greenstone Melange². In the past this has been prospected for a low grade of greenstone (semi-nephrite).

Several examples of large scale rock falls are known, one of the best being at the boundary between Routeburn Station and Mount Aspiring National Park. Black Gorge Creek and Rowdy Basin on Elfin Bay Station also contain spectacular block falls as well as good examples of cirque landforms. Tooth Peak has the best examples of extensive scree slopes and an outcrop of manganese occurs in the Rere Basin.

The Greenstone melange in Scotts Basin exhibits classic "knocker" topography³.

The region has particular significance geologically as it was the site of pioneering studies into low grade metamorphic rocks by Hutton and Turner in the 1930s, studies which now have world-wide application. The area has since been studied in considerable detail and numerous scientific and popular articles have been written on the rocks of the region.

1.2 Land Use Capabilities

Broadly speaking the three properties contain two groupings of land use capabilities, as inferred from the Ministry of Works and Development Land Use Capability Maps.

1.2.1 Land Unsuitable for Grazing

Large parts of the three properties are mapped as Class VIIe and VIII land being of high altitude, with active geological processes present, severe climates and being eroded or extremely eroded. There are severe limitations on use. Extensive grazing is restricted and the management emphasis is on catchment protection and reduction of erosion.

Past and current central and regional government agencies have developed and implemented, where possible, policies focused on soil and water conservation and the removal of grazing to facilitate an improvement and retention of the native vegetative cover.

Key policies are the NWASCO Hill and High Country Policy of 1981 and the joint NWASCO/Land Settlement Board policy review of 1985.

This latter policy review recommended that Class VIIe and VIII lands not suited for pastoral use within Crown pastoral lease holdings be destocked and excluded from the pastoral leases, and that all existing catchment board run plan agreements which provide for destocking or surrender be fully implemented. Where such land holdings exist, they will be retained by the Crown and managed for recreation and other purposes. There is a strong public expectation that these lands would be managed by DOC on behalf of the Crown. DOC has consistently taken the stance that such lands should be held by it because of their high conservation values. This stance stems from a government decision made in September 1985 that DOC would be responsible for administering unalienated rural Crown lands.

Two areas of retired land on Greenstone Station totalling approximately 3900 ha were to have been surrendered out of the pastoral lease as a condition of a run plan. This requirement was not carried forward to the stage of the land improvement agreement being registered on the title, and attempts by agencies to complete the surrender action have not been legally enforceable on subsequent owners with the result that the land has remained in the title.

¹ Kames are mounds of rock, sand and gravel deposited by melt water streams. They are formed at the terminus of a glacier when streams cascade off the terminal face and build up a cone of material against the ice.

² A mixture of different rock types found along a fault zone.

³ Blocks of harder rock protruding through a matrix of softer sheared serpentine and mudstone.

1.2.2 Land Suitable for Grazing

This grouping occurs on the valley floors and lake faces, which are variously capable of intensive and extensive grazing. Apart from some smaller areas, the bulk of the land is Class VI, and this hill country requires careful management to prevent erosion.

Of the land holdings of the three properties combined, ie, 27,363 ha, approximately 21,000 ha is mapped as Class VIIe and VIII lands. This is approximately 75% of the properties.

1.3 Soils

Further study is required to ascertain the nature of the soils on the three properties, and their capacity to sustain pastoral usage.

2.0 BOTANICAL COMPONENT OF ECOSYSTEMS

Landcare Research NZ Ltd was contracted by DOC to provide an assessment of the vegetation on the three properties and to concentrate their studies on the valley floors and lower hill slopes of the Mararoa, Greenstone and Caples Valleys in particular; that is, the areas where biological values and pastoral use are in the greatest potential conflict. The Landcare Research NZ Ltd objectives were:

- to document the flora
- to describe and map the principal vegetation types
- to interpret vegetation in relation to landforms, environmental and historic factors
- to record the condition of the vegetation
- to assess botanical values for conservation.

Whilst the principal focus of this study was the valley floors, some assessment is made of the higher altitude lands on the properties as well as the Weka Flat grazing licence area in Mount Aspiring National Park. This licence is held by Routeburn Station.

The report contains extensive detail of the distribution of the plant communities present.

2.1 Characteristics of Ecological Districts

The study areas straddle the boundary between two ecological districts and regions. The Greenstone and Caples lie at the south end of the Dart Ecological District (in Aspiring Ecological Region) while the Mararoa is the major valley running through the centre of the Livingstone Ecological District (in Mavora Ecological Region). In a biogeographical context, the study area occupies a central position between distinctive adjoining ecological regions. It is at the south end of the schistose main divide Otago mountains of the Dart Ecological Region. To the west is the very wet Fiord Ecological Region of steep mountains with metamorphic rocks. To the east the Lakes Ecological Region is typified by drier, less forested schist mountains, while to the south the Southland Hills Ecological Region embraces relatively drier and lower hill country of mainly sedimentary rocks.

2.2 Condition of the Vegetation

Overall the native component in each of the grassland and shrubland types is very high except in the short tussock grasslands where woody weeds have the potential to transform these communities. However, dominant weeds are sparse in all communities. Naturalised plant species are minor components in all vegetation types. Mouse-ear hawkweed is local except for the north-facing lower and mid slopes in the lower Mararoa Valley where it is dominant on spurs. Scrub weeds, ie, broom and briar are present as occasional plants in the Mararoa and Greenstone Valleys and should be eradicated before becoming a problem. In the lower Caples, scrub weeds are more common, ie, blackberry, briar and Himalayan honeysuckle. Wetlands contain almost half of the 57 naturalised plant species but with the exception of soft rush, none achieve dominance except very locally in damper sites where grazing and trampling influence is strongest.

Although naturalised grasses such as browntop and sweet vernal are widespread in the short tussock fescue grasslands, they rarely occur in amounts greater than the native species, including sites with an intensive grazing history.

Grazing at current levels by fallow deer and cattle is unlikely to result in the destruction of the forests, but the animals are creating a very depauperate forest community which must affect the diversity of the birdlife supported in the area. Forest margins are critical ecological zones for birds and invertebrates; possess a diverse shrub and herb flora and form a transition zone for both forest and open-land species. Rates of flowering and fruiting are usually very high along forest edges. This zone is heavily utilised by fallow deer and cattle.

GREENSTONE / CAPLES SUMMARY

2.3 Diversity and Distribution of Vegetation and Habitats

The number and distribution of the different native vegetation types and habitats in the three main valleys is summarised below:

	Mararoa	Greenstone	Caples
● Grassland types	3	42	-
● Shrubland types	12	8	6
● Gorge habitat	1	1	-
● Wetlands habitat	11	9	5
Total	27	22	13

The number of different native vegetation types is greatest in the Mararoa and Greenstone and least in the Caples.

2.4 Vegetation Patterns, Gradients and Succession

The ways in which plants and their communities are spatially arranged, and also how they are changing with time, are important considerations in assessment of biological conservation values. Vegetation types do not simply reflect different landforms, soils, age of surface, degree of disturbance, etc. They also tell a story by their sequential occurrence along environmental and topographic gradients, and by the ways their composition and boundaries change over both short and long time frames.

Several strong gradients are displayed in these three valleys. Altitudinal gradient plays an obvious role on all valley sides, notably in the Mararoa study area where in the general absence of forest, there is a clear array of both grassland and shrubland types with increasing altitude.

A more subtle gradient is evident with the gradual rise in valley floor altitude, combined with increasing rainfall and coldness, and with generally younger soils towards the head of each valley. Within the Greenstone and the Mararoa study areas, the rise in altitude of the valley floors is relatively small (120m and 210m respectively), but it coincides with changes in both grassland and shrubland types. Communities such as red tussockland, and shrublands of manuka, matagouri, or bog pine, are found mainly in the lower sections of the valley floor, and are replaced by vegetation of more montane or subalpine character in valley heads.

Vegetation pattern is often complex, and again this is more marked in the Greenstone and Mararoa than in the Caples. Intricate relations between vegetation types are especially prominent in the wetlands, which could not be mapped at the scale used for grassland and shrubland types. For example, most of the 11 wetland types adjoin or grade into each of the other types at one or another site. Several of the wetland types, and indeed of shrubland types, are of lineal pattern, occurring as a narrow strip, or a fringe, alongside features such as river courses or gorges, or the edges of some more extensive vegetation such as forest. Complex patterning of those communities which occupy a small total area yet contribute markedly to overall diversity, influences identification of areas having conservation value. It highlights the necessity to consider more than just examples of the vegetation types as mapped, but to include also the mosaics and ecotones where the types merge.

Succession is the process whereby vegetation changes its structure and composition over time, such that one vegetation type may eventually replace another. This can be over a time scale of hundreds or thousands of years as must be the case with forest distribution patterns gradually changing in response to climatic changes and disturbance, past and ongoing. Many of the Mararoa Valley shrublands and grasslands represent stages of succession on sites where there was formerly forest, or else different stages of vegetation and soil development on comparable landforms having markedly different ages, such as the erosion and deposition surfaces of different glacial advances.

Some of the examples of plant succession in these valleys are on the time scale of decades. One example is the colonisation phases on river and stream flood plains. Another is the succession from bracken fernland, to manuka or *Coprosma* shrubland, to young forest, on those hillsides of the Caples and Greenstone where forest has been lost to fire.

The fact that much of the vegetation is actually changing, that it is dynamic, adds to the botanical interest of this whole area. It is important to recognise that the delimitation of areas for their conservation values should take account not only of today's vegetation types and habitats, but must allow scope also for the inevitable natural changes in vegetation pattern, whatever their direction might be.

2.5 Features of National Importance

The study area contains examples of the following features which we consider to be of national, rather than just regional importance.

- (i) Tussock grassland of **red tussock** (*Chionochloa rubra*) occurs in both the North and South Islands, in bogs, on alluvial soils of valley floors, and for the most part at a relatively lower altitude than other dominant

Cbionobloa species. Nationwide, its extent has severely diminished, much of its habitat having proved attractive for farm development. *Cbionobloa rubra* subsp. *cuprea* is the red tussock of Canterbury, Otago, and Southland (Connor 1991), but only pockets of its former broad expanses remain. Where the plains and low hills of Southland must once have had landscapes of red tussock, today there are often merely relic roadside clumps. Red tussock grassland is still to be found in the heads of some large valleys in Southland, including the Windon Burn (O'Connor *et al* 1982), to the west of the study area, and at Burwood Reserve in the south of the Livingstone Ecological District.

Red tussock is locally extensive in the Mararoa and Greenstone study areas. These valleys offer a rare opportunity to protect red tussock grassland that is still in good condition, on a sizeable scale and on the valley floor landforms characteristic of the vegetation type. Furthermore, the red tussock grassland here is not confined to floor plains and the distal parts of fans and terraces, but demonstrates gradations to moist lower hillside and bog habitats, as well as intergrades to hard tussock and narrow-leaved snow tussock, across a broad gradient of rainfall.

- (ii) **Short tussock grassland**, dominated by hard tussock (*Festuca novae-zelandiae*), is also well represented on a diversity of river flat, scarp, outwash, stream fan, and colluvial surfaces in the Mararoa and Greenstone. Hard tussock grassland is widespread on lower montane hillsides in eastern South Island, but has been greatly altered by pastoral use or removed in the course of intensive farm development. While some of the hard tussock grassland of the Greenstone and Mararoa has been altered by grazing and invasion, especially by sweet vernal and browntop, there are also extensive areas in these valleys where the hard tussock maintains a healthy density and where the characteristic associated native plants are still abundant.
- (iii) **Wetlands** are of national importance virtually wherever they occur. They are biologically rich communities, yet it has been estimated that New Zealand retains 10% or less of the wetlands it once had. While the loss nationwide has been especially of the lowland wetlands, those of montane valleys are equally vulnerable to nutrient enrichment, trampling, and invasion by naturalised plants. The wetlands of the Mararoa and Greenstone Valley have a high conservation value, containing a large number of native plants, and are extremely diverse in composition in the landforms they occupy. Examples of valley floor turf, sward, pond, and stream vegetation are numerous, and there is particular value in that bog and flush vegetation are still common on landforms that are elsewhere intensively developed. Kettleholes on the Mararoa moraines are important on a national basis. These examples together with those on the nearby Oreti-Von divide (Johnson 1992) are the southernmost such kettleholes in New Zealand, there being some 10 comparable areas in inland eastern South Island, as far north as Marlborough. The string bog in the Mararoa is a small but interesting example of a wetland type that is characteristic of arctic latitudes, but of very limited extent in New Zealand except in the southern Garvie Mountains (Mark *et al* in prep.).
- (iv) Several of the **shrubland types** are of national importance. Celery pine (*Phyllocladus alpinus*) is widespread in New Zealand as a component of many vegetation types, but of much more local occurrence as the dominant species of woodlands on cold sites. Such a community is well developed in the Greenstone on rockfall debris and morainic surfaces. Bog pine (*Halocarpus bidwillii*) is also widely but patchily distributed in New Zealand, yet dominant only on particular types of site, including bogs, but especially on infertile, often old soils of glacial outwash. Bog pine woodland with a characteristic assemblage of associated heath plants, mosses, and lichens is scattered through inland Canterbury, Otago and Southland. The vegetation type is well represented in the Greenstone and the Pass Burn area. The shrubland of *Hebe propinqua* in the Mararoa is also of special interest. It occupies an old soil surface on a large outwash terrace, the sort of habitat which bog pine can occupy in other parts of the South Island. *Hebe propinqua* may reach its western limit at this site (cf. Mark *et al* 1989).

2.6

Vegetation of Sites Additional to Main Study Areas

Apart from the main valley floors, brief aerial and ground inspections were also made of other parts of the properties.

- (i) **Thomson Mountains:** The western faces have U-shaped glacial profiles, with a sometimes meandering main stream, flanked by bogs and flushes and narrow-leaved snow tussock, screes, snow totara or *Dracophyllum* communities on the valley walls and fellfields on the upper slopes. Valleys on the east side of the range have similar cover with beech forest pockets in their lower reaches and manuka up to 1000m.
- (ii) **Rere Lake area:** The lake basin contains patches of mountain beech and hard tussock-sweet vernal grassland. The knoll to the north has stunted mountain beech and manuka.
- (iii) **East side of Humboldt Mountains:** Mid and lower slopes facing Lake Wakatipu still retain both large and small patches of beech forest, mainly red beech, some contiguous with forest extending into the adjacent national park. Many of the hill faces have been cleared for pastoral use but much of the land has partly reverted. Tussock tops above Marshall Creek have a narrow-leaved snow tussock grassland dominant over blue tussock, sweet vernal and native herbs, a vegetation type which appears to continue along the upper faces to the north. Subalpine scrub in the gully heads of Turner, Kowhai and Scotts Creeks is prominent consisting of *Brachyglottis cassinioides*, *Dracophyllum uniflorum*, celery pine and snow totara.

GREENSTONE / CAPLES SUMMARY

- (iv) **Weka Flat:** This small fenced clearing inside the national park boundaries is covered in a dominant pasture grass sward, with patches of matagouri. Seepage areas contain a few native species. The clearing is surrounded by beech forest, successional fernland and shrubland which would provide an abundant seed source for the natural restoration of the clearing if grazing ceased.

2.7 Representativeness

Neither the Dart nor the Livingstone Ecological District have been subject to Protected Natural Area Programme survey, but their vegetation is partly documented and already under some conservation protection.

Much of the Dart Ecological District is within Mount Aspiring National Park and the principal vegetation patterns of the district - mountain, forest, and valley floor communities - are well represented in the park, and to some extent in other lands under DOC management. What then should be considered as additionally representative land for conservation in the southern end of the Dart Ecological District? It could be said that valley floor vegetation is already protected in the Dart tributary valleys, so do the Caples and Greenstone Valleys contain anything different? The Greenstone certainly does, as an extensive montane valley floor, where glacial landforms have been relatively little disturbed by subsequent fluvial processes, and where communities such as red tussockland and bog pine shrubland are characteristic. There is a need also in the context of the Dart Ecological District to conserve a representation of the vegetation sequence on the eastern faces of the southern Humboldt Mountains, ie, the portion of the district having least rainfall and descending to lowest altitude.

The Livingstone Ecological District basically is centred on the Mararoa Valley and the Livingstone and Thomson mountains which flank it. The Mavora Lakes Park in the central part of the district is managed as part of the DOC estate and contains a broad representation of landforms and vegetation types from valley floor to the tops of adjacent ranges. The question arises as to whether the Mararoa Valley north of the Park, ie, this study area contains additional features that should be managed for their conservation values as being representative of the district. By comparison with the vegetation types described for the park it is apparent that the Mararoa Valley within this study area contains greater diversity of shrubland types, larger expanses of valley floor grasslands such as red tussockland, and many additional wetland types.

Protected natural areas in the Livingstone Ecological District should also include a representation of habitats from the north-east end of the Thomson Mountains and the hill faces overlooking Lake Wakatipu. This study did not seek to assess the conservation values of the subalpine and alpine vegetation. It is likely, however, that close study would show the Thomson Mountains to be of high botanical interest, especially because of their intermediate location between the main divide ranges and the floristically unusual Eyre Mountains. The Lake Rere Scenic Reserve and its proposed additions will assist with protection of vegetation representative of lower hill faces close to Lake Wakatipu.

2.8 Conclusions

2.8.1 Areas of Importance for Protection

- Those portions of the Caples, Greenstone and Mararoa study areas which are of high biological conservation value include most of the open valley floors of the Greenstone and Mararoa (see fig. 25, appendix 2), with the exception of the more extensive segments of hard tussock - sweet vernal mixed short tussock grassland, which in its entirety cannot be rated highly. The fact that the delimited areas are extensive is a reflection of the diversity of habitats and plant communities on valley floors which have high conservation value as a network of interrelated communities along a complex of edaphic, temperature, and disturbance gradients.
- Also delimited on fig. 25, by dashed lines, are the catchment areas integral to maintenance of valley floor biological conservation values. These areas of higher country would provide for complete altitudinal sequences of vegetation and landform.
- On other parts of the properties substantial red beech forest remnants remain, notably on the Humboldt Mountains, and intact snow tussock grasslands, shrublands and fellfields on all alpine and subalpine vegetation zones. Mountain beech and manuka become more common south of Lake Rere along the eastern Thomson Mountains. The Weka Flat grazing licence located within Mount Aspiring National Park, whilst being predominantly covered in a sward of pasture grass would regenerate to shrubland and eventually beech forest if grazing ceases.

2.8.2 Presence of Major Ecotone

- In a broad sense, the Greenstone Valley and its once-glaciated extension down the Mararoa across the Livingstone Ecological District could be regarded as a major ecotone, running down country from the main divide, across a strong rainfall gradient.

2.8.3

Threats to Botanical Conservation

- **Grazing:** The impacts of previous grazing regimes and the effects of current grazing of cattle and fallow deer on the valley floor vegetation communities vary with altitude, landform and vegetation type. The plant communities on river terraces, fans and flood plains in the Caples Valley (330 m-500 m asl) are relatively stable under the existing grazing regime, although grazing at current levels will not prevent the spread of matagouri or introduced scrub weeds. In contrast, both the Mararoa (640 m-850 m asl) and the Greenstone (490 m-610 m asl) are at higher elevations and contain more diverse landforms and communities.

Continued grazing will result in a loss of biodiversity and a decline in the condition of natural values and the consolidation and spread of hawkweeds and scrub weeds.

A subsequent survey by DOC botanists has increased the species list of flora to 403 species (98 additional species, all but one being recorded from the Mararoa Valley). The presence of several nationally threatened species was confirmed including a new recording for the rare buttercup, *Ranunculus ternatifolius* (Cameron *et al.*).

This survey further confirmed the significance of the native vegetation in the Mararoa Valley as being the most diverse and in best condition of any comparable valley system plant communities in the Livingstone Ecological District.

- **Grazing Impacts on Adjoining DOC Land:** Except where natural barriers exist, as in a small fenced part of the Caples Valley, cattle grazing is having a marked and detrimental effect on beech forest margins which are largely DOC owned. The absence of boundary fences makes these forest margins readily accessible for stock shelter and subject to grazing. Combined with the browsing effect of fallow deer, the consequence is impeded regeneration of palatable species, and an opening of the understory through trampling. Cattle are also damaging parts of walking tracks, some of which are used for mustering purposes. There is a tendency for cattle to push further and further into the forests, with associated extension of these impacts.

Long-term, the suppression of regeneration through grazing will result in forest dieback.

3.0 FAUNAL COMPONENT OF ECOSYSTEMS

3.1 Invertebrates

Terrestrial invertebrate fauna studies are limited to collections made early this century by prominent entomologists such as Hudson. Collections were made by him and others mostly from Bold Peak, a landmark behind Kinloch. This location is the type locality, ie, where the original specimens were collected and subsequently described for many species of Lepidoptera typical of the Humboldt Mountains which were then new to science.

The Southland Fish and Game Council has supplied lists of aquatic invertebrates from collections made in the Mavora Lakes Park, and it comments that streams outside the park, but within the Mararoa Catchment, contain similar invertebrate communities. The council identified 17 invertebrate groups or species, and their presence and species diversity are key indicators of high water quality environments. Otherwise, little is yet known about invertebrates on the three properties.

3.2 Vertebrates

Vertebrate surveys from 1982-1984 and more recently by DOC have recorded conspicuously high bird numbers with some rare species present.

Of special interest are good populations of falcon and kaka as well as yellow-crowned parakeets, yellowheads, and South Island robins in the DOC managed Wakatipu Forests. Yellowheads favour forest flats in the upper Caples Valley. Several inconclusive sightings and subsequent unconfirmed sightings indicate that a remnant population of South Island kokako may persist in the Mararoa/Greenstone Saddle and Fraser Creek areas. In September 1992 DOC surveyed the forests for brown kiwis as part of the national kiwi survey but none were recorded.

Notable bird species of open country include vulnerable species such as falcon, kea and rock wren. The latter species is considered to be endangered in this area and deserves special study. No comprehensive bird survey has been undertaken of the upper Mararoa Valley but it is noted that black-fronted terns are possibly breeding in the mid Mararoa riverbed and utilising the waterways in that valley for foraging.

Habitat protection, be it forest, riverbed or grassland is a critical factor in meeting the conservation management needs of such species.

GREENSTONE / CAPLES SUMMARY

3.3 Introduced Fauna

The major introduced fauna issue relates to the fallow deer herd management in the Wakatipu forests and margins, in the Caples and Greenstone Valleys.

3.4 Issues

There are several aspects which have generated conflict between landholders and hunters, which have either been resolved or compromises, namely:

- hunter access across private land (mostly pastoral lease)
- hunters illegally breaking into and using private huts and theft/interference with supplies and equipment
- less hunting tends to occur when permission for access has to be gained, resulting in uneven hunting pressure
- hunter/recreational user disturbance of stock
- grazing conflicts between deer and stock
- cattle pugging of bush sections of walking tracks
- stock grazing damage on forest margins, especially on the true right of the Greenstone Valley and Caples Valley.

Concern over the effect of stock grazing on forest margins prompted the New Zealand Forest Service to install an electric fence in the upper Caples Valley. This fence costs DOC several thousand dollars annually to maintain.

4.0 FISHERIES AND AQUATIC VALUES

4.1 Greenstone/Caples Fishery

The Greenstone and Caples Rivers have been recommended for "preservation in their natural state" by a special tribunal hearing for a Water Conservation Order application over the Kawarau River and tributaries by the Minister of Conservation.

This process is currently at the appeal stage and whilst some appeals have been lodged, none affect the Greenstone and Caples Rivers. These appeals are expected to be resolved shortly leaving the way clear for the Minister of the Environment to approve the water conservation order.

The Otago Fish and Game Council submission on the Water Conservation Order hearing contains substantial resource data of relevance to this investigation and is summarised as follows.

The Greenstone/Caples offer some of the best rainbow trout fly-fishing in New Zealand in a wilderness setting. The fishery attracts 800-900 anglers per season about half of whom are overseas anglers, many of them from USA, Europe and Britain, confirming the fishery's international appeal. The remaining anglers are mostly New Zealanders who live outside the Southern Lakes region.

The Greenstone River is renowned for its catch rate, containing the fourth highest trout density per kilometre of river in New Zealand. Many anglers practice a "catch and release" philosophy. Comments from a recent angler survey include statements such as:

- "A classic river."
- "Never seen so many big trout in one river."
- "First class experience."
- "A true national treasure."

There are few rainbow trout sports fisheries in the world which could provide a more highly valued experience.

These comments apply similarly to the Caples River where the smaller fish population is compensated by fish of larger size.

Stock grazing, especially in the valley floors, is having an adverse effect on wetlands through trampling and tracking and is contributing to river bank erosion. Trampling of small tributary streams also has the potential to damage developing trout ova during the spawning season.

The only native fish record is for koaro, which is described as rare.

4.2 Mararoa Fishery

The Southland Fish and Game Council considers this river and lake system as one of its most important fisheries. The Mararoa River drains into the Mavora Lakes, and there is a suggestion that a national water conservation order over the total water system should be considered. The council and DOC both consider that the protection of the very high aquatic and fishery values of the Mavora Lakes can only be retained by adopting sympathetic and

complementary land use practices in the entire lakes catchment including the upper Mararoa River, to retain the high water quality present. To achieve this the catchment should be maintained in its natural state to minimise soil erosion and nutrient enrichment.

The water in the lakes is ultra-oligotrophic, ie, contains very low amounts of organic matter due to low nutrient concentrations. Seasonal influences dominate water quality and mask the effects of non-point source pollution such as low density cattle grazing. The council note the extensive red tussockland communities would be at risk from agricultural use especially continued cattle grazing.

Inorganic fertiliser application in the Mararoa Valley should not be permitted because of the downstream risk to the Mavora Lakes. The north Mavora Lake in particular would act as a sink for nutrients, quickly degrading its water quality.

Published results from angler surveys reveal 2700 angler visits were made to the Mavora Lakes in the 1991-92 season, with about half of the total anglers residing outside Southland. The council's postal survey of anglers in that season estimated the use of 4800 visits per year. The Mavora Lakes fishery contains both brown and rainbow trout and is ranked as the sixth most popular fishery in Southland. The upper Mararoa River is described as a wilderness brown trout fishery. No details on angler use are available. An increase in rainbow trout numbers in the lakes will also in the future enhance the upper Mararoa fishery.

The native fishery is notable for the presence of alpine galaxiids which are found only in the Mararoa and Oreti headwaters in Southland and in high altitude streams in Canterbury.

5.0 LANDSCAPE ASSESSMENT

For the purpose of assessing this conservation value, the properties were subdivided into four landscape units, namely:

- Mararoa
- Lake and Glenorchy faces
- Greenstone/Caples
- Dart Flats.

5.1 Visual and Scenic Values

5.1.1 Mararoa

The combination of impressive and varied landform, highly diverse vegetation communities and intricate water forms and wetland systems contribute to a landscape with outstanding high visual and scenic values. Few valleys remain that have intact tussockland from valley floor to mountain top and that a substantial portion is red tussock makes it all the more significant. Apart from vegetation modification, the presence of cattle, a 4WD access track and the huts, there is little sign of man-made activity. There are no fences, intensive pasture development, earthworks or insensitive tracking which now characterise many South Island high country valleys. The upper Mararoa Valley retains its natural indigenous character and is an outstanding example of a montane tussock landscape in near pristine condition. Its level of intactness probably makes it of national significance.

While removal of grazing is not essential for retention of landscape values it would definitely be beneficial for long-term landscape conservation. Removal of grazing would have an immediate effect by eliminating physical damage to wetlands, etc, and to allow vegetation communities to recover over time where damage and modification has occurred. These latter effects of grazing can diminish the experience of the landscape for some.

5.1.2 Lake and Glenorchy Faces

This unit has very high visual and scenic values. It forms the backdrop to and contributes to the grandeur of Lake Wakatipu and the head of the lake area.

The Wakatipu landscape is of national significance and renowned for its spectacular natural setting.

Although culturally modified the lake faces have a high degree of naturalness. Rugged snow-capped peaks, steep glaciated valley sides and a mosaic of bush, tussock, bracken and cleared pasture combine to create a visually pleasing landscape. Detractors include one or two unfortunate scars resulting from insensitive tracking and earthworks and a few examples of unnatural lines resulting from ill-conceived bush clearance.

Areas of land that should be retired from grazing to retain this landscape quality include:

- mountain tops above 1050 metres
- steep areas with regenerating shrubland, ie, from Black Gorge Creek south to the Elfin Bay boundary
- foreshore vegetation
- significant remnant areas of beech forest

GREENSTONE / CAPLES SUMMARY

5.1.3 Caples/Greenstone

This unit also contains indisputably high landscape values, when considered as a whole. Though the valley floor and sunny faces are highly modified, the indigenous characteristics remain dominant. Beech forest is still the dominant vegetation and the natural pattern of forest and grass covered valley floor remains intact regardless of the grass now being partly exotic. The upper slopes and mountains remain in their natural state.

Of the two valleys, arguably the Caples has the high visual and scenic values. This is possibly due to the narrowness of the valley and greater feeling of enclosure experienced. Also the mountain peaks generally appear more impressive towards the west, and this tends to create a greater impression of wilderness in the Caples compared to the Greenstone. A further factor is the greater visual interest resulting from the pattern of forest interspersed with grassy clearings which is more pronounced in the Caples.

Pastoralism has had a significant impact over the last 100 or more years in the valleys. The landscape remains a predominantly natural one but cultural influence has also played a significant part in shaping the landscape of today. While grazing is continuing to have an impact on the condition of the forest fringes, wetlands and riverbanks, continued grazing at appropriate levels is not necessarily incompatible with retaining landscape values. For some the experience of the landscape will be diminished by the presence of stock and dung and obvious signs of physical damage to the environment.

The following areas are identified for retirement from grazing:

- the high alpine lands
- a large proportion of the valley sides of both valleys
- the upper valley floors.

Restricted preferably summer grazing of the mid and lower valleys would not necessarily be incompatible with landscape management.

5.1.4 Dart Flats

The flats have a high visual and scenic value derived from the combination of spectacular natural features and a farmed landscape that has developed in harmony with nature. Together they form a high quality rural landscape. A minor visual intrusion is recent deer fencing which has been sited too close to the road. The flats form the entrance to the Mount Aspiring National Park and the world renowned Routeburn Track.

The remnant beech stands are not regenerating because of grazing. The pattern of beech and clearings is important to the landscape character. For these remnant forest areas to be sustainable in the long term, retirement from grazing will be necessary.

6.0 CULTURAL HERITAGE VALUES

6.1 Maori Perspective

(Supplied by Matapura Ellison, Kaupapa Atawhai Manager, DOC, Dunedin.)

From a traditional perspective it has been said that the region of Whakatipu is to some extent the cradle of early traditions. The region is integrally connected to the creation beliefs and is part of a network of mythology (pers. comm. Tipene O'Regan).

The spiritual importance then of that whole region to Kai Tahu whanui (extended family of Kai Tahu) which includes the Mararoa, Greenstone, Caples and Routeburn is based on reverence of the deeds, the mana of the tipuna who explored the area, and the connection of man to the elements (whakapapa). There are several traditions relating to the creation and the naming of the landscape and they all have their place of importance in the region. It is not necessary for the purposes of this exercise to examine those traditions in any depth but mention should be made of the traditions of Maui, of Tu Te Rakiwhanoa and of Rakaihautu. Those traditions are central to the way in which Kai Tahu relate to the region.

6.1.1 Pounamu

The importance of this area is accentuated when we consider the knowledge pertaining to the existence of pounamu in the catchment. These sources when discovered became one of the main driving factors which brought the various hapu and whanau into the region, to make such hazardous and long journeys to obtain this most valuable commodity - one of the most important industrial medium available to their stone age culture.

Types of pounamu

The pounamu sourced in the Routeburn can be generally described as Inaka and like most of the sources in the area is considered to be a semi-nephrite and less hard. It ranges from a milky green to the darker olive green colours of Kawakawa. Dart pounamu from Koroka is generally a very good quality, having been subject to more folding and geological stress. It can generally be described as Inaka but some Kahuraki and other varieties are also present. The Caples source can be considered to be in situ, in streams and is of an olive green colour. Not many artifacts are able to be attributed to this source as yet (Russell Beck, Southland Museum, pers. comm.).

Over time it was discovered that fire could alter the characteristics of the pounamu. This had the effect that the slightly softer material could be fashioned a lot easier, and fired, to temper the stone to a new hardness. This means a lot less effort and time involved than trying to work the higher quality pounamu. So, as a result of this technology, these types of slightly softer Whakatipu material were able to be brought to a final state of preparation which, when compared to an article crafted from a higher quality source, were close to or equal to one another in the ability to hold an edge which, of course, was the true measure of its worth.

While pounamu was superseded by steel in articles of every-day use, it did not stop being of tremendous value to Maori. This is illustrated by the wars that occurred in the 1830s between Te Rauparaha, his allies and the people of Kai Tahu, Kati Mamoe and Waitaha. Although steel items were in common usage, it is certain that control and ownership of the pounamu sources was a major factor and aim in Te Rauparaha's invasion of Te Wai Pounamu. It is traditionally thought that one of the last parties to visit Whakatipu for the purpose of obtaining pounamu travelled from Waikouaiti on Otago's east coast in the mid to late 1850s.

To this day, Kai Tahu whanui still treasure pounamu. It is regarded as having a spiritual quality - mauri (a life force). It is important because of the traditions of creation of the sources, but also of discovery and the gathering and the tikanga surrounding it. There is a resolute wish to protect the sources and for Kai Tahu whanui to be the lawfully appointed kaitiaki.

6.1.2

Nga Huarahi

The Whakatipu area was part of a network of trails that linked Otago and Murihiku with Te Tai Poutini (West Coast). The trail up the Waiiau Valley following the Mararoa River to its source, Lake Mavora, and then over a low saddle into the Greenstone was the most direct route from the Foveaux Strait region to the Whakatipu environs (Russell Beck, pers. comm.).

The pace of travelling was worked to the mahinga kai and shelter availability. Semi-permanent/seasonal camps were set generally a day's march apart depending on the above criteria being available. There would be shelter such as a dry cave or whare with utensils such as a supply of dry wood available to set up camp. A number of kaika nohoaka are known and some are noted in Figure 1 which outlines the main trails.

A Maori perspective on the Mararoa, Greenstone, Caples and Routeburn areas can only be considered in the context of the exploration and traditional use of the whole region. The valleys and passes were part of the network connecting hapu and iwi and they were also pounamu and mahinga kai trails. Kai Tahu kaumatua, in the early part of this century gave Beattie names associated with the huarahi to Martins Bay via the Routeburn. Quoting from Beattie information; "Going up the Whakatipu Wai Maori (Lake Whakatipu) you pass Wawahi waka (Tree Island), follow up Te Awa Whakatipu (Dart River), cross Ka Mauka Whakatipu (Ailsa Mountains) by the Tarahaka Whakatipu (Lake Harris Saddle), descend to the Whakatipu katuku (Hollyford River), follow down it past Wawahi waka (Lake Alabaster) to Whakatipu waitai (Lake McKerrow)."

Further Beattie information adds; "from Whakatipu up the Greenstone (Te Wai Pounamu) I got no names except the gorge a long way up was called Tu te Pounamu because a lump of Kaurangi was found here. As it is the best kind of pounamu it may have been dropped by a party from Westland returning to East Coast by this route. The paucity of Maori names on this route is quite surprising, and this can also be said of the Maori route via the Von river".

It is traditionally said that trails mainly followed the braided river valleys but sometimes followed along ridgelines.



6.1.3 Whakapapa

Brailsford - Greenstone Trails - "the Maori trails that traversed Aotearoa were the arteries of economic and social relationships" - a very true statement when considering the rohe (tribal area) of Kai Tahu whanui and how vast it is. This of course presented great difficulties in maintaining a social order and tribal cohesiveness.

Part of a whakatauki (proverbial saying) goes "No Te Parinui o Whiti ki Rakiura huri noa ki Kahurangi". This highlights the vast territory traditionally occupied by Kai Tahu whanui. The tribal kaumatua achieved this cohesion by organising a system of chiefly marriage so that hapu from Murihiku became as closely related to Te Tai Poutini or Tuahiwi as to their relations up the coast in Otago. Therefore "nga huarahi" were essential in facilitating this social networking.

6.1.4 Trade

Trade between hapu and iwi from different regions was another important reason for the exploration and establishment of the huarahi. Items available in one region were exchanged for those of another. For example, pounamu mainly in worked form was traded north for kumara and other foods unable to be grown further south through trade. Obsidian is another item to find its way south. The people of Te Tai Poutini might trade Arahura pounamu for titi poha and so on.

6.1.5 Archaeological evidence

Considering that such trails have been used for many centuries, the lack of many visible sign of human occupation understates the true importance of the region to the tipuna and their descendants today. Neville Ritchie in his paper Archaeology and Prehistory of the Upper Whakatipu states there are about 30 prehistoric sites which exist or are known to have existed within a 20 km radius of Glenorchy. He also notes the existence of settlements at Bobs Cove, Queenstown Bay, Frankton, near the mouth of the Kawarau and at Kingston. He adds, however, other than an oven (site S123/3) near Bobs Cove and isolated finds of artifacts, little firm evidence of the precise location of these settlements has been recorded. He qualifies many of these remarks in the concluding notes by emphasising the need for further archaeological investigations in the Whakatipu region.

6.1.6 Mahinga kai

It is well known from traditional sources that hapu and whanau made extensive use of the resources of the hinterland and took mahinga kai as well as other materials back to their coastal bases to supplement their diet or to transform into tools or garments. Examples in Figure 2 set out Athol Anderson's interpretation of those seasonal movements in Otago and Murihiku respectively (extract from "When all the Moa Ovens Grew Cold"). Traditional information indicates a wide variety of kai available in the Whakatipu area including varieties of ducks, kereru, koreke (quail), tuna, kakahi (freshwater mussels), koura, several varieties of berries including tutu and konini.

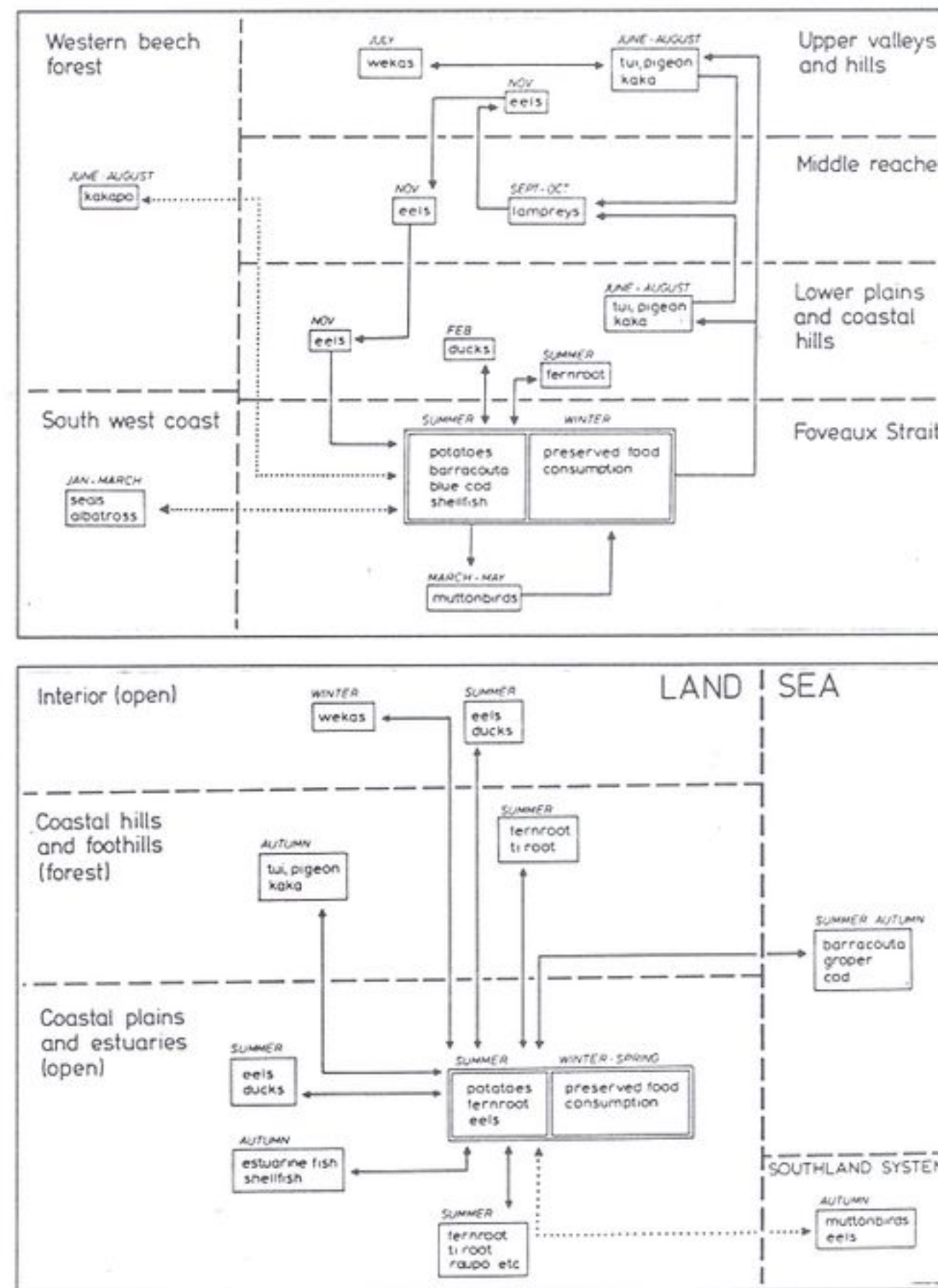
Analysis of an excavated pit at the Dart Bridge site by Ritchie and Anderson shows ti kauru and moa to also have been some part of the diet (faunal remains, Anderson and Ritchie Dart Bridge site).

Figure 2

Top : Seasonal food gathering patterns of early 19th century Maoris in Southland

Bottom : The pattern of activities for eastern Otago Maoris in the early 19th century can be compared with the diagram above.

"Greenstone Trails" - Barry Brailsford



6.1.7

Glossary of Maori Terms and Words

Kai Tahu whanui:	refers to the three main streams of descent within the iwi which are Kai Tahu, Kati Mamoe, Waitaha
whanui:	broad, wide
mana:	authority, control
tipuna:	ancestor
whakapapa:	genealogical descent
mauri:	life principle
tikanga:	1 - rule, plan, method; 2 - custom
kaitiaki:	guardian
huarahi:	road, highway
nga huarahi:	the trails
kaumatua:	grown up, become adult
whareporotaka:	round house made of thatched material
kaika nohoaka:	settlement sites
whakatauki:	proverbial saying
kaika:	village
pounamu:	greenstone
inaka:	type of greenstone
kawakawa:	type of greenstone
kaurangi:	type of greenstone
kahuraki:	type of greenstone
koroka:	place names
Waikouaiti:	place name
Te Wai Pounamu:	place name
whanau:	family
hapu:	section of a large tribe, clan
titi poha:	titi (muttonbirds) preserved and stored in kelp bags
mahinga kai:	places where food is procured
kai:	food
mahi:	work

Reference: A Dictionary of the Maori Language (H W Williams)
The New Dictionary of Modern Maori (P M Ryan)
Oral Information from Kai Tahu Whanui

6.2

Pre-European Archaeological Sites

The most important known Maori site, as represented by archaeological remains, is the camp site beside the Dart Bridge, used for cooking cabbage trees, with moa hunting and the use of greenstone (nephrite) cobbles from the nearby river as minor activities. This is an Archaic site, used during at least two periods of occupation about 800 and 400 years ago respectively, probably by people travelling between the West Coast and Central Otago, rather than by parties focused on the collection and working of greenstone. (Collections from nearby sites show that greenstone was worked in the vicinity.) Though there have been finds of adzes elsewhere on the pastoral leases, there are no other well-validated Maori sites on these stations, according to the Historic Places Trust files.

The site is at risk from natural erosion and deterioration. No archaeological survey of the Greenstone and the Mararoa Valleys has ever been carried out and there may be other Maori camp sites similar to the Dart Bridge site.

6.3

European Heritage Values and Sites

The first European explorers were David McKellar and George Gunn in the Mararoa and upper Greenstone Valleys (1861) and Patrick Caples in the Caples and the Greenstone (1862). Sir James Hector added useful additional material in 1863 and the valley was well used thereafter as the main route to the Martins Bay settlement, with a well-graded track being formed in 1888.

The first sheep entered the head of Lake Wakatipu in the early 1860s and the Routeburn, Birchdale and Mararoa runs (from which the modern Routeburn, Greenstone and Elfin Bay runs were later subdivided) were first stocked between 1868 and 1870.

The run now covering the Caples Valley and known as the Greenstone Run was called Birchdale throughout the 19th century and was farmed from the very isolated homestead and woolshed in the Caples Valley. These were probably built by John Kay about 1875 and lived in by a succession of owners until 1908. About 1909 the Williamson family rafted the woolshed down the Caples and rebuilt it at the mouth of the Greenstone, along with a homestead on freehold land, from which the land has been farmed ever since.

GREENSTONE / CAPLES SUMMARY

The upper Greenstone Valley, Mararoa Valley and the mountain ranges between were part of the very large Burwood Run established in the 1870s by the "sheep baron" of the Waitaki Valley, Robert Campbell. Burwood was the largest run in Southland in the 1880s, and effectively Campbell exploited the palatable species of the native vegetation, which were converted to wool for the English mills and provided the capital to build his mansion at Campbell Park in 1879. Analysis of sheep statistics of Lake County, 1880-1952, show that the mountain tussock grasslands in 1880 were carrying 10 times the number of sheep carried in 1950. Two musterers' huts of corrugated iron and beech poles built about the 1920s still stand in the Pond Burn and Bush Creek respectively, and there is the foundation of a sod hut near the modern Taipo hut.

The most important European heritage site on these stations is the Caples Valley homestead. It is at risk from deterioration, and is being damaged by the entry of stock. It will require careful management for its preservation. The structure ranks with the Mount Aurum Homestead at Skippers as an early remote farm building.

The homestead is over 100 years old and is protected as an archaeological site under the Historic Places Act. Like Mount Aurum, it is worthy of a C classification as an historic building.

7.0

RECREATION VALUES

The three properties are located within the recreation opportunity and tourism infrastructure that Queenstown/Glenorchy and Te Anau/Milford provide for both overseas and New Zealand visitors. Tourists have ventured to this area for more than 120 years to experience the renowned scenic and recreational attractions. Queenstown and Milford are flagships in the New Zealand tourism industry, an industry which is predicted to undergo a major expansion in tourist numbers in the future through aggressive marketing.

The Southern Lakes region has developed a comprehensive service infrastructure to cater for the needs of visitors, and many of the visitors to the properties use these services. For example, more than 100,000 people travel the Glenorchy road annually, and seven different transport operators provide services to the Caples/Greenstone and Mavora Lakes with most services running daily.

Queenstown airport provides an excellent connection with international airports as well as other tourist destinations, with two domestic airlines operating as well as smaller aircraft.

Diverse recreation tourism opportunities exist on the properties already, many of which are of international or national appeal. These activities capitalise on the remote or semi-remote user experience the area provides and the services available to get people to their recreation/tourism opportunity.

Recreational use occurs where the opportunity to pursue the experience exists. When the land was held as pastoral lease, the lessees legally enjoyed exclusive occupancy. Any member of the public wishing to gain access required the consent of the lessees. Despite the former pastoral lease tenure of much of the properties, with these legal limitations on public access, recreational use has developed to relatively high levels. Accompanying this growth has been the provision of recreational facilities on private land by government conservation agencies, without any security of tenure.

7.1

Recreational/Tourism Opportunities

7.1.1

Tramping (International Significance)

Major Tracks

Includes the Caples and Greenstone Tracks and the Mavora Walkway. Usage of these tracks is both by New Zealanders and overseas trampers in approximately equal numbers. The Greenstone and Caples Tracks are being considered by DOC for "Great Walks" status. In 1992/93, track records indicated 2500 trampers used the Greenstone Track and 1850 used the Caples Track (cf. the Routeburn, 10,000; and Rees/Dart, 1700). The majority used DOC huts whilst a few camped. It is estimated each track will have at least 2000 trampers through this current 1993/94 season, and this trend in increasing use will continue in the future.

The Caples/Greenstone Circuit is particularly important for overseas visitors with a fixed travel timetable arriving early in the tramping season. The lower altitude of this track circuit makes it an attractive and negotiable alternative to the Routeburn and Rees/Dart Tracks early in the season when late spring snow prevents safe use of these two high altitude tracks. In past seasons the Routeburn Track has been closed until the third week in November. The Caples/Greenstone Circuit has soaked up this early season demand. It also appeals to some users, being less strenuous and less crowded than some tracks such as the Routeburn. The linkage of the Greenstone Track with the Routeburn Track to form "The Grand Traverse" is receiving increased promotion by tourist operators.

Minor Tracks and Routes

There are at least eight well-known minor tracks which are traversed frequently in combination with part of the Caples and Greenstone Tracks, and some provide more challenging variations when combined, for example, with the Routeburn Track. All except Kay Creek and Fraser Creek are partly on former pastoral lease land.

There are several identified routes used to gain access to the open tops of the Humboldt Mountains, Ailsa Mountains and the Livingstone Mountains. These ranges are also contained within the former pastoral leases. Whilst not heavily used, they are appreciated for their scenic beauty, remote qualities and easy access from the main valleys.

Short Walks

The Lake Rere Circuit is currently the only short walk on the properties, but other opportunities may exist. Current use of this partly developed walk is approximately 100 walkers per annum.

7.1.2 Hunting (National Significance)

Based on the trophy fallow deer herd in the Greenstone and Caples Valleys, the recreational hunting area attracts hunters from throughout New Zealand. The bush edges adjacent to the former pastoral leases are favoured hunting. Hunting interest is increasing for the five month season, now necessitating balloting for blocks in the first two months. A total of 192 hunters were permitted in the 1992 season.

7.1.3 Fishing (International Significance)

The rainbow trout fly-fishing opportunities for the Greenstone River and to a lesser extent the Caples River have international recognition amongst the angling fraternity. About 50% of anglers are from overseas and a total of 86% reside outside of the Southern Lakes region. Eight hundred to nine hundred anglers fish the rivers annually. The Greenstone River is ranked fourth nationally for fish abundance and over 80% of anglers practice a "catch and release" philosophy.

More than 2700 anglers fish the Mavora Lakes area per season which is predominantly a brown trout fishery. The upper Mararoa River is considered to be a wilderness fishery and is the sixth most popular fishery in Southland.

7.1.4 Horse Trekking (Local Significance)

Only a few riders currently pass through Elfin Bay from Mavora Lakes to the Greenstone Valley.

7.1.5 Tour Groups/Day Visitors

Of the 100,000 visitors annually to Glenorchy, many travel on to road ends such as the Greenstone and Routeburn.

7.1.6 Aerial Access

During 1992, DOC issued six landing permits in liaison with the former lessees. Two were for possuming and four for RHA hunting. No fishing landings were authorised but it is estimated up to six unauthorised landings occur in the Greenstone by commercial fishing guides and their clients.

7.1.7 Educational Groups

Two school lodges are located nearby, at Kinloch and Glenorchy. Kinloch is used continually from October to March by schools from Otago/Southland. Other educational groups regularly use the area. Extensive use is made of the Greenstone/Caples Valleys for outdoor education.

7.1.8 Commercial Tourist Operations

There are four DOC licensed concessions operating on DOC land and the properties. The major enterprise is the Greenstone Valley Walk Ltd concession, owned by Routeburn Walk Ltd. The company has two 40 bunk lodges in the Greenstone Valley, on former pastoral lease land. Two walking options are offered by the company involving either the Greenstone Valley three day walk or a combined Greenstone/Routeburn five day walk. About 250 and 400 clients respectively are anticipated this season. The company also expects 800 clients to use its Routeburn Walk option this season.

The three other concessions are currently low-key enterprises based on guided walks. A trial guided fishing concession is also operating this year.

There are two recreation permits issued under the Land Act 1948 authorising guided safari hunting on Routeburn and Elfin Bay Stations.

Several of these enterprises were partly owned by the former lessees.

There is significant potential for increased commercial activity, especially in the Mavora Lakes/Greenstone Valleys. Other opportunities are currently under consideration, eg, heliskiing, guided hunting and fishing. Some of these will require aircraft landings.

7.2 Existing Recreational Facilities

Over the last 20 years government conservation agencies have constructed seven huts, 16 foot bridges, RHA monitoring, and electric fencing as well as signs, and maintained approximately 140 km of major walking tracks and many kilometres of minor tracks. Much of this development has, of necessity, occurred on the former pastoral lease land, to utilise logical routes or hut sites.

7.3 Recreation Issues and Impacts

There have been and will be continuing conflicts of expectations from differing uses of the land, affecting both DOC estate and former pastoral lease land. The public recreation and commercial tourism operations transcend existing legal tenure boundaries and occur where the opportunity to do so exists. This use attracts an important national and international recreation tourism market and is highly valued in terms of user experience. Recreation tourism use generates substantial economic and employment benefits to the region, which will expand in line with increased visitor numbers predicted.

7.4 Key Issues

- (i) Some recreational facilities have been constrained in their development by pastoral farming operations. For example, the Mavora Walkway was agreed to by the former lessee so long as the alignment was such that it prevented or minimised stock disturbance. The outcome was an alignment which did not follow a logical route which would have maximised the opportunity to appreciate the surrounding landscape, avoid unattractive walking conditions, and reduce route maintenance costs. In the Greenstone Valley the former lessee insisted track sections be re-routed through forest to avoid stock disturbance at key locations. Where this track passed through forest and it is used by walkers and cattle being mustered, extensive pugging of wet areas occurs. Major reinstatement of the track surface is often required.
- (ii) Many recreational facilities have been developed on pastoral land by the former government conservation agencies, and large sums of tax-payers' money were spent, without legally securing this investment. There are four DOC owned huts with a current value of more than \$80,000 and many kilometres of walking tracks involved. If the former pastoral lease land was to be either leased or ownership transferred to another party, it is essential that continued DOC occupancy and public access is guaranteed.
- (iii) Public access for major recreational activities, including tramping, climbing, hunting and fishing, have a requirement for a "wander at will" to be provided for. Walkways Act easements which may be subject to closure at critical times of the year are not considered appropriate to apply in this situation given its existing level of public use and that the valley tracks substitute for the Routeburn early in the season. Existing marginal strips are to be retained and additional marginal strips along watercourses that meet the legal requirements of section 24 of the Conservation Act 1987, eg, the Greenstone River will be required if any disposition occurs.

Public access especially for hunters across former pastoral lease land has in the past been denied at certain times of the year. This has resulted in loss of hunting opportunity of some parts of the RHA. The restrictions on access have affected both anglers and hunters and has been justified by former lessees on the basis of stock disturbance.

- (iv) Adverse reactions to the presence/impacts of cattle on the recreational experience enjoyment is discernible from public feedback. Many queries are made by recreationists/tourists about the appropriateness of cattle grazing in an area which has become nationally and internationally renowned for the quality of its recreation tourism experience. This situation also applies to some valleys in Mount Aspiring National Park.

Any agricultural development in the Mararoa Valley resulting in increased cattle numbers will affect the condition of the native vegetation, the quality of the recreation experience and the wilderness fishery in the river. The risk of discernable downstream aquatic impacts will increase affecting the Mavora Lakes. These lakes are a valued recreational resource dependent to a large degree on the appeal of the lakes and surrounds for fishing, tramping and camping.

- (v) Past lessees have frequently raised with DOC the issue of camping in the valleys. Lessees have sought to get DOC to identify and designate camping area, but virtually all suitable camp sites in both the Caples and Greenstone Valleys are located on leasehold land. Problems do not appear to be stock disturbance related, rather a concern about waste disposal, including human waste and the risk of giardia, and fire risk. DOC has identified suitable camping sites and would be prepared to install toilets and cooking shelters to minimise and concentrate any impacts. Agreement with lessees had not been reached prior to acquisition of the properties by the Crown.
- (vi) Air access, especially in the Caples and upper Greenstone, may in the future need to be limited to protect the quality of the wilderness experience.
- (vii) Minor tourist developments, eg, lodges, already occur in the Greenstone Valley. Further developments will need to be carefully assessed in order to avoid compromising the wilderness experience.

- (viii) Major tourist developments proposed in recent times include the Greenstone Road and a monorail to link Queenstown and Milford Sound. Both proposals would have severe environmental impacts in the Greenstone Valley and adjacent Fiordland National Park:
- The RHA would inevitably attract widespread poaching and spotlighting and its wilderness hunting value would diminish. Management of the recreational hunting would be compromised to the extent that its RHA status could be threatened.
 - The “wilderness” fishing value could be lost. Increased pressure would be placed on fish stocks by increased numbers of anglers and probably an increased disregard by some of the bag limits and the current widespread practice by anglers of a catch and release philosophy.
 - The Greenstone Valley tramping opportunity would be destroyed as the road alignment would follow or parallel the Greenstone Track for the entire length of the valley.
 - There would be major landscape and ecological consequences of the slope instability and proximity to waterways in such locations as Lake Rere, lower Greenstone/Slip Flat Gorge section, Slyburn Gorge section and the Narrows/Lake McKellar section.
- Either proposal if it was proceeded with would generate an intense and divisive public debate. Whilst the monorail may have a diminished environmental impact the debate may not be any less vociferous.
- (ix) Loss of recreational use of the properties would prompt a major media event involving the public, DOC and existing concessionaires. The loss of internationally recognised recreation opportunities would harm the country’s tourism image. There may be increased pressure for use on other established recreational facilities, which may risk human lives, eg, early season use of the Routeburn, necessitating tighter controls on use.
- (x) Existing legal access through all three valleys consists of unsurveyed unformed legal roads and marginal strips but the latter do not exist at all in the Greenstone Valley. The “paper roads” approximate in part the existing 4WD vehicle track in the Mararoa and the walking tracks in the Caples/Greenstone Valleys. It is likely that the chief surveyor would rule that these existing tracks be adopted as the legal accessways, except for the lower Caples and lower Mararoa where the accessways do not approximate the line of the existing accessways.

8.0 NEGOTIATED LAND DEALS

8.1 Agreements with Former Owners

Two deals negotiated between the Crown and former owners of the properties have yet to be concluded. One deal has since been withdrawn from further consideration.

8.1.1 Routeburn Station and the Crown (Lake Sylvan area)

The deal involved an exchange of part of Mount Aspiring National Park and Crown land in exchange for gaining the Routeburn Paddock. The rationale was to better control stock grazing north of the Routeburn.

8.1.2 Greenstone Station and the Crown (Reserve boundary rationalisation)

This deal relates to a boundary rationalisation following construction of the Kinloch to Elfin Bay road and involves the disposal of two areas of reserve land which have no conservation values.

8.1.3 Routeburn Station and the Crown (Mount Aspiring National Park boundary)

Approximately 74 ha of park land was to be added to the former pastoral lease. This deal attempted to rationalise boundaries and prevent stock trespass into the Routeburn Valley. DOC was not happy with the deal, which was inherited from the Department of Lands and Survey and considered that it should not proceed. Agreement has been reached with the Commissioner of Crown Lands to shelve this proposal. The park land involved adjoins other beech forest on the station which is of conservation interest.

8.2 Other Land Deals

Three additional agreements were not successfully negotiated with the former owners, ie:

8.2.1 Lake Rere Reserve Addition

Agreement between Office of Crown Lands and DOC staff has been reached to rationalise the existing inadequate reserve boundaries and extend them to include the balance of the catchment up to the summit of Tooth Peak.

GREENSTONE / CAPLES SUMMARY

8.2.2 Greenstone Station Surrender Areas

Two high altitude areas were to have been surrendered under a catchment board run plan. Unfortunately the land improvement agreement did not contain a requirement for surrender and with subsequent changes in ownership it was found that surrender could not be legally enforced. Both areas have been flagged by the Cabinet Committee on Treaty of Waitangi issues with the suggestion they be excluded from the Land Bank for Ngai Tahu claim settlement and the areas be retained by the Crown.

The two areas have a land use capability of Class VIIIe9 and have high landscape, recreation and natural conservation values in addition to their importance for soil and water conservation. Unfortunately, not all land unsuitable for grazing was retired and this adjacent land also possesses other conservation values. This suggests that it is premature to surrender these retired areas now until the full extent of the conservation and other Crown interest in the properties has been defined.

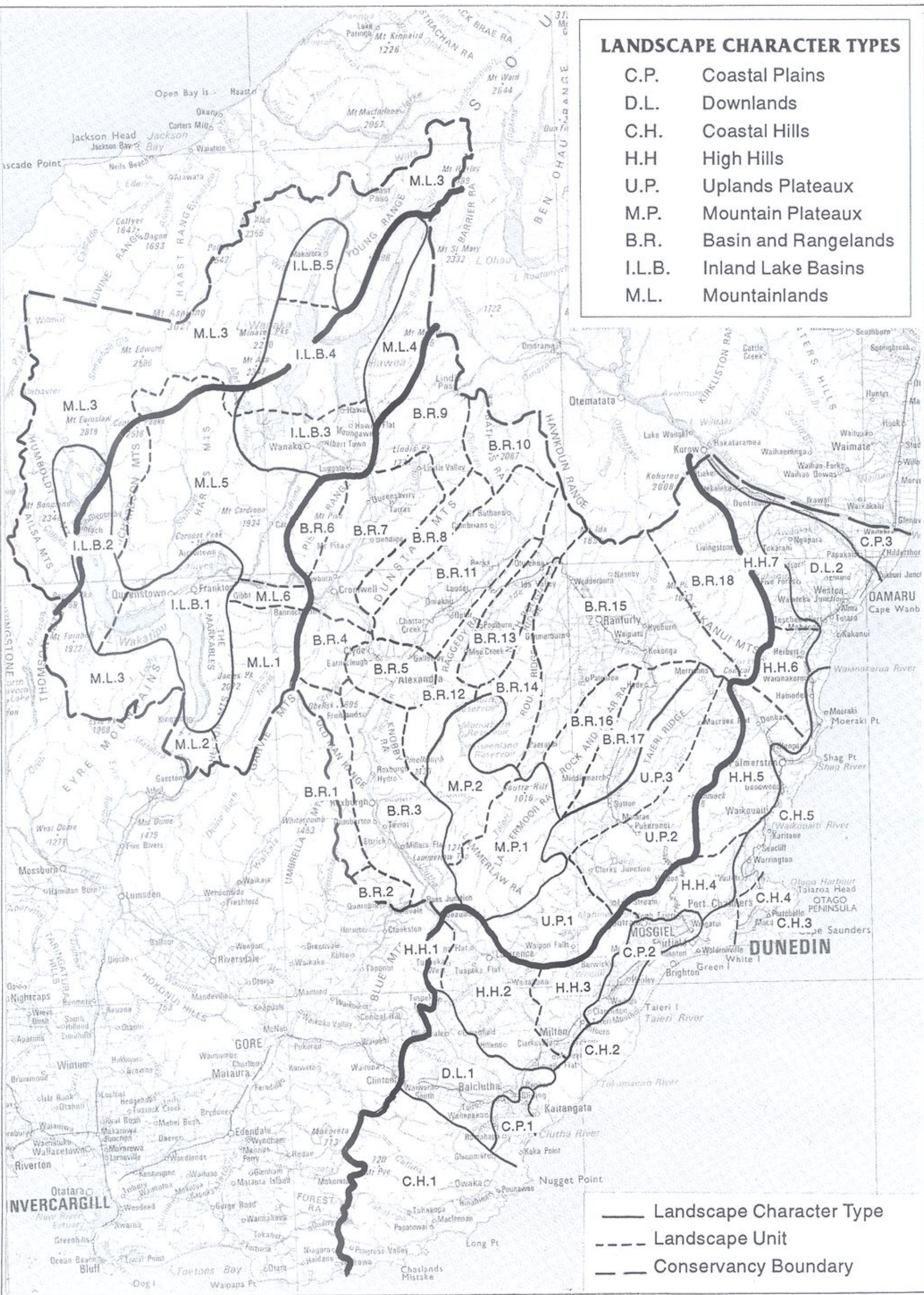
8.2.3 Mavora Walkway - Proposed Deviation

Agreement between Office of Crown Lands and DOC staff has been reached to realign parts of the Mararoa Valley section of the Mavora Walkway. The realignment will provide for better travel and reduced maintenance costs.

APPENDIX THREE

Landscape Analysis

OTAGO CONSERVATION MANAGEMENT STRATEGY



LANDSCAPE ANALYSIS

Landscape Character Type	Landscape Unit	Page
Coastal Plains - Balclutha	CP 1	ii
Coastal Plains - Taieri Plains	CP 2	ii
Coastal Plains - Waitaki	CP 3	ii
Downlands - Balclutha	DL 1	ii
Downlands - Oamaru	DL 2	iii
Coastal Hills - Catlins	CH 1	iii
Coastal Hills - Kaitangata North	CH 2	iii
Coastal Hills - Otago Peninsula	CH 3	iii
Coastal Hills - Purakaunui	CH 4	iv
Coastal Hills - Waitati North	CH 5	iv
High Hills - Tuapeka West	HH 1	iv
High Hills - Lawrence	HH 2	iv
High Hills - Waikouaiti	HH 3	v
High Hills - Silverpeaks	HH 4	v
High Hills - Beaumont/Lawrence	HH 5	v
High Hills - Waianakarua	HH 6	v
High Hills - Kakanui Foothills	HH 7	vi
Upland Plateau - Mahinerangi	UP 1	vi
Upland Plateau - Deep Stream	UP 2	vi
Upland Plateau - Macraes	UP 3	vi
Mountain Plateau - Lammermoor/Lammerlaw	MP 1	vii
Mountain Plateau - Manorburn	MP 2	vii
Ranges and Basins - Bengier	BR 1, 2	vii
Ranges and Basins - Roxburgh	BR 3	vii
Range and Basin - Bannockburn	BR 4	viii
Range and Basin - Alexandra	BR 5	viii
Range and Basin - Pisa	BR 6	viii
Range and Basin - Upper Clutha	BR 7	viii
Range and Basin - Dunstons	BR 8	ix
Range and Basin - Lindis	BR 9	ix
Range and Basin - St Bathans	BR 10	ix
Range and Basin - Manuherikia	BR 11	ix
Ranges and Basins - Raggedy Range and North Rough Ridge	BR 12, 14	x
Ranges and Basins - Ida Valley	BR 13	x
Ranges and Basins - Maniototo	BR 15	x
Ranges and Basins - Rock and Pillar Range	BR 16	x
Ranges and Basins - Middlemarch	BR 17	xi
Ranges and Basins - Kakanui Range	BR 18	xi
Inland Lake Basin - Wakatipu	ILB 1	xi
Inland Lake Basin - Glenorchy	ILB 2	xi
Inland Lake Basin - Wanaka/Hawea	ILB 3	xii
Inland Lake Basin - Upper Wanaka/Hawea	ILB 4, 5	xii
Mountain Lands - Nevis	ML 1	xii
Mountain Lands - Alps	ML 2, 3, 4	xii
Mountain Lands - Cardrona/Shotover/Arrow	ML 5	xiii
Mountain Lands - Kawarau Gorge	ML 6	xiii

SIGNIFICANT ELEMENTS		Landscape Unit CP 1
Landscape Character Type: Coastal Plains (Balclutha)		
1 Primary Elements		
Landform:	Flat alluvial outwash plains.	
Land cover:	Predominantly exotic grasses, river rough with a scattering of willows, shelter belts, Clutha River with back waters.	
Land use:	Intensive sheep farming, dairying, arable cropping, deer farming; urban development, Balclutha.	
Dominant primary element:	Flood plain.	
2 Landscape Character Attributes		
Geometric landuse pattern superimposed over a flat plain, the different hues of green in the squared paddocks reflect the fertility of the soil. The uniform pattern is broken by the meandering Clutha River.		
LOCATION	See CP 1 on landscape map.	
STATUS		
Being such a productive resource means that this landscape unit's natural values are very depleted. All unmodified streams and wetlands should be protected from further drainage and channelling.		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Protect the integrity of the Clutha from further river control work. Further enhance wetlands and wildlife habitat.	
Uses to support:	Wise use of the versatile productive soils. Encourage water oriented recreation.	
Uses to discourage:	River protection works; shingle extraction; pollution from direct runoff; further clearing of riparian vegetation.	
TIMING	As opportunity arises, eg, RM Act, advocacy.	
AGENTS		
DOC, Otago Regional Council, fish and game council.		

SIGNIFICANT ELEMENTS		Landscape Unit CP 2
Landscape Character Type: Coastal Plains (Taieri Plains)		
1 Primary Elements		
Landform:	Flat alluvial flood plains.	
Land cover:	Predominantly high quality pasture; wetlands; riparian zones; exotic shelter-belts.	
Land use:	Intensive farming - dairying; market gardening; fruit orchards; lamb fattening; horse training; urban development - Mosgiel; deer farming.	
Dominant primary element:	Flat plain bisected by the Taieri River.	
2 Landscape Character Attributes		
An expansive area of flat rural land overlaid by a geometric land use pattern which utilises the fertile soils to their fullest extent. The plains are contained by the surrounding coastal hills and the high hills, eg, Maungatua.		
LOCATION	See CP 2 on landscape map.	
STATUS		
The Taieri Plain is highly modified after a long period of farming. Natural values are mainly associated with the Taieri and Lake Waihola wetlands, further flood control works and wetland drainage would be detrimental to the remaining conservation values on the Taieri Plains.		
MANAGEMENT PRESCRIPTION		
Uses to promote:	The protection of residual natural areas and landscapes which still have an apparent natural character.	
Uses to support:	Wise and sustainable use of fertile soils.	
Uses to discourage:	Expansion of urban and industrial development over the plains. Interference with natural watercourses. Single species forestry.	
TIMING	As opportunity arises, eg, RM Act advocacy.	
AGENTS		
DOC, Dunedin City Council, Otago Fish and Game Council, water-based recreation clubs		

SIGNIFICANT ELEMENTS		Landscape Unit CP 3
Landscape Character Type: Coastal Plains (Waitaki)		
1 Primary Elements		
Landform:	Flat alluvial outwash plain, Waitaki River a dominant feature, distinctive gravel berm along coastline.	
Land cover:	Predominantly exotic grasses, river rough with a scattering of willows. Network of pine and deciduous shelter planting.	
Land use:	Semi-intensive sheep farming, arable cropping, pockets of fruit orchards and market gardening.	
Dominant primary element:	River and coastal flood plain.	
2 Landscape Character Attributes		
Geometric landuse pattern superimposed over a flat plain, the different hues of green and yellow in the squared paddocks reflect the fertility of the soil. The uniform farming pattern is broken by the Waitaki's braided river channels in the north.		
LOCATION	See CP 3 on landscape map.	
STATUS		
Being such a highly modified area means that most natural values are depleted. All unmodified streams and backwaters should be protected from further drainage and channelling.		
MANAGEMENT PRESCRIPTION		
Uses to promote:	The protection of all residual natural areas and wetlands.	
Uses to support:	Wise and sustainable use of fertile soils. Encourage landscape principles and guidelines to be followed in the siting of farm forestry, shelter planting, roading and farm buildings.	
Uses to discourage:	Interference with natural watercourses, pollution from direct run-off.	
TIMING	As opportunity arises, eg, advocacy, RM Act.	
AGENTS		
Department of Conservation Waitaki District Council Otago Fish and Game Council Otago Regional Council		

SIGNIFICANT ELEMENTS		Landscape Unit DL 1
Landscape Character Type: Downlands (Balclutha)		
1 Primary Elements		
Landform:	Undulating low hill country.	
Land cover:	Exotic grasslands; homestead plantings; farm forestry; river rough with willows.	
Land use:	Intensive sheep farming; farm forestry; croplands; dairying; deer farming.	
Dominant primary element:	Intensive landuse pattern.	
2 Landscape Character Attributes		
A landscape where a uniform landuse pattern has been superimposed over the rolling hill country. Most of the area's inherent values have been severely modified for production purposes. The Clutha River and its riparian strips contrast markedly with the intensive farmland.		
LOCATION	See DL 1 on landscape map.	
STATUS		
Being a landscape that has been highly modified through intensive farming means that there are only "pockets" of natural areas remaining.		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Full protection of last remaining natural areas, particularly the wetlands along the Clutha River.	
Uses to support:	Possibly some further diversity in landuse.	
Uses to discourage:		
TIMING	As opportunity arises, eg, RM Act, advocacy.	
AGENTS		
DOC, Otago Regional Council, Clutha District Council, local farmers		

LANDSCAPE ANALYSIS

SIGNIFICANT ELEMENTS		Landscape Unit DL 2
Landscape Character Type: Downlands (Oamaru)		
1 Primary Elements		
Landform:	Gently rolling hill country.	
Land cover:	Exotic grasslands; small vestiges of native shrublands and dry forests; shelter-belts (soil conservation); hedgerows; cultivated land.	
Land use:	Dry sheep farming; pockets of dairying and market gardening; croplands; urban development, eg, Oamaru.	
Dominant primary element:	Intensive land use pattern.	
2 Landscape Character Attributes		
An agricultural landscape where natural systems have been highly modified for production purposes, especially on the highly fertile loess soils around Kakanui.		
<hr/>		
LOCATION	See DL 2 on landscape map.	
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STATUS		
Being a landscape that has been highly modified through intensive farming means that there are very few coherent natural areas remaining.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	Full protection of last remaining natural areas and landscapes, particularly around limestone outcrops.	
Uses to support:	Reinforce the local distinctive rural character.	
Uses to discourage:	Defacing and quarrying of prominent limestone features. Exploitation of non-renewable resources, eg, limestone.	
<hr/>		
TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Otago Regional Council, Waitaki District Council, local farmers, quarry operators		

SIGNIFICANT ELEMENTS		Landscape Unit CH 1
Landscape Character Type: Coastal Hills (The Catlins)		
1 Primary Elements		
Landform:	Series of parallel ridges and troughs (Southland syncline). Diversified coastline.	
Land cover:	Native mixed forests mainly on steeper south slopes and protected natural areas; shrublands on reverting farmland and logged over areas; exotic grasslands; wetlands; coastal vegetation.	
Land use:	Conservation; intensive sheep farming; semi-intensive cattle grazing; farm forestry.	
Dominant primary element:	Co-dominant, distinctive landform; land cover, coastline.	
2 Landscape Character Attributes		
Intact and expansive native forests (last remaining on the entire east coast of the South Island). Spectacular coastline and contorted vegetation. <u>Prominent</u> headlands with associated coastal platforms - reefs. <u>Sweeping</u> beaches with complete sand-dune systems. <u>Sensitive</u> estuaries with fragile inter-tidal communities and diversified wildlife.		
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LOCATION	See CH 1 on landscape map.	
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STATUS		
Continued exploitation of native forests, the rapid transformation from native forest to European agricultural settlement has left a disjointed landscape and largely unsustainable ecosystems. Most of the healthy natural areas are now in public ownership, while the remainder are under constant threat from cattle grazing, weed infestation and land clearing.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	General change in attitudes towards native forest, from being seen as a liability to an asset. Promote eco-tourism. Unless the area's special landscape character and features are protected, the Catlins will not be looked upon as an alternative tourist destination.	
Uses to support:	Increase diversity of land uses which will lead to a diversity in landscapes, eg, agroforestry.	
Uses to discourage:	Further exploitation of the district's natural resources for short term gains.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Otago Conservation Board, Clutha District Council, Tourism Council, Federated Farmers, ORC		

SIGNIFICANT ELEMENTS		Landscape Unit CH 2
Landscape Character Type: Coastal Hills (Kaitangata North)		
1 Primary Elements		
Landform:	Low hill country with a regular gully system.	
Land cover:	Predominantly exotic grasslands; mixed native and exotic grasslands; remnants of coastal forests; afforestation; wetlands; roadside vegetation.	
Land use:	Intensive sheep farming; semi-intensive cattle grazing; natural protected areas; unproductive land (derelict farmland); deer farming.	
Dominant primary element:	Landform - prominent skyline.	
2 Landscape Character Attributes		
Highly visible hill country, distinctive landscape pattern created by woody vegetation in gullies and pasture on ridges. Marginal farmland is now starting to revert back to shrublands, giving many areas a "weedy" appearance. Expansive areas of plantation plantings is having a noticeable effect on the character of this area.		
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LOCATION	See CH 2 on landscape map.	
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STATUS		
Low (broken) hill country can absorb changes in land use, due to the diversified vegetation pattern, however, block planting of one tree species will have a detrimental effect on the landscape.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	Full protection of remaining forest remnants, gully shrublands, wetlands and roadside native shrublands (lineal ecosystems).	
Uses to support:	Sustainable land use, emphasis placed on well planned forestry which helps to accentuate landform rather than negate it.	
Uses to discourage:	Monocultural exotic forestry. Avoid forestry on highly visible skyline.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
Clutha District Council, Ministry of Forestry, DOC, Federated Farmers, Otago Regional Council		

SIGNIFICANT ELEMENTS		Landscape Unit CH 3
Landscape Character Type: Coastal Hills (Otago Peninsula)		
1 Primary Elements		
Landform:	Conical hills with distinctive volcanic features.	
Land cover:	Predominantly exotic grasslands; shelter-belts and farm forestry; remnants of coastal forests and shrublands; wildlife refuges.	
Land use:	Intensive sheep farming; localised dairying; small scale forestry; nature conservation; pockets of residential development; tourism.	
Dominant primary element:	A very distinctive landform overlaid with a well established cultural overlaid pattern.	
2 Landscape Character Attributes		
The striking contrasts between small scale cultural landscapes (often defined by macrocarpa trees and dry stone walling) and remote/wind-swept coastline. Other attributes include sweeping vistas over Dunedin City, harbour and ocean; sheltered inlets and estuaries and stormy beaches.		
<hr/>		
LOCATION	See CH 3 on landscape map.	
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STATUS		
The whole of this unit being highly visible from many primary and secondary transport routes as well as many parts of the city makes it extremely sensitive to man-made impacts and dramatic changes in land use.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	The natural, cultural and historic attributes of the peninsula warrant it being promoted as a <u>heritage landscape</u> .	
Uses to support:	Formulation of landscape management guidelines that will help to protect and enhance the peninsula's outstanding intrinsic qualities.	
Uses to discourage:	Block forestry, roading improvements, further subdivision of rural land. Insensitive siting of installations and buildings on skylines.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Otago Conservation Board, Maori community, Federated Farmers, Dunedin City Council, Otago Peninsula Trust, Yellow-eyed Penguin Trust, Save the Otago Peninsula, QE II Trust		

SIGNIFICANT ELEMENTS

Landscape Character Type:
Coastal hills (Purakaunui)

Landscape Unit CH 4

1 Primary Elements

Landform: Undulating coastal hills with a coastline comprising estuaries, sandy beaches and headlands.

Land cover: Predominantly exotic grasslands, remnants of dry coastal forest, wind shorn shelter belts, hedgerows and dry stone walling.

Land use: Small scale sheep farming, dairying, nature conservation, small settlements.

Dominant primary element: Landform with a distinctive land cover pattern.

2 Landscape Character Attributes

This unit comprises a series of deep, enclosed valleys that are separated by straight spurs which run down to the sea. Within these valleys a pleasing cultural landuse has developed with farms being small scale and enclosed by hedgerows and stone walls (crofts). Small settlements nestle into the landform, eg. Purakaunui. Other landscape attributes that make this unit distinctive are the surrounding views of the sea, sweeping sandy beaches, feeling of remoteness and rocky headlands.

LOCATION See CH 4 on landscape map.

STATUS

The small scale characteristic of this unit is vulnerable to change through the removal of hedgerows and shelterbelts. Large monocultural forestry would also be detrimental to the visual character of the unit.

MANAGEMENT PRESCRIPTION

Uses to promote: The district plan should recognise and protect the special cultural characteristics of this unit.

Uses to support: The regeneration of native bush and shrublands (to assist with land stability). Increase diversity of land uses which will lead to a diversity of land uses.

Uses to discourage: Large scale, single species forestry.

TIMING As opportunity arises, eg, RM Act, advocacy.

AGENTS

DOC, Dunedin City Council, Otago Regional Council

SIGNIFICANT ELEMENTS

Landscape Character Type:
Coastal Hills (Waitati North)

Landscape Unit CH 5

1 Primary Elements

Landform: Undulating coastal hills, with large-scale earth movements.

Land cover: Predominantly exotic grasslands; remnants of dry coastal forests, mainly kowhai, ngaio and ribbonwood; shelter planting and hedgerows; scattering of mature native trees.

Land use: Intensive sheep farming; dairying units; arable cropping; farm forestry.

Dominant primary element: Co-dominant.

2 Landscape Character Attributes

The most impressive characteristics of this unit include the diversity of landform and land cover. The sweeping coastal views. The conical hills on the skyline and other volcanic features. The signals of early European settlement, eg, hedgerows, homestead plantings and old buildings which help a district to be "anchored to the past".

LOCATION See CH 5 on landscape map.

STATUS

Being low hill country means that it can absorb some changes to the visual landscape, but these changes must be diverse and in scale with their surroundings. Visual links with the coastline must be protected. "Lifestyle" farms need to be planned not to disrupt the overall rural character of this coastal landscape.

MANAGEMENT PRESCRIPTION

Uses to promote: Being the gateway to Dunedin, the local district council should recognise and protect the cultural landscape elements found within this unit.

Uses to support: The regeneration of native bush and shrublands (assist with land stability). Increase diversity of land uses which will lead to a diversity of landscapes. Protection of native bush remnants; geological features.

Uses to discourage: Large scale forestry on the coastal side of State Highway 1.

TIMING As opportunity arises, eg, RM Act advocacy.

AGENTS

DOC, Dunedin City Council, Otago Regional Council

SIGNIFICANT ELEMENTS

Landscape Character Type:
High Hills (Tuapeka West)

Landscape Unit HH 1

1 Primary Elements

Landform: Steep hills with a deeply incised valley system.

Land cover: Manuka shrubland, exotic grasslands, mixed beech forest, diverse exotic forestry, river rough areas, reverting farmland, pockets of pip fruit orchards, wilding pines.

Land use: Commercial forestry, conservation, sheep farming, orcharding.

Dominant primary element: This landscape unit is dominated by the Clutha River valley.

2 Landscape Character Attributes

A very diverse landscape unit in relation to land cover and contrasts markedly in landform and landuse from the downlands. Has coherent landscape component which helps to give these hills an impression of semi-naturalness. The enclosed character of the Clutha River valley at this point is also a feature.

LOCATION See HH 1 on landscape map.

STATUS

Although a robust type of landscape that can absorb some changes in landuse without affecting its overall character, the landscape's distinctive visual characteristics need to be assessed before any further modifications take place. The semi-wilderness corridor that the Clutha River flows through needs careful consideration.

MANAGEMENT PRESCRIPTION

Uses to promote: Protect this distinctive part of the region from further incompatible management decisions. Encourage further water orientated recreational activities.

Uses to support: Close integration between forestry, farming and conservation status quo management.

Uses to discourage: Monocultural forestry on highly visible slopes and skylines, further shrubland clearance on marginal slopes, further river control works.

TIMING As opportunity arises, eg, RM Act, advocacy.

AGENTS

DOC, Otago Regional Council, Clutha County Council, forestry companies.

SIGNIFICANT ELEMENTS

Landscape Character Type:
High Hills (Lawrence)

Landscape Unit HH 2

1 Primary Elements

Landform: Dissected high hills.

Land cover: A diverse mixture of exotic grasslands, shrublands, short tussock, mixed native forests and afforestation.

Land use: A combination of intensive and semi-intensive sheep farming; large tracts of mixed native bush and scrublands; afforestation; protected natural areas.

Dominant primary element: Continuous high hills.

2 Landscape Character Attributes

The present mixture of land uses contrasts sharply with the intensive downland farms. Has a high visual resource value as these hills can be seen from major transport routes (includes Maungatua).

LOCATION See HH 2 on landscape map.

STATUS

Although a robust type of landscape that can absorb change, further large scale monocultural afforestation will blanket out the existing diversity of colour, form and texture of the landscape.

MANAGEMENT PRESCRIPTION

Uses to promote: More creative and multiple land uses. Further protection of natural areas.

Uses to support: Closer integration between intensive farming and forestry, eg, agroforestry. Preparation of guidelines for balanced land management and landscape conservation.

Uses to discourage: Insensitive siting of buildings and installations on prominent skylines. Forestry should be kept off skylines and ridges. Tracks and pylons should be kept off all highly visible slopes.

TIMING As opportunity arises, eg, RM Act advocacy.

AGENTS

DOC, Otago Conservation Board, Dunedin City Council, Otago Regional Council, Ministry of Forestry

LANDSCAPE ANALYSIS

SIGNIFICANT ELEMENTS		Landscape Unit HH 3
Landscape Character Type: High Hills (Waikouaiti)		
1 Primary Elements		
Landform:	Very steep hills dissected by deep gullies, with individual conical hills (truncated volcanic cones).	
Land cover:	OSTD native grasses; remnants of snow tussock; manuka shrublands; farm forestry; rock fields; scattering of native trees, etc; kowhai and cabbage tree.	
Land use:	Semi-extensive sheep farming; cattle grazing; forestry.	
Dominant primary element:	Landform - especially the volcanic hills with their associated landscape elements such as basalt rock mounds and rock streams.	
2 Landscape Character Attributes		
A diverse landscape that is reflected in its very disjointed appearance. Has a high visual reserve value, as these hills are noticeable from SH 1 between Waikouaiti and Palmerston.		
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LOCATION	See HH 3 on landscape map.	
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STATUS		
Although a robust type of landscape that can absorb some changes in land use, any further major changes will be detrimental to the existing diversity of the landscape.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	Further protection of distinctive landforms and remnants of native vegetation.	
Uses to support:	Closer integration between production and nature conservation.	
Uses to discourage:	Intensive siting of buildings and installations on prominent ridgelines. Large scale forestry. Tracks and powerlines should be kept off all highly visible slopes.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Otago Regional Council, Waitaki District Council		

SIGNIFICANT ELEMENTS		Landscape Unit HH 4
Landscape Character Type: High Hills (Silverpeaks)		
1 Primary Elements		
Landform:	Dissected high hills.	
Land cover:	A diverse mixture of intensive and semi-intensive sheep farming, mixed native forest and reverting shrublands, tussocklands and afforestation.	
Land use:	Small scale farming around the city's perimeter; water catchment and storage; afforestation; nature conservation, recreation.	
Dominant primary element:	Continuous hill country, includes the Taieri Gorge.	
2 Landscape Character Attributes		
A broken landscape with a variety of land uses that is dominated by the native and exotic forests. Acts as a natural backdrop to the hill suburbs of Dunedin. Contrasts markedly with the surrounding small scale farmland and coastline. The enclosed character of the Taieri Gorge is a special feature.		
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LOCATION	See HH 4 on landscape map.	
<hr/>		
STATUS		
This landscape unit has a high visual resource value, that needs to be protected from further insensitive changes in landuse or siting of man-made structures particularly along/or near skylines and ridges. The semi-natural character of the Taieri Gorge is vulnerable to changes through large scale forestry.		
<hr/>		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Further protection of natural areas and the landscape's overall integrity. Outdoor recreational activities that are compatible with the area.	
Uses to support:	Ensure further afforestation is compatible in colour, form and scale with the surrounding landscape.	
Uses to discourage:	Large scale monocultural forestry; further clearing reverting shrublands; removal of hedgerows.	
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TIMING	As opportunity arises, eg, RM Act, advocacy.	
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AGENTS		
DOC, Dunedin City Council.		

SIGNIFICANT ELEMENTS		Landscape Unit HH 5
Landscape Character Type: High Hills (Beaumont-Lawrence)		
1 Primary Elements		
Landform:	Hill country with dissected valley system.	
Land cover:	Exotic grasslands, farm forestry, mixed shrublands (mainly on steep faces), afforestation, historic gold mining areas, small established settlements.	
Land use:	Extensive hill country sheep farming, reverting farmland, commercial forestry.	
Dominant primary element:	Continuous high hills and parallel valleys.	
2 Landscape Character Attributes		
A rather nondescript landscape unit with no distinctive landscape characteristics to make it memorable. The large areas of reverting shrublands gives the unit a "weedy" appearance - perhaps an indication of unwise landuse decisions of the past.		
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LOCATION	See HH 2 on landscape map.	
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STATUS		
Being such a disjointed landscape character type means that it can absorb further changes without detriment to its overall visual appearance.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	Further protection of remnant natural areas, eg, wetlands. Historic gold mining areas' integrity. More creative and multiple landuses.	
Uses to support:	Closer integration between farming and forestry, ie, support agro-forestry principles.	
Uses to discourage:	Insensitive siting of buildings and installation on prominent skyline; forestry should be kept off prominent skylines and ridges; tracking and pylons should be kept off all highly visible slopes.	
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TIMING	As opportunity arises, eg, RM Act, advocacy.	
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AGENTS		
DOC, Clutha District Council, Otago Regional Council		

SIGNIFICANT ELEMENTS		Landscape Unit HH 6
Landscape Character Type: High Hills (Waianakarua)		
1 Primary Elements		
Landform:	Dissected high hills.	
Land cover:	A diverse mixture of forestry; exotic and native grasslands; manuka shrublands and mixed broadleaved forests.	
Land use:	Commercial forestry; semi-extensive farming; conservation.	
Dominant primary element:	Landform and land cover co-dominants.	
2 Landscape Character Attributes		
A very coarse textured landscape due to the wide coverage of exotic forests, protection forests and shrublands. Has a high visual resource value as these hills are very noticeable from SH 1.		
<hr/>		
LOCATION	See HH 4 on landscape map.	
<hr/>		
STATUS		
Although a robust type of landscape that can absorb a certain degree of change, further large scale monocultural afforestation will reduce the existing colour, scale and texture of the landscape.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	More creative and multiple land uses. Further protection of natural areas.	
Uses to support:	Closer integration between intensive farming and forestry, eg, agroforestry. Preparation of guidelines for balanced land management and landscape conservation.	
Uses to discourage:	Insensitive siting of buildings and installations on prominent skylines. Forestry should be kept off skylines and ridges. Tracks and pylons should be kept off all highly visible slopes.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Otago Conservation Board, Dunedin City Council, Otago Regional Council, Ministry of Forestry		

SIGNIFICANT ELEMENTS		Landscape Unit HH 7
Landscape Character Type: High Hills (Kakanui Foothills)		
1 Primary Elements		
Landform:	Uniform high hills	
Land cover:	Exotic grasslands; short tussocklands in gullies; shelter belts; farm forestry.	
Land use:	Dry sheep farming; croplands; farm forestry.	
Dominant primary element:	Landform and land cover co-dominant.	
2 Landscape Character Attributes		
This landscape unit generally conveys a feeling of openness, where expansive views can be obtained of areas outside the actual unit.		
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LOCATION	See HH 7 on landscape map.	
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STATUS		
Being such a high visual landscape means any major changes in land use would have an impact on this landscape unit.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	The retention of natural areas that are still remaining in inherently difficult areas to farm.	
Uses to support:	Encourage landscape principles and guidelines to be followed in the sites of farm forestry, shelter belts and buildings.	
Uses to discourage:		
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TIMING	As opportunity arises, eg, RM Act, advocacy.	
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AGENTS		
DOC, Waitaki District Council		

SIGNIFICANT ELEMENTS		Landscape Unit UP 1
Landscape Character Type: Upland Plateau (Mahinerangi)		
1 Primary Elements		
Landform:	Uplifted plateau with dissected gullies.	
Land cover:	Exotic grasslands on the plateau tops; native grasslands in the deep gullies; shrublands in the deep gullies closer to the coast; forestry; farm forestry.	
Land use:	Intensive sheep farming; commercial forestry; arable farming; deer farming; water reservoir (Lake Mahinerangi).	
Dominant primary element:	Co-dominant - no real striking primary features.	
2 Landscape Character Attributes		
A landscape under transformation where a new character is emerging with visual contrasts appearing between cultivated land, tussocklands and forestry.		
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LOCATION	See UP 1 on landscape map.	
<hr/>		
STATUS		
Being such a highly visible landscape the extensive changes that are rapidly occurring in land use are very marked. Changes in land use and man-made impacts, eg, powerline towers are very conspicuous.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	Identification and protection of native grasslands, especially those that could be converted to farmland, as well as red tussock areas around wetlands and along roadsides.	
Uses to support:	Better integration between conflicting land uses. Preparation of guidelines for balanced land management and landscape conservation. Wilding tree control. Protection of lake margins from fluctuations of levels.	
Uses to discourage:	Forestry should be kept off skylines and sensitive landscape areas. Care should be taken in the siting of installation on skylines.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Dunedin City Council, Otago Regional Council, Forestry companies		

SIGNIFICANT ELEMENTS		Landscape Unit UP 2
Landscape Character Type: Upland Plateau (Deep Stream)		
1 Primary Elements		
Landform:	Uplifted plateau with deeply dissected gullies.	
Land cover:	Tall tussock in deep gullies and other areas too difficult to cultivate; farmland on plateau tops; youthful shelterbelts.	
Land use:	Intensive sheep farming; extensive sheep grazing.	
Dominant primary element:	Plateau landform.	
2 Landscape Character Attributes		
This landscape unit acts as a transition between the coastal hill country and Central Otago. A new landscape pattern is emerging with strong visual contrasts appearing between the cultivated land and tussocklands.		
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LOCATION	See UP 2 on landscape map.	
<hr/>		
STATUS		
Being such a highly visible landscape, the extensive changes that are occurring in land use are very conspicuous. The conversion to cultivated farmland should be restricted to the flat tops.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	Further protection of coherent tussock grasslands which help to reinforce the local character.	
Uses to support:	Striking a balance between farmland and tussockland.	
Uses to discourage:	The removal of tussock cover in inherently difficult areas to farm. "Patch" burning of tussocks in deep gullies. Insensitive siting of building and installations on plateau tops.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Otago Regional Council, Waitaki District Council		

SIGNIFICANT ELEMENTS		Landscape Unit UP 3
Landscape Character Type: Upland Plateau (Macraes)		
1 Primary Elements		
Landform:	Upland plateau containing a series of low ridges studded with rocky outcrops and tors.	
Land cover:	Exotic grasslands; OSTD native grasses; mature homestead planting; shelter planting; mats of <i>Hieracium</i> ; rocky outcrops.	
Land use:	Intensive sheep farming in the troughs; extensive sheep grazing over undeveloped native grasses; nature conservation.	
Dominant primary element:	Landform - foothill for landscape.	
2 Landscape Character Attributes		
In visual terms this unit is characterised by its expansiveness and no sense of immediate boundaries. This area's combination of rocky outcrops, short grasslands and lack of physical relief makes this unit very special and distinctive. A local feature is the traditional use of rock for building and farming purposes.		
<hr/>		
LOCATION	See UP 3 on landscape map.	
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STATUS		
Because this unit is relatively low in altitude it makes it susceptible to change, especially through the intensification of farming, which results in changes in the ground cover from short tussock grasslands to exotic pasture with associated shelterbelts and farm buildings.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	Identification and protection of coherent foothill for landscapes.	
Uses to support:	Status quo farming. Discreet usage of schist rock for traditional purposes.	
Uses to discourage:	More intensive land uses. Spread of wilding pines. Quarrying and extensive removal of schist outcrops.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Dunedin City Council, Otago Regional Council, local farmers		

LANDSCAPE ANALYSIS

SIGNIFICANT ELEMENTS		Landscape Unit MP 1
Landscape Character Type: Mountain Plateau (Lammermoor/Lammerlaw)		
1 Primary Elements		
Landform:	High altitude tablelands with a smoothly rounded topography.	
Land cover:	Snow tussock; random patches of small blue tussock; cushion bogs and snow banks.	
Land use:	Extensive pastoralism (summer run country); backcountry recreation, eg, tramping, cross-country skiing; headworks for DCC's water supply.	
Dominant primary element: The distinctive landform (moorlands) with its intricate drainage pattern.		
2 Landscape Character Attributes		
This landscape's special qualities include the limited relief in topography, strong sense of remoteness, and open character.		
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LOCATION	See MP 1 on landscape map.	
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STATUS		
This finely textured landscape is vulnerable to visual change, particularly in relation to intensive farming practices. The fragile moors, cushion bogs and snowbanks are also very susceptible to human interference. Along the edges of the mountain plateau, installations such as communication dishes would be visible from many low country viewing points.		
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MANAGEMENT DESCRIPTION		
Uses to Promote:	The protection and enhancement of the Lammermoors and Lammerlaws' outstanding natural landscape qualities. The protection of soil and water values, especially the hydrological significance of the wet dome at the southern end of the Lammermoors.	
Uses to Support:	Status quo management of the tussock grasslands. Control of all adventive plants and feral animals that will degrade landscape values.	
Uses to Discourage:	Depletion of intrinsic values through burn-offs. Insensitive tracking, bulldozed fencelines and ploughed firebreaks. Further depletion of the natural groundcover. Unsympathetic siting of installations along the high edges of the plateau.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC (NB: The role of DOC is to influence landscape change for the better, mainly by trying to influence the decisions of others through policies and advocacy work.) Landcorp, ORC, Federated Farmers.		

SIGNIFICANT ELEMENTS		Landscape Unit MP 2
Landscape Character Type: Mountain Plateau (Manorburn)		
1 Primary Elements		
Landform:	High altitude tablelands with a large well defined shallow basin.	
Land cover:	Snow tussock; fingers of red tussock around the damp depression; cushion bogs; water reservoirs.	
Land use:	Extensive pastoralism (summer run country); backcountry fishing.	
Dominant primary element: The distinctive landform (moorlands) with associated water masses.		
2 Landscape Character Attributes		
This landscape's special qualities include the limited relief in topography, strong sense of remoteness, and open character. Water has become a strong focal point in this landscape unit, which contrasts markedly with the encircling semi-arid grasslands.		
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LOCATION	See MP 2 on landscape map.	
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STATUS		
Many of this unit's special inherent terrestrial features have been drowned or modified by large water masses. Lake Onslow and the irrigation reservoirs are very accessible and are becoming important for water orientated recreation therefore they need to be managed in a sensitive manner.		
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MANAGEMENT DESCRIPTION		
Uses to promote:	Around the water reservoirs, the retention of the tussock cover up to the immediate skyline. This will help to provide these increasingly important recreational areas with a natural backdrop and setting.	
Uses to support:	Light grazing (sheep only).	
Uses to discourage:	Insensitive siting of pylons, tracks and fire breaks around the reservoirs; further tree planting; further unsympathetic siting of fishing cribs around Lake Onslow.	
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TIMING	As opportunity arises, eg, RM Act, advocacy.	
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AGENTS		
DOC, Otago Regional Council, Central Otago District Council		

SIGNIFICANT ELEMENTS		Landscape Unit BR 1, 2
Landscape Character Type: Basin and Rangeland (Benger)		
1 Primary Elements		
Landform:	Block-faulted uplands with mid-altitude rolling foothill country.	
Land cover:	Comprises mainly OSTD native grasses; exotic grasslands, alpine tussock grasslands, shrublands, red tussock remnants, mixed beech forest.	
Land use:	Extensive pastoral farming, intensive sheep farming, farm forestry, nature conservation.	
Dominant primary element: Landform with its deeply incised drainage pattern.		
2 Landscape Character Attributes		
Landscape units BR 1 and 2 have a greater diversity in vegetation cover than most other units in this landscape type, primarily because of the higher annual rainfall. The said altitude land was exploited at an early stage for pastoral farming while the high country still has a coherent character that is worthy of protection.		
<hr/>		
LOCATION	See BR 1 and 2 on landscape map.	
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STATUS		
The mid-altitude land being so disjointed in character means that it can absorb a certain degree of change without being detrimental to the overall landscape, whereas the high country which is still primarily natural in character cannot withstand further changes in land cover and landuse.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	The protection and enhancement of the rangelands' natural intrinsic qualities through the PNA implementation programme.	
Uses to support:	Sustainable light grazing (sheep only) in the high country, more diverse and imaginative land uses in mid-altitude country, eg, agro-forestry.	
Uses to discourage:	All land uses and management issues that will degrade the landscape, insensitive siting of buildings and installation on prominent skylines.	
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TIMING	As opportunity arises, eg, RM Act, advocacy.	
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AGENTS		
DOC, Otago Regional Council, Federated Farmers, Landcorp.		

SIGNIFICANT ELEMENTS		Landscape Unit BR 3
Landscape Character Type: Basin and Rangeland (Roxburgh)		
1 Primary Elements		
Landform:	Deeply incised valley with alluvial terraces.	
Land cover:	Tussock grasslands, market gardening, OSTD native grasslands, shelter planting, shrublands on rocky outcrops, irrigated farmland, stone fruit orchards, historic mining sites.	
Land use:	Extensive sheep farming on the high rangeland, intensive farming on the mid slopes, orchards on the valley floor, water storage for hydro power.	
Dominant primary element: The deep river valley with its series of terraces.		
2 Landscape Character Attributes		
The most distinctive feature of this unit is the contrast between the surrounding rugged hills and the highly productive alluvial terraces. The main contrast is in colour with the hills being a tawny brown while the lower terraces are a patchwork of greens. There is also a marked contrast between the water mass of Lake Roxburgh and the surrounding land.		
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LOCATION	See BR 3 on landscape map.	
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STATUS		
The striking contrasts in colour and texture are rapidly being reduced by continual OSTD of the mid altitude slopes. An increase in farm tracking is also having an impact on the highly visible slopes.		
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MANAGEMENT PRESCRIPTION		
Uses to promote:	The protection and enhancement of the rangeland's natural intrinsic qualities. Further protection of all low altitude short tussock and rocky outcrops.	
Uses to support:	Sustainable and diverse land uses. Preparation of guidelines that will help to protect and enhance the area's special identity.	
Uses to discourage:	All land uses and management decisions that will degrade the landscape.	
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TIMING	As opportunity arises, eg, RM Act advocacy.	
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AGENTS		
DOC, Otago Regional Council, Otago Central District Council.		

SIGNIFICANT ELEMENTS		Landscape Unit BR 4
Landscape Character Type: Range and Basin (Bannockburn)		
1 Primary Elements		
Landform:	High altitude plateau dissected by the Clutha River and tributaries. Rocky arid hills studded by rocky outcrops.	
Land cover:	Spaniard communities at high altitude, interspersed by tussock grasslands. Lower ground mainly dry pasture and localised orchards. Poplar and pine shelter planting.	
Land use:	Pastoral farming, horticulture, small urban settlements and water resource development.	
Cultural elements:	Bannockburn township, historic goldmining features. Lake Dunstan (Clutha Arm).	
2 Landscape Character Attributes		
The unit is characterised by rocky tors along the skylines, arid hills and "green oasis" in the valleys. The sluiced areas around Bannockburn have a badlands appearance. The landscape has been changed dramatically with the filling of Lake Dunstan.		
LOCATION	See BR4 on landscape map.	
STATUS		
A landscape with striking visual contrasts between arid and bush irrigated land. The historic character of the sluiced area is vulnerable to further weed infestation, wilding pines and inappropriate subdivision.		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Protection of historic/cultural features. Planned approach to rural subdivision, sustainable land use, good lakeshore development.	
Uses to support:	Control of invasive plants and feral animals that will degrade landscape values.	
Uses to discourage:	Insensitive tracking and earthworks. Further depletion of native ground cover.	
TIMING	As opportunity arises, eg, Resource Management Act advocacy.	
AGENTS		
DOC, Otago Regional Council, Landcorp.		

SIGNIFICANT ELEMENTS		Landscape Unit BR 5
Landscape Character Type: Range and Basin (Alexandra)		
1 Primary Elements		
Landform:	Alluvial basin and terraces dissected by Clutha River. Rocky arid hills above Alexandra.	
Land cover:	Pasture, orchards, poplars, willows, pine plantations and shelterbelts.	
Land use:	Horticulture, lifestyle blocks, grazing, urban development.	
Cultural elements:	Earnsclough tailings - an important historic/cultural feature.	
2 Landscape Character Attributes		
Rivers (Clutha and Manuherikia) important feature. Town developed around confluence. Oasis character of basin within arid landscape is a distinctive characteristic.		
LOCATION	Alexandra/Earnsclough Basin	
STATUS		
Existing character of arid hills vulnerable to wilding tree spread. Public must decide on trees or no trees. Sporadic subdivision of lifestyle block on outskirts of Alexandra is resulting in loss of rural character.		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Protection of historic/cultural features. Planned approach to rural subdivision.	
Uses to support:		
Uses to discourage:	Ribbon development between Alexandra and Clyde. Uncontrolled wilding tree spread. Sporadic subdivision on highly visible terraces.	
TIMING	As opportunity arises, eg, RM Act advocacy.	
AGENTS		
DOC, Central Otago District Council		

SIGNIFICANT ELEMENTS		Landscape Unit BR 6
Landscape Character Type: Range and Basin (Pisa)		
1 Primary Elements		
Landform:	Summit plateau. Steep eastern fault scarp face. Glacial cirques line top of the eastern face. Elsewhere smooth rounded ridges with scattered rock tors.	
Land cover:	Snow tussock, blue tussock, herbfield, cushionfields. Modified tussocklands on range sides.	
Land use:	Extensive pastoralism, back country recreation. Commercial cross-country skiing, nature conservation, commercial tyre testing.	
Cultural elements:	Localised evidence of early gold-mining (water races, dams, mining equipment). Cardrona Packtrack important early route to goldfields.	
2 Landscape Character Attributes		
Impressive summit plateau landscape derived from spectacular landform, vegetation, views and remote/isolated characteristics.		
LOCATION	Pisa	
STATUS		
Fragile summit landscape vulnerable to human interference, tracking, installations, earth works, structures, development associated with commercial recreation.		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Farm management practices which retains or improves tussock cover. Control of hieracium. Retirement from grazing for large areas of Pisa Tops.	
Uses to support:	Planned cross-country ski area development. Some forestry on suitable lower slopes. Control of invasive weeds and feral animals.	
Uses to discourage:	Burning. Insensitive tracking and earth works. Further depletion of indigenous cover.	
TIMING	As opportunity arises, eg, RM Act advocacy	
AGENTS		
DOC, Otago Regional Council, Landcorp		

SIGNIFICANT ELEMENTS		Landscape Unit BR 7
Landscape Character Type: Range and Basin (Upper Clutha)		
1 Primary Elements		
Landform:	River, flats, terraces and foothills.	
Land cover:	Mainly exotic grasses, willow, poplar, kanuka shrubland at Bendigo and Queensberry.	
Land use:	Horticulture, dryland and irrigated farming, urban uses, water resource development.	
Cultural elements:	Early mining activity and settlements. Stone buildings.	
2 Landscape Character Attributes		
Character changing with creation of Lake Dunstan. Remnant kanuka at Bendigo and on NW lower lopes of the Pisa are important to character and identity of this unit. Pisa escarpment is a dominant feature.		
LOCATION	Lake Dunstan and Tarras.	
STATUS		
Rapid landscape change is occurring with creation of Lake Dunstan. Farm intensification and rabbit control threaten remnant kanuka.		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Sustainable land use, good lakeshore development, protection of kanuka shrubland.	
Uses to support:		
Uses to discourage:	Insensitive siting of installations and all other man-made impacts.	
TIMING	As opportunity arises, eg, RM Act advocacy	
AGENTS		
DOC, Central Otago District Council, Otago Regional Council		

LANDSCAPE ANALYSIS

SIGNIFICANT ELEMENTS	Landscape Unit BR 8
Landscape Character Type: Range and Basin (Dunstons)	
1 Primary Elements	
Landform: Flat-topped block mountain range. Large impressive rock tors. Summit characterised by broad smooth undulating ridges. Range sides typically ridge and gully.	
Land cover: Broad area of slim snow tussock, herbfield and blue tussock on summit, grading into fescue tussockland, matagouri and pasture lower down. Some remnant woody vegetation confined to gullies.	
Land use: Extensive pastoralism; back country recreation, nature conservation.	
Cultural elements: Musterers huts, water races, mining.	
2 Landscape Character Attributes	
Summit's landscape character derived from combination of land form, vegetation, rock tors, impressive views and remote isolated values. Remnant indigenous cover on range sides important to valley landscapes. Valley leading up to Thomson Saddle (Rise and Shine Creek) important for relatively intact short tussocklands.	
LOCATION Dunstan Mountains	
STATUS	
Fragile summit landscape vulnerable to human interference, eg, tracking, structures. Farm intensification threatens tussock cover continuum on lower slopes.	
MANAGEMENT PRESCRIPTION	
Uses to promote: Farm management practice which retains or improves tussock cover.	
Uses to support: Control of invasive plants and feral animals that will degrade landscape values.	
Uses to discourage: Insensitive tracking and earthworks. Further depletion of indigenous cover. Unsympathetic siting of installation. Burning off.	
TIMING As opportunity arises, eg, RM Act advocacy	
AGENTS	
DOC, Landcorp, Otago Regional Council	

SIGNIFICANT ELEMENTS	Landscape Unit BR 9
Landscape Character Type: Range and Basin (Lindis)	
1 Primary Elements	
Landform: Steep, smooth colluvial slopes characteristic of Lindis Pass area. Lower part of catchment - broad undulating ridges and rock tors.	
Land cover: Snow and short tussock on colluvial slopes. Depleted fescue tussock and exotic pasture and weeds, eg, briar in lower catchment. Mountain beech remnants in NW of unit (ie, Breast Hill).	
Land use: Pastoral farming.	
Cultural elements: Stone farm buildings and plantings associated with early pastoralism.	
2 Landscape Character Attributes	
Lindis Pass landscape is a highly distinctive representative NZ landscape (derived from combination of landform and vegetation). Loss of tussock cover in lower catchment and invasion by weeds gives an overall degraded appearance.	
LOCATION Lindis	
STATUS	
Lindis Pass landscape is highly vulnerable. Threatened by hieracium, grazing OSTD. Critical that Lindis representative landscape is protected. Coordinated action with Canterbury Conservancy is required.	
MANAGEMENT PRESCRIPTION	
Uses to promote: Conservation of identified Lindis Pass representative landscape. Protection of historic buildings and sites. Sustainable management of degraded lower Lindis catchment.	
Uses to support: Sustainable farm management practices.	
Uses to discourage: Poorly sited tracks and structures.	
TIMING As opportunity arises, eg, RM Act advocacy	
AGENTS	
DOC, NZ Historic Places Trust, Otago Regional Council	

SIGNIFICANT ELEMENTS	Landscape Unit BR 10
Landscape Character Type: Range and Basin (St Bathans)	
1 Primary Elements	
Landform: A mixture of high altitude eroding land rising up to 6800 ft, narrow ridgelines separating catchments, and lower river terrace country.	
Land cover: The high altitude zone is nearly void of all vegetation, except for a scattering of small cushion plants. The middle ground comprises small blue tussock and low saturated snow tussock. In the valley floors the vegetation is mainly introduced grasses, native woody species and some localised weevil infestation.	
Land use: Extensive pastoralism, backcountry recreation and nature conservation.	
Cultural elements: Musterer's hut, sheep yards, water races, eg, Scandinavian Race.	
2 Landscape Character Attributes	
A distinctive feature of the high country is the coloration and the fine texture of the greywacke scree faces, while the middle ground conveys a feeling of wilderness which is highly valued by those seeking solitude and escape. The Manuherikia River and Dunstan Creek dissect the high country into a series of deep valleys.	
LOCATION See BR10 on landscape map.	
STATUS	
Fragile summit landscape vulnerable to human interference, eg, tracking, structures. Farm intensification threatens tussock cover continuum on lower slopes.	
MANAGEMENT PRESCRIPTION	
Uses to promote: Farm management practice which retains or improves tussock cover.	
Uses to support: Control of invasive plants and feral animals that will degrade landscape values.	
Uses to discourage: Insensitive tracking and earthworks. Further depletion of indigenous cover. Unsympathetic siting of installation. Burning off.	
TIMING As opportunity arises, eg, Resource Management Act advocacy.	
AGENTS	
DOC, Otago Regional Council, Landcorp.	

SIGNIFICANT ELEMENTS	Landscape Unit BR 11
Landscape Character Type: Range and Basin (Manuherikia)	
1 Primary Elements	
Landform: Terraces, plains, valleys and low hills.	
Land cover: Predominantly pasture both dry and irrigated. Poplars, willows in water courses and low-lying areas. Some remaining short tussock on St Bathans Downs.	
Land use: Farming, some horticulture.	
Cultural elements: Historic settlements (St Bathans, Matakau, Ophir). Early mining activity.	
2 Landscape Character Attributes	
Early settlement patterns and historic elements make an important contribution to character, ie, early mining activity, historic settlements (St Bathans, Matakau, Ophir), also early farm buildings and plantings.	
LOCATION Manuherikia Valley.	
STATUS	
Not highly vulnerable. Some change could be positive, ie, further tree planting and landuse diversification. Retention of historic/cultural features important.	
MANAGEMENT PRESCRIPTION	
Uses to promote: Protection of historic/cultural features.	
Uses to support: Landuse diversification. Well sited and designed buildings and structures. Townscape improvement.	
Uses to discourage:	
TIMING As opportunity arises, eg, RM Act advocacy	
AGENTS	
DOC, NZ Historic Places Trust, Otago Regional Council	

SIGNIFICANT ELEMENTS

Landscape Character Type:
Basin and Rangelands (Ida Valley)

**Landscape Unit
BR 13**

1 Primary Elements

Landform: A valley floor contained by low rugged hills.

Land cover: OSTD native grasses on the hills, exotic grasslands on valley floor, poplar shelter belts, homestead plantings.

Land use: Dry sheep farming on the hill country, lamb fattening on the irrigated valley floor, cropping, early goldmining sites.

Dominant primary element: Landform and landuse co-dominant.

2 Landscape Character Attributes

The lower portion of the valley is green, flat and fertile looking. Squared paddocks, many cultivated. Homesteads in groves of trees tend to be tucked against the hills. The upper section of the valley is slightly rolling and less intensively farmed. There are fewer trees.

LOCATION See BR 13 on landscape map.

STATUS

A very typical Central Otago landscape with a very strong sense of the past. Threats to the existing character include further shelter-belt planting and weed infestation.

MANAGEMENT PRESCRIPTION

Uses to promote: Being a well-established cultural landscape, DOC should take a passive role, mainly to protect the special identity that this valley has.

Uses to support: Sustainable and wise landuse. Preparation of rural guidelines for landscape conservation and enhancement.

Uses to discourage: Insensitive siting of installations and all other man-made impacts.

TIMING As opportunity arises, eg, RM Act advocacy.

AGENTS

DOC, Otago Central District Council, Otago Regional Council, Federated Farmers

SIGNIFICANT ELEMENTS

Landscape Character Type:
Basin and Rangeland (Raggedy Range and North Rough Ridge)

**Landscape Unit
BR 12, 14**

1 Primary Elements

Landform: Long narrow ridge with small spurs and gullies.

Land cover: Heavily modified short tussock grasslands, patches of native divaricating shrublands in the gullies, large rocky outcrops, large mats of Hieracium.

Land use: Extensive pastoral farming. The summer block in this semi arid region tends to be very large.

Dominant primary element: The continual series of rough ridges and parallel troughs.

2 Landscape Character Attributes

This landscape still retains the arid, rocky, open, typically "Central Otago" character, although the original tussock cover has been heavily modified after a century of pastoralism.

LOCATION See BR 12 and BR 14 on landscape map.

STATUS

The landscape is vulnerable to change in particular with the spread of wilding pines, further spread of hawkweeds and pastoral improvements (further subdividing of summer blocks).

MANAGEMENT PRESCRIPTION

Uses to promote: The protection and enhancement of this typical Central Otago landscape (the region's dry core).

Uses to support: Sustainable light grazing (sheep only), restoration of native grasslands and shrublands, control of all adventure plants

Uses to discourage: Depletion of native ground cover through overstocking and burning. Cultivation - possibly some direct drilling through weed infested areas. Wilding tree spread.

TIMING As opportunity arises, eg, RM Act advocacy.

AGENTS

DOC, district council, ORC, Federated Farmers

SIGNIFICANT ELEMENTS

Landscape Character Type:
Ranges and Basins (Maniototo)

**Landscape Unit
BR 15**

1 Primary Elements

Landform: Inland circular basin surrounded by block mountains.

Land cover: Irrigated farmland; shelter planting; dry grasslands, wetlands and ponds; remnants of short tussocklands; willows along watercourses.

Land use: Lamb fattening; dry sheep farming; arable farming.

Dominant primary element: Large basin with its series of low rocky ridges and meandering watercourses.

2 Landscape Character Attributes

Marked contrast between the shallow basin and surrounding mountainlands. Green irrigated paddocks contrast sharply with the tawny coloured hill country. A new landscape is emerging as more farms have access to irrigation. Only residual natural areas are left which are frequently out of context with their surroundings.

LOCATION See BR 15 on landscape map.

STATUS

The existing open character of the Maniototo Basin is being changed due to the increase in shelter-belt planting and the squared green paddocks. As well, the other standardised farming elements which are associated with more intensive farming, ie, silage pits, are becoming more of a common feature.

MANAGEMENT PRESCRIPTION

Uses to promote: Being an agricultural landscape, DOC should take a passive role, mainly to help influence landscape change for the better and to encourage further protection of remnant short tussocklands.

Uses to support: Sustainable and diverse land use. Preparation of guidelines for wise land management and landscape conservation.

Uses to discourage: Exploitation of natural resources. Insensitive siting of installations and all other man-made impacts.

TIMING As opportunity arises, eg, RM Act advocacy.

AGENTS

DOC, District Council, Otago Regional Council

SIGNIFICANT ELEMENTS

Landscape Character Type:
Ranges and Basins (Rock and Pillar Range)

**Landscape Unit
BR 16**

1 Primary Elements

Landform: Massive flat-topped rangeland with steep scarp faces.

Land cover: Snow tussock grasslands; patches of small blue tussock; alpine fellfields; cushion bogs and tarns; woody species in damper/shady gullies.

Land use: Extensive pastoralism (summer run country); backcountry recreation, eg, tramping, 4WD activities, cross-country skiing; nature conservation.

Dominant primary element: Block rangeland with its pocked surface and schist outcrops.

2 Landscape Character Attributes

The most distinctive attributes include the serrated skyline along the edge of the eastern scarp. Expansive and open character provides a feeling of no sense of boundaries. Provides an excellent setting for wilderness types of recreation. Striking colour of the vegetation - tawny brown to gold.

LOCATION See BR 16 on landscape map.

STATUS

The generally subtle nature of this landscape and its inherent fragility makes it extremely vulnerable to insensitive changes. In such a landscape type it is difficult to hide man-made impacts, tracking, bulldozed fencelines and intensive land use. Adventive weed plants need to be controlled.

MANAGEMENT PRESCRIPTION

Uses to promote: The protection and enhancement of the rangelands' natural intrinsic qualities. The protection of soil and water qualities.

Uses to support: Sustainable light grazing (sheep only). Restoration of native grasslands and shrublands. Control of all adventive plants (*Hieracium*) and wild animals that will degrade landscape values.

Uses to discourage: Depletion of groundcover through overstocking and occasional burning. Cultivation (possibly some conservation tillage). AOSTD. Wilding tree spread. All other uses that are outlined under Mountain Plateau LCT.

TIMING As opportunity arises, eg, RM Act advocacy.

AGENTS

Similar to those mentioned under Mountain Plateau.

LANDSCAPE ANALYSIS

SIGNIFICANT ELEMENTS		Landscape Unit BR 17
Landscape Character Type: Basin and Rangeland (Middlemarch)		
1 Primary Elements		
Landform:	A wide river valley contained by surrounding hills and mountain range (Rock and Pillars).	
Land cover:	Tussock grasslands with distinctive rocky outcrops. OSTD native grasslands. Intensive farmland. Shelter planting.	
Land use:	Extensive sheep farming on the higher slopes. Intensive sheep farming on the mid and lower slopes.	
Dominant primary element:	The landform with the deeply incised Taieri River.	
2 Landscape Character Attributes		
Refer to BR 15.		
<hr/>		
LOCATION	See BR 17 on landscape map.	
<hr/>		
STATUS	Refer to BR 15.	
<hr/>		
MANAGEMENT PRESCRIPTION		
Uses to promote:)	
Uses to support:) Refer to BR 15	
Uses to discourage:)	
<hr/>		
TIMING	As opportunity arises, eg, RM Act advocacy.	
<hr/>		
AGENTS		
Refer to BR 15		

SIGNIFICANT ELEMENTS		Landscape Unit BR 18
Landscape Character Type: Basin and Rangelands (Kakanui Range)		
1 Primary Elements		
Landform:	Steep-faced mountain range, includes the Pigroot and Danseys Pass.	
Land cover:	Herbfields and rock barrens, depleted snowtussock grasslands, shrublands, oversown native grasses, exotic pasture, historic goldmining sites.	
Land use:	Extensive pastoral farming, semi-intensive farming, lowland cropping.	
Dominant primary element:	Landform with its deeply incised drainage pattern.	
2 Landscape Character Attributes		
The high altitude country still conveys a general appearance of naturalness, characterised by the homogeneity of ground covers, especially the snowtussock which transmits a golden sheen over the surrounding ridgeline. This character is also found at a lower altitude in the main mountain passes.		
<hr/>		
LOCATION	See BR 18 on landscape map.	
<hr/>		
STATUS		
The general subtle nature of this landscape and its inherent fragility makes it extremely vulnerable to insensitive changes. In such a landscape type it is difficult to hide man-made impacts, tracking, bulldozed fencelines and intensive landuse patterns.		
<hr/>		
MANAGEMENT DESCRIPTION		
Uses to promote:	The protection and enhancement of the rangelands natural intrinsic qualities. The retention of the appearance of tussock cover along important road corridors, Protection of historic sites.	
Uses to support:	Sustainable management of tussock grasslands. Control of all adventive weeds and wild animals that will degrade landscape values.	
Uses to discourage:	Depletion of native ground cover at a high altitude and mountain passes. All land uses and management issues that will degrade the landscape, insensitive siting of buildings and installations on prominent skylines.	
<hr/>		
TIMING	As opportunity arises, eg, RM Act advocacy.	
<hr/>		
AGENTS		
DOC, Otago Regional Council, Waitaki District Council, Federated Farmers, Landcorp		

SIGNIFICANT ELEMENTS		Landscape Unit ILB 1
Landscape Character Type: Inland Lake Basin (Wakatipu)		
1 Primary Elements		
Landform:	Glacial landforms, river terraces and flats, old lake terraces.	
Land cover:	Snowtussock on tops grading into fescue and silver tussock, bracken and pasture grasses. Exotic trees and hedgerows around areas of human settlement. Remnant lakeshore vegetation.	
Land use:	Semi intensive farming, tourism, horticulture, urban development, lifestyle blocks, recreation forestry.	
Cultural elements:	Early settlement patterns, stone buildings, plantings, etc.	
2 Landscape Character Attributes		
Wakatipu Basin is an outstandingly attractive rural landscape derived from the combination of its physical form and the patterns created by traditional agriculture.		
<hr/>		
LOCATION	Wakatipu Basin	
<hr/>		
STATUS		
Landscape under pressure for land uses other than traditional agriculture. Landscape character vulnerable to arbitrary subdivision and urban uses. Tussock cover of surrounding mountains threatened by farming and wilding tree spread.		
<hr/>		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Farming, horticulture, controlled rural residential development. Retention of rural character.	
Uses to support:	Wetland protection.	
Uses to discourage:	Spread of wilding trees, uncontrolled subdivision, burning.	
<hr/>		
TIMING	As opportunity arises, eg, RM Act advocacy	
<hr/>		
AGENTS		
DOC, Landcorp, Otago Regional Council, Queenstown Lakes District Council		

SIGNIFICANT ELEMENTS		Landscape Unit ILB 2
Landscape Character Type: Inland Lake Basin (Glenorchy)		
1 Primary Elements		
Landform:	Steep glaciated mountain slopes. Alluvial flats and moraines.	
Land cover:	Diverse mixture of vegetative cover. Beech forest, tussockland, alpine herbfields, kowhai remnants at the Hillocks, lakeside shrubland and forest. Exotic plantings associated with settlement. Willow, poplar plantings significant.	
Land use:	Farming, commercial tourism, recreation mining.	
Cultural elements:	Farm buildings, exotic plantings.	
2 Landscape Character Attributes		
The developed farmed landscape combined with river, lake, wetland, natural landform and a mosaic of indigenous vegetation forms an outstanding, and highly scenic landscape.		
<hr/>		
LOCATION	Glenorchy	
<hr/>		
STATUS		
Vulnerable to insensitive tracking, poorly sited and designed buildings associated with farming and tourism and to vegetation modification.		
<hr/>		
MANAGEMENT PRESCRIPTION		
Uses to promote:	Protection of forest remnants and wetlands. Retirement of forest areas from grazing. Sensitive siting and design of structures and buildings.	
Uses to support:		
Uses to discourage:	Burning without follow-up OSTD. Burning of any remaining forest or shrubland.	
<hr/>		
TIMING	As opportunity arises, eg, RM Act advocacy	
<hr/>		
AGENTS		
DOC, Landcorp, Otago Regional Council, Queenstown Lakes District Council		

SIGNIFICANT ELEMENTS

Landscape Character Type:
Inland Lake Basin (Wanaka/Hawea)

**Landscape Unit
ILB 3**

1 Primary Elements

Landform: Glacial landforms, alluvial flats and terraces, steep mountain slopes and lakeshore bays, extensive rock outcrops.

Land cover: Snow tussock grading into fescue/silver tussock and pasture grasses. Kanuka, manuka shrubland around lakeshore, Mt Iron, Albert Town. Exotic plantings.

Land use: Tourism, farming, horticulture, recreation, lifestyle blocks, urban development.

Cultural elements: Early exotic plantings, particularly around lake edge and high country stations.

2 Landscape Character Attributes

Remnant kanuka and shrubland that has escaped burning important to character of Wanaka/Glendhu Bay.

LOCATION Wanaka/Hawea

STATUS

Remnant vegetation threatened by burning and farm development.

MANAGEMENT PRESCRIPTION

Uses to promote: Retention of all native remnant shrubland. Development sympathetic to lakeshore character.

Uses to support:

Uses to discourage: Burning (without oversowing and topdressing). Uncontrolled subdivision. Inappropriate lakeshore development. Ribbon development along lakeshore.

TIMING As opportunity arises, eg, RM Act advocacy

AGENTS

DOC, Landcorp, Queenstown Lakes District Council, Otago Regional Council

SIGNIFICANT ELEMENTS

Landscape Character Type:
Inland Lake Basin (Upper Wanaka/Hawea)

**Landscape Unit
ILB 4, 5**

1 Primary Elements

Landform: Glaciated mountain/valley system. Old lake and river terraces.

Land cover: Snow tussock on tops. Mostly bracken and remnant shrubland on lower slopes. Further west beech forest. Remnant lakeshore vegetation, eg, pittosporum, olearia, rata.

Land use: Extensive pastoral farming, tourism, recreation.

Cultural elements:

2 Landscape Character Attributes

Remnant lakeside vegetation important to retaining indigenous character, eg, remnant vegetation between Rumbling Burn and Minaret Burn.

LOCATION Upper Lakes Wanaka and Hawea

STATUS

Vulnerable to degradation and loss of character by removal of indigenous cover, wilding tree spread.

MANAGEMENT PRESCRIPTION

Uses to promote: Farm management practices which maintain or improve indigenous cover.

Uses to support:

Uses to discourage: Burning without OSTD. Poorly sited tracks and structures.

TIMING As opportunity arises, eg, RM Act advocacy

AGENTS

Landcorp, DOC, Otago Regional Council, Queenstown Lakes District Council

SIGNIFICANT ELEMENTS

Landscape Character Type:
Mountain Lands (Nevis)

**Landscape Unit
ML 1**

1 Primary Elements

Landform: Valley enclosed by steep glaciated mountains to west and flat topped range to east. Gorges separate the upper and lower Nevis Flats and the mouth of the Nevis.

Land cover: Snow tussock in headwaters and upper slopes. Flats are short tussock, exotic grasses, herbs and wetland species.

Land use: Extensive pastoralism, mining, recreation.

Cultural elements: Much evidence of early mining activity, eg, tailings, sluicings, dredge ponds, stone ruins, mining relics and early settlements. Planting confined to locality of farmstead plantings associated with early pastoralism.

2 Landscape Character Attributes

Character derived from largely intact natural character overlaid by rich cultural history. Lower Nevis retains its early pastoral character. Remote isolated characteristics also important.

LOCATION Nevis

STATUS

Existing character vulnerable to change by uses which alter the indigenous cover, and erode the early pastoral and backcountry character.

MANAGEMENT PRESCRIPTION

Uses to promote: Backcountry recreation, landscape appreciation

Uses to support: Existing grazing levels

Uses to discourage: Insensitive tracking, mining which destroys natural and historical values, water resource development, transmission pylons and cables.

TIMING As opportunity arises, eg, RM Act advocacy

AGENTS

DOC, Otago Central Electric Power Board, Landcorp, Otago Regional Council

SIGNIFICANT ELEMENTS

Landscape Character Type:
Mountain Lands (Alps)

**Landscape Unit
ML 2, 3, 4**

1 Primary Elements

Landform: Steep sided U-shaped valleys with rugged mountain peaks. Extensive evidence of glaciation, sandstone gorges.

Land cover: Beech forest, grass covered flats. Snow tussock, herbfield and fellfield above bush line.

Land use: Nature conservation, grazing, recreation, commercial tourist activity.

Cultural elements: Generally not dominant. Evidence of grazing and burning.

LOCATION South and west side of Lake Wakatipu

STATUS

Majority of area covered by national park and conservation park status.

MANAGEMENT PRESCRIPTION

Uses to promote: Protection and enhancement of indigenous cover.

Uses to support: Sustainable grazing of land suitable for grazing.

Uses to discourage: Burning. Poorly sited tracking and earthworks. Further depletion of indigenous cover.

TIMING As opportunity arises, eg, RM Act advocacy

AGENTS

DOC

LANDSCAPE ANALYSIS

SIGNIFICANT ELEMENTS	Landscape Unit ML 5
Landscape Character Type: Mountain Lands (Cardrona/Shotover/Arrow)	
1 Primary Elements Landform: Terraces and steep hills. Impressive schist rock gorges. Land cover: Snow tussock and short tussockland are the dominant cover. Pockets of beech forest, shrub-lined water courses. Lower country colonised by miners plants, eg, elderberry, briar and exotic herbs and grasses. Land use: Extensive high country pastoralism. Commercial tourist use, recreation, mining. Cultural elements: Rich cultural heritage. Early mining settlements and mining sites, eg, Skippers Bridge and road. Macetown.	
2 Landscape Character Attributes Natural and cultural landscape elements combine to form a highly distinctive and unique NZ landscape. Tussock covered hills and terraces are the dominant feature.	
<hr/> LOCATION Cardrona/Shotover/Arrow	
<hr/> STATUS Vulnerable to exploitation by modern mining, farm intensification resulting in vegetation modification and the excesses of tourism.	
<hr/> MANAGEMENT PRESCRIPTION Uses to promote: Status quo grazing. Promote protection and enhancement of tussock cover. Controlled tourist use. Limited and strictly controlled mining. Uses to support: Uses to discourage: Burning, earthworks, insensitive siting of installations, tracks, etc.	
<hr/> TIMING As opportunity arises, eg, RM Act advocacy	
<hr/> AGENTS DOC, Landcorp, Otago Regional Council	

SIGNIFICANT ELEMENTS	Landscape Unit ML 6
Landscape Character Type: Mountain Lands (Kawarau Gorge)	
1 Primary Elements Landform: Steep mountain slopes, rock outcrops, bluffs and narrow continuous terraces. Slot gorges. Land cover: Snow tussock, short tussock, exotic grasses, sweetbriar, matagouri, willow, poplar, thyme. Land use: Farming, tourism, hydro development, mining, recreation. Cultural elements: Extensive early goldmining activity, stone huts, sluicings, hotel remains, dams and plantings.	
2 Landscape Character Attributes Many hill slopes are dry, barren and eroded. The river is the focus of the Kawarau Gorge. The gorge is an important entrance to Queenstown and the Wakatipu Basin.	
<hr/> LOCATION Kawarau Gorge	
<hr/> STATUS Vulnerable to degradation by mining, hydro development.	
<hr/> MANAGEMENT PRESCRIPTION Uses to promote: Farm practice which maintains or improves vegetative cover. Uses to support: Rabbit and goat control. Strict control over siting of communication installations and other structures. Protection of historic/cultural features. Careful siting of forestry blocks. Uses to discourage: Insensitive development.	
<hr/> TIMING As opportunity arises, eg, RM Act advocacy	
<hr/> AGENTS DOC, Landcorp, Otago Regional Council	

APPENDIX FOUR

Otago Conservancy High Profile Track Strategy

Note: this Strategy was written prior to the commencement of the Conservation Management Strategy process, as part of the Otago Conservancy Recreation Strategy. Some of this information is now out of date.

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

1.1 INTRODUCTION

Throughout New Zealand there are a number of high profile tramping tracks. Some, such as the Abel Tasman, Milford, Routeburn and Tongariro are well known throughout New Zealand and also overseas. The greatest concentration of such tracks is found in the south west of the South Island. The backpacker component of the overseas tourists visiting New Zealand is growing in proportion to visitor growth overall. This concentration means that a growing number of trampers use the region each year, frequently tramping more than one track. This is bringing increasing pressure on the tracks, and often developments have occurred on an ad hoc basis, in response to demand or impacts as they occur.

This strategy integrates a number of factors influencing the use of the tracks, and outlines a broad but more coordinated approach to future management.

1.2 DEFINITION

High profile tracks display certain characteristics. The key feature is a high awareness of the track and the tramping opportunity it offers, both by domestic and international users.

These tracks tend to receive relatively high use, which contributes to the character of the experience, but which may occasionally be reflected in negative physical and social impacts. Partly as a result of the usage levels, many high profile tracks have a reasonable infrastructure in the immediate area including a variety of transport available, a range of accommodation and food/equipment outlets.

1.3 HIGH PROFILE TRACKS IN THE SOUTHWEST OF THE SOUTH ISLAND

The following tracks are identified as high profile within the area outlined, along with their main characteristics.

1.3.1 Otago/Southland Conservancies

Routeburn	links Wakatipu to Milford Road, full day above bushline in alpine setting, suitable for inexperienced trampers
Mavora	links Mavora Lakes to Wakatipu, open valley grassland setting, some experience desirable

1.3.2 Otago Conservancy

Gillespies Pass	round trip based on Makarora, valley settings with one high pass, moderate experience desirable
Wilkin	day or overnight trip based on Makarora with a variety of transport options, valley setting, suitable for inexperienced trampers if transport used to shorten journey
West Matukituki	day or overnight trip utilising Aspiring Hut, valley setting amidst high mountains, suitable for inexperienced trampers
Rees Dart	round trip based on upper Wakatipu, beech forest, open valley and alpine settings, some experience desirable
Greenstone Caples	round trip based on upper Wakatipu, valley settings with a short alpine section over McKellar Saddle, suitable for inexperienced trampers. Either valley can link to Routeburn
Cascade Saddle	links Wanaka (via West Matukituki) with Queenstown (via Dart Valley), exposed single day (or overnight camped out) alpine crossing amidst high mountains, moderate experience desirable

1.3.3 Southland Conservancy (included for completeness only)

Milford	round trip (using transport links) based on Te Anau, forested valley settings and an alpine pass, suitable for inexperienced trampers
Hollyford	one way multi-day trip, valley and lakeside settings with a coastal destination, some experience desirable
Kepler	round trip based on Te Anau, forest, lakeside and alpine settings, suitable for inexperienced trampers

Rakiura round trip in Stewart Island, coastal and forest settings, suitable for inexperienced trampers.

The tracks within or partly within the Otago Conservancy form the study area for this strategy.

1.4 MARKET

The market which uses these tracks comprises a mixture of domestic and international visitors, with a majority of international visitors on most tracks. Domestic users are likely to remain fairly static in number over the next decade, with several factors influencing likely use. The increased number of outdoor activities available may reduce participation in traditional activities such as tramping. Lower average disposable income, increasing transport costs and an overall trend towards an aging population are inhibiting factors, while increased awareness, school outdoor education programmes and increasing participation from women are enhancing factors.

The majority of domestic trampers on high profile tracks in south west New Zealand are from Otago and Southland.

On the Routeburn Track, approximately 71% of New Zealand trampers are from the South Island. On the Rees/Dart, 65% are South Islanders and on the Greenstone 77% (of domestic users) are South Islanders (1992/93 figures).

Amongst overseas visitors, Germans tend to be the highest users by nationality, followed by the United Kingdom, Australia, North America and Switzerland. Of interest is that, on some tracks, Japanese visitors are now almost as frequent as Scandinavian users, showing an increase in Japanese trampers. Other specific nationalities recorded include Israel and Holland.

As a generalisation, school group use of high profile tracks is increasing, and tramping club use is decreasing.

Many users are relatively inexperienced trampers, and are drawn to the tracks by their reputation for spectacular scenery and by the ease of access afforded by local infrastructure. Such users will often tramp some of the more challenging high profile tracks as their experience level increases.

1.5 INTERNATIONAL MARKET

One of New Zealand's strongest marketing points is its "clean green" image, and the large land resource available for outdoor recreation activities. Recent marketing strategies overseas have emphasised the "adventure tourism" segment of the tourist industry, which increases awareness of opportunities such as tramping. Tracks such as those in Otago and Southland have a relatively high profile amongst overseas visitors, who are aware of many of them before arriving in New Zealand. This is especially true of the Milford and Routeburn, Abel Tasman and Tongariro Tracks.

The predominant segment of the international tourist market using tramping tracks is the Free Independent Traveller (FIT). This segment is characterised by not booking their itinerary prior to arrival in New Zealand. Within the FIT category, backpackers make up the sub-segment most likely to tramp on high profile tracks. Numbers of backpackers have increased from 42,200 in 1988-89 to 72,500 in 1990-91. Numbers for the 1992-93 year are estimated at 80,000. Tourism board research has indicated that the favourite activity of backpackers is "bush walking" followed by a number of other "adventure tourism" activities. Backpackers also have the longest average stay (41 days) and as a result spend a greater sum of money (\$2600) in New Zealand than any other tourist segment.

1.6 INFLUENCES ON USE

A range of factors influence use of high profile tracks. They can be divided into internal and external (to DOC).

Internal factors include such things as visitor management techniques, promotions, track updates, recreation strategies and available resources. External influences are very difficult to assess in their impact, except that in general terms it is considerable.

Visitor Management: A range of techniques for actively managing visitor numbers are possible. Before any system is contemplated, the following question needs to be answered...is the intent to restrict total numbers on the track, or is it to even out peak use times and spread use more evenly across the season, to avoid overcrowding in huts at peak times? The following discussion outlines some techniques which may be considered.

1. **Booking system:** This can be complete or partial. A complete booking system limits total numbers and restricts use to those with a confirmed booking. A partial booking system guarantees a percentage of people a bunk, but does not address total numbers at a site at any one time and does not really address the overcrowding problem. A booking system would virtually reduce the current flexibility enjoyed by trampers to tramp a track whenever they choose, taking advantage of suitable weather, knowledge of hut loadings and an independent itinerary. One of the problems with the Great Walks system is that it attempts to force trampers to plan their trip prior to buying a pass, when they don't have the knowledge of weather, side

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

trips or conditions that may alter their intentions once on the track. In practical terms, trampers can purchase further nights on the track, but this reduces DOC's efforts to implement a pre-paid system.

Flexibility is something which trampers appear to value highly, and good information prior to beginning the track can help trampers to decide whether they want to tramp a particular route or not.

What a booking system would achieve is the evening out of peaks to achieve a greater spread of use across the season, thus reducing overcrowding situations at peak times. It should be noted that overcrowding can be defined in two ways. Firstly, more people than a hut's bunk capacity, and secondly when people perceive that there are more people at a hut than they expected or desired to meet, thus reducing the quality of their experience. The two are not mutually exclusive.

To achieve consistent use and maximise the use of facilities, it is desirable to have consistent size of huts across the track.

2. **Restricting direction of travel:** If this option is considered, it may well be in conjunction with a booking system, since it is easier to administer a booking system if travel is one way.

Without a booking system, the technique can still be used, but it will address perceptions of crowding on the track, but not necessarily in the huts.

If hut size were consistent, then restricting the direction of travel would work better in evening out use, because word of mouth and DOC updates could be more usefully directed.

3. **Replacement of individual bunks with platform bunks:** This is a short term option which may relieve pressure at some huts.

Platform bunks do not limit numbers, but make it easier to accommodate trampers within available space.

4. **Designated campsites:** Encouraging camping can reduce pressure on hut use.

5. **Differential pricing:** Pricing as a management technique which probably has the best potential for low intervention management if the aim is to improve utilisation of existing huts.

Under this technique, all facilities are assessed for their relative desirability as expressed by occupation rates.

The price is then set to encourage use of less utilised huts, while a premium is placed on popular huts. Price differential can be applied between huts on the same track, when one is more heavily used than another, or by peak season premiums, to encourage shoulder use.

6. **Shoulder season promotion:** There is often increased scope for promoting use in the shoulder season, in an effort to even out use. This does depend on its success on weather, snow cover, avalanche risk and the number of trampers interested in tramping at these times of the year.

7. **Do nothing:** An apparent contradiction in terms, this is a valid management technique which relies on users to be self limiting. This works through the "backpackers grapevine" • an effective word of mouth system that spreads information on social conditions on tracks far quicker than DOC can hope to. There is some basis for the argument that this has already worked on the Routeburn Track, as evidenced by the levelling off of growth over the last few years, and in responses to questions in a survey of Dart trampers which questioned their knowledge of the Routeburn track.

Weather is a determining factor for many people. Apart from determining the length of season of most of the tracks (via snowfall), periods of rain usually discourage trampers about to start out on tracks in the study area. International trampers may not wait around for weather to clear, thus reducing overall use of the tracks, for example, a wet January in 1992 saw lower use during that month compared with average figures for January.

Infrastructure in an area is probably the most important external influence on track use. Most high profile tracks in the study area have public transport available, which encourages use of the tracks • especially by overseas trampers who rely on these services for access to backcountry and rural areas. Some tracks, for example Gillespies Pass, Rees, Dart and Wilkin, have plane, jetboat or inflatable kayak services available as well as buses, so transport options become a feature of some tracks. Accommodation availability and services such as food outlets are also important.

Guidebooks/magazine articles provide the initial awareness of some tracks for many trampers. DOC has no say as to which tracks are covered in such articles, and they can have a large influence on use of specific areas. An example is Cascade Saddle, which has had several recent articles written about the area, and use is increasing. Gillespies Pass also gets a write-up in a recent guidebook, as has the Rees/Dart. Such listings raise awareness of these tracks considerably, especially when the books are purchased overseas and used for trip planning.

The “backpackers” grapevine disseminates information rapidly on the high profile tracks, and often influences use of specific tracks. For example, a 1993 survey of the Rees/Dart Track questioned respondents on their intentions to tramp the Routeburn Track. Eighty-three percent of respondents to this question indicated that they did not plan to walk the Routeburn because they heard that there were too many people. On the other hand, the backpackers grapevine can encourage use of quiet areas as word is spread about the “best kept secret”, leading to increased use and eventually changing the nature of the area

1.6.1 Off Season Use

Off season use occurs to some extent on all the high profile tracks covered by this strategy. On some tracks, while the whole route may be impassable due to snow or avalanche risk, parts of the track may still receive use. On the Routeburn Track, for example, crossing the Harris Saddle and Hollyford Face is usually an alpine undertaking during winter, but Lake Howden, Routeburn Flats and Routeburn Falls Huts receive use from people going to the huts, staying a night, then returning to their starting point.

Deliberately encouraging winter use is more a matter of education than of practicality, as most huts are accessible, although the complete track may not be. Most tramping in this part of the country occurs in summer. During winter, the colder temperatures, much shorter days, frequent snow falls and the lack of overseas visitors combine to keep winter use at a minimum. An exception is the use of the Greenstone and Caples, where hunters use the valleys during the winter. Even here, most use is concentrated in May and June, with considerably less use during the remaining winter months. The main obstacle to increased utilisation of huts during the off season is reduced interest in tramping as a winter activity, rather than accessibility of many of the huts, although that too is not always without problems.

Areas further north in New Zealand, such as Abel Tasman and Coromandel, which remains mild in winter climate, are generally more suitable for extended winter use than are most high profile tracks in south west New Zealand. Rakiura and Hollyford Tracks have a more maritime climate which often brings settled conditions to these areas during winter, and their low altitude makes them suitable for off season use.

1.7 RATE OF RETURN

In terms of economic principles, it is unlikely that many projects proposed within this strategy would return an acceptable investment rate. This is because many projects, such as providing toilets, upgrading tracks and building bridges, are required for visitor safety and/or environmental protection. Because the department does not charge for these facilities, costs cannot be recovered, except by improving the track to attract more people, who are charged for hut use if they choose to use huts.

Hut developments are proposed because of current or immediately foreseeable under-capacity problems, so we are largely formalising existing use • currently we charge the same amount for all those using the hut, regardless of how crowded it is. The fees charged for hut use generally recover the operating costs incurred in servicing huts. On some tracks, for example the Routeburn, revenue is higher than operating costs (on the Otago Conservancy section of the track) but this situation is unlikely on other high profile tracks in the conservancy.

The biggest potential for improving rate of return is by increasing total use. In some cases this may require some form of management to spread use over each season, rather than have potential trampers turned away by crowds on tracks.

Provision of facilities by the private sector is a possible option which requires further consideration.

1.8 RECREATION OPPORTUNITY SPECTRUM

The number and diversity of high profile tracks in western Otago are an important part of the recreation opportunity spectrum and also form a “sub spectrum” within themselves. The high profile tracks provide opportunities for tramping where the provision and standard of facilities is relatively high, with huts, bridges and well formed tracks. They predominantly provide for relatively inexperienced trampers who do not necessarily seek off track tramping experiences where fewer or lesser standard facilities are provided.

The high profile tracks can be placed on a spectrum of opportunity, being based on such factors as capacity of huts, facilities in huts, tramping time between huts, numbers of rivers and side streams bridged, track surface, ease of access and terrain traversed.

The principles of the Recreation Opportunity Spectrum in general apply equally to management of the western Otago high profile tracks, as to the ability of the tracks to fulfil the experience being sought.

The ROS specifies the interplay of six factors, the interaction and variation of which provide the diversity of opportunity settings. The factors are:

1. Access (types of access roads and conveyances).
2. Other non-recreational resource use (eg, mining, grazing).

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

3. On-site management (extent and complexity of modification and facilities)
4. Social interaction (eg, crowds or solitude).
5. Acceptability of visitor impacts (eg, magnitude and importance of impact such as pollution, track damage, etc).
6. Acceptable level of regimentation (regulations, laws, restrictive designs).

It is important to provide a range of these factors amongst the high profile tracks, as well as applying the concept to recreational opportunities in general. By doing this we will ensure that each track maintains different characteristics and does not duplicate similar experiences. The opportunities offered by high profile tracks in Southland Conservancy must also be considered in this context, when considering management of Otago tracks.

1.9

MANAGEMENT PLANS

The Mount Aspiring National Park Management Plan bases management of the park on the concept of zones. Zoning forms the basis for decisions on:

- the degree of modification which is acceptable
- design and extent of tracking and associated huts
- types of concessions and associated conditions
- the extent of finance and effort expended on protection
- aerial access.

Zone types adopted for Mount Aspiring National Park are Wilderness, Low Impact and Moderate Impact.

In relation to the high profile tracks within, or partly within Mount Aspiring National Park, the following zonings apply:

- Part of Routeburn (within Otago), Gillespies Pass and Wilkin Tracks are zoned as Moderate Impact.
- Matukituki Track and adjacent side tracks are zoned as Low Impact, except Cascade Saddle which is Moderate Impact.
- On the Rees/Dart Track, most of the Rees is in pastoral leasehold tenure, but that section within the park is zoned Moderate Impact, with this zone extending to Dart Hut and north to Cascade Saddle. Most of the Dart Track has a Low Impact zoning, except that part of the Dart Track (downstream of Sandy Bluff) traverses Dart Forest.
- The Greenstone and Caples Tracks are in Wakatipu Forest, and this area has no current management plan, although the Crown ownership of the former pastoral leases has important management implications.

The specific objective for the Routeburn Track, as stated in the Mount Aspiring Management Plan is:

“To provide a high use, through route, walking opportunity for users with little to moderate experience, with overnight accommodation, while at the same time maintaining the natural setting for which the track is renowned.”

The Fiordland National Park Management Plan, currently in draft form, states in relationship to high use tracks, the following objective:

“To manage popular tracks for optimum levels of use, recognising the specific attributes of each and their value to less experienced walkers.”

(This category includes the Routeburn, Hollyford (to Lake Alabaster), Milford and Kepler Tracks.)

Commercial Use

Currently there are guided tramping opportunities available with concessionaires on the Routeburn, Greenstone, Matukituki, Wilkin and Gillespies Pass. Of adjacent tracks in Southland Conservancy, the Milford and Hollyford Tracks also have guided tramping options.

To provide a balance of tracks where commercial users are not encountered by private trampers, no concession applications will be considered for commercial activity on the Rees/Dart or Caples Tracks.

This approach is partly in response to the desire to maintain a spectrum of recreation opportunity, and partly in response to user reaction, as expressed by user groups in the recent (1993) Rees/Dart Visitor Satisfaction Survey.

Further concession applications will be considered on high profile tracks which already have a commercial activity on them, where the proposed activity is appropriate to overall management of the track. The Conservation Management Strategy and Concessions Policy (and subsequent approved policies) will apply.

The following section outlines characteristics and proposals for management of each of the high profile tracks in Otago.

2.0

GILLESPIE PASS

General	<p>The Gillespie Pass Circuit links the Wilkin and Young Valleys, near Makarora.</p> <p>The track is the northern-most circuit in Mount Aspiring National Park, and provides a challenging tramping opportunity through valley floors, bush, sub-alpine valleys and over a pass at about 1500 m. It is suitable for moderately fit, well equipped trampers with some previous tramping experience.</p>
Features	<p>The particular features of the track include the challenging nature of the tramp, varied and spectacular scenery, fewer people, a variety of transport options, links to other tracks and good side trips.</p>
ROS Zones	<p>The track crosses backcountry walk-in and backcountry 4WD ROS zones.</p>
Use	<p>Currently about 900 trampers cross Gillespie Pass each year, but about 3000 people use the valleys to some extent, often by utilising aerial access to Siberia Hut. A survey conducted over the 1991/92 summer showed a NZ to overseas visitor ratio of 55:45%.</p>
Management Aim	<p>DOC intends to manage the Gillespie Pass Circuit to maintain the qualities which currently draw people to the area, while accommodating those people in consistent sized backcountry huts, with a track and facilities on it of a standard to ensure environmental protection and visitor safety. Hut capacity will not be increased beyond current levels (maximum 20). Sections 8.20 and 8.21 of the Mount Aspiring National Park Management Plan apply.</p>
Growth	<p>There is potential for considerable growth beyond current usage. It is considered that more growth, if spread evenly across the current season, would not significantly change the experience offered.</p> <p>The number of people using the track is growing at about 30% each season, as awareness from word of mouth and guide books increases, but we are comfortable that growth of 200-300% can be accepted without compromising the quality of the experience.</p> <p>Within the term of this strategy it is not envisaged that a booking system would need to be considered.</p> <p>Dispersing use is not seen as a likely management option, given that this is one of the tracks to which users may be dispersed from other tracks.</p> <p>If active visitor management becomes necessary, encouraging travel from north to south, ie, up the Young and down the Wilkin would assist in maintaining tramper flow to minimise perceptions of over-use.</p>
Off Season Use	<p>Gillespies Pass is usually blocked by snow from June to October. Use of the Young and Siberia Valleys is possible through winter, but linking via the pass requires alpine experience.</p>
Management Issues	<p>There are several management issues affecting the Gillespie Pass Track. They include the following:</p> <p>Commercial Use: To what extent should aircraft and jet boat access be encouraged or permitted? How many commercial guided trips should be granted concessions?</p> <p>Aerial Access: Should there be any restriction on expanding aircraft use of the Siberia airstrip?</p> <p>Environmental Impacts: How much physical impact on the environment is acceptable, how is this to be determined, and what needs to be done to prevent or repair such damage?</p> <p>Safety: How can visitor safety be promoted and assured to an extent compatible with the experience being sought?</p> <p>Increasing Overseas Use: How much will usage of the track be influenced by factors outside DOC's control, eg, magazine or guide book articles, NZ Tourism Board marketing, projections and type of future overseas visitors.</p> <p>Grazing: Incompatible with trampers and track maintenance. Grazing occurs in the Wilkin valleys only.</p> <p>Upgrading/re-routing in places is required to overcome damage caused by major flooding in January 1994.</p>
Discussion	<p>The intent to maintain current opportunities gives some answers to the issues raised.</p> <p>Grazing within the Wilkin valleys is a result of a commitment made some years ago and is managed under a licence system, which falls outside the scope of this strategy. However, track maintenance is often futile when stock use the same track, and some sections of track upgrading would not be undertaken while stock are still licensed to graze. Attempts are being made to phase out grazing by negotiation.</p> <p>There are some sections of the track which do require some improvement to overcome flooding damage or to prevent excessive damage to the track surface.</p>

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

Visitor safety will primarily be addressed by bridging the remaining major river crossings and providing all-weather linking from the Blue Pools Bridge into the Young.

Proposed Projects Reinstatement/re-routing following flood damage.

A major project, partly associated with visitor safety, is the creation of a track to link the Young Valley with the bridge across the Makarora River near the Blue Pools, thus providing an all-weather entry-exit to the track.

Hut extensions are proposed at Young Hut to bring it up to a similar capacity as other huts on the circuit. A new hut is proposed at Young Forks, although the requirement for this is not expected for several years. This hut will allow a shorter day than the current tramp up the Young, while also enabling further side trips.

Track realignment from Young Hut to Gillespies Pass is required in places, to avoid continued damage to the subalpine vegetation and soils.

3.0 WILKIN TRACK

General The Wilkin Valley lies to the west of Makarora township. The track links to the Gillespies Pass Circuit via the Siberia Stream, or follows the main river to the Top Forks Hut. The junction of these options is Kerin Forks, where there is a hut.

Features The number of day walks to sub-alpine lakes in the upper valley are major features of the Wilkin Track, as is the alpine scenery surrounding the valley. Relatively easy terrain is an attractive feature for some.

ROS Zones The Wilkin Track to Kerin Forks is zoned backcountry 4WD. The upper Wilkin Valley and the Siberia Stream valley is zoned backcountry walk-in.

Management Aim DOC will promote the Wilkin Valley as an easily accessible valley track with attractive day walking opportunities. Camping will be encouraged.

Use Currently 500 people are estimated to use the valley annually, excluding those using the lower Wilkin as part of the Gillespies Pass Circuit. Of these, 70% are New Zealanders, 30% from overseas.

Use Patterns Most users of the valley go up to the Top Forks Hut, spend a couple of days exploring the upper valley and visiting Lakes Diana, Lucidus and Castelia, and the Waterfall Basin, then return to Makarora. A small number of users exit the valley to the East Matukituki via Rabbit Pass. Some users also use the Siberia Valley. Jet boating up the Wilkin to Kerin Forks is a popular way of accessing the Wilkin.

Growth Use of the Wilkin Valley is relatively low, but has increased recently as awareness of the valley has been raised. Potential for growth is high, and because of the extensive nature of the valley many more users could be in the valley without significant overcrowding occurring. Although hut capacity would be stretched with extensive growth, the nature of the valley lends itself to a camping experience, and with establishment of designated campsites, pressure can be diverted from the Top Forks Hut.

Off Season Use There is low use of the Wilkin Valley during the winter months, but as the valley is usually snow-free during most of the winter, increased use of the valley is possible during the off season. The day trips popular in summer are usually inaccessible during winter, reducing the alternatives available once the upper valley is reached. Jetboat access is still available on demand during winter, as is air access to the Siberia airstrip.

Management Issues **Grazing:** Grazing occurs in the Wilkin Valley up to the Top Forks Hut. User groups frequently maintain that grazing is incompatible with recreation in remote areas, and should be discontinued. The current position is that grazing licences issued in accordance with assurances given in the 1960s will be honoured, but attempts are being made to phase them out by negotiation.

Upgrading/re-routing following major flood damage in January 1994.

Aerial Access: Increasing pressure from aerial operators can conflict with other recreationists. Although accepted as a legitimate form of access, this must be tempered with the need to provide areas where people can go that are free of mechanical forms of access.

Commercial Use: There are two or three concessionaires licensed to guide fishing, including aerial access. Increasing commercial use is feasible, but should be monitored to assess potential conflicts if significant increased in guided activities occur.

A future issue may be increased use from overseas visitors in the Wilkin, resulting from greater awareness of the area. As mentioned, the valley can cope with increased growth, but the relatively low experience level of overseas trampers may indicate the need to improve track conditions in the Wilkin, including bridging of three side streams to improve visitor safety aspects. Increased use will also bring increased impacts on areas of fragile vegetation; which is already occurring to some extent. Sub-alpine and bog vegetation areas are particularly prone to damage and some work on track surfaces would be required to protect these communities.

Greater use, especially by inexperienced trampers, will also lead to concerns about the Waterfall Face-Rabbit Pass route. Already increasing numbers of overseas trampers are attempting this route, which contains some sections which are dangerous in adverse conditions, and is generally unsuitable for inexperienced trampers.

This route is, part of a "concept track" known as the Grand Traverse, which would link the Gillespies Pass, Wilkin, East and West Matukituki, Cascade Saddle, Dart, Routeburn and Greenstone Tracks. The key barriers to linking this route are the Waterfall Face and Rabbit Pass. DOC's current position is to leave these two sections unimproved, as considerable work would be required to bring both sections up to a safe standard for general use, and more use would change the wilderness character of the East Matukituki.

- Proposed Projects**
- Boardwalking of an area of sphagnum bog in the upper Wilkin will be undertaken as an early priority. This section of track has been getting much wider as people try and avoid the bog in the centre of the track.
 - Other areas of the track, in bog and sub-alpine areas, are fragile in nature and would require protective measures if usage levels increase to a point where damage becomes unacceptable.
 - Various sections of track have been damaged or lost due to slips in the past couple of years. Realignment and repair of the track is required.
 - Establishment of designated campsites is not seen to be a high priority, but should be considered based on impacts apparent from increased use over the next decade.

4.0 CAPLES TRACK

- General** The Caples Track lies between the Routeburn and the Greenstone Tracks, and offers a predominantly valley floor tramping experience. The Caples is linked to the Greenstone and Routeburn tracks via McKellar Saddle. It is popular year round with trampers, and seasonally with hunters and anglers.
- Features** Like the Greenstone, the Caples has become more popular with overseas trampers in recent years, often being tramped as part of a circuit with either the Routeburn or the Greenstone. The Mid Caples Hut is in relatively close proximity to the Greenstone roadend, and is a popular destination for overnight trips and day trips, particularly amongst family groups.
- Hunting and fishing are also features of the Caples, and overall it offers a more "compact" atmosphere, with the adjacent Greenstone being more "expansive" in nature.
- Ros Zones** The Caples Track lies within a backcountry walk-in zone.
- Management Aim** To manage the Caples Track to provide for a wide range of recreational opportunities in a natural setting.
- Use** Approximately 2075 bed nights were spent on the Caples Track in the 1992/93 season, with about 43% spend by New Zealanders. This included 180 camping and 1895 hut bed nights. This use is estimated to be from about 1700 people.
- Growth** In the 1993/94 season estimated use was; camping 220, hut bed nights 2100, bed nights 2600-2800 people, estimated from 1900-2000 people.
- There is potential for more use of the Caples, although the relatively short distances involved mean that impacts would be noticeable before they would on the Greenstone. Development of huts is not envisaged beyond a 20 bunk capacity, unless a booking system is implemented on the Routeburn or a transport development eventuates in the Greenstone Valley. In either of these instances, increased pressure will be placed on the Caples Track, and facilities will need to be reviewed accordingly.
- Use of the Caples has been growing steadily in recent years, and with increasing use by anglers and overseas trampers, growth will probably continue.
- The Mid Caples Hut may become more important to overnight users if tourism market research showing increased popularity in overnight walks eventuates.
- Off Season Use** The Caples Track, as far as Upper Caples Hut, is snow-free for most of the year. No scheduled transport is available, but use of the valley during winter is moderate, mainly due to hunters. There is potential for greater winter use.
- Management Issues** **Crown Management:** The former pastoral lease in the Caples Valley is now managed by the Office of Crown Lands, pending possible settlement of land claims. This leads to uncertainty in DOC's ability to plan for the future of the recreational aspects of the Caples.
- Grazing:** Stock frequently use the tramping track to move between different parts of the valley. This causes significant damage to the track, particularly by rounding off of the shoulder, excessive widening and pugging. Apart from clearing of windfalls, track maintenance is not carried out on sections of track used by stock. Grazing is found to be incompatible with the tramping experience by many users.

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

Environmental Aspects: Severe environmental impacts have been obvious on McKellar Saddle for the past decade. Work is required to address part of the problem, but is only the first stage of a proposal which will realign and repair the track from Upper Caples Hut to the Greenstone Valley.

Aerial Access: Recent guidelines prepared by Landcorp and DOC now no longer apply in the former pastoral lease of the Caples Valley. Under these guidelines aerial access was not permitted in the Caples. While OCL is not bound to this, DOC will continue to maintain a philosophy of no aerial access to the Caples Valley.

Winter Use: The Caples receives a considerable amount of winter use, both from hunters and from trampers, as access to most of the Caples Valley is easy year round. Promoting winter use is a feasible way of improving hut utilisation.

Altered Use of Adjacent Tracks: If proposed transport developments in the adjacent Greenstone Valley eventuate, it is likely that tramping numbers will decline in the Greenstone, and the track most likely to attract trampers displaced from the Greenstone is the Caples. It may also become more popular due to improved access.

If visitor numbers on the Routeburn Track are actively managed, then again the Caples is likely to attract greater usage, as it also provides a tramping route to get to Milford Sound, and can be linked with the Greenstone.

Under either scenario, hut facilities in the Caples will need reviewing immediately, especially Mid Caples Hut.

Proposed Projects

- The main project in the Caples involves realignment of the track from Upper Caples Hut to McKellar Saddle. The first part of this project, realignment across the saddle, was to commence in 1993, with a further three sections to be completed, one of which will include a bridge over the upper Caples River. The work is now programmed for the 1994/95 summer. Prevention of further environmental deterioration is the prime rationale for undertaking this work, although improved gradient and track surface will contribute to user satisfaction as well, thus addressing many of the complaints received in recent years.
- Hut warden's quarters, Upper Caples: The Upper Caples Hut is the only high use hut in the field centre which has no staff accommodation. The only staff facilities in the Caples are at Mid Caples Hut, where they are attached to the hut. This is not ideal because:
 - a Upper Caples Hut receives considerably more use, and it is more desirable to have a staff presence there, especially for hut fee compliance and public safety reasons.
 - b The majority of work on the tracks in the Caples is centred around Upper Caples, so having a staff facility in this location would be beneficial and save considerable staff travelling time.
 - c The principles of separate staff quarters as mentioned in the Mount Aspiring National Park Management Plan apply.
- While Mid Caples Hut is currently of sufficient capacity, this may change quickly depending on a number of factors, particularly transport developments in the Greenstone and actively managing visitors on the Routeburn.

5.0

REES/DART

General

The Rees and Dart tracks link together to form a circuit around the Forbes Mountains, to the north of Glenorchy.

The track is relatively long, with most trampers taking four to five days to complete the circuit. It is fairly challenging country, and traverses bush and grassy river valleys, a subalpine pass at 1400 m, and passes through spectacular alpine terrain.

The track standard, length between huts and terrain make it a track suitable for well equipped trampers with some previous tramping experience.

The track passes through pastoral lease, Mount Aspiring National Park, and Dart stewardship forest.

Features

The alpine setting of the upper Dart valley is one of the track's most well known features, with popular day trips to Cascade Saddle, Dart Glacier and Whitbourn Glacier. The variety of alternative means of transport is becoming an attraction, with jetboat and inflatable kayak options available.

ROS Zones

The approach to the Rees Track up the middle Rees is within a backcountry 4WD zone, with the balance of the Rees and Dart Tracks being backcountry walk in.

Use

About 1350 trampers walked the track in the 1992/93 season. About 40% are from New Zealand, with Germans being the next highest nationality, at 20% of total trampers.

Use has increased in recent years, and the proportion of overseas trampers has increased markedly, as the track becomes more well known. Five years ago the ratio of New Zealanders to overseas visitors was 60:40%.

Use Patterns	About 70% of users tramp up the Rees and down the Dart, partly because the timing of scheduled transport services is structured towards this. Eight percent tramp up the Dart and down the Rees. The remaining 22% link the Matukituki with either the Rees or the Dart, via Cascade Saddle.
Off Season Use	The Rees/Dart Circuit receives little off season use. Snow usually lies from Shelter Hut onwards, and avalanche risk is high. Occasional use of the huts occurs. There is potential for more use of Daleys Flat and Shelter Rock Huts.
Growth	<p>The Rees/Dart is currently popular as an alternative to the Routeburn Track, amongst those aware of the latter's reputation for overcrowding. While more growth can feasibly be accommodated, this would require addressing facilities at Dart Hut, which has frequent problems with under capacity.</p> <p>Significant growth may change the nature of the experience sought, and this in itself should be seen as a management issue. While continued growth is likely as the track increases in profile amongst overseas visitors, the length of the track will ultimately provide a threshold, as shorter alternatives are available, and limited time of many international visitors will mean then some will seek shorter experiences.</p>
Management Aim	To manage the track for users seeking a more challenging experience, and to aim facility development at this level of trampler.
Management Issues	<p>Several issues are apparent on the Rees Dart track. They include:</p> <p>Environmental impacts: In several places the track passes through sensitive areas susceptible to damage from human overuse. They include the upper Rees, which has a number of boggy stretches growing in width as trampers go wide to avoid them: the upper Snowy, with similar problems over a smaller distance, and a section of track below Dredge Flat, where floods washed away the old track and the replacement is of temporary nature.</p> <p>Safety: Several aspects of the tramp warrant concern. A ladder and steep section of track to get over Sandy Bluff, in the Dart, causes dismay amongst some trampers, while providing a highlight for others. Some letters have been received expressing concern at the safety aspects of this section of track.</p> <p>Between Dart Hut and Daleys Flat Hut are several side streams which rise quickly after heavy rain. On several occasions trampers have left Dart Hut in rainy conditions and got over half way to Daleys before being faced with flooded side streams. When they try to return, they find the track back to Dart blocked by rising streams as well. Inexperience with New Zealand river conditions is often the main deterrent to crossing.</p> <p>In spring and early summer, trampers on day trips to Cascade Saddle return to Dart Hut in the late afternoon, often finding that two side streams crossed in the morning have risen considerably, due to afternoon snow melt. The same streams can provide obstacles to trampers crossing from the Matukituki to the Dart, especially after heavy rain.</p> <p>Changing expectations: It is becoming obvious that a proportion of users are critical of standards on the track, generally from those with limited tramping experience who have tramped the track because they heard about it from someone else. Dissatisfaction is often because of user expectations, which poses the question; how much should the track be developed to cater for users with higher expectations with regard to standard of facilities, and how much will this change the experience for other users, who are attracted because of its "wilderness" qualities.</p> <p>Grazing: Grazing is permitted on Dredge and Cattle Flats, in the Dart. Under the license conditions grazing is restricted to winter, thus minimising conflict with trampers. However, stock use of the track has a negative impact on the standard of the surface, and little maintenance is carried out on some sections because of that.</p> <p>Commercial Use: Currently there are no guided tramping opportunities on the Rees Dart, although there has been interest expressed in obtaining concessions for this. A recent survey (1992/93) showed a marked aversion from current users to meeting guided trampers. The Rees/Dart is one of only two of the high profile tracks within Otago which does not have guided tramping available. There is a view that the department should maintain opportunities for trampers to tramp without encountering guided parties, although there is no preclusion of this in the Mount Aspiring Management Plan.</p>
Recent Projects	<p>Since 1990 considerable resources have been invested in the track, mainly to address the impacts of increased use, and to upgrade facilities to an appropriate standard.</p> <p>Daleys Flat Hut was upgraded in 1990, involving a new roof and an enclosed porch access.</p> <p>In 1992 both swing bridges in the Snowy Creek were upgraded. Staff quarters were constructed at Dart Hut the same year.</p>

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

A user survey was undertaken in 1993, to assess user demographics and preferences.

Construction of an improved toilet system at Dart Hut and extension of Shelter Rock Hut were completed in 1994. A section of new track in the upper Dart was benched in 1993, which connected with work undertaken by staff over the last seven years. Sections of the lower Dart Track were reconstructed following flood damage in January 1994.

Future Projects

Considerable work still needs attention in the Rees/Dart. Of highest priority is upgrading and extending Dart Hut.

This hut was built in 1979 of weatherside which has since rotted extensively. It was roofed with aluminium sheeting, which has also deteriorated markedly and leaks in a number of places, accelerating decay in the roofing timbers. It is in poor condition as a result of the exterior and roofing cladding, and has a limited useful life. Gas for cooking is no longer supplied in Dart Hut.

Because of the location of the hut, people often stay for more than one night while doing day trips in the area, and also there is increasing use from trampers crossing Cascade Saddle from the Matukituki River. This leads to a "bottleneck" effect, and congestion is becoming more and more frequent each year. The 1993 survey showed that Dart Hut was the hut at which more respondents felt crowded than at any other. Extension to 30 bunks, and recladding/reroofing is proposed. This would complete the major hut projects on this track expected for the next decade.

Pit toilets at Shelter Rock Hut and Daleys Flat Hut are of poor standard, and with *Giardia* having been identified in the rivers outside these huts, replacement with suitable systems is desirable in the near future.

Three areas of track require major work, to prevent further environmental damage from occurring. These are the upper Rees, upper Snowy and Dredge Flat. Although a much improved walking surface will result, the initial objective is the prevention of further damage to vegetation and soils.

As use increases, designated campsites are expected to be required, with associated facilities. Three campsites are envisaged, at the old Shelter Rock Hut site, at Dart Hut, and at Dredge Flat.

In response to the changing profile and experience levels of trampers on the track, bridging of seven side streams is desirable, including streams off Headlong Peak and Mt Anstead and on the Cascade Saddle route. To maintain the challenging nature of the track, this is not proposed for at least five years, when review of the need based on changing user characteristics will be undertaken.

Monitoring of the Cascade Saddle route as a crossing is necessary to assess ways of addressing impacts that are already beginning to be noticeable. It is accepted that some form of facility may be required there in the future, both for environmental protection and visitor safety reasons. Again, further monitoring of the area will be undertaken to determine the most appropriate course of action.

Road end shelters are required at two road ends, with Paradise being of higher priority than the Rees. Private transport operators would be encouraged to contribute.

Discussion

In recent years the profile and number of users on the track has changed in the Rees/Dart. Five years ago New Zealanders, usually with some tramping experience, were the predominant users. This has changed to a majority of overseas trampers, often with little or no tramping experience. This has led to changing expectations among trampers and increased social and physical impacts.

While there is a perception amongst some users that the Rees/Dart should be "left as it is", it has already been seen that use increases anyway, regardless of what level of development the department undertakes. Trumper numbers will continue to increase because of the tracks increasing profile amongst overseas backpackers. As the trumper profile changes to a less experienced one, increasing dissatisfaction with some aspects of the facilities will be expressed. The recent survey (1993) showed this, with two "poles of opinion". One group were keen to see no more development, the other expressed dissatisfaction with "rocky, muddy tracks, and poor track marking". Track marking has not been an issue in the past, as the experience level of trampers was higher and they were less likely to have route-finding problems.

The projects proposed for the Dart are designed to address visitor safety issues (bridges), environment issues (toilets, track work) and social impacts (Dart Hut extension).

6.0

WEST MATUKITUKI TRACK

General

The track in the West Matukituki Valley provides a valley floor tramping experience in the Mt Aspiring region of Mt Aspiring National Park, some 50 km from Wanaka. It is suitable for a wide range of tramping abilities, including family groups.

Features

Easy access is one of the most important features of the West Matukituki, with reasonable road access and a spacious hut two hours away over farmland. This means a large number of day walkers and family

groups use the lower valley. The number of side tracks off the valley floor are another feature, providing a range of opportunities to gain access to subalpine and alpine settings.

The track forms the start of the most frequently used route to the Mt Aspiring climbing area. Thus the majority of climbers accessing the high peaks in the area use the valley.

ROS Zones The track lies within a backcountry walk-in zone although there is 4WD access to Aspiring Hut for management purposes.

Use Numbers are difficult to estimate accurately, due to variation in assessment methods. Hut use over the 1992/93 year was recorded at 1350 bed nights, but overall use of the valley is estimated to be much greater than this, due to the large number of day walkers. An estimate for 1993/94 suggests about 1600 bed nights. Of hut users, 40% are New Zealanders, 60% from overseas. Because of the proximity of the roadend and Wanaka's nearby location, day walkers are thought to be predominantly New Zealanders.

Use of Rob Roy Track (the principal day walk in the valley) is estimated at 7500 people for the 1992/93 year.

Use Patterns Almost all users of the Matukituki Track start and return to the roadend at Raspberry Creek - accessed from Wanaka, thus the valley provides an in-out experience. In 1992/93 about 230 people entered or left the Matukituki via Cascade Saddle. Numbers using Arawhata Saddle, Matukituki Saddle and Shotover Saddle are negligible.

Aspiring Hut is often used as a base from which to do day trips in the area, which include Cascade Saddle/Tyndall Ridge, Liverpool Bivvy, Scott Bivvy, French Ridge and Rob Roy. The character of Aspiring Hut, its accessibility from the roadend and the view of Mt Aspiring also contribute to its popularity.

Off Season Use Access is available to Aspiring Hut for most of the winter, and it is a frequent destination for winter trampers and climbers. Most of the day walks from the hut which are popular in summer, are more challenging in the winter due to snow and avalanche activity.

Growth There is potential for considerably more use in the West Matukituki Valley. Aspiring Hut is the focal point of the valley, and use is concentrated here. Further growth would increase use of the hut, which can generally accommodate more trampers for most of the season without exceeding capacity.

The huts in the Upper Valley (Liverpool Bivvy, French Ridge and Colin Todd) generally receive more use from climbers than from trampers. Use of these huts is not expected to increase dramatically. Recent Tourism Board research has indicated increased interest in overnight tramping opportunities, and Aspiring Hut is ideally located to provide for growth of this type.

Over the next ten years, the number of users is not expected to reach a point where a booking system is necessary. However, monitoring of Aspiring Hut will be required to assess its ability to meet demand. The introduction of a numbered pass system in 1993/94 for Aspiring Hut will provide visitor information to help this monitoring.

Camping beyond Aspiring Hut is popular and encouragement of camping does, and will continue to relieve pressures on hut accommodation.

Management Aim To cater for short-term visitors wishing to combine an overnight backcountry experience with day walking opportunities, particularly for family groups.

Management Issues **Access:** There is no marginal strip or legal road all the way to the hut from the Raspberry Creek roadend, so there is no "as of right" access up the valley. Currently access depends on the goodwill of the pastoral lessee, but changes in ownership in the future could pose access problems. Securing some form of legal access agreement is desirable.

Hut Ownership: Currently Aspiring Hut and French Ridge Hut are owned by NZ Alpine Club and managed by DOC under an agreement with the club, which runs for a five year term. The level of resources invested in Aspiring Hut indicate a need for greater security of tenure, and this should be borne in mind when renegotiating the agreement upon expiry of the current term.

Cascade Saddle: Cascade Saddle is an outstanding subalpine area between the Matukituki Valley and the Dart Glacier. It is a popular day walk from both Dart Hut and Aspiring Hut. Increasing use raises issues of environmental impact and of public safety. Subalpine bog areas in the Cascade Basin are susceptible to trampling, and already track widening is occurring as trampers try to avoid the boggy areas by going around the side. There are several hundred metres of track where such impacts are becoming increasingly noticeable. **Human waste** disposal is another problem which will need addressing in the future, as numbers of trampers increase. There are no toilet facilities between Dart and Aspiring Huts and trampers crossing from valley to valley, and also on day trips, spend between five and ten hours from hut to hut. The Cascade Basin has received publicity as a superb alpine camping setting, and the lack of toilet facilities will be a concern if use increases markedly. Public safety is a potential problem area because of the long distance between huts (6-10 hours), the altitude gained 1750 m at Tyndall Ridge, the exposure to the elements (90% of the traverse is above bushline), the terrain covered (steep rock/tussock faces above the Matukituki

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

and steep unstable slips above the Dart) and the variation in side creek levels near Dart Hut. Trampers using the route need to be made aware of the risks involved in undertaking this crossing.

- Proposed Projects**
- Replacement of Colin Todd Hut above the Bonar Glacier is needed to replace the small, aging hut there at present. This is provided for in the Mount Aspiring National Park Management Plan.
 - A footbridge is proposed near Scotts Rock Bivvy to provide safe access back across the Matukituki River. Estimated cost \$5000.
 - Shelter is required at Raspberry Creek roadend to provide shelter and information for visitors to the area. A toilet is the only facility provided at present.
 - The Rob Roy Valley is a very popular day walk from the Matukituki Valley, with 7500 people using the track in 1992/93 (July-June). Ending above bushline and with the Rob Roy Glacier immediately above, a viewpoint is proposed incorporating interpretation panels. The viewpoint would provide a destination for day walkers (currently the track peters out in subalpine scrub) as well as interpreting glacial action and subalpine flora and fauna.
 - Ongoing assessment will be made to determine the need for a hut and toilet facility in the Cascade Saddle area.

7.0 THE ROUTEBURN TRACK

This track is included for completeness, and the Mount Aspiring National Park Management Plan and the Routeburn Special Area section (chapter 10 of the CMS) should be read in conjunction with this part of the high profile track strategy.

- General**
- The Routeburn is a 39 km track across the main divide through the Ailsa Mountains. It is the southernmost track in Mount Aspiring National Park, and extends into the adjacent Fiordland National Park.
- The Routeburn traverses a variety of vegetation and landform types, giving it a diverse character with unequalled scenery. It is the most popular mainly alpine track in New Zealand.
- A considerable portion of the track lies above 1000 m, and is exposed to bad weather, particularly the Hollyford Face. The track is usually impassable during the winter months due to snow between Mackenzie Hut and Routeburn Falls Hut, giving an effective season of about seven months.
- The track suffered major flood damage in the Otago side in January 1994 including the loss of all bridges. The bridges have been reinstated, and the track upgraded in the course of repair work.
- Features**
- Three aspects are of particular importance; firstly the popularity of the track amongst overseas visitors, who are largely aware of the track prior to their arrival in New Zealand, secondly the track's ability to link two points of high tourist interest - Queenstown and Milford Sound. Also important is the linkage with other tracks (Greenstone, Caples), which provide additional walking routes between Queenstown and Milford, good regular servicing by public transport, and the high number of people using the track.
- ROS Zone**
- The section of the Routeburn within Otago Conservancy lies within a Backcountry Walk-in Zone.
- Use**
- Assessment of the total numbers of trampers using the Routeburn is reasonably accurate due to statistics accumulated by both conservancies.
- In 1992/93 Otago great walk pass outlets sold passes to 7885 people, for 14,400 nights accommodation on the track. Although day use is considerable, less statistics are available on numbers using the track on this basis.
- Combined with figures from Southland conservancy a total use of 9000 to 10,000 people is estimated.
- Use Patterns**
- In recent years between 65% and 75% of trampers travel from east to west, that is; from Glenorchy to the Milford Road. An increasing trend is for Routeburn trampers to combine with either the Greenstone or the Caples tracks to return to Queenstown, either directly or after visiting Milford Sound.
- Use patterns often change in response to public transport initiatives. For example, in 1991 a new company operated a van to the Routeburn earlier than the established service was, advertising that this would ensure that passengers "got a bunk". The established company responded with an earlier service as well, meaning that an increased number of people were now leaving the roadend earlier in the morning. When trampers then arrived at Routeburn Falls around midday, they frequently carried on to Mackenzie Hut, missing out Falls altogether. This made the track an overnight trip, rather than a two night, three day tramp.
- Off Season Use**
- Winter use of the Routeburn is reasonably steady, although use is generally restricted to in-out travel, especially to Lake Howden and Routeburn Falls Hut. Snow between Falls Hut and Lake Mackenzie Hut usually precludes travel for those without alpine experience and equipment.

Growth	<p>The Routeburn experienced steady growth through the 1970's, accelerating in the early and mid 1980's. Since the late 1980's growth appears to have stabilised at about its current level of 9000-10,000 people, with only small fluctuations in the 1990's.</p> <p>While there is room for more growth, this may be best achieved through regulating use to avoid current peak periods, which account for the tracks reputation as being overcrowded.</p> <p>There is some evidence that the number of people using the track is self-limiting, and that users spread information through word of mouth that discourages people who do not tolerate crowded conditions. On a numerical basis, there are 131 bunks on the track (excluding spare mattresses) and with a 6-7 month season, in theory 27,000 bed nights could be available on the track, ie, considerably more than the current number, and yet the perception is that it is overcrowded now.</p>
Management Aim	<p>DOC acknowledges the high profile which the Routeburn Track holds within New Zealand's track system, and it's resulting popularity. The management aim relating to the track is to maintain the quality of the experience for trampers, by ensuring that conditions which cause dissatisfaction as reduced as much as possible, through an active management regime if necessary.</p>
Management Issues	<p>There are a number of management issues pertaining to the Routeburn Track.</p> <p>Commercial Use: To what extent should current concessionaires operating on the track be restricted in terms of client numbers and facility provision? Should additional concessions be considered on the track, and if so on what basis? How much should aircraft landings on the track be restricted?</p> <p>Environmental impact: How much development should occur to redress environmental impacts? Recent work on the Harris Saddle was undertaken to prevent further damage to vegetation and soils, but other areas are showing impacts as well, eg Routeburn Falls Hut environs.</p> <p>Pressure Points: Across the length of the track, a number of sites come under considerable pressure. The Routeburn roadend is one, with frequently heavy concentrations of people arriving, departing, sightseeing or awaiting transport. Car parking is a problem at some times of the year, and provision for more parking is desirable.</p> <p>Routeburn Falls Hut is the worst pressure point on the track. The hut is too small, both in terms of bunk capacity and in terms of living space per person, for the numbers which it frequently receives. It is more popular than Routeburn Flats because of its subalpine location and associated views, and because it is an hour closer to Lake Mackenzie Hut. Nevertheless, the close proximity of the Flats Hut makes it an important overflow for the Falls, which is coordinated by hut wardens at peak use periods.</p> <p>The Harris Saddle is also a pressure point. The recent track work and new shelter were in recognition of this. The shelter provides a focal point and this is also where the Conical Hill Track branches off. In fine weather the Harris Saddle/Conical Hill area is a popular spot to spend more time enjoying the views and subalpine environment.</p> <p>Lake Mackenzie is another pressure point. Fiordland National Park recently upgraded all facilities at the site in response to this, increasing bunk, toilet and living area capacity. The site is now more able to cope with the pressure it receives.</p> <p>Key Summit is the other pressure area, receiving much use from day walkers as well as from Routeburn trampers. Environmental impacts were becoming marked, but Southland Conservancy has responded by installing boardwalking to reduce the impacts.</p> <p>Visitor management: With perceptions of overcrowding at huts, how much should visitor numbers be actively managed, and how should this be undertaken?</p> <p>The number of users make the Routeburn the most heavily used of all high profile tracks in Southland and West Otago. Various hut locations and relative sizes all play a part in frequent perceptions that the huts are overcrowded. One manifestation of this is the expectation of some trampers that they must "run to get a bunk". Such psychological pressures are not conducive to the high quality experience that DOC is trying to foster, even though with spare mattresses at huts it is rare to not be able to accommodate trampers. The lack of living space at some huts is more of a concern than bunk capacity, for example Routeburn Falls Hut.</p> <p>Facilities: Are facilities on the track sufficient to cater for current use and for future growth? Indications are that the most critical facility in terms of ability to cope with use is Routeburn Falls Hut.</p>
Discussion	<p>Concessions: Currently a concessionaire offers guided overnight tramping, using private huts. A further concession allows winter use of the DOC hut at Routeburn Flats, again for overnight guided trips. Two concessions for guided day walks have been granted within Otago Conservancy and Southland Conservancy also licenses some commercial operators.</p>
Proposed Projects	<p>Facilities: In the past three years considerable progress has been made in upgrading facilities on the track. Briefly, they are as follows; structural maintenance to Routeburn Flats Hut and painting of the interior, septic toilet system at Flats Huts, camping shelter established at Flats Hut, track realignment above Emily</p>

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

Creek, new bridges on Routeburn Flats, Emily Creek and Hollyford Face, staff quarters at Routeburn Falls Hut, allowing conversion of the old quarters to a 10 bunk bunkroom, new track around Harris Saddle, new shelter on Harris Saddle, extensions at Lake Mackenzie Hut, including new toilets and accommodation annex, established campsites near Mackenzie Hut, and boardwalking at Key Summit. Also the major flood damage repair work already referred to.

There is still considerable work required.

Flats Hut: requires new bunkroom flooring and new stove.

Falls Hut: has major problems accommodating the number of people who use it. The hut was built in 1968, and despite past additions of a kitchen and additional bunkroom, living space is severely restricted. Because the hut was built of untreated timber, and some structural timbers are known to be rotten, a completely new approach is envisaged. This will involve an assessment of the whole site, including sewage facilities, to determine what option is the most appropriate for current and anticipated needs. Due to severe erosion of soils and vegetation around the site, boardwalking to popular viewpoints is planned, to prevent further deterioration.

The track up Conical Hill requires urgent attention due to accelerated erosion, this would also link up with the new Harris Saddle track. This project would be in combination with Southland Conservancy.

Considerable maintenance work is required in the Harris basin, however this should be achievable within annual budget allocations.

Combined conservancy projects include an assessment of visitor management techniques applicable to the Routeburn, and the preparation of a Routeburn Track Management Plan. These have been completed.

8.0

GREENSTONE TRACK

General

The Greenstone Track provides a valley floor tramping experience between Lake Wakatipu and the Lake Howden area of Fiordland National Park (near the western end of the Routeburn Track). It traverses scenic reserve, stewardship forest, Crown pastoral land and Fiordland National Park.

Initially the track passes through a series of forested gorges. The middle reaches open out into a broad valley, with open tussock lands on the valley floor, and forest extending from the edge of the flats to the upper bushline. The upper reaches feature more forest, wetlands and small tussock flats. In most places the track follows just inside the bush edge on the valley floor.

Features

The relatively easy terrain is a notable feature, as is the length of season, which is due to the lower altitude. Links with other tracks (Routeburn, Caples, Mavora) are important, and the Greenstone is frequently tramped in conjunction with one or more of these tracks. Although lacking the dramatic alpine scenery of the Routeburn, the Greenstone also provides a tramping to Milford Sound. The Greenstone is an internationally important trout fishing river, and a nationally important fallow deer hunting area, making the valley one of the most multiple use of all the high use tracks.

ROS Zone

The part of the Greenstone Track within Otago Conservancy is zoned as backcountry walk-in.

Use

The Greenstone Valley has become more and more popular in recent years, particularly amongst overseas trampers with tramping being the predominant use, followed by anglers and hunters. Approximately 2600-2800 people were recorded to be using the track each summer season (1993/94 figures). About 100 hunters use the valley during the five month hunting season from April to August.

Use Patterns

The most notable feature in developing use patterns has been the increased tendency for trampers to extend their trip from the Routeburn Track. In the 1992-93 summer 48% of Greenstone trampers were linking with the Routeburn in both directions. The Greenstone Caples has always been a popular circuit because it provided a loop back to the departure point - popular with New Zealanders with a vehicle at the roadend, but less of a concern to overseas trampers with no transport commitments. The advent of scheduled transport services to the Greenstone road end, as well as to the Routeburn, has enabled more people to link the Routeburn-Greenstone (and Routeburn-Caples) as a circuit. Many trampers are also accessing Milford Sound from Queenstown overland, travelling via the Routeburn one way and the Greenstone or Caples the other. Recent transport initiatives involving the Mt Nicolas-Mavora backroad have increased use of the Mavora Walkway, which feeds into the Greenstone and boosts numbers on the latter track. While the impact in terms of numbers is yet small, the potential to significantly increase numbers is present.

Off Season Use

The Greenstone generally enjoys a long season, due to relatively low altitude, which frequently enables year round use. The fishing season runs from November to May (inclusive), hunting season runs from April to August (inclusive) and the predominant tramping use occurs from November to May, with a peak from December to March. The predominant winter use comes from hunters, and this is concentrated in the May-June period. The Greenstone does receive more winter use than most other high profile tracks in the study area.

Growth	The Greenstone has the capacity to accommodate further growth, but not without addressing hut accommodation in the middle reaches of the valley. Mid Greenstone Hut, a 12 bunk hut built in 1975 has not been able to cope with increased usage over the past 10 years, and in both bunk capacity and living space is frequently overcrowded. Slyburn Hut, the northern most of the Mavora Walkway huts, is located an hours walk down the valley, and currently acts as an overflow for Mid Greenstone, but it is often full anyway. Growth is likely to be dependant on future developments within the valley, discussed later.
Management Aim	To provide relatively easy tramping expected, with facilities managed for high visitor numbers with a low experience level, and to encourage a variety of activities.
Management Issues	<p>Crown Management: In 1992 the government purchased the pastoral leases covering the Greenstone and Caples valleys, for possible use in settling Ngai Tahu land claims. At present the land is administered by the Office of Crown Lands, although some or all of the land may pass to Ngai Tahu in the future. The implications of this for DoC are, at best, difficult to determine. Two DOC huts in the Greenstone, located beyond the bush edge, lie on the pastoral lease land, therefore security of tenure is not assured. Future management practices are an unknown quantity. Until more is known of future management of the pastoral lands, this conservancy is reluctant to invest in significant permanent changes to DoC facilities in the valley.</p> <p>Transport developments: Connected with the future management of the valley is the issue of proposed transport developments in the area. The idea of a road through the valley has been around for over a hundred years, and currently has proponents raising the possibility once more. Ngai Tahu have in the past indicated that they are interested in investigating the feasibility of constructing a monorail through the valley, to provide a more direct Queenstown-Milford Sound link than the current road route, but appear to have abandoned the notion.</p> <p>Should this proposal eventuate, it is likely that the nature of the tramping experience will be significantly altered, with an anticipated drop in numbers. Trampers are not known for seeking experiences in areas with direct land transport systems. Assuming that trampers interest in the Greenstone drops significantly, this has important implications for other tramping tracks in the area, as it effectively removes one option from the range of tramping opportunities in the region. The biggest impact is likely to fall on the Caples and Routeburn Tracks, as these are the most common tracks with which the Greenstone is linked. The Caples would probably assume the main link with the Routeburn, as it runs parallel with the Greenstone and offers a similar type of experience, thus it would need to absorb the total use currently split between the Greenstone and the Caples. The ability of the Caples to absorb such an increase is doubtful, unless considerable expanding of facilities is undertaken, and major upgrading of the McKellar Saddle track achieved. The Routeburn Track would also attract greater use if a monorail traversed the Greenstone, and other tracks in the region, for example the Kepler and the Rees/Dart, would probably also feel the effects.</p> <p>Depending on how a monorail was operated, it seems likely that hunting and fishing use would remain relatively constant in the long term.</p> <p>Management boundaries: Currently the Greenstone Track above Lake McKellar Hut and up to Greenstone and McKellar Saddles lies within Fiordland National Park, which follows a lineal boundary immediately to the west of McKellar Hut.</p> <p>For management purposes, it is desirable to manage the Greenstone on a catchment boundary basis thus providing more consistent management along the Greenstone Track. If agreement in this is reached by Southland and Otago Conservancies, then Otago would assume practical management of the Greenstone Track up to Greenstone Saddle, also including McKellar Saddle. Management would still be under the Fiordland National Park Management Plan.</p> <p>Management of adjacent tracks: Although crowding is frequent on the Greenstone, the Routeburn has a bigger reputation for being overcrowded. If any policy is implemented which will limit numbers on the Routeburn, then the Greenstone (and Caples) Track can be expected to increase in usage, from those people in the area at peak times unable to tramp the Routeburn. This would significantly increase the pressure on existing facilities. Although not offering a comparable experience, the ability to access Milford Sound is a significant drawcard. Use of the Greenstone-Caples circuit could also be expected to increase, as could the Rees/Dart.</p> <p>Conflict: Potential for conflict exists in the Greenstone, between different land uses and also between different recreational users. Grazing is one example of a conflict situation, both in terms of stock impact on the track surface and with incompatibility with trampers. Amongst recreational users, conflict occasionally occurs between trampers and hunters, and sometimes between people who have walked in and those who have flown in.</p> <p>Grazing: Grazing of the valley floor has an impact on the recreational experience in the Greenstone, but this seems unlikely to change. The presence of cattle on the tramping track, used by station managers to gain access to the tussock flats above Slyburn, has a significant negative impact on the track surface, with pugging, excessive camber and increasing width being the worst problems. While stock are still using the track no significant maintenance or upgrading of these sections is planned.</p>

OTAGO CONSERVANCY HIGH PROFILE TRACK STRATEGY

Concession activity: There is one concessionaire operating on the Greenstone Track, offering multi day guided tramping. However, it is considered that more commercial use of the Greenstone valley is appropriate, either for fishing, tramping, or, subject to pastoral management, horse riding.

Aerial access: In 1991 DoC and Landcorp produced Aerial Access Guidelines to regulate aerial access to Crown lands in Otago. Since the government purchase of the stations, the Office of Crown Lands has assumed the administration of aerial access. It remains an issue, however, with increasing numbers of anglers, and to a lesser extent hunters, wishing to use helicopters to access the valley, and many trampers preferring no aircraft disturbance.

A further point, one beyond DoC's control, is the continual overflying of the valley by fixed wing aircraft from Queenstown en route to Milford Sound. This has an impact on users, by reducing the feeling of remoteness. Together with the presence of stock, this helps shape the Greenstone as a backcountry tramping experience rather than a remote one.

Proposed Projects

As noted, the uncertainty overlying the future management of the area reduces willingness to commit significant resources to the track. Despite this, we face a real and immediate problem at Mid-Greenstone Hut. The preferred option is to have a 20 bunk capacity hut, to be consistent with the other main hut in the valley (Lake McKellar) and relieve current overcrowding in the present hut. A couple of options present themselves. One is to have a new building duplicating the present one, there being a suitable location approximately 75 metres away. A second is to construct a new building on the present site for accommodation, and convert the present hut into living space. In this particular situation, a temporary building in kitset form is desirable, so that if future events bring reduced use on the Greenstone, the building can be relocated, with Mid Caples Hut being the obvious location.

The section of the Greenstone-Caples circuit lying within Fiordland National Park is of major concern. The track rises steeply from the valley floor to McKellar Saddle, and has a very rough surface, with considerable mud, root and rock sections that are difficult to negotiate. The standard of the track is a marked departure from the track standard of any of the tracks leading to it (Routeburn/Greenstone/Caples). Trampers on these tracks are frequently inexperienced, and not necessarily well equipped. They often find the track from the Greenstone to McKellar Saddle extremely demanding because of the poor surface combined with the steep gradient. A more even gradient is proposed, involving a major realignment, beginning further up the Greenstone Valley. The descent from McKellar Saddle to the Upper Caples Hut is viewed in a similar manner, this being discussed further in the Caples Track section of the strategy.

Camping is becoming an issue in the Greenstone, especially with campers taking liberties with the pastoral leasehold area. Although not an immediate necessity, indications are that designated campsites (three) would restrict the impact of campers to acceptable sites (which have been identified).

There is a relatively short section of track suffering from river erosion above the Steele Creek junction, where realignment is required. This is achievable over a period of years within the constraints of annual maintenance allocations.

Discussion

With current uncertainty over likely future management of the Crown land in the Greenstone, much remains unresolved from the recreational viewpoint. Potential uses of the track and the valley include mountain biking and horse riding. While these opportunities are unavailable at present, both have high potential in the Greenstone and Mavora should a shift in management philosophy occur.

9.0 FUTURE GREAT WALKS

Highest priority tracks for consideration for Great Walk status are the Dart/Rees and Greenstone/Caples circuits.

10.0 FUTURE OPTIONS

Within the study area there is potential for the establishment of further tracks to cater for high numbers of users.

Criteria which any proposal for new tracks should meet are:

- should be easily accessible by road
- should have public transport available
- can be completed in two to five days
- traverse scenically attractive terrain
- are near popular tourist routes.

Areas in western Otago where it may be feasible to develop a high use tramp include:

- Wye Creek (Remarkables)
- Dynamo-Skippers Creek (Upper Shotover)
- Wilmot Saddle (East Matukituki).
- Rose's Saddle (Arrow-Motutapu)
- Roaring Meg-Cardrona
- Upper shotover-Upper Rees

Assessment of the ability of current facilities to cope with increased demand will be required. If commercial interests are seeking to provide a multi-day tramping experience, these areas could be identified as likely to appeal.

11.0 STRATEGY SUMMARY

- 1 Continue to upgrade the Routeburn and Greenstone/Caples tracks and associated facilities to better meet the expectations of less experienced visitors, while protecting the natural features and settings of those tracks. Because of their proximity and inter-relationship, management of these tracks will be increasingly integrated.
- 2 Make the Dart/Rees circuit safer for the growing number of less experienced people using it, and upgrade the facilities. Upgrade the parts of the track adversely affected by cattle movement only after grazing no longer occurs in the national park.
- 3 Maintain the character of the West Matukituki as an easy, safe, valley floor tramping opportunity to a spacious hut with day trip options.
- 4 Monitor impacts, incidents and usage levels over the Cascade Saddle. Management priorities will be user safety and environmental protection. The need for facility construction will be driven by those factors. Cascade Saddle will never be suitable for the inexperienced and facilities (if any) will be designed not to encourage that class of trampler onto the route.
- 5 Manage the Wilkin as far as Top Forks in the main valley and as far as Siberia Hut in the Siberia Valley, as suitable for trampers with less experience. Priority will be given to track upgrading following flood damage, and the present range of transport options will be maintained. Section of the track adversely affected by cattle movement will not be upgraded until grazing no longer occurs in the national park.
- 6 Manage the Gillespie Pass circuit for more experienced trampers, with priority being given to forming the Blue Pools Bridge-Young Valley link.
- 7 At an appropriate time, proceed with Great Walks status for the Greenstone/Caples and Dart/Rees, in that priority order.
- 8 Maintain other established tramping opportunities in the study area (eg, East Matukituki, Blue, Makarora, Cameron, Hunter, Dingleburn, Beans Burn, Rock Burn, Fraser Creek, Kay Creek, Lennox Pass, Aurum Basin, Albert burn and Wills) in accordance with their present low use character.
- 9 Keep this strategy, and the need for other high use tramping routes to be considered in the event of serious overcrowding or environmental damage, under review.

APPENDIX FIVE

Glossary of Terms

Glossary of Terms

Advocacy	The collective term for work done to promote conservation to the public and outside agencies by the Department of Conservation, Conservation Boards and the New Zealand Conservation Authority. Advocacy work includes taking part in land use planning processes and using a range of methods to inform and educate the public and visitors on conservation issues.
Amend	In relation to conservation management strategies, conservation management plans, freshwater management plans and sports fish and game management plans, means any change that does not affect the objectives of the strategy or plan. Such a change may not require a full public process (<i>Conservation Act 1987</i>).
Archaeological site	Any place in New Zealand, including shipwrecks, which was associated with human activity more than 100 years before and which through investigation by archaeological techniques may provide scientific, cultural, or historical evidence as to the exploration, occupation, settlement or development of New Zealand (<i>Historic Places Act 1993</i>).
ATB	All Terrain Bicycle.
Biogeography	Distribution of plants and animals.
Biodiversity/Biological diversity	The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part. This includes diversity within species and of ecosystems (<i>United Nations Convention on Biological Diversity 1992</i>).
Brachypterous	In insects, the condition of having wings reduced in length.
CITES	Convention on International Trade of Endangered Species.
CMP	Conservation Management Plan.
CMS	Conservation Management Strategy.
Coastal environment	An environment in which the coast usually is a significant part or element. The extent of the coastal environment will vary from place to place depending on how much it affects or is (directly) affected by coastal processes and the management concerned. It includes at least three distinct but interrelated parts: the coastal marine area, the active coastal zone, and the land back-drop.
Coastal marine area	The area of foreshore and seabed between the outer limit of the territorial sea and mean high water springs. At river mouths the landward boundary is the lesser of one kilometre upstream or five times the width of the river mouth (<i>Resource Management Act 1991</i>).
CODC	Central Otago District Council.
Concession	A lease, licence, easement or permit granted to enable an activity to be undertaken on land administered by the department (<i>Conservation Act 1987</i>).
Conservation	Means the preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment by the public, and safeguarding the option of future generations (<i>Conservation Act 1987</i>).

Conservation area	All land, foreshore and interest in land held under the Conservation Act (<i>Conservation Act 1987</i>).
Conservation Board	There are 17 regional conservation boards, each comprising up to 12 appointed members. Their functions include overseeing the preparation of the conservation management strategies and national park management plans for their area, approval of conservation management plans (e.g. for Forest Parks), advising the New Zealand Conservation Authority or Director-General of the Department of Conservation on regional conservation matters and advising on new walkways in the region (<i>Conservation Act 1987</i>).
Conservation management plan (CMP)	A plan for the management of natural and historic resources and for recreation, tourism and other conservation purposes, which implements the conservation management strategy and establishes detailed objectives for integrated management within any area or areas specified in a conservation management strategy (<i>Conservation Act 1987</i>).
Conservation park	Land managed to protect natural and historic resources and to facilitate public recreation and enjoyment (<i>Conservation Act 1987</i>).
Consultation	A genuine invitation to give advice and genuine consideration of the advice. To achieve consultation, sufficient information must be supplied and sufficient time allowed by the consulting party to the consulted to enable it to tender helpful advice. It involves ongoing dialogue (<i>adapted from McGechan decision in Air New Zealand v Wellington International Airport (CP403/91, 6 January 1992)</i>).
DCC	Dunedin City Council.
Department, the	Department of Conservation.
Diadromous	Freshwater fish fauna that migrate between fresh water and the sea as a regular, often obligatory, phase of their life cycles (<i>Conservation of New Zealand's Freshwater Fishes, NZ Freshwater Fisheries Report No. 116</i>).
DOSLI	Department of Survey and Land Information.
ECNZ	Electricity Corporation of New Zealand.
Ecological district	One of the major levels used for the ecological classification of land. New Zealand has been divided into 268 ecological districts according to geological, topographical, climatic and biological features and processes, which interrelate to produce a characteristic landscape of biological communities (<i>The New Zealand Protected Natural Areas Programme, DSIR</i>).
Ecology	The study of organisms in relation to one another and to their surroundings (<i>NZ Pocket Oxford Dictionary</i>).
Ecosystem	A biological system comprising a community of living organisms and their environment involved together in the process of living. There is a continuous flow of energy matter through the system. The concept implies process and interaction. Ecosystems may be small or large, simple or complex. They range in size from freshwater ponds or pools to the earth itself.
Effect	Includes any positive or adverse effect, any temporary or permanent effect, any past, present or future effect, any cumulative effect arising over time in combination with other effects regardless of scale, intensity, duration or

	frequency, and also includes potential effects of high probability and potential effects of low probability but have high potential impact (<i>Resource Management Act 1991</i>).
Endangered	A plant or animals in danger of extinction and whose survival is unlikely if the causal factors continue (<i>Red Data Book of New Zealand 1981</i>).
Endemic	Refers to species of plants or animals which are unique to New Zealand or animals which may migrate but breed only in New Zealand (<i>Red Data Book of New Zealand 1981</i>).
Esplanade reserve	A local purpose reserve usually 20 metres wide, vested in the territorial authority or in the Crown with the purposes of protecting conservation values, enabling public access to or along the sea, a river or lake and recreation use where this is compatible with conservation values. Usually created as a result of subdivision of land (<i>Resource Management Act 1991, Reserves Act 1977</i>). See also marginal strip.
Estuary	A broad tidal area associated with a river where there is a mixing of saline and freshwater (<i>New Zealand Coastal Policy Statement 1994</i>).
Exotic	Non-native or not of New Zealand.
Exploration	Means any activity undertaken for the purpose of identifying mineral deposits or occurrences and evaluating the feasibility of mining particular deposits or occurrences of one or more minerals.
Fauna	Animal life of a given place or time (<i>Collins Concise Dictionary</i>).
FFMP	Freshwater Fisheries Management Plan.
Fishery	One or more species of freshwater fish that can be treated as a unit for the purposes of conservation or management (<i>Conservation Act 1987</i>).
Flora	Plant life of a given place or time (<i>Collins Concise Dictionary</i>).
FMC	Federated Mountain Clubs.
Foreshore	Shore between high- and low-water marks at mean spring tides (<i>Conservation Act 1987</i>).
Freshwater fish	Species of finfish (classes Agnatha and Osteichthyes) and shellfish (classes Mollusca and Crustacea) that spend all or part of their life histories in freshwater (<i>Conservation Act 1987</i>).
Functional planning	Strategic assessment for a single function of the department over a wide geographic area. For example, wild animal control plans for a conservancy, or conservancy recreation strategies (<i>Management Planning Guidelines, Department of Conservation</i>).
General policy	A guide for decisions based on general approaches. General policy is used to mean a statement, directive or guide adopted by the Minister of Conservation, or New Zealand Conservation Authority following a statutory process under the Conservation Act, National Parks Act, Reserves Act, Wildlife Act, Marine Reserves Act, Wild Animals Control Act, Marine Mammals Protection Act and the New Zealand Walkways Act. Conservation management strategies are required to implement statements of General Policy (<i>Management Planning Guidelines, Department of Conservation</i>).

Habitat	The environment in which a particular species or group of species lives. It includes the physical and biotic characteristics that are relevant to the species concerned. For example, the habitat of the blue duck consists of swift water with an abundance of freshwater insects.
Halophytes	A plant able to grow where the soil is salty.
Hapu	Sub-tribe (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Historic area	An area of land that, a) contains an interrelated group of historic places, some or all of which are registered, and b) forms part of the historical and cultural heritage of New Zealand and is within the territorial limits of New Zealand (<i>Historic Places Act 1993</i>).
Historic place	Any land, building or structure that forms part of the historical and cultural heritage of New Zealand and is within its territorial limits of New Zealand. Includes anything fixed to this land (<i>Historic Places Act 1993</i>).
Historic resource	An historic place within the meaning of the Historic Places Act. Includes interest in an historic place (<i>Historic Places Act 1993</i>).
HPT	Historic Places Trust.
ICOMOS	International Council on Monuments and Sites.
Indeterminate	Species known to be extinct, endangered, vulnerable or rare but where there is not enough information to say which of the four categories is appropriate.
Interpretation	Conveying information about the origin, meaning or values of national or cultural heritage via live, interactive or static media. It occurs in the vicinity of the subject and is designed to stimulate visitor interest, increase understanding and promote support for conservation.
Intrinsic values	This is a concept which regards the subject under consideration as having value in its own right independent of any value placed on it by humans. Elements of intrinsic value with respect to ecosystems can include their integrity, form, uniqueness, functioning, inter-relationships and resilience.
Invertebrates	Animals without backbones, including snails, insects, worms, spider, crustacea, etc.
IUCN	International Union for the Conservation of Nature.
Iwi	Tribe, people (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Kai moana	Sea food or food of the sea.
Kaika	Small settlement of a more or less permanent nature.
Kaika nohoaka	Semi-permanent camp.
Kaitiakitaka	The exercise of guardianship. In relation to a resource this includes the ethic of stewardship based on the nature of the resource itself (<i>Resource Management Act 1991</i>).
Kames	A short ridge of sand and gravel deposited from water of melted glacier.
Kaupapa	An abstract word with many meanings. Within the Department of Conservation it is generally used in the sense of vision, philosophy, cause, idea or theme.
Kohatu mauri	Special stone representative of a life force.
LAC	Limits of Acceptable Change.

GLOSSARY OF TERMS

Lease	An agreement which gives the lessee the right to exclusive possession of the land with the intention of conferring an interest in land as opposed to giving a personal privilege (<i>Conservation Act 1987</i>).
Licence	An agreement which gives non-exclusive possession of land which may or may not constitute an interest in land which makes provision for any activity on the land that the licensee is permitted to carry out (<i>Conservation Act 1987</i>).
MAF	Ministry of Agriculture and Fisheries.
Mahinga kai	Places where food is procured or produced (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Mainland islands	Discrete areas on mainland New Zealand, of predominantly indigenous vegetation or habitats of key indigenous fauna, that are subject to intensive management (particularly pest and weed control).
Mana	Authority, control, influence, prestige, power (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Management Planning	The process of setting and confirming objectives for the management of natural and historic resources, and recreation, tourism and other conservation purposes, and specifying the actions and resources necessary to achieve those objectives (<i>Management Planning Guidelines, Department of Conservation</i>).
Manawhenua	Customary rights and authority over land (<i>Waitangi Tribunal Report (Wai 27) 1991</i>); customary authority exercised by an iwi or hapu in an identified area (<i>Resource Management Act 1991</i>).
Marginal Strip	Land reserved from sale by the Crown under the Land Act 1948 and Conservation Act 1987 along the foreshore, waterways greater than 3 metres wide (when not used by the Electricity Corporation of New Zealand for generating electricity) and lakes. This term also refers to land acquired in exchange for marginal strips. Marginal strips are 20 metres wide unless a reduction of width has been approved by the Minister. They move automatically if the boundary of the adjacent waterbody moves either naturally or as a result of human activities (<i>Conservation Act 1987</i>). For more information refer to the Act.
Mauri	Life principle, special character (<i>The Revised Dictionary of Maori, P.M. Ryan</i>).
Mining	Means to take, win or extract by whatever means, a mineral existing in its natural state in land, or a chemical substance from that mineral, for the purpose of obtaining the mineral or chemical substance; but does not include prospecting or exploration (<i>Crown Minerals Act 1991</i>).
Natural character	The qualities of an area taken together give it a particular, recognisable character. These qualities may be ecological, physical, spiritual or aesthetic in nature.
Natural resources	Include plants and animals and their habitats, landscape and landforms, geological features, and systems of interacting living organisms, and their environment (<i>Conservation Act 1987</i>).
New Zealand Conservation Authority (NZCA)	A national body of 12 appointed members established under section 6A of the Conservation Act. Its statutory functions include approving general policy, conservation management strategies, plans and national park management plans;

advising the Minister of Conservation; investigation of conservation matters of national importance and advising the Minister or the Director-General of Conservation; reviewing and reporting on the Department of Conservation's management and budget priorities. It also considers any proposed changes to land classification or status for areas of national and international importance, like for example, the recreation of national parks (*Conservation Act 1987*).

NGO	Non-government Organisation.
NZAIP	New Zealand Aeronautical Information Publication.
NZDF	New Zealand Defence Force.
NZFF	New Zealand Federated Farmers.
NZTB	New Zealand Tourism Board.
Objectives	Statements of intended results. These can be broad or narrow in scope and should be accompanied by implementation provisions (<i>Management Planning Guidelines, Department of Conservation</i>).
OCR	Otago Central Railway.
OCRT	Otago Central Rail Trail.
OGP	Otago Goldfields Park.
OPQ	Otago Pioneer Quartz.
ORC	Otago Regional Council.
ORV	Off-road Vehicle.
Pa	Fortified village, or more recently any village (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
PANZ	Public Access New Zealand.
Papakaika	Settlement.
Permit	A grant of rights to undertake an activity on land that does not require an interest in the land. Used predominantly for entry into a place or onto land (<i>Conservation Act 1991</i>).
PNA	Protected Natural Areas.
PNAP	Protected Natural Areas Programme.
POL	Pastoral Occupation Licence.
Preservation	In relation to resources under the Conservation Act, means the maintenance, so far as practicable, of their intrinsic value (<i>Conservation Act 1991</i>).
Prospecting	Means any activity undertaken for the purpose of identifying land likely to obtain exploitable mineral deposits or occurrences.
Protected natural area	A legally protected area, characterised by indigenous species or ecosystems where the main purpose of management is retention of the indigenous state (<i>NZ Protected Natural Areas Programme, NZ Biological Resource Centre Publication No. 6</i>)
Protected natural areas programme	A programme which aims to establish a network of reserves and other protected natural areas which is representative of the full range of

	New Zealand's natural diversity. Ecological districts are surveyed and areas identified which best represent the diversity of their natural features. These are termed recommended areas for protection or RAPs.
QLDC	Queenstown Lakes District Council.
Rahui	A restriction on access, prohibition (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Rakatira	Chieftain.
Rakatirataka	Chieftainship or authority.
RAP	Recommended area for protection.
Rare	Species with small world population that are not at present endangered or vulnerable but are at risk (<i>Red Data Book of New Zealand 1981</i>).
Recommended area for protection	A place identified as a priority for protection because it contains the best example(s) of its type or class of natural ecosystem and/or landscape in an ecological district (<i>NZ Protected Natural Areas Programme, NZ Biological Resources Centre Publication No. 6</i>).
Recreation and tourism concessions	Have the predominant purposes of facilitating recreation or tourism use and enjoyment of natural and historic resources by the operator's client and customers.
Recreation Opportunity Spectrum	A system for clarifying outdoor experiences. It identifies opportunities along a continuum from urban to wildness. It has eight main categories and provides both an inventory and planning process.
Rehabilitation	To return a degraded ecosystem or population to an undegraded condition, which may be different from its original condition (<i>IUCN 1991</i>).
Restoration	Returning a place as nearly as possible to a known earlier state by reassembly, reinstatement and/or removal of extraneous additions (<i>ICOMOS 1993</i>).
Review	In relation to conservation management strategies and plans, means to reconsider all objectives and policies of those parts under review and following a process of public comment to approve a new strategy or plan, having regard to increased knowledge or changed circumstances (<i>Conservation Act 1987</i>).
RFBPS	Royal Forest and Bird Protection Society.
Riparian	Environment situated or inhabited on the bank of, or adjacent, to a waterbody.
RLMP	Rabbit and Land Management Programme.
RMA	Resource Management Act 1991.
ROS	Recreational Opportunity Spectrum.
Rohe	Boundary, tribal region (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Runanga	Assembly, tribal region (<i>Waitangi Tribunal Report (Wai 27) 1991</i>); local representative groups or community system of organisation.
Species recovery plan	A plan of action intended to halt the decline of a threatened species and increase its population.

Stewardship area	A conservation area that is not a marginal strip, watercourse, conservation park, ecological area, sanctuary area or wilderness area, or land in which an interest is held under the Conservation Act for one or more of these purposes (<i>Conservation Act 1987</i>).
STOP	Save the Otago Peninsula.
Sustainability (ecological)	The use of the components of an ecosystem in ways that allow for the perpetuation of the character and natural processes of the ecosystem.
SWNZWHA	South West New Zealand World Heritage Area.
Taking	In relation to plants, this includes breaking, cutting, destroying, digging up, gathering, plucking, pulling up and removing of the plant. In relation to fish, it means fishing (<i>Conservation Act 1987</i>).
Taonga	Prized possession, property (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Terrane	Fault-bounded fragments of the Earth's crust characterised by a geological history markedly different from that of neighbouring crustal segments.
Threatened (species)	A term used loosely to include rare, vulnerable, endangered and indeterminate species.
TIES	Trade in Endangered Species.
TLA	Territorial Local Authority.
Tor	Rock outcrop; schist in the Otago context.
Umu ti	Ovens designed to cook ti (cabbage tree).
UNESCO	United Nations Education Scientific and Cultural Organisation.
Urupa	Cemetery, burial ground (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Vulnerable	A plant or animal believed likely to move into the endangered category in the near future if the causal factors continue (<i>Red Data Book of New Zealand 1981</i>).
Waahi tapu	Scared place (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Waahi taoka	Special in terms of culture and tradition but not sacred; treasured resources.
Wai repo	Wetlands.
Wai roto	Lakes.
Walkway	An area of land that has been declared a walkway or an area of land over which a walkway has been established under the New Zealand Walkways Act (<i>New Zealand Walkways Act 1990</i>).
Waterbody	Means fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located within the coastal marine area (<i>Resource Management Act 1991</i>).
Water conservation order	An order made to recognise and sustain those characteristics of a waterbody which afford outstanding amenity or intrinsic values. They are made by the Minister for the Environment on the recommendation of a special tribunal and/or the Environment Court (<i>Resource Management Act 1991</i>).
WERI	Wetland or Ecological and Representative Importance.

GLOSSARY OF TERMS

Wetland	Permanent or intermittently wet areas, shallow water and land-water margins. Wetlands may be fresh, brackish or saline, and are characterised in their natural state by plants or animals that are adapted to living in wet conditions (NZ Wetlands Management Policy 1986).
Whakapapa	Ancestry.
Whanau	Family (<i>Waitangi Tribunal Report (Wai 27) 1991</i>).
Whanaukataka	Relationships (between families or groups).

APPENDIX SIX

Selected Bibliography to the Conservation Management Strategy

Selected Bibliography

- Allen, R.B. (1978) *Scenic Reserves of Otago Land District: Biological Survey of Reserves, Report 4* Department of Lands and Survey: Wellington.
- Allen, R.B. (1994) *Native Plants of Dunedin and its Environs* Otago Heritage Books: Dunedin.
- Anderson, A. (1983) *When All the Moa Ovens Grew Cold: nine centuries of changing fortune for the southern Maori* Otago Heritage Books: Dunedin.
- Bibby, C. James. (1997) *Macraes Ecological District: Survey Report for the PNAP* Department of Conservation: Wellington.
- Beattie, H. (1994) *Traditional Lifeways of the Southern Maori: the Otago University Museum Ethnological Project, 1920 - edited by Atholl Anderson* University of Otago Press in association with Otago Museum: Dunedin.
- Brunley, C.F., Stirling, M.W. and Manning, M.S. (1986) *Old Man Ecological District: Survey Report for the PNAP, No. 3* Department of Lands and Survey: Wellington.
- Carter, J. (1994) *Waipori Ecological District: Survey Report for the PNAP, No. 24* Department of Conservation: Wellington.
- Child, P. (1981) *Birdlife of Mount Aspiring National Park* Department of Lands and Survey: Wellington.
- Comrie, J. (1992) *Dansey Ecological District: Survey Report for the PNAP, No. 23* Department of Conservation: Wellington.
- Department of Conservation (1991) *Yellow-eyed Penguin Species Conservation Strategy* Department of Conservation: Dunedin.
- Department of Conservation (1992) *Gillespie Pass Circuit: a facility use appraisal 1991-1992* (Miscellaneous Series No. 14) Department of Conservation: Dunedin.
- Department of Conservation (1993) *Mobua (Yellowbead) Recovery Plan* Department of Conservation: Wellington.
- Department of Conservation (1994) *Otago Central Rail Trail: interim policies and development plan* (March 1994) Department of Conservation: Dunedin.
- Dickinson, K.J.M. (1988) *Umbrella Ecological District: Survey Report for the PNAP, No. 7* Department of Conservation: Wellington.
- Dickinson, K.J.M. (1989) *Nokomai Ecological District: Survey Report for the PNAP, No. 9* Department of Conservation: Wellington.
- Evison, H.C. (1993) *Te Wai Pounamu, The Greenstone Island: a history of the southern Maori during the European colonisation of New Zealand* Aoraki Press in association with Ngai Tahu Maori Trust Board and Te Runanganui o Tahu: Christchurch.
- Fagen, B. and Pillai, D. (1992) *Manorburn Ecological District: Survey Report for the PNAP, No. 22* Department of Conservation: Wellington.
- Gaskin, C. and Peat, N. (1991) *The World of Penguins* Hodder and Stoughton: Auckland.
- Gaskin, C. and Peat, N. (1991) *The World of Albatrosses* Hodder and Stoughton: Auckland.
- Given, D.R. (1981) *Rare and Endangered Plants of New Zealand* Reed: Wellington.
- Graham, O. (1993) *Otago Conservancy Visitor Monitoring Report 1992/93* Department of Conservation: Dunedin.
- Graham, O. (1993) *The Rees/Dart Track: visitor satisfaction survey 1992/93* Department of Conservation: Dunedin.
- Grove, P. (1994) *Hawkdun Ecological District: Survey Report for the PNAP, No. 25* Department of Conservation: Wellington.

- Grove, P. (1995) *Maniototo Ecological District: Survey Report for the PNAP, No. 30* Department of Conservation: Wellington.
- Hamel, G.E. (1988-) *Unpublished reports to the Department of Conservation on archaeological and historic sites on pastoral leases* Department of Conservation Library: Dunedin
- Harper, R.K. (1992) *Otago Recreation Opportunity Spectrum* (Miscellaneous series, No. 10) Department of Conservation: Dunedin.
- Jellyman, D.J. (1984) *Distribution and Biology of Freshwater Fish in the Clutha River* (Fisheries Environmental Report, No. 46) Fisheries Research Division, NZ Ministry of Agriculture and Fisheries: Christchurch.
- Johnson, P.N. (1986) *Wildflowers of Central Otago* McIndoe: Dunedin.
- Johnson, P.N. (1989) *Wetland Plants in New Zealand* DSIR Publishing: Wellington.
- Jones, K.L. and Simpson, P. (1995) *Archaeological Site Stabilisation and Vegetation Management: Case Studies II, Auckland, Northland, Otago, Canterbury and Wellington* Department of Conservation: Wellington.
- Kai Tahu Ki Otago (n.d.) *Natural Resource Management Plan*. Produced by Kai Tahu ki Otago.
- Kelly, G.R. (1988) *An Inventory of Whitebaiting Rivers in the South Island* (New Zealand Freshwater Fisheries Report, No. 101) Freshwater Fisheries Centre, MAFFish: Christchurch.
- Kuschel, G. (1990) *Beetles in a Suburban Environment: a New Zealand Case Study: the identity and status of Coleoptera in the natural and modified habitats of Lynfield, Auckland (1974-1989)* DSIR: Auckland.
- Mark, A.F. (1977) *Vegetation of Mount Aspiring National Park, New Zealand* National Parks Authority: Wellington.
- Mark, A.F. and Adams, N.M. (1974) *New Zealand Alpine Plants* (2nd Ed) Reed Methuen, Auckland.
- Mark, A.F. and Bliss, L.C. (1970) "The High-alpine vegetation of Central Otago, New Zealand" *NZ Journal of Botany* 8(4) pp 381-451
- Mark, A.F., Dickinson, K.J.M., Patrick, B.H., and Barratt, B.I.P. (et al) (1987) "An Ecological Survey of the Central Part of the Eyre Ecological District, Northern Southland, New Zealand" *Journal of the Royal Society of New Zealand* 19(4) pp 349-384
- McDowell, R.M. (1990) *New Zealand Freshwater Fishes: a natural history and guide* (Rev ed.) Heinemann Reed: Auckland, MAF Publishing Group: Wellington.
- McDowell, R.M. (1990) *Conservation of New Zealand's Freshwater Fishes* (New Zealand Freshwater Fisheries Report, No. 116) Freshwater Fisheries Centre, MAFFish: Christchurch.
- McIntosh, P.D., Beecroft, F.G. and Patrick, B.H. (1990) *Register of Saline Soil Sites in North and Central Otago: Volume 1* Division of Land and Soil Sciences, DSIR: Dunedin.
- McIntosh, P.D., Beecroft, F.G. and Patrick, B.H. (1992) *Register of Saline Soil Sites in North and Central Otago: Volume 2* DSIR Land Resources: Lower Hutt.
- Molloy, J. and Davis, A. (1994) *Setting Priorities for Conservation of New Zealand's Threatened Plants and Animals* Department of Conservation: Wellington.
- National Parks and Reserves Authority (1983) *General Policy for National Parks* (National Park Series, No. 27) Department of Lands and Survey: Wellington.
- Patrick, B.H. (1989) *The Lepidoptera of Central Otago Salt Pans: Central Otago ecological region* (Scientific Series, No. 3) Department of Conservation: Dunedin.
- Patrick, B.H. (1991) *Insects of the Dansey Ecological District* (Science and Research Series, No. 32) Department of Conservation: Wellington.
- Patrick, B.H. (1994) *Valley Floor Lepidoptera of Central Otago* (Miscellaneous Series, No. 19) Department of Conservation: Dunedin.
- Patrick, B.H. (1994) *The Importance of Invertebrate Biodiversity: an Otago Conservancy review* (Conservation Advisory Science Notes, No. 53) Department of Conservation: Wellington.

SELECTED BIBLIOGRAPHY

- Patrick, B.H., Lyford, B.M., Ward, J.B. and Barratt, B.I.P. (1992) "Lepidoptera and Other Insects of the Rastus Burn Basin, The Remarkables, Otago" *Journal of the Royal Society of New Zealand* 22 pp 265-278
- Patrick, B.H., Barratt, B.I.P., Ward, J. and McLellan, I. (1994) *Insects of the Waipori Ecological District, Lammerlaw Ecological Region* (Miscellaneous Series, No. 16) Department of Conservation: Dunedin.
- Peat, N. (1995) *Land Aspiring - The Story of Mount Aspiring National Park* Craig Potton Publishing: Nelson.
- Smith, P.J.M. (1990) *Otago Goldfields Park Management Strategy* (Unpublished draft) Department of Conservation: Dunedin.
- Springer, K. (1993) *Otago Conservancy Recreation Strategy* (Miscellaneous Series No. 18) Department of Conservation: Dunedin.
- Te Runanga o Ngai Tahu. (1994) *Kai Tabu Policy on the Management of Cultural Materials*. Office of Te Runanga o Ngai Tahu, Christchurch.
- Te Runanga o Ngai Tahu. (1993) *Kai Tabu Policy - Koiwi Tangata*. Office of Te Runanga o Ngai Tahu, Christchurch.
- Ward, C.M., Bruce, D.C. Rance, B.D. and Roozen, D.A. (1987) *Lindis, Pisa and Dunstan Ecological District: Draft Survey Report for the PNAP* (Unpublished) Department of Conservation: Dunedin.
- Ward, G. and Munro, C.M. (1989) *Otago II: Biological Survey of Reserves, Report 20* Department of Conservation: Wellington.
- Wardle, P. (1991) *Vegetation of New Zealand* Cambridge University Press: Cambridge.
- Whitaker, A.H. and Loh, G. (1991) *Species Conservation Strategy for the Grand Skink and Otago Skink* (Unpublished draft) Department of Conservation: Dunedin.