

SECTION 7 - RURAL

Introduction

The Mackenzie District is predominantly rural in character. Of the total area of 745,562ha, there is approximately 3,000ha of roading, urban settlement and other use. There is 132,000ha of lakes, riverbeds and mountain tops and the remainder is divided into four main farming systems which together, express the district's primary productive capacity. All four systems use sheep, cattle and deer as their predominate income base. Forestry may increase in significance in the years ahead from the current resource of 6,924 hectares. As at 1992, there were 841,000 sheep, 31,000 cattle and 12,000 deer in the district with only 2-3000 hectares of cash cropping. Significant areas within the district are also utilised for a wide range of recreation and tourist activities. A description of the basic landscape units of the District is contained in Issue 7 - Landscape Values.

The main land systems of the District are described briefly below:

System 1 Unfarmed: Area 132,000ha

The majority of this area is situated back against the main divide and comprises the mountain tops, steep rock and scree slopes and the montane basins. The physical difficulties and risks associated with grazing the existing vegetation have long been recognised. In recent times, water and soil conservation concerns to maintain the ecosystems in these rapidly eroding environments and preserve the plant communities have led to the introduction of retiring this class of country from grazing use by the erection of retirement fences. The lakes and unoccupied river systems are characterised by having a high visual and aesthetic appeal and attract a significant level of tourism and recreational use. As for any land area, it requires competent management to ensure its long term sustainability and improvement where necessary. The production of water for hydro electricity generation is a vital national concern from these catchment areas. These catchments also supply water for local domestic and irrigation needs.

System 2 Gorge and Moraine Runs: Area 190,000ha

There are 15 properties in this category, with the majority of the country being around 600m altitude and receiving a rainfall of 800mm+. Typically each property can carry 8-9000 stock units made up of a Merino flock and some cattle for income diversification and pasture management. Small areas of good soils permit hay and silage production. Much of the more accessible land of this country at mid-rainfall responds well to topdressing. The mid and higher rainfall country is being recognised as a good environment for Douglas Fir timber production. Typically this area does not have a problem maintaining good ground cover.

Animal pests can become a problem in this system particularly as a result of invasion from adjoining areas. Rabbits are managed under a Regional Pest Strategy. Canadian Geese are managed by the Fish and Game Council. The natural hazard of snow falls and other climatic extremes are a feature of this country.

System 3 Semi Arid Plains and Lower Hills: Area 210,000ha

There are 20 properties in this area below the 600m contour and in a rainfall zone which varies between 300 and 700mm. There are also semi-arid areas with low rainfall above the 600m contour, including the lower Mackenzie Basin from Lake Benmore to the Dalgety Range.

Historically these areas have had some wide extremes of ground cover and livestock carrying, coinciding largely with fluctuating rabbit numbers. The present (mid 1990's) lack of ground cover is acute in some areas and has arisen from a variety of causes including past management practices, a series of dry years, removal of government support for rabbit control and a number of biological factors such as the spread of heiracium.

There are prospects for rabbit control with the use of Rabbit Haemorrhagic Disease (RHD) and once this is achieved a range of pastoral vegetation options will become available. Rabbit control measures will need to be continued long term and there is a need to use any reduction in rabbit numbers as an opportunity to ensure sustainable land management practices are in place. In addition, commercial forestry is an alternative land use but with moderate returns compared to the more productive areas of the District. Increasingly recreation and tourism are being developed as an adjunct to livestock income.

System 4 The Foothill Country: Area 130,000ha

This area of land runs roughly north south and is all that area on the east of the ranges separating the high country from the rest of the District. There are 42 properties carrying on average between 4-6,000 stock units but there is a wide range within these averages.

Ground cover is generally good. Where development has occurred, there is an improvement on the original native cover in terms of plant density and soil fertility. Where there has been pasture improvement to lower country consistent with prudent management, there is generally less grazing pressure on higher altitude country.

The area contains good sites for commercial forestry and additionally forestry is an economic land use option for areas infested with scrub weed.

Besides its primary production, this country is the source of the coastal river systems and the watershed has important implications for the rest of South Canterbury. Gorse, broom, blackberry and Spanish Heath, wallaby, rabbits and possums are an ever present problem and require a regular response.

System 5 The Downlands: Area 80,000ha

This is the intensively farmed and settled part of the Mackenzie District. It stretches from Cave to Sherwood and from Fairlie to Raincliff and has 277 holdings of which approximately 30 are smaller "lifestyle" blocks. Except for some 10,000ha of alluvial flats the soils are loessal (wind deposited) in origin and described as Opuha and Claremont silt loams. Up to the 1950's this was looked upon as cold "sour" country and typically grew a lot of browntop. With the advent of major and minor element correction, soil fertility has improved and production levels rose rapidly in the late 50s and 60s.

A short flurry into cereal cropping on the downs in the late 60's convinced most farmers that cash cropping was not a viable option for these soils and such activity is now largely confined to alluvial flats and the easier Claremont soil downs.

For the remainder of the area income is derived from livestock farming and is done with minimum cultivation to provide winter feed. The steeper Opuha soils are at risk from surface erosion if heavy rainfall occurs during cultivation. This was a cause of serious soil loss pre 1950 when considerable cultivation was done for feed and crop. There is a viable base in this farming system for intensification and diversification. To date one of the main forms of diversification has been into small lot forestry and on farm tourism.

Issues

The following are resource management issues relevant to the rural areas of Mackenzie District. The objectives and policies which address these issues are then referred to.

Issue 1 - Land Management in the High Country

Description

The high country of the Mackenzie District is comprised of the Main Divide and mountain ranges which include the Four Peaks, Two Thumb and Mount Peel Ranges, inland valleys, the Mackenzie Basin and surrounding hills. This corresponds to land systems 1, 2 and 3 as described above. The Mackenzie Basin which forms part of the high country is identified on the map following page 152 of the Plan.

All of the issues of the rural area which are set out in this Section 7 of the District Plan have relevance to the high country e.g. sustaining the soil resource, plant and animal pests, rural amenity, protection of indigenous vegetation and riparian areas, and landscape and ecological values. However, it is considered appropriate to detail the following specific high country issues because of the significance of the high country landscapes, indigenous vegetation and wildlife, locally, regionally and nationally, and because of the seriousness of these issues.

- 1 In some parts of the high country (most particularly in the driest areas) grazing by feral and domestic animals and some burning practices have significantly depleted the soil resource which has contributed to a decline in the quality and resilience of vegetation. The continued use of the tussock grasslands of the high country for extensive pastoral farming has the potential, if managed inappropriately, to further adversely affect the life supporting capacity of the soil and the robustness and diversity of the vegetation cover of some areas of the high country. The Canterbury Regional Council's Land and Vegetation Management Regional Plan controls burning in some hill and high country areas to avoid adverse effects on soil conservation and water quality.
- 2 Some areas of significant vegetation and significant habitats are under threat from some activities including burning and grazing and from the invasion of weeds and pests. Such areas include:
 - forest remnants including tree species such as silver beech, mountain beech, bog pine, miro, totara and kamahi.
 - tall tussock grasslands including examples of *Chionochloa rigida*, *C. macra* and *C. rubra*
 - Shrublands including associations of *Phyllocladus* and mountain ribbonwood
 - short tussock grasslands especially in arid and semi-arid zones.
- 3 Loss of vegetation health and cover in parts of the high country and changes to vegetation composition have adversely affected amenity, landscape, soil conservation, nature conservation, and production values in these areas.

Relevant Objectives and Policies

- Rural Objective 1, Policies 1A, 1B and 1C
- Rural Objective 2, Policies 2A and 2B
- Rural Objective 3, Policies 3A, 3B, 3C, 3D, 3E, and 3F
- Rural Objective 4, Policies 4A, 4B and 4C

Issue 2 - Sustaining the Soil Resource of the District

Description

There is concern in some areas to maintain vegetation health and cover; vegetation composition; soil fertility and health, so that the land can sustain the District's soil, vegetation and landscape resources into the future. The health of the vegetation needs to be maintained to ensure that the underlying soil is sustained in order to meet the reasonably foreseeable needs of future generations.

A pressing issue that confronts many rural communities in high country areas in the South Island is the apparent degradation of the unimproved tussock grasslands such that the land may not sustain a range of land uses into the future. The worst land degradation has occurred in the semi-arid areas of the high country. This rate of degradation appears to depend on the terrain, rainfall and management practices, natural soil fertility, and levels of rabbits and heiracium.

Sustainable management of the land resources has importance for several aspects of the District's well-being. Stable and viable rural communities depend upon the implementation and maintenance of sustainable land use systems which retain and improve soil quantity, fertility and health; protect water and air quality; and are energy efficient.

In an attempt to maintain viability of land holdings in the District plantation forestry is being considered as an alternative land use to intensive pasture development and extensive grazing. The main species with commercial potential are Douglas Fir in the moister areas and Corsican Pine in the drier areas. While the rotation period is long (up to 50 years) by comparison with radiata pine, it compares well with these species grown elsewhere in the world and the quality of wood can be high.

Research carried out in relation to forests in the Mackenzie Basin and high country indicates that soil fertility and structure can improve under a forestry regime. This improvement in fertility becomes particularly apparent after forests are harvested and growth of herbaceous vegetation occurs. This improvement in soil fertility is most frequently evidenced in the increase of plant available or soluble phosphorus. It is understood that this increase in forest soil phosphorus levels can persist for many years following forest removal. Grassland which establishes after clear felling has shown itself to be more productive and to contain a greater variety of species. The soil structure can also improve under forestry assisting protection from wind and frost erosion. While research in the Mackenzie Basin indicates that soil fertility and structure can improve under a forestry regime, the potential adverse effects of increased plantation forestry also require consideration. These potential adverse effects range from visual concerns with siting of forestry plantations, wilding tree spread and effects from reduction in water flows in rivers and streams.

The setting up of landcare groups has been a means of addressing sustainable management of the soil resource and application of sustainable grazing management techniques. Such techniques should include management of strong vegetation cover, grazing spells to allow revegetation and seeding, conservative stocking, monitoring of soils, and fencing designed to achieve improved grazing patterns.

Cultivation is an important part of arable farming. The purpose of cultivation is to maintain the sustainability of the soils by turning under crop residues and to subsequently prepare the seedbed for the planting of the following years crop. However, when cultivation is on a continuous annual basis research in other parts of New Zealand is showing that the soil can become compacted and structureless over time if appropriate techniques and equipment use is not applied. Fortunately, in the Mackenzie District most arable farming includes rotation with pasture or use techniques and machinery designed to protect or enhance the soil. Within carefully controlled rotations with pasture the decline of total organic matter may be low, and while components such as plant available nitrogen and soil microbes do decline with cropping, they subsequently increase with pasture restoration, as do soil physical conditions such as aggregate stability. However under poor management or without adequate fertiliser changes in stocking regimes, particularly intensive livestock operations may reduce the benefits of the pasture component of the rotation or result in other adverse effects on soil quality.

Relevant Objectives and Policies

- Rural Objective 4, Policies 4A, 4B and 4C
- Rural Objective 5, Policy 5A

Issue 3 - Plant and Animal Pests

Description

Over time there have been a wide range of plant and animal pests within the District which have caused damage to existing vegetation and have impaired production options. In recent decades parts of the high country have experienced changes in vegetation. Many of these changes have been into species such as hawkweeds and woody species, which reduce grazing and in some cases threatens nature conservation and landscape values. Some of the changes are thought to be due to structural changes in plant communities as a result of past and present management practices including high rabbit numbers and burning and overgrazing.

In the lower country gorse, broom, blackberry and spanish heath has invaded areas and is generally being tackled on a farm by farm basis by landholders, under the guidance of the Regional Pest Management Strategy and pest liaison committees.

Animal pests, and in particular rabbits in the high country, are an ongoing concern because of their contribution towards loss of ground cover. Because of the large scale degradation of ground cover in the more arid high country areas and the invasive capacity of rabbit populations the Rabbit and Land Management Programme (RLMP) was established with Central Government funding. The programme had the aims of reducing rabbit numbers and developing more sustainable production systems for each property within the RLMP area. The programme has now ended but the problem of controlling rabbit numbers on a long term basis still exists.

Wallaby and Canadian Geese have also reduced pasture availability and contributed to the degraded condition of some grasslands. Other animals, including thar, chamois and

deer, have over time damaged alpine, beech forest and sub-alpine species. Predators such as rats, mustelids and cats prey on native river birds and some wild animals threaten animal health through the spread of disease

The increasing spread of wilding trees is a key issue for sustainable management in the District because it is having significant adverse effects on pasture availability, the landscape values and natural conservation values. If unchecked, it is likely to preclude land use options such as ecological restoration, nature conservation, recreation and tourism from large areas of the District, and may also threaten pastoral viability and commercial forestry options over large areas. In some areas wildings are already overwhelming sites of natural significance and spreading into high altitude areas in the Mackenzie Basin.

Notwithstanding that some economic benefits can be derived from mature wilding trees in a few areas of the basin, the quality of trees is likely to be variable. The often random nature of wilding forests also means that it is difficult to apply location and design conditions in order to address visual effects.

As plant pests and animal pests are almost by definition invasive, control on a small scale, e.g. on individual properties, it is only effective if all property owners are involved in that control. To the extent that weeds and pests have the potential to adversely affect other people's rights to enjoy their own property without interference there is perhaps a responsibility to control these pests.

In the past territorial authorities had direct responsibility for pest control. Now under the Biosecurity Act national and regional pest management strategies can be prepared by central government and regional councils respectively. The Regional Pest Management Strategy makes management of declared pests mandatory in the Region or in parts of the Region. The strategy sets priorities for dealing with pests. The District Council has an input into the strategy and could be specified as an agency for pest eradication or control. In addition the District Council can, through its District Plan, control the effects of land use which allow the spread of undesirable plants and animals.

Relevant Objectives and Policies

- Rural Objective 1
- Rural Objective 4, Policies 4A, 4B and 4C

Issue 4 - Protecting Rural Amenity

Description

The rural environment has particular amenity and environmental values which are important to rural residents and visitors. These include privacy, rural outlook, spaciousness, ease of access, and quietness. In addition, there is an expectation from people that water will be available for both domestic and farming activities without the need for treatment.

Intensification and diversification of rural farming activities has occurred in the last two decades. This is a result of rural people wishing to either take up new opportunities or having to because of economic necessity. In addition, there has been a demand for residential dwellings in the rural area for retiring farming people wishing to remain in the rural area, or other people wishing to farm blocks on a part time basis. Rural diversification enables people to provide for both their economic, social and cultural well being. However, the consequence of the increased variety of activities now occurring in

the rural areas means that some farming activities, such as spreading of manure, crop spraying, late night and early morning use of machinery creating some noise, bird scaring devices, dust or vibration or even the barking of dogs are perceived by some people as a nuisance or a health risk. This is especially so where the rural population is being boosted by people wishing to live in the rural area but with employment and a background in an urban area.

Intensive livestock farming and factory farming can present problems associated with noise, smell, and effluent disposal. These types of operation may also contribute to water quality degradation due to inappropriate farm management and effluent disposal practices. Other problems include inconvenience for drivers caused by cattle moving across or along roads and damage to vehicles from animal dung. These problems are likely to affect greater numbers of people around the fringes of the District's towns.

Intensive livestock development or an increase of dwellings can also result in an increased number of effluent disposal fields. Unless controlled, the proliferation of effluent disposal fields can lead to a deterioration of groundwater quality. This is particularly of concern where the groundwater table is close to the land surface.

Noise is likely to provoke complaints where, by virtue of its level or other distinguishable characteristics, it intrudes upon existing background noise levels. Many of the rural areas of the District are valued by residents for its peace and quietness. The disturbance from rural activities may well be accepted by rural residents as an integral part of rural life. However, the rural areas can be disturbed by noise from recreational and other commercial or industrial activities. These can include motorised recreation activities, such as motorbikes, helicopters, jetskis, jetboats and traffic associated with recreational activities in rural areas. Overflying of aircraft cannot, however, be controlled through the District Plan, except for the location of landing sites. Other industrial and commercial activities can generate unacceptable noise levels from machinery or traffic, for example, if located in quiet rural areas.

The potential for the drift of agricultural chemical sprays on to adjoining properties is increasingly perceived by people as a concern in relation to potential health risk. Difficulties arise in trying to control spray drift under the District Plan, in that it is often the particular spraying contractor or the method of spray application that causes the drift. Registration and training of operators and national requirements for the use of certain chemicals is well established. Encouragement and support for existing and new initiatives including development and adoption of industry codes of practices may be an appropriate way of dealing with the issue, which is already controlled by a variety of other statutes and regulations.

Extractive Industries and forestry and other land uses can create adverse impacts such as shading of property and roads, intensive heavy traffic generation, noise, dust, disturbance of natural contours and landforms and disruption or change to traditional rural landscapes.

Several landscape assessments have been carried out within the District, with a particular emphasis on the impacts of forestry in the Mackenzie Basin. The landscape values of these areas are considered to be high by many people who live in or visit them and it is possible that these values could be compromised by some forestry plantings.

Subdivision can result in increasing demand for access from state highways which can reduce the safety and efficiency of the functioning of these roads. These difficulties can be mitigated by lot sizes, separation of accesses, the number of accesses or limiting non-residential development.

Relevant Objectives and Policies

- Rural: Objective 6, Policies 6A, 6B, 6C and 6D.

Issue 5 - Protection of Indigenous Vegetation and Wildlife and Natural Features

Description

The retention of indigenous vegetation and habitat is important for the maintenance of ecosystem functioning and for retaining biodiversity, soil and water values, natural character and landscape values.

The District is fortunate in that it still contains a large number of areas that have particular natural conservation value; some of which are considered nationally significant. In particular the District contains threatened species including the robust grasshopper, scree skink, black stilt, crested grebe, black fronted tern, wrybill and several species of moth and threatened plants. Seven species of native fish inhabit the waters of the Mackenzie District - short and long finned Eels, common river and long jawed Galaxid, Kaoro and Bullies. The District also contains tussock lands and remnants of shrubland and forest which are part of the identity of the District. Within the higher altitude areas of the District there is a high degree of natural character with the environment remaining relatively unmodified. These areas can be protected by a range of methods. Providing incentives and educative techniques, rather than regulatory and enforcement provisions, where possible, is a positive way in promoting the survival of indigenous plants and animals and retaining geological or geomorphological sites. Incentives may vary depending on the circumstances of the owner of the land wishing to protect a particular site. Educative techniques could include the targeting of stewardship groups by providing practical information about conservation or geological values of sites.

Notwithstanding this, there may be a need to have rules to control activities which may have adverse effects on areas that contain indigenous animals and plants, or natural features such as geological or geomorphological features which are of significant value to the District. Activities involving vegetation clearance, land disturbance through earthworks, and the planting of close canopy vegetation can destroy indigenous plants and animals directly, or indirectly through the modification of habitat. Other factors which can impact on indigenous vegetation and habitat include grazing, oversowing and topdressing, browsing by pest animals, wilding tree and weed spread, predation, and recreational impacts.

Non-regulatory and regulatory methods could control these activities when they occur in ecologically important and sensitive areas. These areas include the high altitude environments, generally above 900m, the District's riverbeds or river mouths and the margins of rivers, lakes and wetlands.

In the future with landowner support these areas could be reserved for conservation purposes or wildlife protection.

Relevant Objectives and Policies

- Rural: Objective 1 Policies 1A, 1B and 1C
- Rural: Objective 4, Policies 4A, 4B and 4C
- Subdivision: Objective 4 - Esplanade Provision

Issue 6 - Protection of Riparian Areas, Wetlands and Other Water Bodies

Description

Areas adjoining lakes, rivers and water supply inlets have a range of values which justify a special management approach. The maintenance of the natural character of these areas combined with appropriate plantings and appropriate grazing management results in maintenance of water quality due to filtering of sediments and the degradation of some contaminants. These areas can also have considerable value as habitat areas.

Obvious and often adverse impacts on the values of riparian areas include the destabilisation of banks, the deposition of debris in waterways, the degradation of water quality and the destruction of ground cover. Activities which can have these adverse impacts include earthworks, the clearance of vegetation, entry of stock, the planting of inappropriate vegetation types and/or densities, intensive livestock farming and structures, and inappropriate stream channel management. Sustainable management of these areas from these or similar impacts can be obtained by public reservation of these areas, by educating people about good management practices, by developing voluntary management guidelines and rules over the use of these areas and by accountability for management actions.

While the adverse impacts of tracks and excavations around waterbodies are obvious, there is likely to be differing views as to the extent which buildings are appropriate in the vicinity of major waterbodies such as Lakes Tekapo, Pukaki, Ohau and Benmore. To date the only accommodation facilities available are camping grounds with minor buildings such as toilet blocks. However it is possible that in the future there will be demand for accommodation facilities such as hotels, motels and private housing in these areas. The appropriateness of such development would need to be assessed in terms of matters including impacts on the visual landscape viewed from the land and the lakes, the implications for ground water quality, the adequacy of access and the impact on the natural values of the area and the safety of water for recreation and wildlife.

The landscape value of areas close to Lakes Tekapo, Pukaki, Ohau and Benmore and their rivers is high. This value is largely due to the naturalness of this environment with little or no built development. These riparian areas are also a great recreational asset as they provide a setting for a variety of activities and also provide access to waterbodies.

Note: Discussion of the issue of access to riparian areas and esplanade provision in these areas is contained in Section 12 - Subdivision.
Discussion of Landscape values is listed below.

Relevant Objectives and Policies

- Rural: Objective 2, Policies 2A and 2B
- Subdivision: Objective 4, Esplanade Provision

Issue 7 - Landscape Values

Description

In general terms the District contains three basic landscape units:

- The uninterrupted **mountainous chain of the Main Divide** forming the north western boundary of the District and containing 29 snow-capped and rugged

peaks of greater than 3,000m in height. Below the extensive snowfields covering the summits and high basins, the mountain valleys contain a network of glaciers, and ribbons of ice extending for up to 30km in length.

- The vast tussock grasslands of the **Mackenzie Basin**, enclosed in mountain ranges such as the Ben Ohau, Two Thumb, Hall, Gammack, and Grampian Ranges. The Basin contains the large lakes and canals of the Upper Waitaki Power Development and the townships of Twizel, Mt Cook and Tekapo. The landscapes of these high country areas are vast and spacious with subtle colourings and vegetation patterns, dominated by natural features and extended views. Development in the high country has also been generally unobtrusive with isolated contained settlement and a lack of prominent artificial structures and patterns.
- The more **intensively farmed and settled farmland** east of the Two Thumb, Albury and Dalgety Ranges, characterised by gently rolling hills and the plains around the Opuha River. This is a landscape shaped by water and wind processes and with a far milder climate than the Mackenzie Basin. Particularly in the vicinity of State Highway 8 and the townships of Albury, Fairlie and Kimbell, the level of human modification to the landscape is significant.

The term landscape is an elusive phenomenon. In any area, the physical resources are expressed in the landscape, giving each area its own unique character and identity. In addition, each area is perceived and experienced differently. The values people place on an area are subjective and will differ, however, many are widely shared, supported by research or are formally recognised by a community, such as through reserve status.

The landscapes of the District are of significant value to the people who live, work and visit there. Most of this experience of the landscape is gained from within the settlements and the main transport routes. However, an increasing number of people are interested in exploring more remote locations by vehicle or by foot. The high country landscape, in particular, is not only important for its residents and a drawcard for recreation and tourism, it is also part of the identity of New Zealand which can be seen in writings, paintings, songs and advertisements. Many of these landscapes are working landscapes containing farming and forestry elements such as fences, buildings, cultivation, introduced pasture, forestry and livestock. The significance of these elements varies with the intensity of use, the most intensive farming and forestry containing the greatest degree of modification. In many areas these elements constitute the typical rural landscape.

A landscape study was undertaken in 1992 with the purpose of identifying key landscape values to be maintained under different land use options in the Mackenzie/Waitaki Basins. This landscape study was prepared by Boffa Miskell Partners and comprises two volumes. The main volume containing consideration of the key landscape values and the visual vulnerability of areas to land use change was entitled "Landscape Change in the Mackenzie/Waitaki Basins". A second volume "Landscape Guidelines for Forests in the Mackenzie/Waitaki Basins" sets out siting and design guidelines for forestry in the Basin.

The findings of the study indicate that much of the study area is of medium or high visual vulnerability.

The Act requires the Council to recognise and provide for "the protection of outstanding features and landscapes from inappropriate subdivision, use and development". The Council shall also have particular regard to "the protection and enhancement of amenity values". The Canterbury Regional Landscape Study 1993 identified the majority of the Mackenzie Basin as being "**regionally outstanding**". These areas were identified as

outstanding on the grounds of their "natural science" values (geomorphological and biological values, particularly glacial and fluvial features, lakes and wetlands, and vegetation types); "legibility" (expressiveness and ease of understanding); "aesthetic values" (including visual character and quality, such as naturalness, and coherence) "recognised" values (general agreement between professionals and the public on its value) and takata whenua values. The remainder of the high country was identified as being "**regionally significant**". The significance of the area for recreation and leisure was also highlighted in the Regional Study. The District's high country also has a long history of Maori importance and retains significance to takata whenua.

The Regional Study recognised that the high country is a dynamic landscape with ecological changes, including the spread of heiracium and wilding trees, and changes as result of agricultural practices, such as shelter planting, ploughing and topdressing. These changes continue to have an impact on the character of the landscape. At the same time there is a growing awareness and appreciation of the many values of largely unmodified areas of the high country. The landscape values of the high country, in particular higher altitude areas, are very sensitive to change by activities, particularly activities involving earthworks, establishment of buildings and structures, the planting of trees and intensification of pastoral and arable use. Changes to indigenous vegetation patterns can also affect the visual qualities of the landscape, as they contribute to the colour, texture and naturalness of an area. The challenge is to find an appropriate balance between land uses and activities and the maintenance of outstanding landscape qualities.

Rural lifestyle developments and rural residential development around existing towns if too extensive or in the wrong location have the potential to alter the extensive open character that much of the Mackenzie Basin still offers. Where subdivision and housing occurs, the Basin becomes more strongly an "occupied rural place" as in the lowlands of South Canterbury. This potentially reduces the Basin's unspoiled openness and vastness, which are its main attributes. The breaking up of land through subdivision could result in the loss of the former high country ethos and landscape pattern. It may also result in more intensive use of the remaining farmed areas. This process has the potential to increase with the removal of former pastoral lease land, from the working landscape and return to full Crown ownership in conjunction with the freeholding of some of this lease land, particularly at lower altitudes. Particular landscape values, which could be degraded by inappropriate redevelopment, include visual openness, a sense of naturalness, sense of landform continuity, small well-separated towns and spectacular views such as the iconic views up the lakes, particularly Tekapo and Pukaki. The loss or degradation of views from the iconic tourist highways could also occur.

Existing and new development, other than rural lifestyle development, may also result in an increase in the level of modification in the landscape and in an associated reduction in naturalness. As an example, nationally significant electricity and defence infrastructure can be found within the Mackenzie Basin including at Pukaki, Tekapo and Ohau. This infrastructure will need to be maintained and upgraded from time to time. Striking a balance between the need for essential infrastructure and the desire to protect particular landscape values is an issue in this context.

Relevant Objectives and Policies

- Rural: Objective 3, Policies 3A, 3B, 3C, 3D, 3E, 3F

Issue 8 - Natural Hazards

Description

Communities of the Mackenzie District are vulnerable to a variety of natural hazards. Some hazard events have the potential to affect the whole District, such as an earthquake; whilst others such as river flooding will affect only the flood plain areas.

When assessing the "risk" of natural hazards to the communities, two aspects are considered. The first aspect is the nature of the hazard event. For example, an earthquake may occur infrequently but cause widespread damage; whereas, a river flood may be frequent but cause damage to a localised area. The second aspect is the vulnerability of the community to a particular hazard event. For example, housing development on a flood plain may increase the number of assets and hence the potential losses of that community if flooding occurs.

The communities in Mackenzie are at most potential risk from the following natural hazards:

- Flooding
- Earthquakes
- Severe Climatic Extremes - Drought, Floods, Snowfall, Wind.

The Council is required under the Resource Management Act to control any actual or potential effects of the use, development, or protection of land including for the purpose of the avoidance or mitigation of natural hazards. Flooding is a natural hazard that can most effectively be avoided or mitigated by providing "protection" (eg stopbanks, breakwaters) or by guiding communities away from areas exposed to these hazards.

There are a number of active faults in the District. The Ostler Fault is a significant fault system that crosses through the Mackenzie Basin, close to the town of Twizel. Mapping of the fault hazard area allows for potentially significant effects to be mitigated by ensuring development within that area takes account of known risk, and raising the awareness of people and communities.

The effects of drought as a natural hazard are more difficult to avoid because the impact of drought is closely related to the availability and use of water. Long term changes in land use practices and land use patterns can either increase or decrease the vulnerability of the community to the hazards.

Relevant Objectives and Policies

- Rural: Objective 7, Policy 7A
- Subdivision: Objective 5 and Policies

Issue 9 - Commercial and Industrial Development in the Rural Area

Description

Industrial activities and some commercial or recreational activities can have significant adverse impacts on the rural amenity and environment. The visual impact of large scale industrial, commercial or accommodation buildings and ancillary structures, as well as the likelihood of significantly increased traffic generation could have a cumulative adverse impact on amenity values such as privacy, rural outlook, spaciousness and quietness. In addition the lack of services in the rural area could necessitate these industries or activities to extract sufficient quantities of water for their development and also to establish appropriate large scale on-site waste disposal systems.

Relevant Objectives and Policies

- Rural Zone: Objective 6, Policy 6D

Issue 10 - Recreational Values and Impacts

Description

Tourist and recreational activities and opportunities in the District range from the passive (eg sightseeing or picnicking) to the active (eg mountaineering and skiing). The types of experience involve activities in remote areas, back country areas, rural and pastoral areas as well as use of facilities and walkways within the towns of the District. The recreational activities are land and waterbased with the lakes and rivers providing considerable opportunities for boating, fishing and other water pursuits. In addition a significant number of aircraft (including fixed wing, helicopters and hot air balloons) offer sightseeing and access to activities such as skiing.

By far the majority of recreational activity within the District is pursued by visitors to the area, both national and international. The number of visitors is increasing every year, particularly international visitors. For example Mt Cook which is a major determinant of tourist accommodation is currently (1993) visited by some 200,000 people a year, 70% of whom are overseas tourists. This number could increase to 600,000 people in the year 2000 if projected increases eventuate.

To date recreation and the associated development has not significantly impacted on the District's environment or the ability of people to pursue their recreational goals. However with increases in recreationalists and visitors, and with an increasing preference for participatory experiences it seems very possible that adverse impacts could occur. These impacts include:

- detraction from the visual amenity of scenic areas
- noise and disturbance from traffic (including boats and aircraft)
- litter and waste poorly collected or disposed of
- degradation of vegetation quality
- risks to the safety of recreationalists and others
- conflicts with spiritual and food gathering values of the takata whenua for an area
- change in local landforms by excavators
- reduction in water quality
- degradation of natural habitats (including lakes and rivers)
- reduction in the values of remote areas (including lakes and rivers) associated with increased use by recreationalists
- limiting of the productive capacity of areas.

The nine major rivers within the Mackenzie Basin provide significant habitat for wading birds and other wildlife. Recreational use of these riverbeds during the bird breeding season (August to January inclusive), off-road vehicle use and associated tracking can cause disturbance and impact on wading birds and other wildlife. There are, however, practical difficulties associated with the implementation of District Plan regulations concerning this matter. Promoting awareness of the issues of using river beds during the breeding season and the use of off-road vehicles in riverbeds at any time of the year may prove a more workable option. The Department of Conservation has established a Braided River Care Code for all users of braided riverbeds.

With most of these impacts it is their cumulative effect that is of concern rather than the occurrence of a single event. This presents difficulties in determining what, if any, level of interference is required to protect environmental and recreational values. Lack of experience may prevent development of predetermined acceptable levels of activity.

Even if a level of activity can be ascertained the methods of allocation present administrative or equity problems. A tender system could be used but it would not be able to take into account private (as compared to commercial) recreation unless that private component could be "purchased" by a representative body. Any system of regulation by rules or consents would have to be based on the "first come, first served" basis which prejudices future uses and can involve significant administrative costs.

Commercial operators provide a range of services associated with recreation. These services include activities such as guiding, lodge accommodation, transport and adventure activities and boating. Together they make an important contribution to the range of recreation opportunities available within the District. The nature of their impact is no different from those carrying out similar activities non commercially. However, commercial reality often dictates that they operate regularly and in some cases with significant numbers. It is this factor which sometimes causes conflict with other users. Consequently commercial recreation activities may require special consideration. Limits on the type and numbers of commercial operators within any one area may be necessary where management of factors such as public safety, physical and/or social carrying capacity require, or where the needs of other users make this necessary in order to achieve a balance between users.

The impacts of activities on recreational settings and experience is potentially of greater significance than the effects of recreational activities themselves. Impacts on recreational amenity can arise from poorly located or designed earthworks, structures, signs and tree planting, inappropriately located activities such as those which generate noise or smells, and motorised activities, both on the ground and in the air. Conflict can also occur between recreational activities in a similar location.

Through a series of workshops based on the report "Mackenzie Basin Aviation Needs and Development Strategy" (BECA 1995) an Aviation Strategy was developed, most of which has been incorporated in this District plan. The approach of the strategy is to specify appropriate locations for airports and helicopter bases and to provide for snow landings as a discretionary activity. In addition noise abatement areas are to be established within the Basin and conservation lands by agreement between aviation and national park user groups. (Refer Appendix L for Aviation Strategy).

Relevant Objectives and Policies

- Rural Objective 2, Policy 2A & 2B
- Rural Objective 6, Policy 6D
- Rural Objective 8, Policy 8A, 8B & 8C
- Rural Objective 9, Policy 9A

Issue 11 - Aoraki/Mount Cook National Park

Description

Under the Town and Country Planning Act 1977 (the Act under which the previous District Plan was prepared) activities within National Parks were not controlled, whether by objectives, policies or rules. The Resource Management 1991 now permits activities within national parks to be controlled by district plans where these activities are:

- carried out by persons other than the Crown, or are
- Crown activities which are not consistent with a management plan for the park and which have a significant adverse effect beyond the national park.

The distinction between Crown and non-crown activities, while obviously relevant to the jurisdiction of the District Plan within the Aoraki/Mount Cook National Park, is of little significance when considering effects on the environment and sustainable management of the Park's resources. Therefore unless there is a clear distinction between the impact of Crown and non-Crown activities on the environment there would seem little point in distinguishing between them for the purposes of the District Plan.

The Aoraki/Mount Cook National Park Management Plan was approved in 1988. This Management Plan, which is undergoing review, specified objectives and policies for the Park and for Aoraki/Mount Cook Village. The objectives set out the basis for Park Management and can be summarised as:

- Preserving the park in its natural state.
- To facilitate public use and enjoyment of the Park.
- To enhance an appreciation and awareness of Park values.
- To foster research into the Park.
- To co-operate and maintain effective relationships with agencies etc whose decisions affect management of the Park.

The Management Plan then sets out a wide range of "Preservation Oriented" and "Use Oriented" policies relating to matters such as public use, aircrafts and airports, mining, introduced plants and visitor safety.

In preparing the Management Plan the Department is guided by its responsibilities under the National Parks Act which includes:

- preserving the park as far as possible in its natural state;
- preserving native plants and animals;
- preservation of sites of archaeological and historical interest;
- maintaining the park's value as a soil, water and forest conservation area;
- maintaining freedom of entry for the public subject to meeting the other preservation requirements.

It would appear that the guiding principles in preparation and review of the Management Plan and the public input into this process are sufficient to ensure that, in general, the matters in Part II of the Resource Management Act 1991 are suitably provided for. The Mackenzie District Council however have concerns about the extent of aircraft movement within the park, particularly in areas such as the Hooker Valley. While the District Plan could become involved in this matter, it may be more appropriate to have those concerns expressed through the Management Plan.

Other conservation lands administered by the Department of Conservation under management plans or similar would also seem to be managed in a way that meets the purposes and principles of the Resource Management Act. Where there is a need to control effects of an activity and the Department of Conservation management regime ensures that effects are suitably controlled it is Council's policy to avoid creating an additional regulatory regime in the District Plan to deal with these concerns.

Consideration of the natural hazards issues within the Aoraki/Mount Cook National Park is contained in Section 17 - Natural Hazards, Issue 1.

Relevant Objectives and Policies

- Rural Objective 10, Policy 10A, 10B & 10C,

Rural Objectives And Policies

Rural Objective 1 - Indigenous Ecosystems, Vegetation And Habitat

To safeguard indigenous biodiversity and ecosystem functioning through the protection and enhancement of significant indigenous vegetation and habitats, riparian margins and the maintenance of natural biological and physical processes.

Reasons

- Section 6 of the Act requires the Council to recognise and provide for protection of areas of significant indigenous vegetation and significant habitats for indigenous fauna.
- The District still contains many areas that have particular natural conservation value, some of which contain nationally significant species which are deserving of protection.
- It is appropriate that the values of areas of particular natural significance are protected both because of their intrinsic ecological worth, their contribution towards biodiversity and their value to the people of the District.
- the retention of indigenous vegetation and habitat is important for the maintenance of ecosystem functioning, and the retention of indigenous biodiversity, soil and water values, natural character, landscape and amenity.

Rural Policy 1A - Department Of Conservation And Landholders

To promote the long-term protection of sites with significant conservation values by encouraging:

- *landholders and relevant agencies to pursue protection mechanisms and agreements;*
 - *tenure review processes under the Land Act and Crown Pastoral Land Act 1998;*
 - *implementation of the Conservation Management Strategy and the Management Plan for the Aoraki/Mount Cook National Park.*
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Explanation and Reasons

- As for Objective 1.
- Conservation of natural values can be achieved over time with the goodwill and initiative of landholders working in partnership with relevant agencies and landholder groups.
- Landholder initiatives, joint projects and voluntary protection mechanisms can be encouraged through co-operation with Department of Conservation which has a statutory obligation to advocate the protection of areas of significant conservation value.
- The Aoraki/Mount Cook National Park Management Plan has as one of its purposes the preservation of indigenous plants and animals. It is appropriate that the Council support management of the National Park on this basis.

Implementation Methods

- Identify sites of significance.

- Promoting reasons and merits of protection of areas.
- Providing information on and promote opportunities for protection, including management agreements and covenants.
- Provide for exemptions from Plan rules where alternative protection mechanisms are in place.
- Rates relief for landholders protecting indigenous vegetation.

Environmental Results Anticipated

- Gradual preservation of areas of significant conservation values by way of conservation covenants, management plans, transfer to the Crown, or other means.

Rural Policy 1B - Identification And Protection Of Special Sites

To identify in the District Plan sites of significant indigenous vegetation or habitat (in accordance with the criteria listed in the Reasons below), and significant geological or geomorphological features, and to prevent development which reduces the values of these sites or features.

Explanation and Reasons

- As for Objective 1.
- Loss or significant reductions in the ecological integrity and functioning, habitat values or amenity values of any significant natural site or area needs to be avoided.
- It is desirable that the District Plan controls activities which may adversely affect areas of indigenous animals and plants and geological and geomorphological features of significant value to the district.
- Activities involving vegetation clearance, land disturbance through earthworks and the erection of buildings, and the planting of trees can destroy indigenous plants and animals directly, or indirectly through the modification of habitat.
- Other activities such as oversowing and topdressing and changes in stocking regimes can also adversely effect conservation values.

Primary criteria used to identify sites of natural significance:

- i Intactness - The area is little modified by human activity, comprises a predominately intact indigenous system and is not affected in a major way by weed or pest species.
- ii Rarity - The area supports an indigenous species, habitat or community of species which is rare and vulnerable within the ecological district or threatened nationally.
- iii Representativeness - The best examples of particular vegetation types, habitats or ecological processes which are typical of their ecological district.
- iv Distinctiveness/Special Ecological Characteristics - The type and range of unusual features of the area itself and the role of the area in relationship to other areas locally, regionally or nationally, including:
 - presence of species at their distribution limit
 - levels of endemism
 - supporting protected indigenous fauna for some part of their life-cycle (e.g. breeding, feeding moulting, roosting), whether on a regular or infrequent basis
 - playing an important role in the life-cycle of protected migratory indigenous fauna

- continuing an intact sequence, or a substantial part of an intact sequence of unusual ecological features or gradients.
- v Diversity and pattern - areas exhibiting a high degree of biological diversity in terms of:
 - Vegetation
 - Habitat types
 - Species
 - Ecological processes

Secondary criteria used to assist in identifying sites of natural significance:

- i Scientific Value - The area is a type of locality or other recognised scientific reference area.
- ii Connectivity - The extent to which the area has ecological value due to its location and functioning in relation to its surroundings. An area may be ecologically significant because of its connections to a neighbouring area, or as part of a network of areas of fauna habitat, or as a buffer.
- iii Size and shape - The degree to which the size and shape of an area is conducive to it being, or becoming, ecologically self sustaining.

Implementation Methods

- Identify sites of significance.
- Controls within Sites of Natural Significance: limiting volume, area and slope of earthworks, tree planting, vegetation clearance, building and pastoral intensification.
- Promoting reasons and merits of protection of areas.
- Providing information on and promote opportunities for protection, including management agreements and covenants.
- Provide for exemptions from Plan rules where alternative protection mechanisms are in place.
- Rates relief for landholders protecting indigenous vegetation.
- Review of Rules 12.1.1 (g) and 12.1.1 (h)
A review of Rules 12.1.1 (g) and 12.1.1 (h) will commence 3 years after the date at which the Plan became operative. These Rules will continue to apply until such time as the review is complete and a new Rule(s) is substituted. The agreed process for such a review is as follows:
 - (i) The Mackenzie District Council will review the extent and condition of short tussock grasslands and associated communities in the Mackenzie Basin, and the extent of cultivation and modification of these areas since the Plan became operative. Council will consult interested parties including landholders, Federated Farmers, Department of Conservation, Environment Canterbury, and environmental and community organisations. It will use relevant information such as the ortho-digital technology of the RFT (Rural Futures Trust). It will consider matters such as the economic, ecological, landscape and other values of the short tussock grasslands and associated vegetation.
 - (ii) The review process may result in the Council amending the Plan and/or Rules 12.1.1 (g) Short Tussock Grasslands and 12.1.1 (h) Indigenous Cushion and Mat Vegetation and Associated Communities to identify areas where development and modification needs to be more strictly controlled and/or areas where the above Rules would no longer apply.

Council has chosen to provide exemptions from the rules controlling adverse effects on Sites of Natural Significance where management agreements or covenants are in place. Council will monitor the effectiveness of these to maintain the significant values of these sites. If this review indicates that the values of the sites are not being satisfactorily maintained the Council will reconsider the mechanisms available to maintain these values.

Environmental Results Anticipated

- Protection of the natural habitats of indigenous plants and animals from the adverse effects of human activities and a reduced overall rate of degradation of indigenous habitats and biodiversity.

Rural Policy 1C - Natural Character And Ecosystem Functions

To avoid, remedy or mitigate adverse effects on the natural character and indigenous land and water ecosystem functions of the District, including

- i land form, physical processes and hydrology;*
 - ii remaining areas of significant indigenous vegetation and habitat, and linkages between these areas;*
 - iii aquatic habitat and water quality and quantity.*
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Explanations and Reasons

- As for Objective 1
- Safeguarding the life-supporting capacity of air, water, soil and ecosystems is a prerequisite for sustainable management to occur
- The policy recognises New Zealand's responsibilities under the Biodiversity Convention to preserve biological diversity.

Implementation Methods

- Taking Policy 1C into account in administering the Resource Management Act 1991 and this District Plan.
- To review the provisions for indigenous vegetation following assessment of ecological values within the Fairlie Basin.
- To monitor the effectiveness of the Canterbury Regional Council resource consent exemptions to the indigenous vegetation clearance provisions in the District Plan and review them when the ecological and landscape assessments are complete.

Environmental Effects Anticipated

- Maintenance of the natural character and indigenous land and water ecosystems within the District.

<h3><i>Rural Objective 2 - Natural Character Of Waterbodies And Their Margins</i></h3>

<p><i>The preservation of the natural character and functioning of the District's lakes, rivers, and wetlands and their margins, and the promotion of public access along these areas.</i></p>
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Reasons

- The primary functions of riparian areas are to maintain the stability of the margins of waterbodies and to maintain water quality through the filtering out of sediment, nutrients and contaminants. Waterbody margins can also provide habitat for plants and animals.
- Riparian areas are important habitats which provide wildlife corridors throughout the District.

Rural Policy 2A - Controlling Adverse Effects

Managing by way of standards, guidelines and good management techniques, the adverse effects of activities such as earthworks, vegetation clearance, tree plantings and buildings that have the potential to threaten the survival of riparian vegetation and habitat, or to have significant adverse effects on public access and recreation, river, lake or wetland ecology, natural character, maintenance of bank stability, or water quality and quantity.

Explanation and Reasons

- As for Objective 2.
- Earthworks, structures, vegetation clearance, livestock and some plantings have the potential to reduce the effectiveness of vegetation and contour of riparian areas to function in a way which assists in maintaining the water quality and quantity of adjacent waterbodies and provide habitat for indigenous wildlife and vegetation.

Implementation Methods

- Promote permanent protection of riparian areas.
- Provide information, education and community guidelines on the reasons for protecting and methods for protecting riparian margins.
- Provide incentives for protecting riparian margins.
- Provide for alternative protection mechanisms such as management agreements and covenants and Canterbury Regional Council consents.
- Conditions on tree planting
- Limits on volume, site and slope of earthworks
- Limits on vegetation clearance
- No buildings permitted

Environmental Effects Anticipated

- Reduced loss of the natural character of riparian areas from human activities.
- Maintenance and enhancement of the natural filtering character of riparian vegetation to protect water quality.

Rural Policy 2B - Riparian Margins

To encourage the protection of natural character and conservation values of riparian areas and adjacent water bodies and the provision of public access along riparian margins.

Explanation and Reasons

- As for Objective 2
- Maintenance and enhancement of public access along the district's lakes, preserving the intrinsic values of the district's aquatic ecosystems and the protection of habitat of indigenous and introduced fish are all matters required or referred to in Part II of the Resource Management Act 1991.
- The subdivision of holdings provides an opportunity to obtain greater protection of riparian values through obligations incorporated into land titles.

Implementation Methods

- Subdivision (Section 12): Esplanade Provision
- Identify areas where public access is available via formed or paper roads.
- Promote identification of riparian areas of significance for their public access or conservation values.
- Promote permanent protection of riparian areas.
- Provide information, education and community guidelines on the reasons for protecting and methods for protecting riparian margins.
- Provide incentives for protecting riparian margins.
- Provide for alternative protection mechanisms such as management agreements and covenants and Canterbury Regional Council consents.

Environmental Results Anticipated

- Increase over time of the protection of natural character and values of riparian areas by increasing people's understanding of the value of riparian management and to increase the area being managed within the District.

Objective 3A – Distinctive and Outstanding Landscapes

To protect and sustain the distinctive and outstanding natural landscapes and features of the District from subdivision and development that would detract from those landscapes.

Explanations and Reasons

- Section 6(b) of the Resource Management Act requires the Council to recognise and provide for the protection of outstanding natural features and landscapes within its District from inappropriate subdivision, use and development as a matter of national importance.
- It is appropriate that development, particularly in the high country and Mackenzie Basin, has an overriding regard to the wider visual and landscape considerations that are important to the well-being of the District, its residents and visitors.

Policy 3A – Recognition of Mackenzie Basin

To recognise the Mackenzie Basin as having a distinctive and highly valued landscape containing outstanding natural landscapes, and through the Mackenzie Basin Subzone within the Rural Zone, to protect the Basin from inappropriate subdivision, use and development.

Explanations and Reasons

- As for Objective 3A
- A distinctive 'Mackenzie Country' character has developed, based on the visual and physical qualities of the Basin, combined with the land use practice and the social pattern of run holders, workers and extensive stations. Substantial areas of the Mackenzie Basin are in the public estate, including areas that provide the most dramatic landscape features: the lake surfaces and margins, Mount Cook/Aoraki National Park, the Southern Alps backdrop, and extensive areas of Crown land and conservation estate. Despite its modified and managed land surface as a working landscape, virtually the entire Basin remains, in 2007, "outstanding" in terms of landscape values. This is because of the uniqueness, natural and visual qualities of the high-mountain basin environment, lakes, landforms, land use, community and Mackenzie identity. The landscape values of the Mackenzie Basin thus result from cultural factors such as land use, social pattern and identity, and from physical factors such as built structures including houses, roads, transmission lines and power generation structures, as well as from natural factors such as the ecology, climate and topography.
- Not all areas within the Mackenzie Basin are outstanding. However for the purposes of the District Plan objectives and policies relating to outstanding natural landscapes, reference to the Mackenzie Basin is used to refer to those parts of the Basin that are distinctive and/or outstanding.
- Sustainable management of natural and physical resources will not be achieved unless the integrity of the values associated with the Mackenzie Basin including the visual and landscape qualities of this resource can be assured.
- The uniqueness of the Mackenzie Basin, with its naturalistic appearance, legible geomorphology, natural and cultural heritage extensive and dramatic vistas from mountain tops to valley floors, and lack of apparent "clutter" is to be protected from inappropriate subdivision, use and development.

Policy 3B – Landscape Diversity

To recognise the diversity of physical settings and landscapes within the Mackenzie Basin and the varying capacity of these to absorb further subdivision, buildings and domestication, and in particular to recognise the suitability of existing farm base areas to accommodate and absorb additional buildings.

Explanations and Reasons

- The Basin has a diversity of conditions with a north to south altitude gradient and a west to east rainfall gradient. To this can be added the topographic and soil variability of outwash, moraine, valley, lake, hillside and high mountain environments and the variability of closeness to or remoteness from the state highways and other roads. Although the term Mackenzie Basin is frequently used (and is used throughout this District Plan) the area being referred to incorporates a number of land forms including the basin proper and areas of moraine valley, upland and range lands and mountains.
- The 2007 report "The Mackenzie Basin Landscape: character and capacity" by Graham Densem which assessed the Mackenzie Basin landscape identifies various landscape character areas and sub-areas and describes their characteristics and values. The report also contains descriptions of the types of landform and areas, and classifies areas as having high, medium or low ability to absorb development.

Policy 3C – Adverse Impacts of Buildings and Earthworks

To avoid adverse impacts on the outstanding natural landscape and features of the Mackenzie Basin, in particular from residential, buildings, domestication, structures, earthworks, tracks and roads.

Explanations and Reasons

- Domestication of the Mackenzie Basin landscape can reduce or remove those qualities for which it is valued. These effects include the imposition of buildings, structures, plantings and other patterns associated with development (earthworks, lighting, reflective surfaces etc.) that detract from the open and uncluttered landscape of the Basin.
- If poorly sited, the traditional landscape values of the Basin could be significantly changed and diminished by infilling empty rural areas and disrupting land use patterns with random rural lifestyle and other housing and tourism developments.
- Rural lifestyle subdivisions, as found throughout lowland rural areas of New Zealand, and other Southern Lakes districts, have the potential to lessen the sense of extensive wilderness and long views to distant points by dispersing developments over wide areas of the Basin.
- Some structures associated with more intensive farming such as large irrigators or industrial style buildings, when placed in the foreground of views can reduce the scenic values and sense of openness valued within the Basin.
- Poorly sited and constructed tracks and roading can result in scars on the landscape, reducing its value, naturalness and intactness.

Policy 3D- Adverse Effects of Sporadic Development

To control non-farming buildings and subdivision in the Mackenzie Basin (outside of existing farm base areas) to ensure adverse effects on the environment of sporadic development and subdivision are avoided and to sustain existing and likely future productive use of farm holdings

Explanations and Reasons

- Subdivision creates separate legal entities each having a bundle of rights and set of landowner expectations about what can be done within each legal entity, e.g. building a house. Subdivision is therefore the first step in a process that can ultimately result in changes to, and adverse effects on landscape, rural character and sustainable resource use. Although individual subdivisions and resulting activities may only have a limited adverse effect on their own if sensitively sited, the incremental and cumulative effect of further subdivisions may be significant. Adverse effects which are of concern within the Mackenzie Basin include:
 - a) Cumulative impacts on rural character and in particular the unique character of the Mackenzie Country
 - b) Impacts on rural amenity values including a sense of isolation and naturalness
 - c) Impacts on rural productivity resulting from incompatibility of rural and non-rural activities
 - d) Impacts on native plant and animal biodiversity and ecological patterns
 - e) Impacts on landscape values from earthworks, including additional access roads and tracks, structures and built development
 - f) Loss of versatility of rural land from fragmentation of existing land holdings

- g) Impacts on water quality from overland runoff with increased hard surface, land modification and earthworks, and sewage treatment and disposal
- h) Impacts on waahi tapu, archaeological sites and historic heritage.
- i) Minimise the potential for reverse sensitivity effects on hydro-electricity generation and transmission infrastructure and operations.
- j) Impacts on the provision of and/or safe and efficient operation of existing infrastructure including reverse sensitivity effects on utilities and facilities of national importance.
- k) Impacts on the availability of water to existing water users.

Policy 3E – Limitations on Residential Subdivision and Housing

To provide for residential subdivision and housing development in the Mackenzie Basin only within identified urban areas of the Basin (Twizel and Lake Tekapo), within the special zone for a possible small settlement at Lake Pukaki and within identified farm base areas.

Explanations and Reasons

- As for Objective 3A
- It is desirable that the majority of housing and accommodation growth within the Mackenzie Basin occurs within the towns of Twizel and Lake Tekapo to:
 - a) Reinforce and enhance these towns as commercial and service centres both for residents and rural residents and as sources of employment
 - b) Reinforce and build on the social and community cohesion of these towns
 - c) Maintain the character of these towns
 - d) Provide support for and utilise existing and planned community, recreational, social and educational facilities.
 - e) Achieve efficient utilisation of existing and planned infrastructure services of these towns.
- Traditional occupation of the Mackenzie Basin comprises periodic nodes of shelter and development (shelter trees, home paddocks and yards, farm sheds, houses, seasonal accommodation) within an otherwise vast, open and highly undeveloped landscape. In this pattern, the developed 'nodes' are small points of civilization, far outweighed in area by the natural 'landscape'. Thus the sense of extensive areas of highly natural landscape is maintained in the traditional Mackenzie land use pattern. Retaining much of this traditional pattern is possible by requiring buildings to either be located within existing farm base areas unless they are required to be sited elsewhere to facilitate farming.

Policy 3F – Design and Appearance of Buildings

To control the design, scale, appearance and location of all residential buildings, and other buildings where reasonable, with regard to the purpose of the buildings, within the Mackenzie Basin to avoid, remedy or mitigate adverse impacts on the landscape and heritage values of the Basin Subzone.

Explanations and Reasons

- As for Objective 3A.
- Refer also Policy 3C.
- The Council will have regard to the extent to which applications for buildings and associated earthworks, tracks etc met the guidelines in Appendix K of the Plan.

- The Council recognises technical, operational and security requirements associated with electricity generation and transmission mean that some adverse effects on the landscape from these activities cannot be avoided or mitigated. For example, there may be no realistic alternatives.
- The effects of built development are not confined simply to the structure, but also frequently include the domestication or modification of the surrounding environment. The Council seeks to manage these potential effects when considering the merits of proposals to erect buildings within the Mackenzie Basin Subzone.

Policy 3G - Lakeside areas

To avoid adverse impacts of buildings, structures and uses on the landscape values and character of the Mackenzie Basin lakes and their margins.

Explanations and Reasons

- The Mackenzie Basin contains two of the South Island's significant 'Southern Lakes'; Tekapo and Pukaki. It also contains the smaller Lake Alexandrina in its entirety, parts of Lakes Benmore and Ruataniwha, and parts of the margin of Lake Ohau, although not the lake surface itself. Although modified and in two cases man-made, these lakes variously are jewels of the Basin, and of the most outstanding value. Pukaki and its setting is a tourist icon, both visually and as the approach to Mount Cook/Aoraki and the National Park. Tekapo similarly, without the specific Aoraki connection, but with a high mountain backdrop. Ohau is similar in importance among the Southern Lakes, and its margins within Mackenzie District should be considered in the same terms as those of Tekapo and Pukaki. Lake Alexandrina, while of smaller scale and differing character, is much valued for fishing and also of outstanding value. Lake Benmore, while man made, has a scale and ruggedness also of outstanding value. Although the shoreline of Lake Benmore within Mackenzie District is the gentlest and least rugged of that lake's surrounds, the totality of Lake Benmore dictates that this lake and its surrounds within Mackenzie District should also be considered outstanding. The landscape values of the Mackenzie lakes arise from the naturalness, vastness, glacial colouration, legibility and the pure visual unity of both the lakes and their settings.
- Built development, roads, land use intensification, wilding tree spread and earthworks in the vicinity of these lakes have the real potential to degrade not only their more local landscape character and naturalness, but also the wider and more expansive views up, down and across them. Notwithstanding this, the presence of nationally significant electricity generation and transmission infrastructure within the Mackenzie Basin, and particularly within the outstanding natural landscape areas of Pukaki, Tekapo and Ohau must be acknowledged and the benefits derived from the supply of electricity need to be taken into account when assessing landscape values, character and capacity.
- A Lakeside Protection Area has been identified in the Plan. This reflects the visual sensitivity of the landscapes around the major lakes in the District. Any proposed development within this area needs to be carefully considered. Buildings and subdivision within the Lakeside Protection Area are non-complying activities.

Policy 3H – Views from Roads

To require buildings to be set back from roads, particularly state highways, and to encourage the sensitive location of structures such as large irrigators to avoid or limit screening of views of distinctive and outstanding landscapes of the Mackenzie Basin.

Explanations and Reasons

- As for Objective 3A.
- As for Policies 3A, 3B, 3C, 3D, 3F, 3G, 3L, 3M, 3N, and 3O
- Refer also Policy 3M Scenic Viewing Areas, which applies within the Rural Zone and Mackenzie Basin Subzone.
- Structures such as large irrigators and storage of polythene-wrapped feed and long lengths of shelter planting aligned along roads can impact on the experience of road users. Given the emphasis on the unique natural character and landscapes of the Mackenzie Basin it is appropriate to encourage sensitive placement of structures, feed etc including setbacks from road frontages, particularly state highways, through information and guidelines.

Policy 3I – Manuka Terrace Rural-Residential Zone

To avoid, remedy or mitigate the adverse effects of existing and further subdivision and development on Manuka Terrace, Lake Ohau through the Rural Residential – Manuka Terrace Zone.

Explanations and reasons

- The Rural Residential zone for Manuka Terrace specifies how adverse effects of past and future subdivisions such as landscape impacts, servicing issues with water supply and sewage treatment and disposal, winter shading and severe wind hazard, and adverse effects on hydro-electricity generation and transmission infrastructure and operations are to be avoided, remedied or mitigated by:
 - a) Setting a minimum lot size of 4ha,
 - b) Setting servicing standards for water supply, sewage treatment and disposal, stormwater, power and telecommunications,
 - c) Controlling the design and appearance of subdivisions and housing,
 - d) In addition to recognition of the wind hazard in this District Plan, all Property Information Memoranda and Land information Memoranda for the area will advise of the wind hazard.
 - e) Controlling the clearance of indigenous shrubland.
 - f) Taking into consideration the availability of a sustainable domestic water supply and potential effects on water quantity (including existing users) in the District.
 - g) Taking into account any actual or potential effects on the safe and efficient operation of the Waitaki Power Scheme, including taking into account civil safety matters associated with the operation of the hydro-electricity generation in proximity to the site. This can be achieved for example by appropriate setbacks, the location of buildings in relation to monitoring equipment and facilities, and avoiding the potential for reserve sensitivity effects.

Policy 3J – Renewable Energy

To recognise and provide for the use and development of renewable energy generation and transmission infrastructure and operations while, as far as practicable, avoiding, remedying or mitigating significant adverse effects on the outstanding natural landscapes and features of the Mackenzie Basin.

Explanations and reasons

- The Resource Management Act specifies, amongst other matters, that particular regard must be given to the benefits to be derived from the use and development of renewable energy. Utilities of national significance are found within the Mackenzie District. These have distinctive and varied characteristics. Key infrastructure includes the Pukaki High Dam, Tekapo A and B, the Ohau Power Stations, and part of Lake Benmore (which was created specifically for hydro-electricity generation purposes).
- There is also a clear recognition by Government of both the importance of the use and development of renewable energy and the need to address climate change. Recognising and providing for this type of development in the District Plan goes some way to contributing to New Zealand renewable energy targets.

Implementation Methods for all policies

To protect the distinctive and outstanding landscapes of the Mackenzie Basin by:

- Identify existing farm base areas in the Plan, recognising that existing homestead areas and associated farm buildings generally fit within the landscape without adversely affecting values and character
- Providing for residential development and subdivision only within the established townships of Twizel and Lake Tekapo, in a potential new small settlement at Lake Pukaki, and within the defined existing farm base areas.
- Requiring consent (as controlled activities) for farm buildings and farm retirement buildings (both defined in the District Plan) outside the farm base areas.
- Requiring consent (as a discretionary activity) for non-farming buildings and subdivision outside the farm base areas.
- Requiring consent (as a non-complying activity) for buildings and subdivision within Lakeside Protection Areas.
- Encouraging placement of various temporary farm structures such as irrigators and wrapped feed back from roads and state highways, through preparation and distribution of guidelines to landowners and managers.
- Creation of a Rural-Residential - Manuka Terrace Zone with a minimum lot size and residential density of 4ha.

<h3>Objective 3B – Economy, Environment and Community</h3>

<p><i>To encourage a healthy productive economy, environment, and community within, and maintain the identity of, the Mackenzie Country.</i></p>
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Explanations and Reasons

- To sustain the valued landscapes of the Mackenzie Basin it is considered necessary to also foster its economic, social and environmental viability. In this way the communities, infrastructure and economic health can be sustained over time providing a situation where continued pastoral use and extensive runs can

be maintained and developed. Along with this, it is intended that environmental values of the Basin will also be protected and enhanced.

- It is not considered reasonable or appropriate in achieving the Resource Management Act's purpose to prevent all further development in the Basin or regard the current environment as a museum piece. Sustainable management requires a balance to be found that provides for the social, economic and cultural well-being of the community, while sustaining natural and physical resources and safeguarding the environment from adverse effects.

Policy 3J-3K – Renewable Energy

To enable productive use of the land of the Mackenzie Basin and in particular farming use, by providing for farming buildings and subdivision to facilitate farming, while limiting their potential adverse impacts on important landscape values.

Explanations and Reasons

- The open natural-looking landscape of the Mackenzie Basin is maintained by controlling the spread of wilding pines in grazed areas as part of farming. Grazing is effective in controlling wildings in many places, but in other places additional control measures are needed. These measures may be economically viable only if subsidized by more intensive farming elsewhere on properties. More intensive farming may require new buildings, and where new farming units are feasible through irrigation they may require subdivision. Similarly, viable farming is needed to fund rabbit control and soil loss through wind erosion.
- The new buildings that may be required for farming include new homesteads and farm workers' accommodation (permanent and temporary).
- Farm buildings are an expected element in the Mackenzie Basin landscape. They "read" as related to the clearly evident farming activities being carried out, in a way that even the most carefully "disguised" buildings for other purposes, such as visitor accommodation cannot. Traditionally they have been loosely grouped and located in sheltered situations so that generally they do not appear obtrusive or incongruous in the landscape.
- Ideally new farm buildings will be located within the existing farm base areas so as to keep most of the Basin free of buildings. It is recognised however that sometimes this is not feasible for farm management reasons. Most properties within the Basin have sufficient size and topographical complexity to provide sites for new farm buildings where they will be no more inconspicuous than existing buildings, provided care is taken with details such as colour finishes.
- While farm retirement dwellings can also assist to maintain the viability of farming, if they are erected away from buildings with a more visually obvious link to farming they may appear out of place and thus undermine landscape values. Particular care in siting and design is required.

Objective 3C – Landscape Values

Protection of the natural character of the landscape and margins of lakes, rivers and wetlands and of the natural processes and elements that contribute to the District's overall character and amenity.

Explanations and Reasons

- While the Mackenzie Basin has been the focus of concern to protect a distinctive landscape, the whole Mackenzie District has landscape that is a resource deserving protection.
- Refer also to Objective 4, Policy 4B and Implementation, Objective 2, Policy 2A and 2C, and Objective 6
- It is appropriate that development, particularly in the high country and Mackenzie Basin has an overriding regard to the wider visual and landscape considerations which are important to the well-being of the District and its inhabitants.
- To sustainably manage the physical resource of the District, some priority is required to ensure the protection of the landscape and visual amenity and in particular the landscapes which have been identified as outstanding. The high country of the District and the Mackenzie Basin have an impressive array of landscapes
- Assessment of landscapes shall be based on the following characteristics: natural science values, aesthetic values, recognised values and takata whenua values. Refer Rural Issue 7 for more detail.

Rural Policy 3L - Important Landscapes And Natural Features

To limit earthworks on steeper slopes, high altitude areas, and on land containing geopreservation sites to enable the landforms and landscape character of these areas to be maintained.

Explanation and Reasons

- As for Objective 3
- Earthworks, other than small scale earthworks, have the potential to scar the landscape or destroy the landform or visual value of natural features (geopreservation sites).
- Earthworks and tracks on steeper slopes (over 25°) and in high altitude areas (over 900m) can be visibly obtrusive because of their slowness in rehabilitating, their high degree of visibility and the greater amount of earthworks required to ensure stability. It is appropriate therefore that controls be in place relating to location, design and revegetation.

Implementation Methods

- Controls on Earthworks in Geopreservation Sites and High Altitude Areas
- Controls on Earthworks and Tracking on land over 25°

Environmental Results Anticipated

- Protection of the visual values and natural character of areas containing steep slopes, high altitude areas and natural features (geopreservation sites) from unsightly or damaging earthworks.

Rural Policy 3M - Scenic Viewing Areas

To limit structures and tall vegetation within scenic viewing areas to enable views of the landscape to be obtained within and from these areas.

Explanation and Reasons

- As for Objective 3.
- Areas have been identified by the Council as being significant because of the landscapes contained in these areas, the views obtained from these areas, and because of the high degree to which these areas are visited for the purpose of experiencing the Mackenzie Basin and high country landscapes. To ensure that views within and from these areas are not obstructed it is considered appropriate that structures and tall vegetation not be permitted as of right. It is also appropriate that earthworks be limited and vegetation clearance controlled in these areas.
- Because the controls needed in these Policy areas are the same as those required for areas of natural significance (refer Policy 1B) these scenic viewing areas have been incorporated into areas of natural significance for control and mapping purposes. In addition there is often an overlapping of these two types of area. A schedule listing all these sites details the values of each site in terms of their conservation and/or scenic values.

Implementation Methods

- Controls on Buildings and Trees in Scenic Viewing Areas

Environmental Results Anticipated

- Retention of view within and from scenic viewing areas.

Rural Policy 3N - Impacts Of Subdivision Use And Development

Avoid or mitigate the effects of subdivision, uses or development which have the potential to modify or detract from areas with a high degree of naturalness, visibility, aesthetic value, including important landscapes, landforms and other natural features.

Explanation and Reasons

- As for Objective 3
- Sustainable management of natural and physical resources will not be maintained unless the protection of the District's natural resources, including the visual and landscape qualities of those resources, can be assured. This is because the quality of life and development within the District is, in part, dependant on the quality of the visual and landscape character within which it operates.

Implementation Methods

- Administration of resource consents guided by this policy.
- Promotion of adoption of the Design Guidelines in Appendix K
- To undertake a study, in consultation with the community, to identify landscapes of value outside the Mackenzie Basin.

Rural Policy 3O - Tree Planting

To control the adverse effects of siting, design and potential wilding tree spread of tree planting throughout the District, to enable forestry to be integrated within rural landscapes and to avoid screening of distant landscapes.

Explanation and Reasons

- As for Objective 3
- Plantation Forestry can impact significantly on landscapes and potential adjacent landuses. This is particularly so in the open and uncluttered landscapes of the Mackenzie Basin and high country. Within these areas the grasslands give a unity to the landscape and allow the landforms to dominate the landscape and define the horizons. The tussock grassland also emphasises even subtle changes in light and colour. Because of this potential for impact it is considered important that the Council have power, through Controlled Activity status of forestry, to place conditions on the siting and design of forests and on potential wilding tree spread.
- Because of the natural character, visibility and environmental sensitivity of sub-alpine and alpine areas, and the potential for wilding tree spread from plantings it is necessary to control tree plantings in higher altitude areas as a Discretionary Activity.
- As for Rural Policy 3C - Scenic Viewing Areas.
- Generally the landscape character of the District is such that further small scale plantings can be assimilated without adversely impacting on the landscape character.

Implementation Methods

- Small scale forestry – Permitted Activity Fairlie Basin – Permitted Activity.
- Other planting in the Fairlie Basin – Controlled Activity.
- Small scale forestry in the vicinity of homesteads and farm buildings in the Mackenzie Basin – Permitted Activity.
- Other planting in the Mackenzie Basin – Restricted Discretionary Activity.
- Tree planting in riparian areas – Restricted Discretionary Activity.
- Tree planting in scenic viewing areas and high altitude areas –Discretionary Activity.
- Tree planting in wetlands and Sites of Natural Significance – Non-complying Activity.
- To undertake a study, in consultation with the community, to identify landscapes of value outside the Mackenzie Basin.
- To review the provisions for forestry following assessment of landscape values outside the Mackenzie Basin.

Environmental Results Anticipated

- Tree planting in the high altitude areas limited to locations where adverse effects on landscape values, ecology, visual amenity and natural values can be avoided or mitigated.
- Retention of views from and within scenic viewing areas.
- Tree planting in other parts of the District which is in sympathy with the landscape and which avoids, remedies or mitigates adverse effects on the environment.

Rural Policy 3P - In Harmony With The Landscape

To encourage the use of guidelines for the siting and design of buildings and structures, tracks, and roads, tree planting, signs and fences.

To encourage the use of an agreed colour palette in the choice of external materials and colours of structures throughout the district, which colours are based on those which appear in the natural surroundings of Twizel, Tekapo and Fairlie.

Explanation and Reasons

- As for Objective 3.
- A harmony of colour and design between the built and natural environment is one which most people find agreeable and desirable. For this reason the Council has had prepared three colour palettes containing the predominant colours of Twizel, Fairlie and Tekapo areas and adopted a set of design guidelines. Because it was considered that there may be some administrative and enforcement difficulties in requiring these palettes and design guidelines to be applied in all cases the Council has chosen to encourage the use of these by bringing the existence and advantages of the palettes and guidelines to the attention of all people who are building within the District. Council will however apply these to resource consents where appropriate.

Implementation Methods

- Design guidelines - Appendix K
- Encourage use of colour palette.
- Through resource consent conditions

Environmental Results Anticipated

- Increased use over time of colours within the colour palettes prepared for the Fairlie, Tekapo and Twizel areas.

Rural Objective 4 - High Country Land

To encourage land use activities which sustain or enhance the soil, water and ecosystem functions and natural values of the high country and which protect the outstanding landscape values of the high country, its indigenous plant cover and those natural processes which contribute to its overall character and amenity.

Reasons

- In some parts of the high country within the district land degradation is apparent to an extent that the potential of the land to sustain a range of land uses has been markedly reduced.
- Sustainable management of the land resources of the high country has importance for many aspects of the District's well-being. Stable and viable rural communities depend upon the implementation and maintenance of sustainable land use systems which retain soil quantity, fertility and health; protect water and air quality; and are energy efficient.
- It is necessary that future management of high country lands maintains the health of the vegetation to ensure the underlying soil is sustained in order to meet the reasonably foreseeable needs of future generations.
- The protection of the nationally important tourism and recreation values of the high country landscape is an important outcome for the district, region and the country

Rural Policy 4A - Vegetation Cover

Land use activities should be carried out in such a way that a robust and intact vegetation cover is maintained to assist in sustaining the life supporting capacity of the soil.

Explanations and Reasons

- As for Objective 4

Implementation Methods

- Refer to implementation for Policy 4C
- Controls on burning in some hill and high country areas for soil and water conservation in the Land and Vegetation Management Regional Plan Pt IV (Canterbury Regional Council)

Rural Policy 4B - Ecosystem Functioning, Natural Character And Open Space Values

Activities should ensure that overall ecosystem functioning, natural character and open space values of the high country are maintained by:

- *Retaining, as far as possible, indigenous vegetation and habitat*
 - *Maintaining natural landforms*
 - *Avoiding, remedying, or mitigating adverse effects on landscape and visual amenity.*
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Explanation and Reasons

- As for Objective 4
- Activities need to be undertaken in a way which provides for the maintenance or restoration of the natural values of the high country, resulting in improved overall ecosystem functions, and the retaining of natural character and open space values of the area.

Implementation Methods

- Refer to Implementation for Policy 4C

Rural Policy 4C - Soils And Water

Encourage the use of land management techniques that maintain or enhance the life supporting capacity of soils and water including:

- *The careful application of the correct types and quantity of fertiliser*
 - *Stock control procedures to avoid, remedy or mitigate the effects of stock entry to rivers or wetlands*
 - *Limitations on stock numbers where overgrazing may result in land degradation*
 - *Restoration of disturbed land to reduce diffuse source discharge of contaminants to water*
 - *Retaining and enhancing riparian vegetation*
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Explanation and Reasons

- As for Objective 4

Implementation Methods for Rural Policies 4A, 4B and 4C

- **Identification of Sites:** Identification on planning maps of sites of significant indigenous vegetation and habitats of indigenous fauna and outstanding landscapes and natural features.
- **Rules:** Provide standards which set the parameters for the allowable degree of change which may occur on high altitude land (above 900m in altitude) and on sites of natural significance. Such standards include:
 - volume limits on earth removed or excavated
 - limits on the degree of slope on which earthworks can be carried out
 - limits on the amount of vegetation that can be cleared
 - limits on location and type of tree planting
 - limits on pastoral intensification
- **Support for Landholder Groups:** Recognise and support the role of landholder groups in developing solutions to the land degradation problems of the high country by providing information and assisting with monitoring and results analysis.
- **Monitoring:** In consultation with landholders establish monitoring programmes to identify:
 - changes in the extent and quality of natural habitats of indigenous plants and animals
 - changes to the quality of the natural character of waterway margins
 - distribution and change of distribution of wilding tree species
 - trends in vegetation condition and the extent of vegetation cover
 - trends in soil condition
 - impacts of animal and weed pests on the Districts environment
- **Research:** Develop joint research strategies in association with research agencies, land managers and other stakeholders to identify, in particular, threshold levels for vegetation/soil relationships.
- **Review:** To review in consultation with the District's residents provisions of the district plan when research provides adequate information on threshold levels for vegetation/soil relationships.
- **Protect:** To protect the visual coherence and harmony provided by the natural resources and open character of the high country by:
 - Encouraging buildings and structures to be located away from skylines, ridgelines and prominent places and features.
 - encouraging all buildings and structures to be located along the edges of landforms and vegetation patterns.
 - requiring tree plantings to be consistent with existing landform patterns.

Rural Objective 5 - Downlands And Plains Soils

Cultivation and livestock management on downlands and plains areas which minimises potential soil loss and loss in quality of soil.

Reasons

- There is a concern that some crop rotations can result in soil becoming compacted and structureless over time. There can also be problems with loss of topsoil from cultivated paddocks as a result of high intensity rainfall.
- It is appropriate that management of downlands and plains avoid practices which cause soil loss and loss of soil quality.

Rural Policy 5A - Land Use Practices

To promote land use practises on the down lands and plains which do not accelerate erosion or depletion of soil quality and which therefore are appropriate for sustainable land management

Explanation and Reasons

- As for Objective 5

Implementation Methods

- Encourage and co-ordinate with other agencies the continuation or establishment of local landholder stewardship groups to facilitate land uses and land management practices which promote sustainable land management.
- To remain informed through contact with other agencies and landholders of developments in practices and the application of technology to problem land area; jointly with landholders liaise with the Canterbury Regional Council, Government Departments and Crown Research Institutes to increase knowledge about the degree to which farming practices impact on the long-term sustainability of the soil resource; and also encourage research into identifying management practices with the potential to minimise soil erosion.
- Encourage the provision of information that promotes land management practices which do not cause accelerated erosion or depletion of soil quality.

Environmental Results Anticipated

- A gradual change to more sustainable land use practises with a decrease in induced soil erosion and soil quality depletion.

<h3>Rural Objective 6 - Rural Amenity And Environmental Quality</h3>

<p><i>A level of rural amenity which is consistent with the range of activities anticipated in rural areas, but which does not create unacceptably unpleasant living or working conditions for the District's residents or visitors, nor a significant deterioration of the quality of the general rural and physical environment.</i></p>
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Reasons

- While a wide range of activities is desirable in the rural area it is important that the effects of these activities does not significantly impact on the enjoyment of the area for residential or recreation use (whether associated with rural productive use or not) or on the efficient carrying out of productive uses.
- There is considerable potential for activities such as intensive livestock and extractive uses to adversely affect the natural environment of the rural area. Because of this potential impact it is desirable that these activities be controlled to ensure an acceptable level of environmental quality is maintained.

Rural Policy 6A - Livestock Farming

Avoid, remedy or mitigate adverse effects of livestock farming to protect the amenity of rural areas and the quality of the physical environment.

Explanation and Reasons

- As for Objective 6
- This policy recognises the potential for all livestock farming to impact on the natural environment and amenity of the rural area. A number of means to avoid, remedy or mitigate these impacts have been chosen, including education and general promotion of good management practices. Council will monitor the environmental impact of livestock farming as well as the effectiveness of the various methods chosen to maintain or enhance environmental quality.
- Many problems associated with factory farming and intensive livestock farms occur as a result of poorly designed buildings and enclosures and inappropriate management and waste disposal methods. Given the adverse effects are so dependent on management practices and the sensitivity of the surrounding environment it is appropriate to consider each factory farming proposal on its merits and have the necessary standards attached to each operation.
- While many people who live in rural areas are willing to accept a level of noise or smell associated with factory farms and some intensive farming, these are likely to be irritating or unacceptable to people living in an urban area.

Implementation Methods

- Promoting the use of industry codes of practices
- Liasing with farming groups
- Liasing with Canterbury Regional Council and other groups regarding water quality and resource management options for environmental improvement.
- Rural Zone: Factory Farming
- Rural Zone: Proximity to Urban Areas

Environmental Results Anticipated

- Improved intensive livestock management systems which limit the amount of degradation of the physical environment, to a level acceptable to rural residents.
- Avoidance of adverse smell and noise nuisance in urban areas from factory farms.

Rural Policy 6B - Setback Of Buildings

To require residential dwellings to be setback from property boundaries to reduce the probability of the residents of these dwellings being exposed to significant adverse effects from an activity on a neighbouring property, and to maintain the visual character of the rural area particularly as viewed from the state highways.

Explanation and Reasons

- As for Objective 6
- It is wise to avoid any nuisances being experienced by rural residents resulting from their proximity to neighbouring properties.
- The setback gives adjoining land owners greater flexibility in their land management practices.
- The setback from boundaries, in particular the front boundary assists in maintaining the distinct low density rural character of the District.

Implementation Methods

- Building set backs from roads and boundaries

Environmental Results Anticipated

- Limiting of nuisance effects of rural activities on rural residents to an acceptable level.
- Set back of buildings which ensures the avoidance of an urban style of road scene.

Rural Policy 6C - Extractive Industry

To recognise the potential effects of extractive operations, including mineral exploration, on the rural environment, and to require consent for such operations in order that an assessment may be made as to the sensitivity of an area and the degree to which an operation will minimise any adverse effects to the amenity and environment of a rural area.

To recognise prospecting as an activity with limited environmental impact for any area.

Explanation and Reasons

- As for Objective 6
- Controls are necessary on individual extractive operations because the scale of the operations, the sensitivity of the area and the management of these can vary considerably. These matters effect amenity values such as privacy, rural outlook, spaciousness and quietness valued by residents, recreationalists and visitors to rural areas.
- The plan can place sufficient performance standards on prospecting to maintain rural amenity values as prospecting is essentially a low impact activity.

Implementation Methods

- Mineral Prospecting - Permitted
- Mineral Exploration - Controlled
- Other mineral extraction - Discretionary

Anticipated Environmental Results

- Utilisation of mineral resources within the District, providing that the scale of each operation and its effects, both long term and short term, are appropriate to the environment.

Rural Policy 6D - General Amenity Controls

To encourage and/or control activities to be undertaken in a way which avoids, remedies or mitigates adverse effects on the amenities and physical environment of rural areas.

Explanation and Reasons

- As for Objective 6
- Uses such as community activities and retail sales of produce, while of value to the community can cause a nuisance or danger by way of noise, poor access, and excess traffic generation. These matters therefore need to be subject to assessment and control.
- Noise limits for noise received by occupants of rural dwellings will be set to avoid restrictions on normal agricultural activities, with noise controls only applying in the proximity of rural dwellings or residential zone boundaries.

- The use of roads by heavy traffic can cause deterioration in roads over time, the maintenance of which will generally be funded by rates and road levies. However, substantial damage to some roads can occur when roads are vulnerable because of recent weather or climatic conditions. In these cases it may be appropriate that any damage caused is compensated for by the people responsible for the damage.

Implementation Methods

- Advise spray users of the best practicable options to minimise the likelihood and effects of spray drift and encourage operators to conform with relevant Codes of Practice.
- Use the Building Act and Health Act to ensure appropriate sewage disposal and treatment facilities are installed and maintained.
- Use enforcement provisions of the Resource Management Act to prevent effects which are noxious, dangerous, offensive or objectionable to the extent that they have an adverse effect on the environment.
- Promote use of codes of practice such as the Pork Industry, Logging Industry and Agricultural Users Code of Practice.
- Initiate and maintain discussion with the Department of Conservation on the impacts of recreational activities on the environment within Aoraki/Mount Cook National Park and other areas administered by the Department throughout the District.
- Advocacy of appropriate mechanisms to control aircraft noise in the Aoraki/Mount Cook National Park
- Encourage the use of weed free sources of gravel supplies from local areas to avoid weed spread onto road sides.
- Rural Zone: Access
- Rural Zone: Noise and Lighting
- Rural Zone: Community Activities - Controlled Activity
- Rural Zone: Retail Activities - Controlled Activity
- Signs rules - Section 11
- Subdivision and Development - Section 12
- Transportation Rules: Section 14

Environmental Results Anticipated

- Maintenance of rural amenity including privacy, ease of access, quietness and rural outlook.
- Prevention of adverse noise effects on people without undue disruption of normal farming practices.

Rural Objective 7 - Natural Hazards

Minimal loss of life, damage to assets and infrastructure, or disruption to the community of the District, from natural hazards.

Reasons

- The Act requires the Council to have objectives and policies and controls on the actual or potential effects of the use, development, or protection of land for the purpose of mitigation of natural hazards.
- Avoidance of loss and damage to life and property is generally preferable to restoration and compensation for loss where this is possible.

Rural Policy 7A - Proximity To Waterways

To control the proximity of buildings to waterways to limit potential loss of life and damage to property.

Explanation and Reasons

- As for Objective 7
- Flooding is a natural hazard which can be most effectively avoided or mitigated by directing buildings away from hazard areas.

Implementation Methods

- Setback of buildings from waterways

Environmental Results Anticipated

- A setback of buildings from waterways which will maintain an acceptable level of risk to life and property.

Rural Policy 7B – Earthquake Hazard

To ensure that potential risks from subdivision and development in the Ostler Fault Hazard Area are adequately assessed and managed through resource consents.

Explanation and Reasons

- As for Objective 7
- Geological evidence from radiocarbon dating indicates that on average, the Ostler Fault Zone experiences an earthquake large enough to cause rupture (i.e. offset) and buckling of the ground surface every 3,000 ± 1,000 years. The most recent known surface-rupture earthquake was about 3,600 years ago. There is significant risk of abrupt ground breakage, perhaps involving up to several metres of movement and buckling of the ground within the Ostler Fault Zone during the next rupture. Minimising or avoiding the adverse effects of a ground-rupturing earthquake is therefore important when considering subdivision or development within the Ostler Fault Hazard Area. Resource consents will be required for residential buildings and visitor accommodation activities within the Ostler Fault Hazard Area. The provision of site-specific geotechnical and engineering design reports carried out by experts will assist the Council to assess the adverse effects arising from the fault rupture hazard for the development site and how those effects can be minimised.

<h3>Rural Objective 8 - Surface Of Waterways</h3>
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<p><i>Recreational activities being undertaken on the District waterways and riverbeds in a manner which avoids, remedies or mitigates potential adverse effects on conservation values, wildlife and wildlife habitats, public health and safety, recreational values, takata whenua values and general amenity values.</i></p>
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Reasons

- There is potential for recreational activities and associated vehicle use to have a number of adverse effects on waterways and riverbeds including:
 - noise
 - reduction in navigational safety
 - conflict with other recreationalists
 - degradation of river, lake and adjoining wildlife habitats
 - increased bank erosion caused by wave action or activity on the banks
 - water contamination from turbidity, exhaust fumes and human effluent
 - litter and other wastes in the area
 - disturbance to wading birds and other wildlife, especially during the breeding season (August to January inclusive)

It is appropriate in providing for recreation throughout the District that these adverse effects are minimised to enable environmental and recreational quality to be maintained.

Rural Policy 8A - Recreational Use Of Riverbeds And Waterbodies

To avoid, remedy or mitigate the adverse effects of the recreational use of riverbeds and waterbodies (in particular the use of off-road vehicles and power boats) on wildlife and wildlife habitats.

Explanation and Reasons

- As for Objective 8
- The braided riverbeds of the Tasman, Dobson, Hopkins, Ohau, Tekapo, Pukaki, Cass, Godley and Macauley rivers are important breeding habitats for many important and threatened species. It is important that care is undertaken during the breeding season as disturbance of parent birds leaves eggs and chicks unattended and therefore extremely vulnerable to predation and cold temperatures.
- Off-road vehicles can inadvertently run over eggs and chicks.
- Lake Alexandrina and Lake McGregor form part of a wildlife refuge that was initially established in 1899, and re-gazetted in 1957 under the Wildlife Act 1953. At this time restrictions were also gazetted limiting boats to those 'wholly propelled by oars or paddles' to prevent disturbance of wildlife habitats and bird breeding areas.
- The predominately single thread braided river channels of the Opihi and Opuha rivers are widely utilised by trout and salmon for spawning. During the spawning season (April to September) eggs and fry buried in the riverbed gravels are particularly susceptible to disturbance from motorised boats.

Implementation Methods

- To promote the Braided River Care Code.
- To promote continued awareness of the wildlife refuge status of Lakes Alexandrina and McGregor, and to restrict accommodation use of the lake.
- To prevent the use of motorised craft upstream of the confluence of the Opihi and Opuha rivers, between 1 April and 30 September, excluding the Opuha Dam Zone.
- To encourage Central Government and the Canterbury Regional Council to control activities on the surface of water.

- Council will work with agencies such as the Department of Conservation, Fish and Game Council, the Royal Forest and Bird Society, to identify breeding areas of braided riverbed birds and to investigate mechanisms to control or avoid disturbance of birds, particularly during the breeding season.

Environmental Results Anticipated

- Increased awareness of the impact of recreation activities on the breeding habitats of wading birds and other indigenous fauna.
- The continued protection of Lakes Alexandrina and McGregor as a wildlife refuge and associated restrictions.

Rural Policy 8B - Structures

To ensure that the location, design and use of structures and facilities, within or near waterways are such that any adverse effects on visual qualities, safety and conflicts with recreational and other activities on the waterways are avoided or mitigated.

Explanation and Reasons

- As for Objective 8
- Structures which intrude over or through water which enable greater recreational use of the water can thereby create a potential for conflicts between different recreationalists and cause problems associated with exceeding the carrying capacity of the existing shore vegetation and facilities.
- Structures can create safety problems for on-water users.
- Structures can significantly alter the character and visual appearance of riparian areas and waterways.

Implementation Methods

- Recreational Activities - Controls on Jetties and Boat Ramps

Environmental Results Anticipated

- Structures in or adjacent to waterways which do not hinder water safety and which are visually appropriate.
- A level of recreational activity which does not significantly impact on the natural environment.

Rural Policy 8C - Regulations

To seek the continued administration and control of navigational safety matters principally through regulations or equivalent mechanisms under the Harbours Act and its successor.

Explanation and Reasons

- As for Objective 8
- Controls placed on water based recreational activities by the Water Recreation Regulations 1979 are considered to enforce suitable controls with respect to navigational safety.
- Current upliftings of the Water Recreation Regulations within the District are considered appropriate to allow for certain recreational activities on the District's waterbodies and should therefore be retained.

Environmental Results Anticipated

- Maintenance of the general standard of Navigation on the District's waterways.
- Continued use of gazetted areas for motorised water recreation.

Rural Policy 8D - Cross Boundary Co-Ordination

To co-ordinate with adjoining territorial authorities where activities on the surface of rivers and lakes cross territorial boundaries, including the co-ordination of resource consent processes.

Explanation and Reasons

- Because the Opuha and Opihi Rivers and Lakes Ohau, Ruataniwha and Benmore form the part of the northern and southern boundaries of the District the Council considers a joint approach should be taken for the control of water based activities in conjunction with Timaru, Waitaki and Waimate District Councils.

Rural Objective 9 - Public Safety And Aviation

Aircraft operations, which are potentially dangerous, undertaken in a way which ensures a high level of public safety.

Reasons

- As operations in close proximity to one another, particularly those involving commercial recreational vehicles or aircraft, can result in unacceptable levels of public safety it is appropriate that the council develop policies to overcome, where possible, the potential risks to public safety.

Rural Policy 9A - Commercial Aviation Operations

To control aviation operations and aircraft landing facilities to enable public safety and economic use of facilities to be taken into account by:

- *recognising and providing for existing commercial airfields*
 - *specifying landing areas for helicopter operations*
 - *providing for snow landings as a discretionary activity*
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Explanation and Reasons

- As for Objective 9
- This approach was developed as part of a consultation process with aviation operations in the District which was based on the report "Mackenzie Basin Aviation Needs and Development Strategy" (BECA). From this consultation an Aviation Strategy was developed and then adopted by the District Council for inclusion in the District Plan (Refer Appendix L).
- Some aspects of the strategy will need to be implemented by user groups agreements, acquisition of land and development of facilities.

Implementation Methods

- Aviation activity areas
- Discretionary activity for some aviation activities
- Airport zones at Glentanner, Tekapo and Pukaki

Environmental Results Anticipated

- Maintaining the level of public safety relating to the operation of commercial recreation and aircraft landing facilities.
- Avoidance of a proliferation of landing facilities.

Rural Objective 10 - Aoraki/Mount Cook National Park

Appropriate management of the Aoraki/Mount Cook National Park in accordance with the provisions of the National Parks Act.

Reasons

- The National Parks Act 1980 provides a comprehensive management regime and management processes for the Aoraki/Mount Cook National Park. The Council believes that, except where subdivision and buildings consents are involved, the resources of the Park can be most appropriately managed under that legislation and that duplication of regulatory regimes would be inappropriate and unnecessary.

Rural Policy 10A - Management Plan Support

To participate, as appropriate, in processes under the National Parks Act 1980 in relation to the development and administration of Management Plans for the Aoraki/Mount Cook National Park.

Explanation and Reasons

- As for Objective 1.
- The Council considers that the guiding principles in the preparation and review of the Aoraki/Mount Cook National Park Management Plan and the public input in this process are sufficient to ensure that matters under the Resource Management Act are suitably provided for within the Park.

Environmental Results Anticipated

- Preservation of Aoraki/Mount Cook National Park in its natural state and facilitation of safe public use and enjoyment of the Park consistent with that preservation.

Rural Policy 10B - Natural Hazards

To recognise in the administration of the Resource Management Act the natural hazards that exist in and within the vicinity of the Aoraki/Mount Cook Village and any measures in place to mitigate the effects of these natural hazards.

Explanations and Reasons

- As for Objective 1.
- Aoraki/Mount Cook Village is currently occupied by the Hermitage and ancillary buildings. Flooding and debris flows from the Black Birch, the Glencoe and the Kitchener pose threats to the Village's permanent and travelling accommodation and facilities. These threats have been identified and protection works initiated to mitigate the effects of the natural hazards.

Implementation Methods

- Administration of the Building Act and Section 106 of the Resource Management Act to avoid loss of life and property.

Environmental Results Anticipated

- Reduction or avoidance of the potential for loss of life or property damage.

Rural Policy 10C - Avoidance Of Duplication

To avoid duplication of regulatory control within the National Park.

Explanation and Reasons

- As for Objective 10.
- As for Policy 10A.
- To avoid additional costs and time delays it is preferable that duplication of regulation and consent processes are avoided where these processes essentially have the same environmental objectives.

Implementation Methods

- No district plan rules to apply within the National Park other than subdivision controls.

Environmental Results Anticipated

- As per Objective 10.

Rural Objective 11 - Rural Infrastructure

Rural infrastructure which enables the District and the wider community to maintain their economic and social wellbeing.

Reasons

- Rural infrastructure entails, but is not limited to, power generation and transmission facilities, communication facilities and roads. These are of significance to both residents and visitors, as well as to the wider national community. Their significance is based on their ability to facilitate economic and social wellbeing of the rural and wider communities, as well as being a major component of the rural landscape.

Rural Policy 11A – Rural Infrastructure

To recognise the economic and social importance of transportation, electricity generation and transmission, and rural servicing infrastructure and, consistent with other objectives and policies of this Plan, to provide for its upgrading, maintenance and enhancement

Explanation and Reasons

- As for Objective 11.
- Transportation and communication networks (e.g. telephone lines, cellular phone sites, and radio transmitters) play an important part in the ability of the District to maintain its economic and social wellbeing.
- Power generation and transmission facilities within the District are an important part of the national electricity generation and supply network. Power generation facilities within the Mackenzie District form part of the Waitaki Hydro Scheme, which produces approximately 28% of New Zealand's electricity. Existing power generation facilities are specifically provided for in the Rural Zone as Scheduled Activities, subject to conditions controlling their environmental impact.

Implementation Methods

- Scheduling of existing power generation facilities within the Rural Zone.
- Utility provisions within the District Plan.
- Transportation provisions within the District Plan.

Environmental Results Anticipated

- Upgrading, maintenance and enhancement of rural infrastructure without adversely affecting the surrounding environment.