

16 RURAL

16.1 RESOURCES, ACTIVITIES AND VALUES

16.1.1 Downlands and Plains

Historically the main land use in the Waitaki downland and plains has been pastoral farming. By 1856 the Otago Provincial Council had allocated most of the coastal area and as far inland as Kurow for pastoralism. Thirty sheep runs carrying 120,000 sheep occupied this area in 1860.

The undulating downlands, floodplains and terraces are conducive to semi-intensive or intensive agricultural practices. Accordingly the large estates of last century were progressively subdivided into smaller freehold properties unlike the Waitaki hill or high country. The predominant farming operation throughout the lowlands continues to be prime lamb and wool production. Winter feed production and pasture renewal programmes have enabled more intensive grazing of holdings although still regulated by the frequency of drought conditions and capability of the physical land resource.

The farming of cattle is widespread and increasing in scale throughout the area. Irrigation has enabled more intensive dairying on units. Dairying tends to be quite localised, such as on the lower Waitaki River fan, around Maheno and the Waiareka Valley, and to a limited extent around Palmerston. There is considerable potential for the growth of dairy farming on irrigated pastures as farmers convert from more traditional land uses and production increases on existing dairy units. The principal limitation to the spread of dairy farming is the unavailability of irrigation, 2000mm of reliable water (irrigation) being necessary per annum. However, as is presently occurring in Southland, the price of land relative to other areas in New Zealand may in the future determine the growth of dairying in the Lower Waitaki. At present the sale of milk produced is secured to the Alpine Dairy Company in Temuka. It is estimated as much as 40% of this supply comes from the Waitaki and neighbouring Waimate Districts.

Deer farming is presently most evident in the lower Waitaki River region. Being a relatively recent farming practice, there is potential that the distribution of deer farming may be more widespread in the foreseeable future.

Cropping on easier slopes and deeper topsoils has become an integral part of many farming operations throughout the downlands and coastal areas. Intensity of cultivation is greater on the Class II and III land (New Zealand Land Resource Inventory) towards the coast, although cultivation on steeper Class IV to VI land also occurs.

Cropping is undertaken for one or two purposes: for stock feed or in the generation of income from cash crops. The dominant stock feed varieties in arable farming practices tend to be rape, turnips or swede. Cash crops have traditionally been grain (wheat and barley) and small seeds (grass, clover or lucerne). Irrigation (where available), plus the development of hybrids, has increased both crop yields and the reliability of good crop yields.

Horticultural activity in Waitaki is largely in the form of market gardening, although there is some stone fruit and berry farming in the Lower Waitaki Valley near Kurow and Georgetown. By the mid 1970's there were 60ha of fruit orchards in Waitaki; principally in apricots in the Lower Waitaki.

North Otago's market garden industry grew out of demand for fresh vegetables for the Allied Forces based in the South West Pacific during World War II. Traditional crops have included brussel sprouts, potatoes and glasshouse crops, vegetable crops for which the District's soils, climate and economics of transport are most suited. Market gardening continues today most significantly around Totara and Alma, and to a less extent near Palmerston and localised areas along State Highway 83 east of Georgetown.

Intensive farming activities typically rely on intensive production of large numbers of plants or animals being confined at high densities commonly within buildings. Such activities may include poultry farming, pot plant nurseries, piggeries, rabbit farms or mushroom farming.

Pig farming has increased substantially since the 1960's, taking advantage of the grain-growing capabilities of the District. In the mid 1970's there were some 60 registered pig producers in the Lower Waitaki, running a total of over 500 sows and producing some 8000 pork and bacon carcasses annually. Although the number of farms has declined slightly in recent times the remaining piggeries are larger. In 1994, the District's 88 farms carried a total of 12,262 pigs.

Small-scale, part time farming blocks have also become more common and is reflected in the subdivision of some rural farms, particularly in the areas near Oamaru.

Mineral extraction operations still occur at several locations. Oamaru Stone, a building stone of limestone is quarried near Weston and further potential of sources exist in areas east of Waiareka Creek. Limestone for lime fertiliser and lime products, is quarried near Makareao, Tokarahi and Weston and gravel for roading aggregate is extracted from the various rivers within the District. Most of the gravel extraction operations are well-established, with Council having received only one application for gravel extraction from the Shag River since early 1990.

Industrial activities within the rural area tend to be associated with the provision of a rural service such as contractors depots, or the processing of primary products, such as the freezing works at Pukeuri, the flourmill at Ngapara and fishery at Moeraki. It is acknowledged that lime from Whitstone, coal from Ngapara, and silica from Windsor can be extracted for the purposes of cement manufacturing which is carried out near Whitstone

Approximately 7549ha of exotic forestry existed in the Waitaki District in 1995. *Pinus radiata* is the predominant tree followed by Douglas fir. The Herbert Forests (3500ha) are the largest exotic forests in the District and extend from the hill country into the downland area. There are no other large commercial exotic forests in the downland and coastal area. Forestry tends to be in the form of woodlot planting or farm-forests where stock graze under trees. Sawmills are situated at Palmerston, Herbert and Windsor Park, and treatment plant at Waiareka.

The Waitaki District downland and plains area is well-endowed in terms of land and water resources for recreation. For tourists, the most significant and popular scenic attraction in this area is the Moeraki Boulders, situated on the coastline just north of Moeraki Village. This site is recognised as a scheduled bus stop-over, with approximately 250,000 visitors annually.

There are a large number of reserves along river margins and the coast, established for a variety of purposes. Picnic areas tend to be concentrated along State Highways 1, 83 and 85 and in other appropriate locations for travellers. Both formal and informal camping sites are utilised extensively during the summer months. The beach settlements and their surroundings provide high concentrations of camping locations, camping grounds being located at the mouths of the Waitaki, Kakanui, and Waianakarua Rivers and in bays such as Campbell's Bay and All Day Bay. The latter two bays are accessible by way of a coastal

walkway. The lower reaches of the District's main rivers provide extensive opportunity for water-based recreation, including fishing, boating and swimming.

Although extensive modification to the downlands and plains, landscapes have resulted in a decline of indigenous vegetation and wildlife, the coastal environment and the rivers are still rich in wildlife. The Waitaki River supports over twenty species of birdlife; while the coast provides habitat for species such as the rare yellow-eyed penguin, the blue and Fiordland penguins, Royal spoonbills, Hector's Dolphin, and Hookers sealion. Landward, some wetlands also have a diverse range of indigenous plants.

16.1.2 Hill and High Country

Pastoral farming in the Waitaki hill and high country was established in the 1850's, although not fully stocked with sheep runs until the late 1870's. Pastoral farming (fine wool farming) continues to characterise the high and hill country.

The pre-European vegetation pattern consisting largely of tussock grassland herbfields was modified further under European settlement in response to disturbance by fire, the introduction of grazing animals and pasture improvement. In many areas this meant conversion from tall tussock grasslands to short tussock and sown pastures. Extensive pastoralism has been undertaken in Waitaki's upland areas for over a century, relying principally on wool production from mainly pure Merino and Merino cross bred, store sheep. In recent times dairying has been introduced into the Omarama Basin. This change in land use has occurred with the availability of water irrigating up to some 4000ha of land. Other land in the Basin may be able to access water for irrigation in the future.

Much of the high country is covered by pastoral runs, the history of which dates back to the 1850's. These runs are leased from the Crown on short or long-term leases or licences, usually with rights of renewal. They vary in size from 2,000ha to over 10,000ha. The restrictions imposed by pastoral tenures mean land use changes require specific approval from the Commissioner of Crown Land through his agent. Freeholding of land is more extensive in hill country to the south of the District, although relatively isolated tracts exist in private ownership associated with homesteads or Otago University Endowment land in the Upper Valley. Crown land, administered by the Department of Conservation, is confined largely to the Alps and higher mountains to the west of the District. The process of tenure review is resulting in increasing areas of high country land under pastoral leases and licences being freeholded.

In 1988, at the time the Waitaki County Section of the District Plan was made operative, approximately 19,000ha of the County remained under indigenous state forests, the largest being Huxley (4451ha). Most indigenous forest is situated within the hill or high country. Farm forestry elsewhere in the high and hill country is relatively insignificant in comparison.

One of the most significant gold mining operations in New Zealand occurs presently in the Waitaki District, at Macraes Flat. Gold was first discovered in the area by alluvial prospectors in 1862, and the strike was worked until 1868 when interest fell away. In the 1890's renewed interest in gold mining led to a 40 year period in which an estimated 100,000 tonnes of material was extracted for a yield of approximately 15,000 ounces of gold and 100 tons of scheelite. Much of this mining was underground although there was also open cast mining at Round Hill.

During the last 90 years interest was intermittent until the purchase of the mine by the Macraes Joint Venture Company in 1987. Now open cast mining occurs with a large pit continually being excavated. Resource consents have also been obtained to create a number of other pits with mining expected to continue to at least 2004.

Historically, gold mining has also been undertaken at various locations to the south of the Waitaki District, and there is evidence of sluicing in the vicinity of Livingstone. Another point of interest, is the old lime kilns situated in the Horse Range near Dunback. These were utilised for the hydrating of limestone, which was then crushed and used for fertiliser, cement, or for road surfaces.

The Waitaki catchment has always been an important destination for the recreationalist. The mountains, foothills, lakes and streams provide a variety of settings. The main activities in the past were mountaineering, tramping and hunting. As the access improved and the hydro-lakes were created, recreation has steadily increased. Today there is a wide range of recreational activities, both land and water based; including tramping, climbing, skiing, boating, fishing and camping.

The summer holiday season sees an influx of campers to the Waitaki Valley. In total there are 15 formal lake and riverside camping sites in the area. Several more lakeshore areas are used for camping although not formally designated as such. A range of formal accommodation exists, with Omarama and Otematata offering caravan and tent sites and cabins. Motels, lodges and farm-stay accommodation also increase the range of options available. Otematata township has a significant proportion of privately owned cabins.

As this valley forms a link from Central Otago to the East Coast, and is a popular route to and from Mt Cook, tourism is an important use of the area. Most tourism takes the form of scenic tours through the area en route to other destinations such as Queenstown or Mt Cook.

Part of the attraction for recreationalists is the high country's landscapes. The landscapes can be divided up into 3 broad categories. The first is the steep mountain ranges that rise up to the main divide. The mountains are characterised by narrow sharp ridges with snow year round on the highest peaks. Scree is common on the high mountains. Vegetation consists of alpine and rockfield vegetation, snow tussock on the high slopes with short tussock grassland and matagouri on the lower slopes.

The second category is the Waitaki basin floor. This comprises glacial and fluvial landforms with terminal moraines and outwash terraces, as well as braided and meandering floodplain formed from, for example, the Ahuriri River. Vegetation is commonly induced short tussock grassland, some of which has been oversown and topdressed for farming purposes. The dryer mountains immediately to the east of the basin, such as the Benmore Range, are dominated by short tussock grassland with extensive scree and rock outcrops.

The third category is the ranges that run eastward from the Waitaki basin to the coast, south of the Waitaki River. The ranges included the Hawkdun and Kakanui Ranges. They are extensive fault-block mountains with steep summits with scree, but lower down consist of plateaux, broad spurs and basins. The Hawkdun range consists of snow tussock, alpine and rockfield on the high slopes and highly modified short tussock grassland on the lower slopes. The vegetation in the Kakanui Range consists of depleted snow tussock and oversown native grass and some pastureland. The vegetation progressively becomes more modified into the Kakanui foothill area, and also the plateau areas around Macraes Flat. Indigenous forest remnants bordered by exotic forest planting are an important feature of the Kakanui foothills.

Although the original forest cover has been lost, there are still forest remnants as well as largely unmodified tussock grasslands which are judged to be of ecological significance. The ecologically significant areas generally are:

- remnant forest, with their associated wildlife community;

- relatively unmodified short and tall tussock grasslands with their associated wildlife community;
- relatively unmodified shrubland;
- wetland, tarn or swamps which support a diverse range of flora and fauna and in cases endangered species eg the black stilt;
- unmodified rivers and lakes, with their associated waterfowl and wading birds, and fish species;
- rare plant or animal species such as the Otago skink, black stilt;
- complete altitude, aspect and climatic sequences of indigenous vegetation;
- salty soils, with associated indigenous salt tolerant vegetation, and vertebrates and invertebrates such as skinks and spiders.

For further description of Natural Values and Issues refer to Issue 8- Nature Conservation Values.

16.1.3 Water Resources

The water resources of the Waitaki District are one of its greatest assets. The high country is dissected by a multitude of small steep streams that drain into the Waitaki or Kakanui catchments. The Hopkins River drains into Lake Ohau - the largest natural lake in the District- and the Ahuriri River into Lake Benmore. The Ohau and Waitaki Rivers have both been harnessed for hydro electric power. Lakes Waitaki, Benmore and Aviemore were created in the years 1934, 1965, and 1968 respectively changing the appearance and nature of the Waitaki catchment. The dams caused large areas of the Waitaki and Ahuriri to be flooded, but created recreation areas and wildlife habitats, and facilitated irrigation schemes.

The lower coastal ranges are characterised by small, frequently occurring streams which drain into the coastal lowlands. The drainage pattern of the lower Waitaki District consisting of seven river catchments are:

- the Waitaki River to the north;
- the Kakanui River and its tributaries draining much of that land west of Oamaru and Maheno;
- the Waianakarua River south-west of Herbert;
- the Shag River and tributaries north-west of Palmerston; and
- North branches of the Waikouaiti River and Pleasant River near the southern boundary of the District;
- tributaries draining into the Taieri River.

The District's catchment area for the Waitaki River is 12,000 sq km (the Waitaki Catchment includes Lakes Pukaki and Tekapo); Kakanui River 894 sq km; Waianakarua River 255 sq km; Shag River 544 sq km; and Pleasant River 130 sq km. Water is taken from most of the rivers for domestic stock and irrigation purposes.

Groundwater is generally present beneath lower terraces, fans and coastal plains and downlands. However, the full extent of the exploitable resource in a complex system of confined and unconfined aquifers is not known. The most intensive use of groundwater is in the downland west and south of Oamaru.

Unlike the Waitaki Basin, there are no natural or manmade lakes of significance in the lowlands. However, a number of tidal lagoons exist along the coastline where major watercourses meet the ocean.

For further description of the Waitaki Lakes Area and the Water Ways see Section 3 (Open Space and Recreation).

16.2 ISSUE 1 - High Class Soils

Retaining the productive potential of the District's high class soils.

16.2.1 Explanation of Issue

Waitaki District is fortunate that most of its plains and low hill areas are well endowed with high class soils, and because of this, much of the area has been developed into intensive primary production. Given that the present, and probably future, welfare of the people in these areas is likely to be reliant on primary production, the Council is concerned that the soil resource retains its productive potential.

Council considers this is particularly important for the high class soils (as identified on the District Planning Maps) which have been identified by the Otago Regional Council. The regional council has responsibility, under the Resource Management Act, to sustain the potential of natural and physical resources to meet the reasonably foreseeable needs of future generations.

Subdivision and use of small rural lots for principally residential activities can result in substantial areas of the allotments being covered by buildings, hard-standing and other unproductive investment, which can make the long-term productive use of the soils unlikely.

Council, however, also recognises that there is a demand for small properties for more intensive cultivation and pastoral farming and lifestyle blocks. This is particularly so around the urban centres where there is an availability of labour, services, a reduction in transport costs and where the soils are generally high class. The Council acknowledges that subdivision of the highly productive and versatile land into smaller allotments is often necessary to enable people to develop intensive cultivation and pastoral farming activities, especially those that are capital or labour-intensive around the urban centres. It should also be acknowledged, however, that continuous intensive primary production practices can adversely affect productive soil.

16.2.2 Objective 1

Retention of the productive potential of the high class soils located in the Plains area.

16.2.3 Policies 1

- 1 To encourage the continuing productive use of high class soils by ensuring that such land is not subdivided into small lots nor developed for intensive residential activity.*
- 2 To minimise the likelihood that areas of high class soils will be covered with structures or hard surfaces over significant proportions of these soils, by preventing their subdivision into small lots.*
- 3 To encourage liaison with other local authorities and organisations concerning research into land use and land management practices that sustains the downlands and plains' soil resource.*

16.2.4 Implementation Methods

To achieve policies 1 to 3 through:

- 1 the provision of rules to control subdivision;
- 2 liaising with the Otago and Canterbury Regional Councils, government departments, and crown research institutes to ensure that the research from these organisations can be used to make sound planning decisions, which take into account the effect that land use patterns and land management practices has on the state of the high class soils (as identified on the District Planning Maps) and other soils;
- 3 promoting the dissemination of that research in a form that can be understood and be useful to the community.

16.2.5 Explanation and Reasons

The Council considers that subdivision of land should be at a size that:

- i ensures that if particular operations do not succeed there is an adequate parcel of land remaining for a range of potential productive land uses;
- ii takes into account the need for rotation of crops as part of sustainable land management practices;
- iii minimises the likelihood that significant proportions of the lots will be covered with structures or hard surfaces.

Research into the effects of land use patterns and land management practices on the productive potential of soils can only be translated into sound planning decisions, if the research is communicated clearly to local authorities. The best way to achieve this is by ensuring that the Council advises its research requirements to the appropriate agencies. Similarly, research will need to be translated into practical terms for the wider community to understand its usefulness and implications.

16.3 ISSUE 2 - Cultivation of Downlands

Cultivation of rolling downlands has the potential to result in significant erosion unless carefully managed.

16.3.1 Explanation of Issue

Cultivation is an important part of arable farming. The purpose of cultivation is to turn under crop residues and to subsequently prepare seedbed for the planting of the following year's crop. However, when cultivation is on a continuous annual basis research in other parts of New Zealand is showing that the soil becomes compacted and structureless over time. Fortunately, in the Waitaki District most arable farming includes rotation with pasture. 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.

There has, however, been some concern from the Otago Regional Council at the levels of erosion that have occurred as a result of cultivation practices on the rolling downlands. Cultivated paddocks on slopes as low as 10° have been known to lose much of its topsoils as a result of high intensity rainfall. For example, the Otago Regional Council

conservatively estimated from a storm in March 1986 on the downlands that 240 hectares of cultivated paddocks lost an average of 50 tonnes of topsoil per hectare. Overall, this one event represented a loss of 12,000 tonnes of topsoil. In addition, cultivated paddocks on the flood plain of the Waiareka Valley have had its topsoil stripped due to floods. Though recovery occurs, there is concern that the soil's fertility and water holding capacity is being lost over time. The loss of the soil's ability to hold water means crops and pasture are subject to soil water deficits for longer periods of time. Droughts like that of 1988 and 1999 are thus accentuated in these areas. In recent times methods such as direct drilling are being promoted by the Otago Regional Council to limit this potential for erosion.

The Council would like to ensure that the productivity of these rolling downlands is maintained to meet the reasonably foreseeable needs of future generations.

16.3.3 Objective 2

Cultivation practices on the rolling downlands are managed in such a way as to ensure the potential for significant loss of soil by way of wind erosion is minimised.

16.3.4 Policies 2

- 1 To promote further research into increasing our knowledge about the degree to which poor cultivation practices may impact on the long-term sustainability of the soil resource, and also research into identifying the correct adjustments needed in cultivation practices to minimise the potential of wind erosion.*
- 2 To encourage and co-ordinate with other agencies the provision of information that promotes land management practices which do not cause accelerated erosion.*

16.3.4 Implementation Methods

To achieve the policies 1 and 2 through:

- liaising with the Otago and Canterbury Regional Councils, government departments, and Crown Research Institutes to ensure that research from these organisations increases our knowledge about the degree to which poor cultivation practices may impact on the long-term sustainability of the soil resource, and also research which identifies the correct adjustments needed in cultivation practices needed to minimise the potential of wind erosion;
- promoting the dissemination of research that can be understood and be useful to Federated Farmer groups, land stewardship groups or individual farmers; and assisting appropriate groups such as the North Otago Sustainable Land Management Group.

16.3.5 Explanation and Reasons

The Council wishes to safeguard the soil's life-supporting capacity and to sustain its potential to meet the needs of future generations. Accordingly, the Council is seeking to achieve this outcome by promoting assistance to farmers through supplying information and advice from professionals, which will facilitate changes to cultivation practices, where necessary, in order to sustain the soil resources. The Council will continue to liaise with research organisations, and in particular the Otago and Canterbury Regional Councils, in order to promote an integrated management approach to this issue.

The Council also considered the option of setting performance standards on cultivation practices. The Council elected not to include these standards for the following reasons:

- i further research is needed to determine in more detail the types of cultivation practices that prevent unacceptable erosion rates, and the methods to monitor these rates;
- ii other agencies, such as the Otago and Canterbury Regional Councils, have specific duties and functions in soil conservation matters and are better placed to set performance standards due to their expertise in this matter.
- iii Sustainable Land Management Guidelines have been prepared by farmers in the Waitaki District area with the assistance from the Otago Regional Council. These Guidelines aim to maintain the area's soils in a healthy condition by providing practical methods to achieve sustainable farming.

16.4 ISSUE 3 - Sustaining the Soil Resource of the High Country

In the high country, the land is an important resource for the people who live and work in the area, as well as for many New Zealanders and overseas visitors. Extensive pastoralism in the tussock grasslands of the South Island has to some extent become part of the cultural identity of New Zealand.

However, a pressing issue that confronts many rural communities in high country areas in the South Island is the apparent degradation¹ of the tussock grasslands.

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 primary production systems which retain soil quantity, fertility and health; protect water and air quality; and are energy efficient. The range of landscape, recreational and nature conservation values associated with the District's high country are also dependent on the implementation of pastoral farming systems which sustain these values.

In recent decades, parts of the high country of Waitaki District 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 threaten nature conservation and landscape values.

Fluctuations in farm product prices and previous government incentives to encourage land development have contributed to the problems of achieving sustainable land management. Poor returns for wool in recent years have had implications for expenditure on farm inputs to maintain improved pasture and higher stock numbers, even on the more productive parts of runs.

The Council is concerned that in some areas a loss of vegetation health and cover; changes to vegetation composition; and, over time, decline in soil fertility and health, will damage the land such that it cannot sustain the District's soil, vegetation and landscape resources into the future. Council considers that 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.

¹ Land degradation may be defined as land that is damaged in such a way that it can not sustain a range of land uses into the future all things being equal.

16.4.1 Objective 3 - Sustaining the Life-supporting Capacity of the Soils of the High Country

Rural high country land uses are managed in such a way that a robust, diverse and intact vegetation cover is maintained to assist in sustaining the life supporting capacity of the soil.

16.4.2 Policies 3

- 1 *To encourage and co-ordinate with other agencies regarding the continuation or establishment of local community-based groups to encourage land uses and land management practices which are appropriate for the environment.*
- 2 *To encourage and assist in continued research for means of achieving sustainable land management practices in the District's uplands.*
- 3 *To encourage land-users to monitor the condition of vegetation on their land by providing information and assistance, where possible.*
- 4 *To ensure that District Plan controls do not inhibit a range of land use, management and subdivision options that may be necessary to sustain the land and soil resources.*
- 5 *To advocate that central government allocate the necessary funding to help solve the issues confronting the high country and thereby ensure the long-term sustainability of the high country.*

16.4.3 Implementation Methods

To achieve policies 1 to 5 through:

- 1 the provision of rules which enable a range of land uses in the rural areas, subject to other objectives and policies;
- 2 supporting local land-holder groups through the provision of advice and information and through assistance with monitoring programmes;
- 3 to liaise and where appropriate assist other organisations working in this area, such as the Otago and Canterbury Regional Councils, the Hieracium Trust Board, research organisations, and the North Otago Sustainable Land Management Group;
- 4 to consult and request active support from central government.

16.4.4 Explanation and Reasons

The Council wishes to see the high country develop a range of land-based activities and management regimes that sustain the soil resource in the high country. Council considers the monitoring of vegetation health and cover will be the strongest indicator of the soil's health. Council considers the best means to maintain a robust, diverse and intact vegetation cover is by providing assistance to local stewardship groups, through supplying information and advice (including monitoring techniques) from professionals, which will facilitate changes to land based activities or practices in order to sustain soil resource. This assistance will, if possible, be co-ordinated with other organisations such as the Otago and Canterbury Regional Councils. The Council intends to take an active role in providing support and assistance to community-based stewardship groups and research

organisations and will continue to monitor the outcomes of research and changing management practices in the high country. To complement this strategy the Council will not have controls that unnecessarily regulate alternative activities.

The Council has considered the inclusion of performance standards on grazing intensity and burning. The Council elected not to include these standards for the following reasons:

- 1 The District Council is not well placed compared to some agencies, to set performance standards due to its lack of expertise in this matter.
- 2 That research to date has not determined:
 - a) the frequency of burnings or the grazing intensity that initiates a decline in the vegetation cover or facilitates the influx of rabbits or hawkweed;
 - b) cost effective tools for vegetation monitoring, and the integration of the results of vegetation monitoring and research with land use systems;
 - c) the relationship between land use practices and hieracium, and its impact on farm management and hieracium control.
- 3 Given 2 above, the Council is not in a position to carry out an efficient monitoring programme that can ensure compliance with performance standards in grazing intensity and burning frequency.

The Council is also concerned about the level of central government commitment to solving the problems confronting the high country and where possible the Council will advocate government to take a more active interest in this issue.

16.5 ISSUE 4 - Protecting Rural Amenity

Intensification and diversification of rural farming activities has occurred in the last two decades. This is a result of rural people wishing to diversify for economic reasons. 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. Despite this diversification, the rural environment has particular amenity and environmental values which are important to rural people. 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.

The Council is supportive of rural diversification, in that it enables people to provide for both their economic, social and cultural well being. However, the Council is mindful that increased numbers of residential dwellings in rural areas can lead to complaints in respect of some farming activities such as manure or crop spraying. Intensive cultivation and pastoral and intensive farming, in particular, can be a problem because of smell nuisance due to intensive animal stocking rates and effluent disposal. These problems are most likely to occur around the fringes of the urban area where people live.

Intense dwelling and other building development, associated with subdivision, can also cause a significant loss of "openness." The decline in the openness of an area can cause increased loss of privacy, loss of rural outlook and loss of spaciousness; all important amenity values for many people living in the rural area. In addition, people living in urban areas often value rural open spaces that are nearby. Within the hill and high country (identified in the Rural S (Scenic) Zone), the qualities of open space, predominance of landform, remaining indigenous vegetation and low ambient noise levels, particularly contribute to the amenity of these areas.

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.

16.5.1 Objective 4 - Rural Amenity

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

16.5.2 Policies 4

- 1 To encourage a wide range of rural land use and land management practices in the Rural General Zone, without increasing the potential for conflict or the loss of rural amenity, by ensuring that subdivision is limited to moderate sized rural allotments.*
- 2 To limit the scale of rural subdivision and density of residential activity in the Rural Scenic Zones to large rural lots in order to retain the amenity of openness and to assist in protecting the quality of the water resources.*
- 3 To set performance standards or to use enforcement provisions for activities that may cause unpleasant living or working conditions for other people in the rural community, or that could cause a significant adverse effect to the environment.*

- 4 *To ensure that intensive farming activities require the Council's consent in the Rural Zones so as to protect the amenity of the area, except for small operations which shall be allowed as-of-right, subject to performance standards.*
- 5 *To encourage intensive farming away from intensively developed rural areas, so as to reduce the potential for conflict between these activities and other farming activities or residential living.*
- 6 *To require that residential dwellings be setback from property boundaries so as to reduce the probability of dwellings being exposed to significant adverse effects from an activity on a neighbouring property.*
- 7 *To encourage further research into identifying the trends between the state of the environment (eg. water use, water quality, soil health) and changes in land use patterns or practices.*
- 8 *To maintain clear distinctions between the urban and rural areas, in order to assist in protecting the character and quality of the surrounding rural areas.*
- 9 *To encourage the adoption of the Agrichemical User's Code of Practice NZS 8409:1995.*

16.5.3 Implementation Methods

To achieve policies 1 to 9 through:

- 1 the provision of rules to control subdivision and the provision of controls and performance standards to protect the amenity and environmental quality of the Rural Zones;
- 2 liaising with the Otago and Canterbury Regional Councils, government departments, and research organisations to ensure that any research from these organisations on the state of the environment (eg. water use, water quality, soil health) can be used to make sound planning decisions, which take into account the effect that land use patterns and land management practices have on the environment;
- 3 promoting the dissemination of that research in a form that can be understood and be useful to the community;
- 4 ensuring that industry organisations, Ministry of Agriculture and Fisheries and the Otago and Canterbury Regional Councils are contacted regularly so that monitoring of all intensive cultivation and pastoral farming and intensive farming operations is completed in a co-ordinated way. The Council will also keep in close contact with industry organisations to ensure acceptable management practices are being promoted to their members.

16.5.4 Explanation and Reasons

The Council considers that subdivision controls are necessary to ensure that the Rural Zones can accommodate a full range of rural land-based activities. However, in providing for a full range of rural activities, the Council is mindful that performance standards and, where necessary, enforcement provisions will be required to protect the rural amenity. In addition, residential set back is seen as a further way to minimise the potential conflict between residential use and other activities.

Most of the problems associated with intensive farming and intensive livestock farming activities occur as a result of poorly-sited and poorly designed buildings and enclosures, and poor farm management practices and waste disposal methods. The Council considered setting performance standards for all intensive farming and intensive livestock farming activities. However, given the adverse impacts of these activities is so dependent on the management practices used, or the sensitivity of the surrounding environment, the Council will consider intensive farming proposals on their merits in the Rural Zones, and have the necessary standards attached to each operation. The exception to this policy is where operations are small and only performance standards need to be applied in the Rural Zones. While many people who live in the rural areas are willing to accept a level of noise or smell associated with some intensive farms, such a level may be irritating or unacceptable to people living in neighbouring urban areas. Accordingly, such a level of activities will be discouraged from establishing near the urban environment.

The Council, under the Resource Management Act, is required to monitor the state of the environment (eg. water use, water quality, soil health). The Council considers that research should be encouraged to measure changes to the rural environment and how these changes relate to changes in land use patterns or practices.

The Council considers it important that industry organisations act responsibly and actively promote acceptable management practices in respect to the environment.

16.6 ISSUE 5 - Commercial and Industrial Development

The Council recognises that people need to provide for their economic well-being and therefore seeks to allow a wide range of rural land management activities in the rural area: this includes farming, forestry, recreation, home occupations and some commercial activities such as retailing of certain primary products grown or reared on site or crafts made on site. However, industrial activities and other commercial activities will require a resource consent due to their potential visual impact, as well as the cumulative adverse impact on amenity values due to traffic generation and noise. In addition the lack of services in the rural area would 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.

Commercial and industrial activities have been located in the past within the urban area for the following reasons:

- there is a supply of labour from urban centres;
- there is ready access to goods and services;
- located conveniently to a large number of potential customers;
- access to environmental services such as reticulated water supply, sewer, stormwater and refuse services;
- effects of increased traffic generation can be planned and catered for;
- building and bulk and location requirements can be tailored for the types of buildings and yards needed for these activities.

An identified, compact grouping of commercial activities or industrial activities is still considered by Council as an important factor in managing the adverse environmental effects of these activities.

There may be occasions however, where certain industrial or commercial activities need to establish in the rural area. This may be because of scale. For example, freezing works, with its movement of livestock, special effluent disposal requirements and large site requirements in most cases call for location in a lower density rural environment. Other

examples may relate to the need to be close to the resources they utilise, such as agricultural research facilities or a commercial outlet attached to recreational pursuits enterprise such as a ski field or golf course needs to be "on-site." It may also be advantageous for a saw-mill be established adjacent to a large forest plantation.

16.6.1 Objective 5 - Business Development in Rural Areas

The establishment of commercial, industrial, service, recreational and accommodation activities, that are compatible with the amenities of the lower density rural environment.

16.6.2 Policies 5

- 1 *To consolidate activities that do not require a rural location into established settlements in order to manage and contain their effects on the rural environment.*
- 2 *To enable the establishment of business activities in the rural areas only where the activities need to establish in the rural area (in terms of scale, effluent disposal requirements, use of or relationship to rural resources) and no reasonable alternatives exist for their location within established settlements.*
- 3 *To enable the establishment of small scale business activities in the rural areas, where the adverse effects can be avoided, remedied or mitigated.*
- 4 *To maintain clear distinctions between the settlements and the rural areas, in order to assist in protecting the character and quality of the rural areas.*
- 5 *In considering applications for business activities in rural areas, to ensure that there is no loss of rural amenity as a result of the effects of the proposal, including cumulative adverse effects in conjunction with other activities that are, or may, establish in the rural areas.*

16.6.3 Implementation Methods

To achieve policies 1 to 5 through:

- 1 provision of rules to control establishment of business activity in the Rural Zones.
- 2 the provision of ample opportunities within the business and other urban zones to accommodate industrial, service, commercial, recreational and accommodation activities within the settlements.

16.6.4 Explanation and Reasons

The Council considers that the efficient use and development of the District's natural and physical resources is best achieved in most cases by consolidating activities into specific locations because they are compatible and have a number of effects on the environment that are common. In addition, fragmentation of business enterprises throughout the rural areas is likely to result in a loss of viability of many of these enterprises; a loss of convenient access to facilities for many people; and increased costs of interaction, transport and conducting business. The Council therefore wishes to retain its discretion on whether commercial or industrial activities can be established in the Rural Zones.

16.7 ISSUE 6 - Mineral Extraction

Minerals are a natural resource that the Act treats differently. In common with other resources, minerals are to be managed in a way or at a rate that enables the community to provide for its social, economic and cultural well-being. However, in terms of the environmental bottomlines set out in Section 5 (2) of the Act, minerals are excluded from the requirement to meet the reasonably foreseeable needs of future generations. In other words, minerals can be extracted at any rate providing the mining activities safeguard the life supporting capacity of air, water, soil and ecosystems and avoid, remedy or mitigate any adverse effects on the environment.

Within the district, there are minerals of significance and access to those minerals is an issue. The Council recognises that mineral extraction is an important industry in the District, and acknowledges that access to these minerals is an issue, particularly those of gold which only occur at a fixed and limited range of locations in the District. Future activities or developments have potential to compromise access to, and processing of, these minerals.

The size of extractive operations range from the huge gold mining operation at Macraes Flat, which may generate up to 500 jobs until 2004, to smaller operations such as that near Whitstone where limestone is extracted for lime fertiliser. Gravel extraction operations are collectively an important part of the industry with gravel being used for roading and building purposes.

The mining of minerals these days, such as at Macraes Flat, is often by an open pit method, with heavy earth moving machines and cartage trucks being used. Blasting is sometimes required before earth moving machines can extract the minerals of interest. Such mining is of a scale that it creates a level of amenity that is unique to the mine site. The Council, while recognising the role of mineral extraction industry in the District, is aware that these operations have the potential to adversely effect the rural amenity and environment, unless carefully managed.

There can be adverse impacts to visual, open space, conservation or archaeological values to an area; or the loss of rural amenity associated with noise, dust or heavy traffic during extraction operations. These impacts are dependent on the sensitivity of the area, the scale of the operation, and how well the operation is managed. The loss of visual, open space or conservation values are, for example, likely to be more important in high country areas.

Although the scale of the operations is often smaller, poorly situated gravel pits can also cause a loss of visual, open space or conservation or archaeological value, through to a loss of rural amenity associated with noise, dust or heavy traffic during extraction operations. Gravel extraction also occurs on the beds of rivers in the District, particularly the bed of the Kakanui River. Some rivers such as the Shag River and Waianakarua River carry down only limited supplies of gravel that is available for extraction. The beds of rivers also provide important habitat for birdlife, and some margins contain significant indigenous vegetation. The margin can also be important in providing a riparian buffer that can help protect water. These issues are addressed in Part III, Section 1 (Natural Environment).

An important facet of the extractive industry is the activities of mineral prospecting and exploration. These activities are needed to enable companies to identify mineral resources of worth. Prospecting is a low impact activity that may include very limited rock, soil or vegetation sampling. Exploration, on the other hand, involves more detailed sampling of areas that have been identified during the prospecting phase as having minerals of possible extractive potential. Exploration may involve trenching or drilling and up to a few hundred

tonnes of material may need to be extracted for testing purposes. As a result substantial clearance of vegetation or earth moving may be required. Temporary roading may also be required.

16.7.1 Objective 6

Extractive industries are given the ability to access minerals but in a way that avoids, remedies or mitigates adverse effects on the environment.

16.7.2 Policies 6

- 1 *To acknowledge the importance of known mineral deposits in the District by, where appropriately, discouraging the establishment of future activities or developments that are likely to compromise access to these mineral deposits.*
- 2 *To recognise the potential adverse effects of extractive operations, including mineral exploration, on the rural environment, and to control such operations in order that an assessment may be made as to the sensitivity of an existing area and the degree to which an operation will avoid, remedy or mitigate any adverse effects on the amenity and environment of the rural area.*
- 3 *To provide for a mining zone at Macraes Flat in recognition of the scale and intensity of the mining operation while ensuring the adverse effects of mining operation are avoided, remedied or mitigated.*
- 4 *To ensure that after mining, sites are rehabilitated sufficiently to enable the establishment of activities appropriate to the area.*
- 5 *To avoid, remedy or mitigate adverse effects on the rural amenity and environment by, where appropriate, encouraging extractive industries to continue in existing locations.*

16.7.3 Implementation Methods

To achieve policies 1-5 through:

- 1 The provision of rules to control extractive operations and mineral exploration and the provision of performance standards to protect the environment and amenity of rural areas.
- 2 The recognition of known and important mineral deposits through the provision of a Macraes Mining Zone and a Whitstone cement extraction policy area.

16.7.4 Explanation and Reasons

The Council recognises the importance of the mineral extractive industry to the District and will seek to protect known deposits that are, to a greater or lesser extent, being extracted. This is particularly relevant to the gold mining at Macraes Flat, and the extraction of limestone for the purposes of cement manufacturing near Whitstone which was recognised in the previous Plan. Both these locations are considered as specific policy areas. The Council shall take into account the potential loss of access to these minerals when considering any applications for any future activities or developments.

The Council however also considers that controls are necessary with respect to the extractive operations because the scale of the operations, the sensitivity of the area, and the management of the operations may vary considerably. For these issues to be

adequately addressed, Council considers individual proposals need to be assessed on their merits. This will also enable the Council to set conditions on the management of the operation that are appropriate to the scale of the operation and sensitivity of the area.

With regards to prospecting, the Council considers that sufficient performance standards can be placed on this low impact activity by way of rules in the District Plan which will limit any significant adverse effects to the environment.

Given that many of the existing gravel reserves were established many years ago, the Council would like to encourage the continuing use of existing quarries. The Council considers this should limit the need for the establishment of new gravel reserves. Similarly, the extraction of limestone is encouraged at existing sites. However, it is not always appropriate for the extraction of gravel from the bed of lakes or rivers to occur at a single location as it may change the flow and sediment processes acting within the river channel and cause adverse effects.

16.8 ISSUE 7 - Landscapes

The District's landscapes are of significant value but are vulnerable to adverse change as a result of the effects of some land use activities.

16.8.1 Explanation

The District is endowed with a rich diversity of landscapes, varying from vast spacious high country landscapes with subtle colourings from the landforms and vegetation patterns, the distinctive limestone formations in the hinterland between Oamaru and Dunroon, the schist plateau and hills around Macraes Flat, to rugged coastal seascapes and headlands. The district's landscapes today are a product of, amongst other factors, the geology, climate, patterns of landuse and associated structures and also the management practices carried out on individual properties.

Some landscapes are of significant value to the people who live, work in or visit the District. Most of this experience of the landscape is gained from within the local settlements and the main transport routes; however, an increasing number of visitors are exploring the District's more remote locations by vehicle or foot. The landscapes are undoubtedly a draw-card for recreationalists and tourists. Accordingly, there is a need to manage subdivision, use and development in the District so that the characteristics giving rise to the landscapes of value are retained for both present and future generations.

16.8.2 Landscape Objective

Subdivision, use and development are managed so that:

- the values identified for the outstanding or significant natural features, the outstanding landscapes, and the significant coastal landscapes are protected from inappropriate use and development; and
- the overall landscape qualities of the Rural Scenic Zone are retained.

16.8.3 Policies

- 1 *To adopt a shared values approach which recognises that members of the community can be given the opportunity to consider what are the important landscapes in the district and the appropriate means by which to manage these landscapes.*

- 2 *To maintain the character of those landscapes identified as being outstanding because of their high degree of openness, naturalness and/or visual coherence, and to avoid subdivision, use and development in those parts which have little or no capacity to absorb change.*
- 3 *To manage landscape change in the Rural Scenic Zone in a manner that maintains the overall character of the significant landscape, which forms the basis of the visual amenity associated with this Zone.*
- 4 *To manage the effects of use and development within the significant coastal landscapes so that:*
 - a) *the natural character of the coastal environment is preserved and protected from inappropriate use and development; and*
 - b) *the visual amenity associated with these landscapes is maintained.*
- 5 *To ensure that those characteristics leading to the identification of an outstanding or significant natural feature, are protected from inappropriate use and development.*
- 6 *To assist in achieving the outcomes in Policies 2 to 5 above, the following policies are to be considered against any subdivision, use or development applications:*
 - a) *Production forestry is to be avoided within the outstanding natural features, outstanding natural landscapes, the significant natural features and the significant coastal landscapes.*
 - b) *Shelterbelts are to be carefully designed and located within the outstanding natural landscapes so that the values associated with those landscapes are not compromised.*
 - c) *In the Rural Scenic Zone:*
 - i. *Forestry is to be generally limited to carefully sited and designed woodlots*
 - ii. *Shelterbelts are encouraged to be sited on land of easy contour; and,*
 - iii. *Shelterbelts are to be sited and designed so that they do not unnecessarily obscure views from State Highways and other main roads.*
 - d) *Subject to Policies 6(a) and 6(b) above, any exotic tree planting is encouraged to:*
 - i. *be located on the lower portions of adjacent slopes, and to use natural features such as river terraces or drainage patterns to achieve a degree of visual coherence within the existing landscape where plantings are in valleys or basins;*
 - ii. *be located so that mature trees will not obstruct views from main roads or viewpoints;*
 - iii. *be shaped in sympathy with existing landforms, and where possible be tied to an existing landform or vegetation edge;*
 - e) *In the outstanding natural features and landscapes and significant coastal landscapes buildings are to be located in areas with higher potential to absorb change and, together with residential units in the Rural Scenic Zone, where possible, are to avoid skylines, ridgelines, prominent places and features within important views and are to be encouraged to be in sympathy with the dominant forms and colours in the landscape;*
 - f) *Earthworks are encouraged to be located away from visually sensitive areas, and where practicable towards the edges of the landform and vegetation patterns;*

- g) *Earthworks should not compromise any rare or distinctive geological outcrops or any other values associated with an identified outstanding or significant natural feature;*
 - h) *Earthworks, where possible, should be restored and finished to a contour sympathetic to the surrounding physiography and should also, where possible, be revegetated with a cover appropriate to the site and setting;*
 - i) *Use and development is to take into account the effects of indigenous vegetation clearance on landscape character, and in particular, clearance is to be avoided where the values identified for the outstanding or significant natural features or outstanding natural landscapes, or the significant coastal landscapes, would be irreversibly lost.*
 - j) *Farming activities involving irrigation of land for pastoral or crop production are to be avoided within the Outstanding Natural Landscapes.*
- 7 *To manage siting, design, trees species and the management of tree planting within the Rural Scenic Zone in order to prevent wilding spread.*
- 8 *To recognise that the Rural General Zone is made up of landscapes that have a greater capacity to absorb change because the land has been more intensively developed, and contains a greater range of land uses with a greater dominance of buildings and structures; at the same time acknowledging that the rural amenity of this zone still needs to be managed (refer to Issue 4 and the Associated Objective and Policies).*
- 9 *To protect site-specific and outstanding geological or geomorphological features that are of scientific importance from inappropriate use and development; further sites that come before the Council will be included by way of a Plan Change at a later date.*
- 10 *The Cement Policy Area recognises the presence of significant mineral deposits and the importance of the mineral extractive industry to the district. It has been identified as a preferred location for the extraction of limestone and tuff and the manufacture of cement. Extraction of limestone and tuff (mining) and the manufacturing of cement within the Cement Policy Area is anticipated, provided that the characteristics of the Whitstone Significant Natural Feature are protected from inappropriate use and development.*
- 11 *Any proposal to re-zone land for urban development, or proposed development of an intensity or scale that exhibits urban-like characteristics are required to assess the impacts on landscape character and the policies in this section of the Plan need to be considered against the merits of such a re-zoning proposal.*
- 12 *To assist in the development and establishment of land management practices that do not adversely affect landscape values, by providing information and guidelines to local landholder groups concerning landscape values.*

16.8.4 Implementation Methods

- 1 To achieve the policies through:

- a) the provision of rules to manage the effects of subdivision, forestry activities, shelterbelt planting, earthworks, exotic tree planting, indigenous vegetation clearance, or the establishment of buildings in areas identified as an outstanding or significant natural feature, an outstanding natural landscape, or significant coastal landscape or in the Rural Scenic Zone generally.
 - b) the provision of earthworks rule in the Rural General and Rural Scenic Zone generally so that conditions may be imposed to avoid or mitigate the visual impacts of earthworks.
 - c) the inclusion of landscape design guidelines for buildings, structures and tree planting.
- 2 Co-ordination with other organisations, such as the Regional Council and the Department of Conservation, and scientific organisations, and the provision of information to landholders and stewardship groups that can recommend appropriate land management techniques to help conserve landscapes value;

16.8.5 Explanation and Reasons

In order to identify the landscapes of importance for the district, the Council commissioned a landscape study (Waitaki Landscape Study 2004) which identified areas containing outstanding natural features and landscapes and significant natural features and landscapes. Following a review by the Council, the boundaries to the Rural Scenic Zone were amended to include the identified significant landscapes. The significant landscapes along the coast are renamed the 'significant coastal landscapes.' The study forms the basis for the identification of these 'landscapes of importance' in the District Plan.

Some of the high country landscapes in the Upper Waitaki catchment are considered outstanding because of their high degree of openness and naturalness. These upper basin and mountain areas are spectacular – and are 'landscapes' of the type to which section 6 of the Act applies. The outstanding landscapes sit within the wider Rural Scenic Zone that broadly extends from the Upper Waitaki catchment down the Hawkdun, St Mary's and Kakanui Mountains (and Horse Range) towards the coast and on to the schist uplands on each side of Macraes Flat. The Rural Scenic Zone continues to be recognised as having particular visual amenity associated with the dominance of open-space vistas and landforms and the lack of intensive subdivision and landuse and the overall absence of buildings and structures. Therefore, much of the Rural Scenic Zone can be considered to contain "visual amenity landscapes" in terms of section 7 of the Act.

These landscapes, although having a high degree of naturalness, also reflect in many instances the cultural patterns of previous landuses by both European and earlier Maori people – they are therefore in one sense both cultural as well as natural landscapes.

The outstanding or significant natural features include outcrops, peaks or unique items such as the Moeraki Boulders. There are also specific geological or geomorphological sites which are of scientific importance.

'Features' tend to be items occurring at a given point in the landscape, as compared to areas where the values are unified. Again, many of these natural features have a cultural dimension that increases their importance. For example, the limestone cliffs near Duntroon were important places to earlier Maori as shelter, which is also reflected in some very important engravings on the limestone rocks. Similarly, because the volcanic cones between Palmerston and Oamaru are such prominent features, some have had monuments placed on them, such as Puketapu and Sebastopol. The outstanding natural

features are very important – section 6 of the Act applies to these; while similarly the significant natural features are locally important: section 7 of the Act applies to these.

The coastal landscapes are important, not only because of their scenic value but also because of their long association of settlement, including early Maori, who valued these areas for access to kai moana. These are again landscapes to which section 6 of the Act applies.

Policy 1 recognises that a ‘shared values’ approach has been undertaken to identify those landscapes described above and to introduce the landscape objective, policies and methods contained in this Plan. In order to achieve the landscape outcomes set out in Policies 2-5, Policies 6-10 set a course of action on how use and development should be managed. Policies 6-10 and the associated rules have been developed so that the landscape values identified for a particular natural feature or landscape, or the Rural Scenic Zone generally, are managed appropriately. In particular, it is expected that ongoing landuse change may occur in the Rural Scenic Zone provided it is appropriately managed. For example, dairying has been introduced in parts of the Omarama Basin with the availability of water for irrigation, and could well expand further in the Basin within the Rural Scenic Zone.

On the other hand, landuse change in the outstanding and significant natural features and the significant coastal landscapes would be more strictly controlled to ensure that the natural or cultural landscape character, which give rise to the values identified are protected from inappropriate subdivision, use and development. The landscape design guidelines in Appendix D of the Plan will in addition to the policies provide guidance in how to manage activities.

Any applications for resource consent under the controlled activity rule on earthworks (Rule 4.3.1.1) in the Rural Zones and the restricted discretionary activity rule on shelterbelts and residential units in the Rural Scenic Zone are to be processed as non-notified unless special circumstances exist. A special circumstance may include factors such as:

- i. The residential unit or shelterbelt is located in close proximity of neighbouring property and in particular a neighbouring residential unit;
- ii. The residential unit or shelterbelt is located on a particularly prominent landform as viewed by the public or;
- iii. The proposal involving a number of proposed residential units associated with a subdivision in a prominent area.

The provision of educative techniques and information, including guidelines in this Plan, are also considered by the Council to be important in raising the community awareness about the landscape and its values.

16.9 ISSUE 8 - Nature Conservation Values

The remaining nature conservation values within the District are continuing to be modified and degraded by the effects of land use activities.

16.9.1 Explanation

Despite continuing modification since human occupation, the District still contains diverse communities of indigenous flora and fauna in a variety of habitats. There are no less than 15 ecological districts either completely or partly in the Waitaki District.

In these ecological districts there are 16 recognisable indigenous plant community assemblages distributed relative to natural tolerance gradients of temperature, hydrology, altitude, soil type and modification.

It is fair to say that throughout the district the more fertile, productive areas contain fewer, smaller and earlier successional indigenous communities than areas of less productive capacity (i.e. areas generally above 900m in altitude).

The remnant indigenous communities of the district now cover an estimated 44% of the district although this cover is not uniform throughout and there is a clear divide demarcated roughly by the 400m altitude contour, with very little indigenous vegetation below this line. The remaining indigenous vegetation communities still traverse the range of environments; from high mountain types to lowland plains and coastal systems.

Approximately 31% of the district's remnant indigenous vegetation (habitat) is currently owned by the Crown (DOC) or around 14% of the district's land area. In the west much of the ecological value pertains to alpine and sub-alpine conditions with remnant alpine herbfields, tussocklands and sub-alpine shrublands as well as hardwood indigenous forests (mountain and silver beech). The central highlands have substantial cover of tall and short tussock grasslands, alpine herbfields and areas of grey shrub.

Further east, mosaics of remnant forest and shrublands are found throughout the hill and high country (although forest patches of substantial size are rare), with a thin finger of forest and manuka-kanuka penetrating to near the coast at Hampden. The lower plains have very little remnant indigenous vegetation, although the riparian areas of the Waitaki River (amongst the prominent willow edges) contain important wetlands.

Specialist community types associated with limestone outcrops, inland saline areas and tarn and riverside turf lands are some of the special distinctive indigenous habitat communities remaining.

Analysis of historic vegetation cover suggests that the district initially supported vast lowland plains of matai-kahikatea-totara forests, rimu-matai-miro-kamahi forests on the rising lands and a thin mixture between. These forests occupied the lower river and coastal plains and inland lower hills. Extensive upland scrub-tussock-herbfields were present inland of the plains forests along the southern district boundary and mountain and silver beech forests were prominent in the west. Centrally, around the lakes, were shrub and tussock grasslands below the treeline, and wetlands in the Waitaki basin.

Of the indigenous vegetation types remaining today, shrublands and tall tussock grasslands are the only communities that have had an appreciable increase in cover since human settlement. This increase in cover has been at the expense of forests. The growth in shrub and tussock has followed large scale forest clearance (by fire or felling) and pastoral grazing. Intensified agriculture has removed most of these seral vegetation communities on the fertile plains. However, they have persisted in some abundance on the less productive lands.

Of the 14% of the District land area in protected Crown lands the great majority is in mountain beech forests, sub-alpine tall tussock and alpine communities. Most of the remaining indigenous vegetation and habitats, once well represented, are under-represented today in the district.

The current and future issues in regard to indigenous fauna, flora, their habitat and ecological functions and processes relate to the continued loss of species, of habitat size, of connectivity and integrity. Threats to these areas are from continued clearance for

development (agricultural, or otherwise), invasion by exotic aggressive species (weed and pests) and accidental loss through fire and other disturbances. The sustainability of many indigenous communities is at risk and this risk is largely a function of size, complexity and connectivity. The smaller the area and the fewer species and variety of resources an area has the greater its chance of being lost in total to a disturbance, or of trending to deletion from continual competition, stress and challenge.

Of the remaining remnants and fragments within the district, some have clear values and a sustainable condition, and many have recognisable special features. It is the myriad of small and fragmented areas of “common” vegetation type that are under greatest threat and are of most debated value. In this regard tussock grasslands and shrublands are the most complex nature conservation issues in the district.

With regard to freshwater and associated habitat and systems, the Waitaki district contains a number of large upland lakes (or parts thereof) including Lake Benmore, Lake Waitaki, Lake Aviemore and Lake Ohau as well as a number of small lakes (eg, Raupo Lagoon, Swan Lagoon, Lake Dumbell, Lake Middleton). Associated with the heads of these lakes, and in the Waitaki basin in general as well as along river edges, are a number of significant, large and small wetlands. These wetlands are important for a range of fish, plant and bird life. Feeding these lakes are a number of large braided rivers (e.g. Ahuriri River, Hopkins River and the Waitaki River) as well as moderate sized rivers such as the Otekaieke River, Maerewhenua River, Stoney Gorge Creek, Otematata River, Clear Stream, Awakino River and the lower Waitaki River southern tributaries. Furthermore, draining the various ranges and hill countries are numerous small tributaries that focus much of the upland waters into the Omarama (Waitaki) Basin.

The Ahuriri, Hopkins and Waitaki Rivers provide habitat for wading birds and water fowl, as does Lake Ohau and the other hydro-lakes. The best known of these birds is the endangered black stilt. Again, weeds and predators are of particular concern to these species as are alternative water uses (irrigation, power generation) affecting flows.

The margins of the river and lakes are recognised as being critical areas, not only in providing habitat for plants and animals, but also acting as a buffer to waterbodies from land use activities that produce nutrient-rich or sediment-rich runoff.

While the Waitaki River and lakes are greatly valued for their recreational fishing capacity (salmon and trout), there are also a wide range of native fish species in the district. The lower Waitaki River is also valued for its whitebait, flounder, eel, mullet and kahawai fisheries.

From a conservation perspective, the wider system of rivers and lakes contain at least 23 native fish species (15 diadromous (migratory) species, five non-migratory species and three lagoon species that utilise the lower river mouth). Canterbury mudfish have been recorded (particularly in association with wetlands) and is amongst New Zealand’s most threatened fishes (Nationally endangered). In addition, several other species with threatened status persist, including the long finned eel and Giant kokopu, which are both in gradual decline, Lamprey and low-jawed galaxids are both sparse and *Galaxias cobitinis*, which is nationally critical (the most at risk category) are also known to exist. There are likely to be species remaining to be discovered in the upper waterways of the wilder western areas.

The coastal environment has gained some prominence as it is frequented by the rare yellow-eyed penguin. However, other species such as the blue and Fiordland crested penguins, Royal spoonbills, Hectors Dolphin, and Hooker’s sealion, make the District’s coastal environment one of the richest in the country.

There are also other oddities in the District, such as the dry, salty soils near Otematata which provide habitat for rare salt tolerant plants, which in turn provide habitat for some unusual and rare insects and lizards.

16.9.2 Objectives

- 1 **The maintenance of biological diversity, nature conservation values, and ecosystem functioning within the district by:**
 - The protection of areas assessed as having significant indigenous flora and significant habitats of indigenous fauna; and,
 - The maintenance of other indigenous flora and fauna associated with wetland, riparian areas, alpine areas and other areas that have other particular nature conservation values.
- 2 **The maintenance or enhancement of the quality of water and the coastal environment, wetlands, lakes, rivers and their margins and the protection of these environments from inappropriate subdivision, use and development.**

16.9.3 Policies

- 1 To manage the adverse effects of the use or development of land on significant indigenous vegetation or significant habitats of indigenous fauna so that the values of these areas are protected.
- 2 To manage the effects of land use activities so that they avoid, remedy or mitigate adverse effects on:
 - i freshwater fish habitat, fish passage and aquatic ecosystems generally, and water quality and quantity and/or
 - ii important ecological functions such as connectivity and hydrology.
- 3 To use the following criteria to identify areas with significant indigenous vegetation or significant habitats of indigenous fauna:
 - i Representativeness

The area supports an example of a particular vegetation type, habitat or ecological process that is typical of the ecological district relative to the pre-European baseline and contributes to maintaining the appropriate proportional representation of that feature;

or

- ii Rarity and Distinctiveness

The area supports an indigenous species, habitat or community, which is rare and vulnerable within the ecological district or threatened nationally; or the area contains unusual features such as:

- Playing an important role in the life-cycle of protected or threatened indigenous fauna;
- The presence of species at their distribution limit;
- Containing an intact a sequence, or a substantial part of an intact sequence, of unusual ecological features or gradients;

or

- iii Diversity and pattern

The area exhibits a high degree of biological diversity in terms of:

- Species (vegetation and fauna)
- Habitat types (i.e. "Seral" or "Climax" types)
- Ecological processes;

or

iv Ecological Context, Size and Shape

The area:

- Maintains connectivity between other significant areas or maintains the opportunity for better connectivity between existing significant sites;
- Provides a buffer for areas that are of significant value;
- Is of sufficient size to be viable and edge effects are not an important limitation;
- Important feeding/breeding areas for indigenous fauna.

4 To recognise that indigenous vegetation communities and associated fauna, other than areas with significant indigenous vegetation or significant habitats of indigenous fauna, may have nature conservation values in:

- Maintaining connectivity between other indigenous vegetation and/or
- Providing important habitat for species reliant on patchwork of indigenous vegetation (e.g. birds, lizards)

and to manage these areas so that the nature conservation values are maintained in those areas.

5 To assist in the development and establishment of land management practices that do not threaten the survival of indigenous ecosystems and their component plants and animals and natural features, by providing information to the community, recreationalists and, in particular, the local landholder stewardship groups, concerning their location and appropriate land management practices and uses of the surface of the waterways.

6 To manage the effects of the use, development and protection of land on the natural character of wetlands, rivers and lakes and their margins, having regard to the indigenous vegetation or habitat for indigenous fauna at a locality and the water quality and quantity of the waterbody concerned.

7 To promote long-term sustainable protection of areas that have significant indigenous vegetation and significant habitats of indigenous fauna by encouraging landowners to investigate management options which maintain or enhance these sites and by supporting farmers and local community groups in private or valley conservation initiatives.

8 When considering resource consents that come before the Council, to ensure that regard is given to any adverse effects of the activity on the natural character of the District's environment and on remaining indigenous vegetation and habitat; and that opportunities are taken to promote the retention of indigenous vegetation and habitat.

9 To manage the effects of the use, development and protection of land on the natural character of the coastal environment and the beds of rivers, streams and wetlands, and the margins of lakes, rivers, streams and their wetlands; and having regard to the indigenous vegetation and habitat for indigenous fauna at a locality and the

quality of the water, and also having regard to those important landscapes identified under Issue 7.

- 10 To manage the effects of the use, development and protection of land on the sensitive vegetation communities in the alpine environment
- 11 In conjunction with the Regional Councils, to inform landowners regarding the effects of activities on water quality and when considering resource consents that come before the Council, to ensure that regard is given to the effect of the activity on the quality of waters within the District.

16.9.4 Implementation Methods

To achieve the policies through:

- 1 the provision of rules to control activities that include earthworks, tree planting, clearance of indigenous vegetation, or the establishment of buildings or structures on the beds and margins of lakes, rivers and wetlands; and the coastal environment, in the alpine environment and also in areas identified on the Planning Maps and listed in Appendix C as significant areas of indigenous vegetation and significant habitats of indigenous fauna; and other areas of nature conservation value.
- 2 identification of wetlands, rivers or lakes or part thereof that require protection from inappropriate use or development unless the regional councils identify these environments in regional plans;
- 3 the use of incentives to assist in the protection of areas of significant indigenous vegetation or significant habitats of indigenous fauna;
- 4 the taking of esplanade reserves or strips in appropriate areas on subdivision;
- 5 where resource consents are required for the same activities from both the District and Regional Councils, to give consideration to transferring the power to administer such consents to the Regional Council;
- 6 co-ordinating with other organisations, such as the takata whenua, Otago and Canterbury Regional Councils, Department of Conservation, Landcare groups, Federated Farmers and research organisations the provision of information to landholder stewardship groups that can recommend:
 - appropriate land management techniques to help conserve indigenous plants and animals, and geological features.
 - appropriate land management techniques to safeguard water quality and improve treatment of domestic wastes.
 - development of cost-effective monitoring techniques to assess status of indigenous plants or animals identified in areas of significant value.
- 7 The Council will undertake further assessments of nature conservation values across the District, and will incorporate all appropriate additional areas identified as being Sites of Significant Nature Conservation Value and Geopreservation Sites into the Plan by way of Variation or Plan Change. This work will begin during or before 2007.

16.9.5 Explanation and Reasons

The District is fortunate in that it still contains a number of areas that have particular natural conservation value; some areas of which harbour nationally significant species. These areas can be protected by a range of methods. The Council considers that providing educative techniques is a positive way to promote the survival of indigenous plants and animals. Educative techniques could also include the targeting of stewardship groups by providing practical information about sites of plants or of animals or of areas geological value.

Notwithstanding this, the Council recognises the need to include rules to control activities that may have adverse effects on areas that contain indigenous animals and plants that are of significant value to the District. Activities involving building, vegetation clearance, land disturbance through earthworks, 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 the nature and level of stocking can also, over time, adversely affect areas of significant indigenous vegetation and significant habitats of indigenous fauna.

Should the Council receive any applications for resource consents it needs to consider the values contained in the relevant area. The values need to be assessed against the nature conservation values in the particular Ecological District the area is located. This is because Ecological Districts can vary considerably in their geological, climatic and associated biological attributes (southern alps to the sea) and also because the degree of human-induced modifications to those biological attributes can vary considerably between each Ecological District. In making use of the criteria in Policy 3, the area being assessed shall be considered significant when either one or more of the clauses (i)-(iv) to the policy are met.

The Council also considers that rules are necessary to control activities that occur on the margins of rivers and lakes, and on the margins and within wetlands, alpine environments and at the coast. These areas often contain a diversity of indigenous plants and animals but are also sensitive to impacts from activities such as building, vegetation clearance, land disturbance through earthworks, and the planting of trees. The functions of riparian areas and wetlands are also important in maintaining water quality and hence habitat value of various waterbodies.

As well as seeking to maintain or enhance the natural character of the coastline, significant infrastructure development at the coast will be discouraged in any event due to the risk from coastal hazards.

The quality of the waters in the District is principally of concern to the Otago and Canterbury Regional Councils. However, the Council considers that it has a role in controlling the effects of land uses within the District that may affect water quality. The Council is also the major provider of water supply and sewage reticulation and treatment services.

Also refer to related policies in:

Open Space and Recreation
(including Surface of Waterways)

Part II, Section 3

Natural Hazards

Part II, Section 4

16.10 ENVIRONMENTAL RESULTS ANTICIPATED

Under Rural Issue 1

- The retention of the productive potential of the high class soils of the District.

Under Rural Issue 2

- The development and implementation, over time, of alternative land management practices and a corresponding decline in accelerated soil erosion due to cultivation on slopes, such as through:
 - development of alternative cultivation techniques such as direct drilling;
 - reduction in the number of paddocks of bare soil being exposed to high winds at any one time;
 - reduced cultivation or stocking rates and increased retirement of land to allow recovery of erodible land.

Under Rural Issue 3

- The greater use over time of a range of alternative land management options and uses with improved recovery of vegetation cover and soils and vegetation health, such as through:
 - forestry options; such as agro-forestry, windbreaks for altering micro-climates, woodlots, tree crops and larger scale forestry
 - development of low-maintenance plant species, including tree, herbage, forage and crop species.
 - reduced stocking rates and increased retirement of land to allow recovery.
 - pastoral development of suitable lands to reduce stock pressure on extensive grazing areas.
 - restructuring of property boundaries to ensure economic farm units and redress imbalances between 'summer' and 'winter' pasture and between productive and more degraded land.
 - alternative rabbit control methods, including establishment of viral control.
 - areas for resource-based recreation.
 - nature conservation areas for science, education, aesthetic or spiritual appreciation.

Under Rural Issues 4 and 5

- Retention of a lower density of development in the general rural area, without undue levels of complaints or conflicts relating to rural amenity.
- Retention of the amenities, quality and character of the different rural environments within the District.
- Maintenance and enhancement of surface water quality through appropriate riparian management.

- Consolidation of business activities within existing settlements, except where there is a need to establish in the rural areas and no reasonable opportunities exist for establishment in the settlements.
- Maintenance of clear distinctions between the settlements and the rural areas.

Under Rural Issue 6

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

Under Rural Issues 7 and 9

- Maintenance and enhancement of natural features and landscape and nature conservation values.
- Improved design standards for development reflecting greater public involvement, awareness and support for the importance of the visual amenity of the District.
- A safe and efficient road network.
- Resourcing of landholder groups to facilitate land use options or management practices that better deal with weed invasion and loss vegetation vigour, which adversely affect landscapes.