

Landscape and Ecology
Southland District

Landscape and Ecology In Southland District

Southland District Council

Prepared by

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LANDSCAPE AND ECOLOGY IN SOUTHLAND DISTRICT

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A INTRODUCTION

1 Why study landscape and ecology?

The Council is required to prepare a District Plan under the Resource Management Act (1991). It will replace the current transitional district plan which is comprised of District Schemes prepared under the replaced Town and Country Planning Act (1977), and change the emphasis of planning in the district away from the control of **activities**, towards the management of **environmental effects**. In simple terms, this means that instead of saying "you may not subdivide, or plant a forest, in this zone" the plan will say "you may subdivide or plant a forest as long as it doesn't have these defined adverse effects or outcomes". To be able to identify 'adverse effects' it is necessary to recognise what the values are that may be adversely affected. This is the purpose of the background papers. This landscape and ecology report is one of a number of 'background reports' that the Southland District Council will prepare as part of its District Plan preparation process. It describes the landscape and ecology of the district, outlines what is valuable about it, raises significant issues that are likely to arise within the lifetime of the plan (10 years) and makes recommendations on how these can best be handled in the district plan. Landscape and ecology are technically complex areas. The District Council does not have specialist staff in these areas, so this report has been prepared by a firm of consultant planners and landscape architects.

You are encouraged to respond to this document.

Either you can ring and discuss points with our District Plan staff, or send written submissions to the Council. Because of the requirement to have a District Plan in place by November 1994 an early response would be very helpful.

The Landscape and Ecology report is in two volumes. Volume 1 summarises the study and focuses on the findings and recommendations. Volume 2 is a series of technical papers explaining the legislative background and methodology in greater detail. It contains in-depth information on why objectives, policies and methods have been recommended. Volume 2 is available for viewing at the Council offices and public libraries.

The rest of Part A of this volume explains:

- 1 The Resource Management Act
- 2 The District Plan
- 3 Landscape and Ecology
- 4 The Study Brief and how this was addressed

Each of these aspects are technical with their own jargon. In Volume 1 we have attempted to simplify them without losing their meaning. Full explanations are contained in Volume 2.

Part B of this volume shows how landscape and ecological factors are relevant to district plan preparation, and how they can be applied in Southland District. Land use activities and their effects are discussed.

Part C then looks at the landscape and ecology of the district in detail. The types and units are described and evaluated and proposals for their treatment in the District Plan are set out.

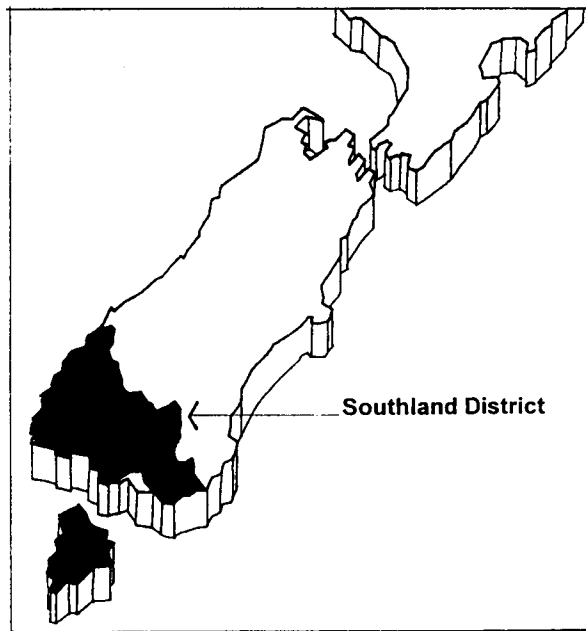


Figure 1

Location Map

1.1 The Resource Management Act (1991)

This massive piece of legislation replaced or amended numerous other Acts. Despite its length it has a single purpose, that is:

"to promote the sustainable management of natural and physical resources".

Sustainable management is a difficult concept. In a few circumstances it is relatively straightforward eg. fish populations are **managed sustainably** when the numbers caught are less than the natural increase in numbers; soil is managed sustainably when the grazing regime maintains healthy vegetation and minimises erosion.

The Act gives an explanation of 'sustainable management' and lists the main principles upon which decisions must be made under the Act. These principles are fairly general, allowing a more flexible, non-regulatory approach to resource management (planning). The Act aims at less, but more focused regulation.

PURPOSE AND PRINCIPLES

5. Purpose-(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, "sustainable management" means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while-

- (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
- (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
- (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

6. Matters of national importance-In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

- (a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development;
- (b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development;
- (c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna;
- (d) The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers;
- (e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

7. Other matters-In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to-

- (a) Kaitiakitanga;
- (b) The efficient use and development of natural and physical resources;
- (c) The maintenance and enhancement of amenity values;
- (d) Intrinsic values of ecosystems;
- (e) Recognition and protection of the heritage values of sites, buildings, places, or areas;
- (f) Maintenance and enhancement of the quality of the environment;
- (g) Any finite characteristics of natural and physical resources;
- (h) The protection of the habitat of trout and salmon.

8. Treaty of Waitangi-In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

In attempting to understand the Act it is important to note that matters thought to be of national importance (Section 6) **shall be recognised and provided for**. Other matters (Section 7) **shall have particular regard** paid to them. In Section 8 the term **shall take into account** is used. This choice of words suggests a hierarchy of considerations which should be reflected in the Plan.

1.2 The District Plan

Southland District is required to produce a District Plan by November 1994. This plan will replace all of the eight existing district schemes (or part district schemes) that comprise the Southland Transitional District Plan.

The Plan shall make provisions for matters included in Part II of the Second Schedule (Matters Related to Districts) as are appropriate for the circumstances of the district, and shall state:

- (i) the **significant** resource management issues of the District
- (ii) the **objectives** sought to be achieved by the plan
- (iii) the **policies** in regard to issues and objectives, and an explanation of those policies
- (iv) the **methods** being or to be used to implement policies (including rules)
- (v) the **principal reasons** for adopting the objectives, policies and methods of implementation set out in the plan. This is consistent with the S32 requirement in which an authority must provide transparent reasons for its choice of objectives, policies, rules and methods, having regard to alternatives, costs and benefits, efficiency and effectiveness.
- (vi) information which must be submitted with an application for a resource consent, including circumstances where further information may be required.
- (vii) environmental results anticipated from implementation of these policies and methods.
- (viii) processes to deal with cross territorial boundary issues.
- (ix) procedures for review of objectives, policies, rules and methods, environmental results, and to monitor the effectiveness of the plan as a means of achieving its objectives and policies.
- (x) any other information a territorial authority considers appropriate and any matters a territorial authority may be appropriate to fulfil its functions, duties and powers under the Act.

The plan shall not be inconsistent with (S75 RMA):

- (i) Any National Policy Statement or New Zealand Coastal Policy Statement (such as draft NZCPS) or
- (ii) Any Water Conservation Order or
- (iii) Any Regional Policy Statement and any Regional Plan of its Region in regard to any matter of regional significance or for which the regional council has primary responsibility under Part IV.

The territorial authority shall have regard to (S74 RMA):

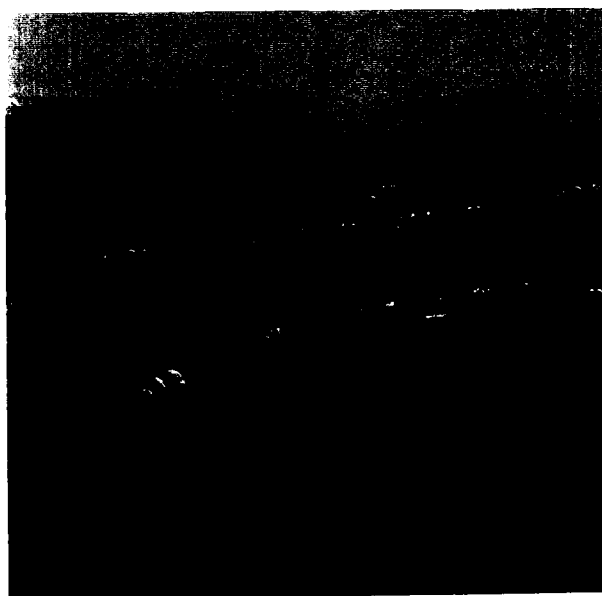
- (i) Any proposed Regional Policy Statement or Regional Plan (ie Southland Region) on a matter of regional significance in respect of its district.
- (ii) Any Management Plans or strategies prepared under other Acts (ie plans prepared by the Department of Conservation for the management of the conservation estate eg.

Fiordland National Park Management Plan, the Conservation Management Strategy for the Southland Conservancy which is in preparation)

- (iii) Any relevant planning document recognised by an iwi authority affected by the district plan (ie the plan currently under preparation by the kaitahu)
- (iv) Any regulations relating to the conservation or management of taiapure or fisheries
- (v) The extent to which the District plan needs to be consistent with plans or proposed plans of adjacent territorial authorities (ie Invercargill City, Gore District).

Two, three and four must be regarded to the extent that their content has a bearing on resource management issues of the district.

The final form and content of the District Plan will reflect submissions and comments on the background papers.



1.3 What is landscape? What is ecology?

The Resource Management Act deals with amenity, intrinsic values, ecosystems, habitats, landscape, landform, natural character, and cultural and heritage values.¹ It recognises that when you consider the whole environment, these matters are directly relevant.

The planning schemes currently administered by the District make little or no reference to these landscape or ecology ideas, yet the public submissions on the *Issues and Options* document prepared by the Council confirm that they are also important to Southlanders.

So what is meant by 'landscape' and 'ecology'?

Landscape

There are many definitions of landscape. It is used here to mean both the visual expression of physical, biological and cultural processes and the human experience of it. This means that it is the result of landform processes, vegetation processes, past and present land use decisions and so on. What you see in the landscape is understandable in terms of the processes that have formed it. Landscape is not static - it changes and therefore we must be concerned with its management not its 'preservation'. People's appreciation of landscape is to a large extent influenced by:

- a) its appearance which can be described in visual terms such as form and texture, and
- b) by its meaning - which is influenced by the viewer's cultural background, prior experience and present circumstances.

Landscape Principles

Landscape principles underpin any assessment of landscape values and are fundamental to understanding the management of the District's landscape resource. Everyone may view the landscape differently and place different importance on its qualities but there are a number of recurring considerations on which there is a measure of consensus. These are reflected in the Resource Management Act. It is important that these are stated clearly so that people are able to see why a particular landscape is valued.

Landscape is the expression of physical, biological and cultural processes in an area. Landscape is explained in terms of its formative processes. Ian McHarg was an early champion of this 'ecological' view of landscape (McHarg, 1969).

Landscape is a visual or scenic resource. The landscape may be described in terms of visual characteristics such as form, line, colour and texture.

Landscape can be understood in terms of experience. Landscape as deeper meaning to us as humans than mere aesthetics. Experience of 'place' evokes responses in us that go well beyond the appreciation of landscape as scenery.

¹See Volume II for explanations and sections of the Act referring to these matters.

These views of landscape are complementary and in this context relate closely to the Resource Management Act interpretation of amenity.

"Amenity values" means those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes:

What is landscape character?

Landscape character is the visual expression of the underlying landscape. This is most clearly expressed in **landform** - which reflects underlying rocks, the erosive process etc, **vegetation** - which reflects the soil conditions, plant succession etc and **land uses** - which reflect cultural and social processes.

What are landscape values?

Landscape character describes the landscape and it provides a basis for judgements to be made as to its values. It is at this stage that subjectivity becomes significant. Two landscape qualities are assessed in this study. These are visual quality and visual sensitivity. These two qualities embrace the values inherent in the Resource Management Act and in most issues of visual resource management.

Visual Quality

To explain why we find some landscapes beautiful and others ugly is not straightforward. We can anticipate that most people would rate Mitre Peak highly and an industrial area surrounded by poorly managed farmland would receive a fairly low rating. But why? What is it in the landscape that makes us respond in this way? There is a substantial theory on this subject and it suggests that our perception of landscape is derived in three ways:- from our innate of biological background, from cultural influences and from our own personal experience (this is explored further below and in Volume 2). This view could explain both the wide variety of opinions and also the broad areas of agreement. It also provides a theoretical structure against which assessment can be considered.

Research points to three landscape attributers that explain much of the 'common wisdom' on visual quality. These are vividness, naturalness and coherence.

Vividness refers to the distinctiveness or memorableness of an area. Mitre Peak across Milford Sound is probably the classic example of a truly striking and memorable landscape. The Resource Management Act refers in S6(b) to 'protecting outstanding natural features and landscapes ...'. The concept of vividness plays an important part in the definition of outstanding landscapes.

Naturalness equates to a lack of modification in rural and wilderness areas. The absence of visual encroachment from contrasting buildings, structures and land use patterns is the key consideration.

The Resource Management Act in its interpretation of amenity values (S2) specifically refers to the natural qualities and characteristics of an area.

Coherence refers to the way a landscape visually 'hangs together'. Unity and harmony are other words that convey the same meaning. This attribute is of particular importance in built or artificial landscapes where the idea of composition becomes significant.

These three attributes - vividness, naturalness and coherence have been assessed for each landscape unit in the district and provide the basis for landscape quality maps.

Visual quality is a generalised assessment based on the findings of research and practical experience and reflects a general consensus. Inevitably, given the subjective nature of landscape values, there is a variety of opinion within this consensus. There is an increasing body of evidence that suggests that part of our response to landscape comes from our evolutionary past. When we were hunters and hunted, the advantages of being able to see without being seen were immense (the prospect refuge theory). This may help to explain the almost universal appreciation of parkland type scenery, and particularly enclosed landscapes with extensive views into open areas etc. Open and featureless landscapes or those totally enclosed landscapes with no views, are generally avoided. Whatever the reason innate or otherwise, those landscapes, that afford some protection yet provide 'prospect', are often preferred.

Cultural influences provide another explanation of preference. Maori and pakeha views of landscape often differ markedly. Recognition of the spiritual qualities of the land are not strongly represented in the pakeha perspective. More information on this aspect of landscape preference may be available once the tangata whenua report has been completed. It is also true that each individuals view on landscape values reflects their past experience and present circumstances. An individuals views are likely to evolve over time.

This short explanation of landscape quality or amenity values, illustrates how complex and imprecise they are. Nonetheless they are a significant issues that must be addressed under the Act. The following structure based on the above provides a basis for a critical assessment of quality.

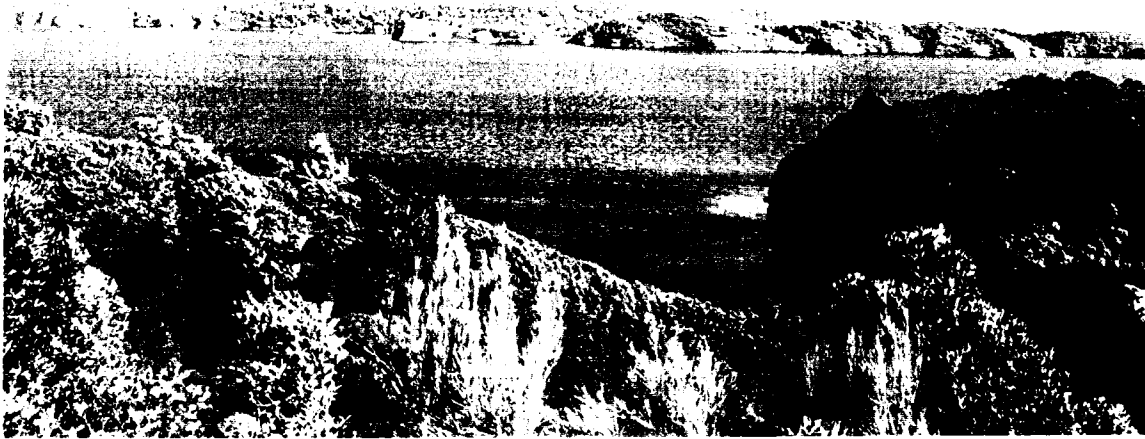
Visual quality is not the only landscape value that must be considered by the District Plan.

Visual Sensitivity

Visual quality is not the only landscape consideration. For example a very attractive landscape may be able to 'absorb' a development with very little adverse effect. Equally an uninspiring rural landscape may be vulnerable to change because of its openness and lack of features.

Because the Resource Management Act emphasis on the effects of development it is important to assess visual sensitivity when considering where change should occur and how it should be managed.

Visual Quality



Visual quality reflects the 'vividness' or 'memorableness' of a scene. This may result from a confirmation of characteristics such as blue sea, white beaches, green bush, craggy mountains etc.

Naturalness (used in the sense of 'an absence of artificial structures, patterns etc) is another attribute of Visual Quality. Both attributes occur at Paterson Inlet, Stewart Island (above).

Coherence relates to the way the landscape 'hangs together' or makes sense eg. planting along streams or on steep slopes, paddocks following the contour, buildings sheltered from the elements. The valley near nightcaps (below) enjoys several of these characteristics.



Visual Sensitivity



Visual sensitivity reflects the ability of the land to visually absorb change. The open landscape of the coastal swamps (above) would be less capable of accommodating change than the more varied and modified landscape of Te Anau basin. The number of people that see the landscape also affects its sensitivity.



Visual sensitivity reflects the visibleness of the area and its visual absorption capability (VAC). Visibility includes the extent of the area from which a landscape is visible and also the number of people living within the visual catchment or using that landscape eg travellers on a particular stretch of road.

Visual absorption capability is the landscape's ability to absorb change without significant modification of its positive visual qualities. Visual absorption capability is, to at least some extent, dependent upon the type of activity proposed eg. a transmission line is less easily absorbed than a single storey building. The key criteria in assessing VAC are landform, vegetation and the level of modification. Landform and vegetation can be used to screen or provide a backdrop to development. Both will reduce a development's impact. The level of modification is significant because generally unmodified landscapes are dominated by natural lines and shapes. New development visually contains artificial shapes, straight lines etc which contrast strongly.

A combination of visual quality and visual sensitivity will give a measure of the landscape's vulnerability to change and therefore the need for control or guidance if change is necessary.

Theoretically, one end of the spectrum will be very attractive, highly sensitive landscapes, viewed by large numbers of people acutely conscious of their environment. At the other extreme will be landscapes of little charm, which are capable of absorbing development without adverse impact and which are seen by relatively few people none of whom have a particular concern for their environment.

Between these extremes are many combinations of quality and sensitivity and these are discussed in relation to each of the landscape character units.

Ecology

If landscape is the outcome of these processes, then ecology can be thought of as their inner workings, with the focus on the plants and animals. It explains many of the connections between these biological and physical aspects. The emphasis of ecological research in New Zealand has traditionally been on the 'natural' rather than the modified environment. There has also been confusion over the difference between ecology and nature conservation. Nature conservation is a way of managing the environment based on a particular set of values. Ecology is a science and is largely 'value free'.

Ecology Principles

These are statements about ecological matters which are important to the management of the District's natural resources. They are introduced to summarise those parts of the huge subject of ecology which are particularly relevant to the requirements of the Resource Management Act. This means that:

- they are focussed on the area managed by Southland District Council

- they give guidance for working towards having healthy land and water which is ecologically sustainable
- they explain why certain things, places or processes are considered significant in ecological terms. This is based on well-used criteria from New Zealand and overseas and is built into the assessment of values in the unit descriptions. (More details of criteria in Volume 2).
- they deal with issues raised during the study. Most of the issues raised related to concerns or uncertainty about the continued health of some ecosystems because of the effects of activities.

The principles underpin the judgements we have made about ecological values and management in the District. They cannot be considered in isolation from each other, but have to be balanced in specific situations. For example, although native fish have greater ecological value than introduced ones, the recreational and tourism importance of trout, and the practical impossibility of removing them, means that it will always be a significant species in Southland rivers.

Rarity

Whether a plant, animal or community is "rare" is measured in terms of a particular area eg Southland District. *Things which are not common in Southland are always significant*, even if they are found elsewhere, because:

- i) they are examples which can easily be seen by Southlanders
- ii) they are outliers of the main populations and could avoid any disaster which might affect the rest
- iii) they may have genetic differences from the rest which might be valuable
- iv) they are part of local habitats or ecosystems

Representativeness

This is usually related to the Ecological Districts which are shown on the map in Volume 2 - there are over 20 Ecological Districts in Southland, reflecting the great diversity of landscapes. Representativeness can be reduced by modification. *Sites which are representative of the vegetation cover which existed in the District pre-Polynesian and pre-European settlement are significant:*

- i) for heritage value
- ii) for potential genetic differences
- iii) for their part in ecosystems, supporting native plants and animals
- iv) because they are adapted to local conditions

Diversity

This is the number and variety of different species or habitats within a specified area. *Greater diversity is generally of greater value for ecological sustainability*, since it usually

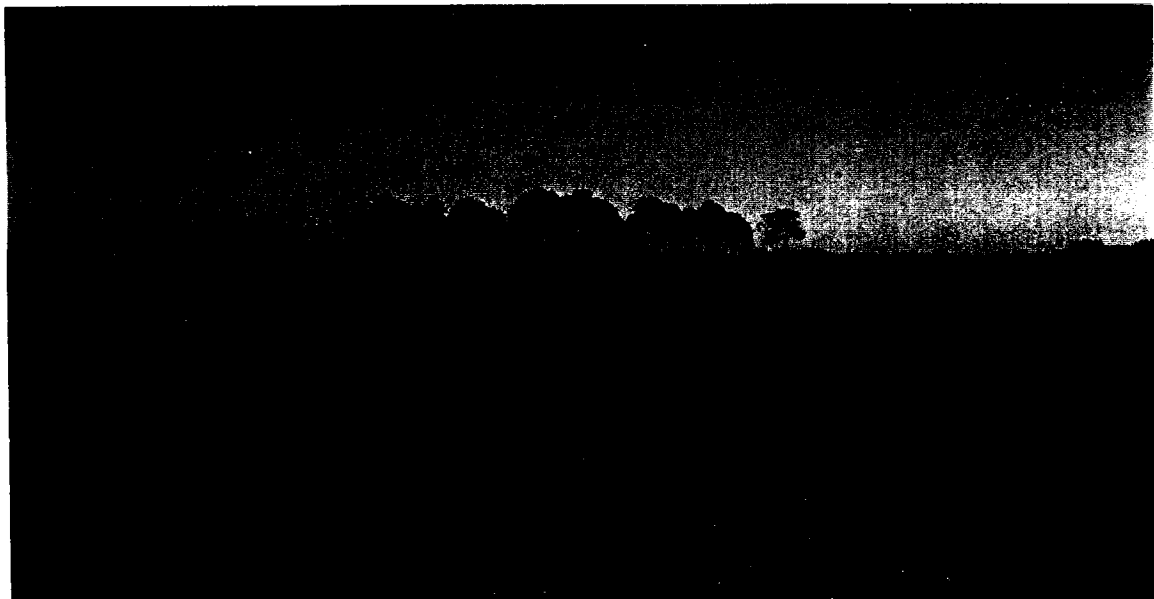
ECOLOGY PRINCIPLES

Rarity



Shrublands at Te Anau Downs are locally extensive, but overall they are rare in Southland District.

Representativeness



Small pieces of podocarp forest are representative of the former vegetation cover of much of the Southland Plains. However, many are small, modified by stock grazing, and open to weeds, so that they are unlikely to survive for long.

Naturalness



Large areas of relatively unmodified natural habitats are found only in Fiordland and Stewart Island.

Diversity



Wetlands, beech forest and tussock grasslands occur close together in Mavora Lakes Conservation Park.

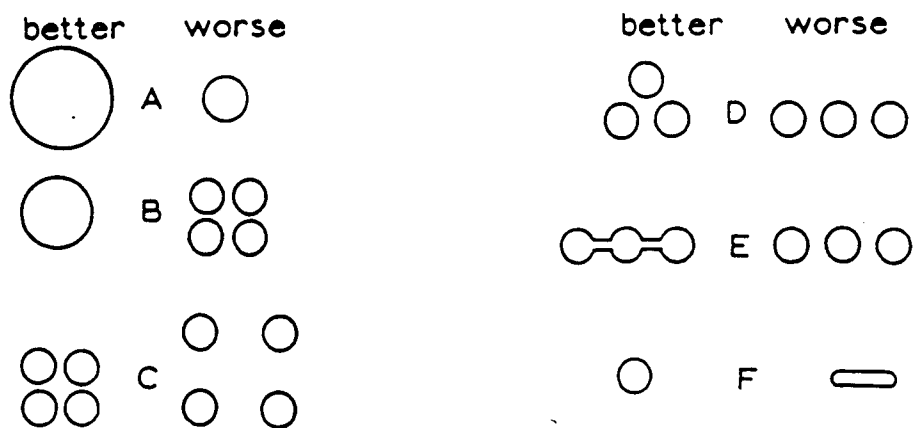
means that an area is more healthy and resilient, with all the parts of its ecosystems intact. *Habitat diversity is a good measure of species diversity.*

In urban and developed rural areas, diversity of native species is generally lower than in the less modified environment. *Grazing reduces the diversity of plants in most native plant communities.*

Size and Shape of an Area

Size is important to the ecological health of any habitat - there has to be a large enough area to support the plants and animals in it. Generally, *a larger site has higher value than a smaller one.* The actual desirable size for any particular habitat varies according to a number of factors, especially the types of animal using it. For example a pair of yellowheads needs large areas of beech forest to feed and nest in throughout the year, but a beetle may need only one log.

A group of small pieces of habitat, if close enough together, can act as a single large area. For example, the use of hill and flatland farmland blocks which are not necessarily next to each other, to support a flock through the year.



Some general principles for the size and shape of protected natural areas.

Some shapes of area are better than others - *those shapes which have a small boundary compared to their area are better than long, thin pieces.* This is because:

- i) there is less edge through which weeds and pests can get in
- ii) there is less edge exposed to damaging wind, salt spray etc

Naturalness

This reflects the amount of change in habitats and ecosystems which has occurred through human modification. Modification may be through introduction of animals as well as

physical change such as drainage or soil removal. *More natural places are of higher ecological value because:*

- i) the extent of change which has taken place throughout New Zealand, means that natural places are rare, and often contain species which are rare or endangered
- ii) they are more representative of former conditions
- iii) there is less change to processes, so that they are likely to be healthy (eg less accelerated soil erosion if vegetation is intact)
- iv) they are likely to have greater diversity

In urban and developed rural areas, naturalness is scarce and therefore significant.

Land, water, the coast and the ocean

There are many physical and biological connections between land and water which cross the boundaries of political interests. They must be considered in resource management. *Land management is a major factor in management of water quality and quantity.*

Material eroded from river banks, bare soils and screes, and carried from soil by run-off into rivers and streams can be carried downstream and deposited. While this is a natural process, sediment transport can be accelerated by some activities. *It causes problems by changing the conditions of the water and river or stream bed, with effects on plants and animals.* Material carried down rivers can end up on the beach or at sea.

Wetlands act as filters in waterways, and can help to remove some of these sediments. *Tall, dense riparian (water edge) vegetation helps to reduce the amount of sediment carried into waterways over the surface.*

The banks of waterways are very important to the plants and animals living in the water. Vegetation and overhangs provide shade, shelter, food and spawning sites for a range of fish species. *Variety in plants and types of bank leads to greater animal species diversity and a more balanced system.*

Ecological processes

These are the things which link together the plants and animals and their environment into an ecosystem. They include activities such as migration or nesting, as well as recycling of nutrients through decomposition, or energy flows through feeding. *It is important that the ability of plants and animals to carry out these functions is maintained while managing natural resources.*

Ecological Health

The ability of an ecosystem to sustain itself depends on a number of things including:

- i) the ability of plants and animals in it to reproduce at a rate which is greater than or equal to the death rate
- ii) having an area big enough for all the plants and animals in it to feed, breed, set up territories etc

- iii) having all the parts of the system connected; for example having continuous flow in a river for fish migrations
- iv) being free from pollutants
- v) having the ability to change naturally; for example, allowing dead wood to rot on the forest floor to renew nutrients in the soil

Native and introduced species

Native or indigenous species are those which occurred here before the arrival of humans. Many of them are found elsewhere (eg waxeye in Australia), but many occur only in New Zealand (endemic). *The more local the occurrence of a native plant or animal, the greater its ecological significance.* Many species which were introduced to New Zealand are now common, and some have become nuisances eg possum, gorse. Some native species are also weeds or pests under certain conditions (eg paradise duck in agricultural lands). In some places, introduced species can exclude native species and are undesirable, eg some grasses along a grazed riverbank.

Sensitivity and vulnerability

The sensitivity of a species, habitat or ecosystem comes from a combination of many of the factors described above (eg diversity, size, ecological health). It reflects its ability to absorb change or "bounce back" after disturbance. *The more sensitive species, habitats or ecosystems need greater protection from the effects of activities. Change is a natural part of ecosystems.*

Vulnerability is a measure of the likelihood of a species, habitat or ecosystem to suffer adverse effects from an activity. It depends on the type of activity, its location in relation to the resource, and its own sensitivity.



Tussock grasslands are gradually changed by oversowing, topdressing, grazing and burning. As different plant species disappear, so do the smaller animals which depend on them for food.

1.4 Brief and Method

The consultant's brief from the District Council was to:

- 1) describe the landscape and ecology of the District and identify major features
- 2) identify distinctive characteristics, qualities and values
- 3) prepare a report on the above which relates the findings to the Resource Management Act and is of direct value in District Plan preparation.

The consultant's approach was to:

- 1) identify the existing landscape resource
- 2) assess how valuable it is and why
- 3) clarify what pressure it is under or likely to be under
- 4) explore what can and should be done about it.

The remainder of this paper describes the landscape and ecology of the District, identifies major features and significant values, and recommends policies, objectives and implementation methods that could form part of the District Plan.

B LANDSCAPE AND ECOLOGY IN SOUTHLAND DISTRICT

2 Using natural resource information in the District Plan

2.1 The Resource Management Act and Activities

The District Council is responsible for the integrated management of any actual or potential effects of the use, development or protection of land. It has specific responsibility for control of the subdivision of land, emission of noise and effects of activities in relation to the surface of water in rivers and lakes.

Whilst the Act focuses on the effects of activities on resources, the majority of submissions on the District Plan "Issues and Options" document discuss activities. Traditionally this has been the focus of planning and for many people it is not easy to make the transition. Consequently this section now looks at the main activities in the district, clarifies references to them within the Act and outlines the connections between activity and effects. The following activities or uses of resources are discussed:

- Agriculture
- Forestry
- Mining
- Recreation and Tourism
- Urban Development
- Nature Conservation

Separate background papers on sustainable agriculture, forestry, mining and recreation are in preparation.

2.1.1 Agriculture

Agriculture is given no special treatment in the Resource Management Act. This is a change from the previous legislation.

As with other uses, agriculture must protect outstanding natural features, areas of significant indigenous vegetation and significant habitats of indigenous fauna from inappropriate subdivision, use or development (S6(b) & (c)). The provision to maintain and enhance public access to and along the coastal marine area, lakes and rivers is of particular importance to those who own land with these features. (The current requirement to vest an esplanade reserve on subdivision has been modified by the Resource Management Amendment Bill. Esplanade and access strips have been introduced. These are further discussed in Section 2.2.2)

The above matters have the status of matters of national importance. Regard must also be had to the efficient use and development of natural and physical resources (S7(b)).

The significance of agriculture varies across the district. In much of Fiordland, Stewart Island, the mountains, the forested parts of the Catlins and hill country there is little agricultural development. On the plains, parts of the coast and hill country and on the fringes of the mountains agriculture is the traditional land use. The agricultural industry contributes greatly to the Southland economy, society and landscape. Nonetheless, past agricultural practices have on occasion conflicted with landscape and ecology values, and have proved to be unsustainable. Therefore, they are the justified concern of the local authorities where adverse environmental effects are involved.

2.1.2 Forestry

Forestry as with other activities is treated on the basis of effects under the Resource Management Act. It has been suggested that in addition to the 45,300 ha of current commercial forestry a further 200,000 ha could be planted without major disruption to the farming industry (most of this increase is likely to be in the Taringatura and Hokonui Hills). The provision S6(c) of the Resource Management Act - 'the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna' is of particular importance in relation to indigenous forestry.

The District Council must have regard to national legislation relating to forestry when preparing the District Plan (S74(2)(a)).

The Forests Amendment Bill is currently before Parliament. Its purpose is to "maintain and enhance in perpetuity the existing area of New Zealand's indigenous forests, either by protection, sustainable management or reafforestation and rehabilitation". The Bill does not apply to land covered by the South Island Landless Natives Act 1906 and land administered by the Department of Conservation.

2.1.3 Mining

The Crown Minerals Act (1991) controls the allocation and administration of mining rights to Crown owned minerals. The environmental effects of mining are controlled through the Resource Management Act (1991). The purpose of the Resource Management Act - the sustainable management of natural and physical resources, does not apply to minerals. Nonetheless, mining will almost invariably need consents or permits under the Resource Management Act, and consideration must be given to environmental effects.

2.1.4 Recreation and Tourism

The Resource Management Act applies to the effects of tourism and recreation. Recreation is specifically referred to in S229 - purpose of esplanade reserves. Esplanade reserves are referred to in more detail in S2.3.8 of this report. Tourism may be most appropriately dealt with in the annual plan of the local authority - particularly in relation to funding.

2.1.5 Urban Development

The Resource Management Act contains no specific reference to 'urban' use of land. Although, there are a number of indirect references (set out in Volume 2).

Urban sustainability must be seen within the context of the sustainable management of natural and physical resources ... 'which enables people and communities to provide for their social, economic and cultural well-being and for their health and safety while sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations, safeguarding the life-supporting capacity of air, water, soil and eco-systems, and avoiding, remedying or mitigating any adverse effects of activities on the environment'. Within the Act, further relevant provisions include amenity values and heritage value references. A Fourth Schedule assessment of effects on the environment must include any effect on the neighbourhood and where relevant, the wider community including any socio-economic and cultural effects.

Under Section 7, regard must be had to the efficient use of natural and physical resources (including energy).

2.1.6 Nature Conservation

Nature conservation involves the management of native plants and animals in a way that ensures their long-term survival.

Under the Resource Management Act, the 'protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna' and 'the preservation of the natural character of the coastal environment, wetlands, lakes and rivers and their margins' are matters of national importance (S6b & c).

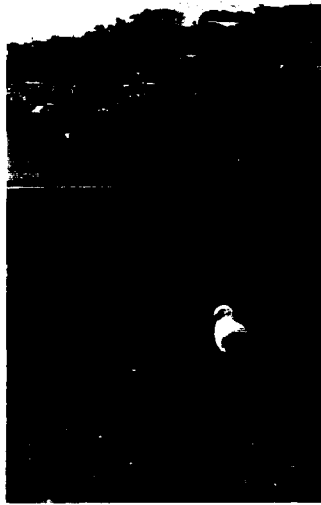
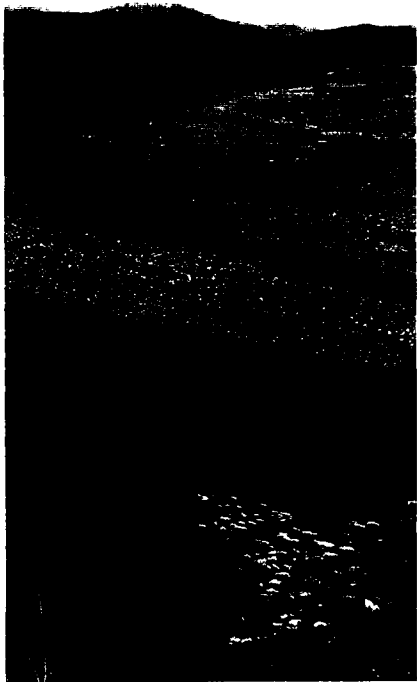
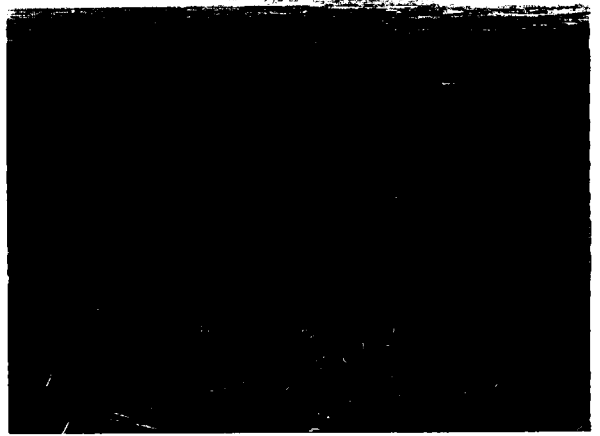
There are a number of references in the Act to ecology, habitats and plants and animals including:

- requiring of a land use consent (S9) for any 'destruction of, damage to, or disturbance of, the habitats of plants, or animals if this contravenes a rule in a district or regional plan (existing or proposed).
- an assessment of effects on the environment prepared under the Fourth Schedule must consider the physical effect, including landscape and visual; and the effect on ecosystems including effects on plants or animals and any physical disturbance of plants in the vicinity.

Nature conservation is of particular significance in Southland with large areas of the District in National Parks, Reserves etc. Nature conservation is the dominant land use in Fiordland and Stewart Island, extensive areas of the Mountains, substantial areas of the Coast, Hills and Catlins and in pockets on the Plains.

The Southland Conservancy of Department of Conservation is preparing a "Conservation Management Strategy" for its area of interest. This encompasses the whole of Southland District, and will be a complementary document to the District Plan. There has been close liaison with DoC in preparing this ecology and landscape report to ensure that there is compatibility where possible and appropriate. The Department is limited in the activities it can undertake because of finances; because of that, it focuses on issues and areas of regional or national significance. The District Council is responsible for issues and areas of local nature conservation insignificance.

The Resource Management Act is not a Nature Conservation charter. It is important to remember that the Act recognises that resources are required for the community to function.



2.2 The Resource Management Act, the Coast, and Water

Two particular natural features receive detailed attention in the Resource Management Act, and these must be considered in the District Plan.

2.2.1 The Coast

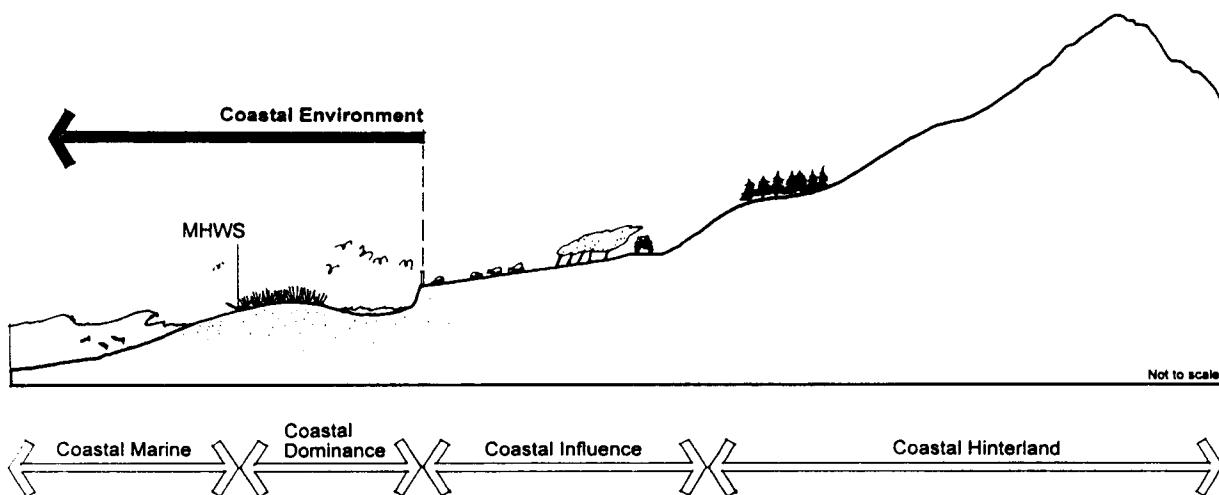
The importance of the coast in terms of ecological, landscape, cultural, spiritual, recreational and economic values is recognised in the Resource Management Act (1991).

Section 6 of the Resource Management Act includes specific mention of, as a matter of national importance, the 'preservation of the natural character of the coastal environment and protection from ... inappropriate subdivision, use and development', and the 'maintenance and enhancement of public access to and along the ... coastal marine area'.

A number of agencies have differing responsibilities within the coastal environment. The Regional Council is responsible for receiving and assessing restricted coastal activity applications, however the Minister of Conservation must be consulted and makes the final decision on the application. The Regional Council must prepare a regional coastal plan for matters specified in Part I of the Second Schedule, RMA.

The Department of Conservation in conjunction with the Regional Council is responsible for administering controls over the coastal marine area, the Ministry of Agriculture and Fisheries for aquaculture, and Ministry of Transport for navigation and safety. The District Plan deals with the coastal environment in relation to land use including sub-division.

The New Zealand Coastal Policy Statement (1992) (currently in draft form) is a national policy statement with which a district plan must not be inconsistent. It relates to national priorities in relation to the coastal environment and specifies matters which should be included in regional and district plans. The policy recognises the importance of the coast in terms of social and landscape ecological values while allowing the use, development and protection of the coastal environment. The coastal environment is defined as 'an environment in which the coast is usually a significant element or part. The coastal environment will vary from place to place depending on the extent to which it affects or is (directly) affected by the coastal processes and the management issues concerned ... '. In this study we have used the following description of the land to marine transition.



Coastal Cross Section

The Coastal Landscape Character Type defined in this study (see Section 6) includes the *coastal marine area* and *coastal dominance zone*. In simple terms this boundary is the point at which a lay person approaching the sea is likely to start saying they are on the coast eg. presence of sand-dunes, extensive marine vegetation or wildlife, dominant views of the sea and coastline etc. The *coastal influence* zone may still contain views to the sea, vegetation may be wind-shorn and some coastal vegetation or fauna may be present, but to most lay people it would not be described as coastal. The *coastal hinterland* includes inland areas which may have an effect on the coast eg. Mountain screes which are the source of silts carried to the sea.

The coast of Southland has a wide range of values.

2.2.2 Rivers, Lakes and Wetlands

There are numerous references to rivers, lakes and wetlands in the Resource Management Act. The definition of sustainable management (S5) makes a specific reference to 'safeguarding the life-supporting capacity of air, water, soil and ecosystems'. Other sections are listed in Volume 2. The question of esplanade reserves alongside rivers and lakes is an issue of concern to Southlanders particularly recreationalists and anyone wishing to subdivide land. Under the Act an esplanade reserve (generally 20 metres) is required along the mean high water springs of the sea, along the bank of any river (bed of greater than 3 metres) and along the margin of any lake (of bed greater than 8 hectares) when land is subdivided. The Resource Management Amendment Bill proposes to alter the provisions. The situation is set out fully in Volume 2.

2.3 Activities and Effects

Section 2.1 shows how the Resource Management Act deals with some specific activities (or doesn't deal with them!). It emphasises that the Act is concerned with "effects", irrespective of the activity causing them. Some of the sorts of effects that are mentioned later in this report are discussed briefly here. By looking at the effects of proposals we can also consider the positive aspects or opportunities to improve or enhance the landscape or ecological values.



Effects

Clearance of land for farming or forestry can cause:

- damage to edge of remnant habitats
- potential for accelerated soil erosion
- potential siltation of waterways
- reduction of native habitats to size which is too small to survive
- potential for weed and stock access to native vegetation

2.3.1 Changes in water quality (pollution)

Adverse effects can occur in a number of ways:

- directly into a waterbody or waterway from a single input (point discharge); by accident (eg vehicle spill) or intentionally (eg dairy shed cleaning)
- through the stormwater system into a waterbody or waterway; by accident or intentionally (eg urban stormwater outlet)
- by general run-off from the land surface; from farmland, roads and urban areas (see below)

Pollution can be in the form of toxins which directly or indirectly kill plants and animals. This includes humans. It can also include sediments or silt in the water which makes it cloudy, affecting plant growth and animal feeding and respiration. Sediment can come from sources such as erosion in heavy rainfall, which are accelerated by activities which disturb the ground.

Water quality can be improved by:

- use of buffer zones in which vegetation can filter out polluting substances
- use of silt traps or ponds in which sediments can settle out
- fencing waterbodies and watercourses to keep stock out

The District Plan can influence water quality issues through management of land uses.

2.3.2 Changes in water quantity

This covers the changes in flows, levels, and patterns of flood and low flow in waterways and waterbodies. Unnatural fluctuations can cause changes in water temperature and chemistry which affect plant and animal survival or can cause growth of unwanted species (eg algae)

Changes can be caused by:

- extraction of water for irrigation, hydro power generation, domestic supplies etc
- discharges of water from industrial areas
- natural floods and low flow cycles

Since its change in land use which bring about many of these water quality changes, the District Plan can be used for management.

2.3.3 Effects of stock

Stock can have adverse effects on land and water ecosystems in a number of ways:



Grazing or cropping right up to the edge of a waterway increases the potential for bank erosion and speeds up run-off of water from the land. Fencing and riparian planting can protect waterways.

- on water quality, through run-off from manured ground, runoff may contain residues from animal health chemicals; this is of concern to human health where water is extracted for potable supplies
- on vegetation at the edge of and in waterways by trampling and eating some plants and stopping growth of others; deer and cattle cause more damage than sheep
- on river and stream banks, by trampling which breaks down vegetation and soils encouraging erosion
- on native forest and shrub vegetation, by eating young plants and new growth, so preventing growth of replacement plants
- on native grasslands and wetlands by trampling which breaks up the structure of tussocks and damages soils structure, and by grazing which eventually kills many native plant species

2.3.4 Effects of roads and tracks

These effects can be in the construction or operational stage of a road or track:



Road and roadside maintenance can damage small pieces of native vegetation. These roadside remnants can have ecological value particularly where they are close to other similar areas.

- damage or destruction of native vegetation
- breakup of large, intact areas of vegetation
- damage to soils, which can lead to erosion and siltation of waterways
- visual intrusion if badly sited
- damage to waterways if crossings not carefully constructed
- damage to roadside vegetation during construction or maintenance work

2.3.5 Effects of urbanisation

Cities, towns, settlements and the services they need can have adverse effects on the environment:



Urbanisation increases the potential for rubbish dumping in sensitive environments. Suitable sites have to be selected on environmental and community-use criteria.

- through effects of roads (see above)
- through stormwater effects (see above)
- through waste disposal needs, and location of rubbish dumps, landfills, transfer stations, sewage treatment plants etc

2.4 Landscape Character types, units and areas

Southland is a very large district (see map) containing a wide range of landscapes.

Different landscapes are under very different pressures for change, and have different characteristics and qualities. The District has been divided into seven broad landscape character types for which different management can be used.

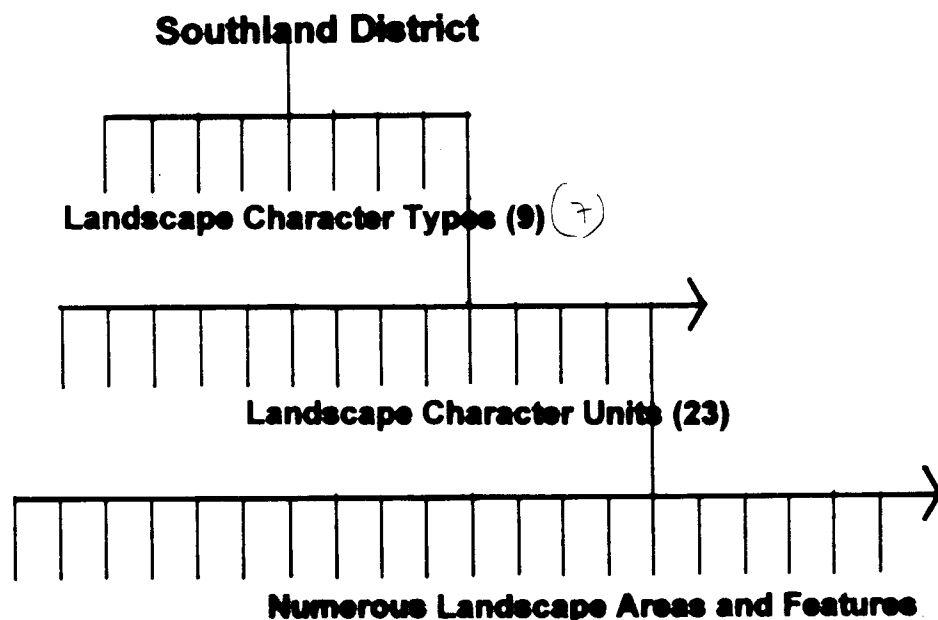
- Fiordland
- Stewart Island
- Coast
- Mountains
- Hills
- Catlins
- Plains

Each of these types has a readily identifiable character. However, within each there are many variations in their ecology and landscape.

For this study, each 'landscape character type' (with the exception of Stewart Island and the Catlins) has been subdivided into 'Landscape Character Units'. These units have a consistent character, reflecting in particular their landform, vegetation and land use patterns. Those landscapes are described in the next chapter and are illustrated in Figure 2.

Within some units there are features or areas that stand out from the rest of the unit but are not of sufficient scale or significance to warrant their own unit classification eg. Forest Hill. These landscape features and areas are identified, mapped and briefly described.

With this landscape breakdown there is a choice of appropriate policy scale based on the resource.



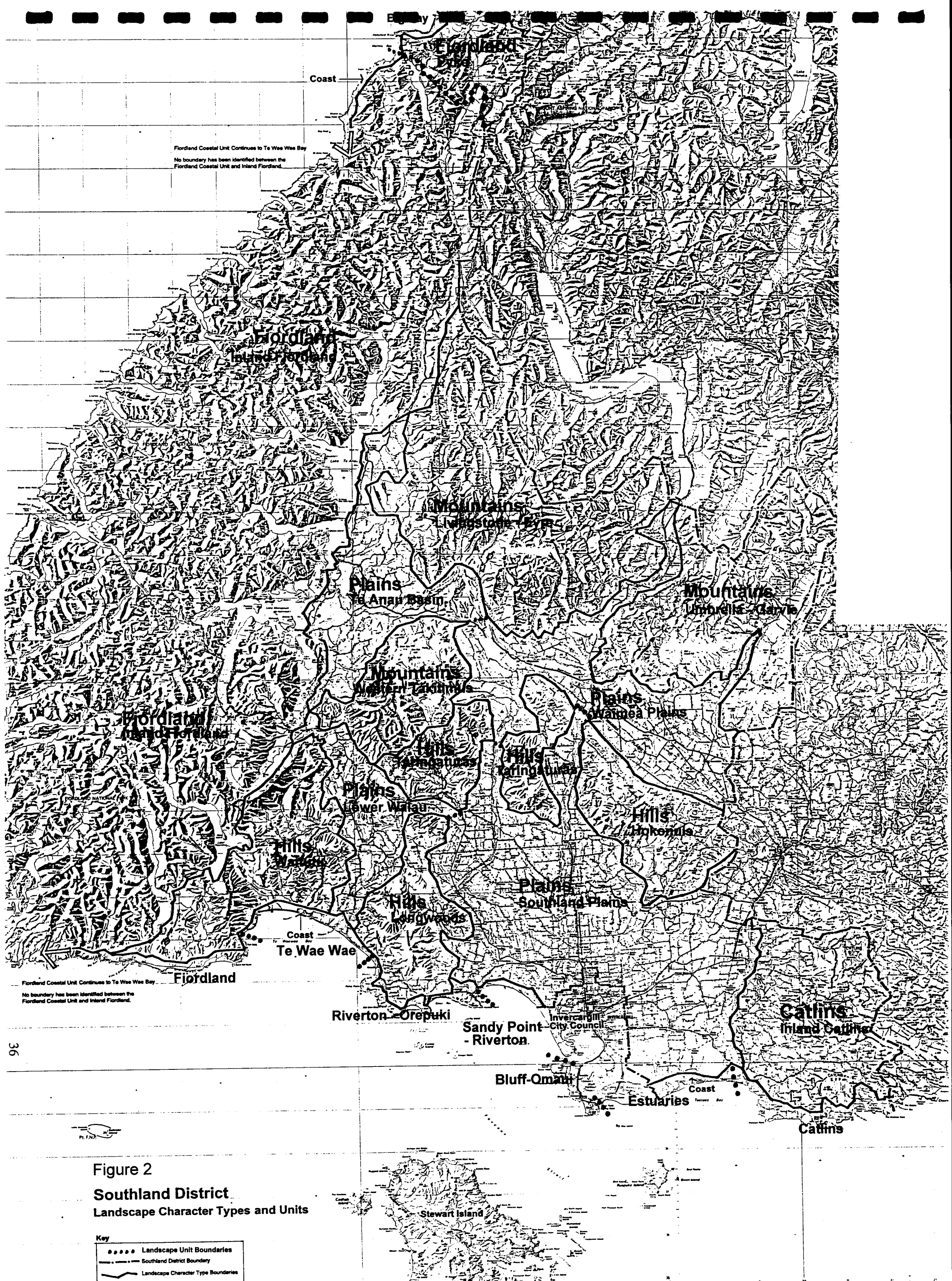


Figure 2
Southland District
Landscape Character Types and Units

Key

- Landscape Unit Boundaries
- Southland District Boundary
- Landscape Character Type Boundaries

SCALE 1:250 000

0 5 10 15 20 25 30 Kilometres

NZMS 262 SHEET 16
 INVERCARGILL

2.5 Using Landscape Character to Administer The Act?

The landscape character type breakdown allows a flexible resource-based approach to planning. For example, much of the Fiordland and Stewart Island Types are currently owned by the Crown and managed by the Department of Conservation. The District Council's role in these landscapes will reflect this. The Coast is subject to joint responsibilities (primarily the Department of Conservation, Southland Regional Council, Southland District Council) which will require a consistent and co-operative management approach to be adopted. In other landscape character types the Council's role will reflect the level of modification and current development pressures.

Under past planning legislation, particular significance was placed on the exact location of boundaries. This was crucial since zoning underpinned the district schemes. However, zoning is likely to lose much of its significance in the District Plan, under the Resource Management Act, as the emphasis moves away from managing activities towards managing wide-ranging effects.

Ecosystem boundaries are often hard to define, and rarely correspond to jurisdictional boundaries. The resource based approach used in this study gives greater importance to the characteristics and values of the 'core' areas than to the definition of precise boundaries between areas.



C THE LANDSCAPE CHARACTER TYPES

3 Introduction

3.1 Layout of Type and Unit Descriptions

In this section of the report the individual landscape character types and units are dealt with in detail. Each type can be looked at separately, since any cross-boundary or District-wide matters are repeated for each type.

The Resource Management Act specifies the contents of District Plans (S75). To be consistent with S75, information on each landscape character type is presented as follows:

General description of type: this provides a general background to the landscape ecology of the area, and shows why particular units have been grouped into the type. Any matters which apply to all units are mentioned here.

Unit description: a summary of the landscape and ecological character, mentioning land-uses and any cross boundary matters

Special features and areas: within a unit there may be significant features (such as a limestone outcrop), or areas (such as a settlement), which are not typical of the bulk of the unit. Significant ecological sites are listed in Volume 2.

Values: here, the important things in the unit are summarised; this includes landscape and ecological values, as well as cross references to matters of European and tangata whenua significance. The landscape and ecology values are based on the principles discussed in Section 1.3.

Issues: this provides a listing of the landscape and ecology matters which are of concern in the unit; the topics have been arrived at from submissions to Regional and District discussion documents, consultation with some local groups and organisations, feedback from Council staff and the judgement of consultants.

A **desired environmental outcome** has been established for each landscape type. It is a 'vision' for that particular landscape's future.

From this, **objectives** are derived. These are operational measures from which the progress towards the desired environmental outcome can be measured (ie. a type of performance indicator). Objectives have been derived mainly from sections 5, 6 and 7 of the Resource Management Act.

A **policy** deals with how to achieve an objective. More than one policy may relate to a specific objective.

Mechanisms are ways of working through the objectives and policies.

Monitoring is necessary to ensure that:

- (a) the condition of resources is known
- (b) the objectives, policies and mechanisms are achieving their purpose, and
- (c) that consents conditions are being implemented. Generally approaches to monitoring will be the same for all landscape types and these are briefly set out in Volume 2.

The remainder of Part C contains an analysis and evaluation of the landscape of Southland District. The analysis and evaluation has been extended to produce examples of desired environmental outcomes, objectives, policies, and mechanisms which could be incorporated in the District Plan. These are examples only, developed with the aim of indicating how this study can be implemented. The structure of this section of the report provides the opportunity for the findings of various other studies (ie transportation, soils) to be incorporated.

4 FIORDLAND LANDSCAPE CHARACTER TYPE

This is a unique New Zealand landscape with steep, granite mountains, large glaciated valley systems and largely unmodified vegetation patterns. There are few permanent settlements, although there have been some historically significant visits to and journeys through, the area.

Fiordland National Park occupies almost half the land area of Southland District and this forms most of the Type. At the north end, a relatively small block of land north of the Park up to the boundary with West Coast Region has been included. It shares a high degree of naturalness and remoteness with the rest of the Type.

These areas are important to the rest of the District because of their influence on its climate as well as through the large numbers of visitors attracted to them. The District Council has responsibility for resource management on private land in the Type. It also has an interest in quality of the environment there which has cross-boundary influences through much of the District (eg. through visitor impacts, effects on water quality).

4.1 Inland Fiordland Unit

4.1.1 General Description

All of this unit is in the Fiordland National Park and is described in detail in the Park Management Plan. It is a unique part of New Zealand having rock types, landforms, habitats and landscapes found nowhere else in such a combination. The drama of this landscape is unmatched elsewhere in New Zealand.

Some of the animals have been introduced, either intentionally (eg deer) or by accident (eg stoat), and there are some introduced plants in the vegetation around the edges.

The boundary of this unit is taken along the eastern shore of Lake Te Anau, excluding the township; however, there are many cross-boundary concerns at this point. State Highway 94 from Te Anau to Milford, the road into Deep Cove, and the road down the Hollyford valley are the only vehicle access routes into the unit. There is some modification of lake levels for hydro-electric power production at Monowai and Manapouri. The coastal environment is treated separately under the 'Coast landscape character type' although in landscape and ecological terms the transition is very gradual and not clearly defined.

4.1.2 Special Features and Areas

See Fiordland National Park Management Plan

4.1.3 Landscape Ecological Values

The things which are important in this Unit are:

- the internationally significant landscape - reflecting its vividness, naturalness and coherence
- the highly sensitive landscape
- the peace and serenity (absence of human intrusions) particularly on the lakes and in many of the fiords
- the high number of visitors, (especially overseas tourists) concentrated into parts of the unit
- the presence of a State Highway through the park which enables people to have easy access to part of the park
- the environmental awareness and high expectations of many of the visitors to the unit
- the extent and naturalness of the vegetation cover and habitats
- the intact connections between land and sea
- the rare species of plants and animals
- the unusual rock types and landforms

4.1.4 Issues

While most of this unit is managed by DoC, there may be concerns related to the private land, the road area or Te Anau township which the Council will need to address. The tourism potential of the area is of great importance to the District, so that the Council may seek to work with the Department on some issues.

The issues identified for this unit include:

- retention of wilderness and ecological values, whilst encouraging and enhancing appropriate tourism and recreational use
- threats to native birds through presence of predator species
- retention of lake qualities while developing activities in and around Te Anau township (cross ref Te Anau Basin unit)
- management of inter-use conflict as recreational uses of the surface of the lakes increase
- retaining landscape and ecological values if any essential buildings or structures are required



Fiordland creates a dramatic backdrop to the Te Anau basin.

4.2 Pyke Unit

4.2.1 General Description

This is the small area of land which lies within the Fiordland Landscape Type but outside Fiordland National Park. It is almost all in Pyke Forest, which lies between Mt Aspiring National Park and the coast. The lowland areas are quite flat and swampy with forest and shrub cover, rising through beech forest to the bare Red Hills inland. The forest cover has not been logged although there have been mining and some farming activities in the area. There are some blocks of private land, but most is Crown owned.

4.2.2 Special features and areas

Red Hills (parts within District)

4.2.3 Landscape Ecological Values

The important things about this unit are:

- the landscape's natural values
- Red Hills unusual geology and associated plants and animals
- continuous vegetation sequence from lowlands to mountains
- naturalness of vegetation and habitat

4.2.4 Issues

This unit is mostly under the management of DoC; however, there is some private land about which the Council may be concerned. It is one of the more remote parts of the South Island, and has many affinities with the West Coast (eg access). Change in the area could come from increased mining activity or tourism development.

The issues identified for this unit include:

- the management of conflicts between natural values and mining activities to ensure that landscape and ecological values are retained
- retention of landscape and ecological values whilst encouraging and enhancing appropriate tourism and recreational use

FIORDLAND LANDSCAPE CHARACTER TYPE

4.3 Desired Environmental Outcomes

The preservation of the existing outstanding landscape and ecological values, and the provision of facilities for appropriate tourism and recreation development.

4.4 Objectives

Preservation of natural character and wilderness qualities of lakes, rivers and their margins.

Protection of the outstanding qualities of the Fiordland and Pyke landscapes from inappropriate use and development.

Protection of significant indigenous vegetation and habitats and in particular the integrity of ecological systems.

Maintenance and enhancement of public access where the benefits outweigh any damage to ecosystems and landscape values.

Promote tourism and recreation development where these encourage public enjoyment and engender respect for the environment.

4.5 Policies

- to ensure that development and activities under District Plan control have regard to the Fiordland and Mt Aspiring National Park Management Plans
- to discourage development involving substantial structures (see Mechanism 7) unless it is demonstrably beneficial to the public's enjoyment of the Park, will not adversely affect the environment and no appropriate alternative locations occur beyond the park
- to assess any proposed development on a case by case basis
- to ensure that any amenity planting associated with development avoids the use of plants that have the potential to become weed species
- to work closely with the Department of Conservation to identify cross boundary issues between the Conservation Estate and adjacent areas
- to require a high standard of siting and design to minimise the adverse impact of structures where these are visible from the Parks or approaches to the Parks
- to ensure that priority is given to the protection of landscape and ecological values in the approval and control of all development
- to cooperate with other agencies on any studies of existing or proposed developments eg. Milford Sound, Cromarty

4.6 Mechanisms

- 1 Identify plants which have the potential to become weed species and use this as a criterion when assessing resource consent applications.
- 2 Establish a liaison group - Department of Conservation, Regional Council and District Council, to deal with cross boundary issues and management.
- 3 Establish design guidelines for development within the National Park, in conjunction with the Department of Conservation, particularly focussing on the avoidance of adverse visual impacts (as viewed from within the Park and its approaches).
- 4 Place conditions on resource consents (ie.a bond, covenant) to ensure the design guidelines or consent specific conditions are adhered to (S108(1)(b), (5)(a)).
- 5 Prepare performance standards (ecological and visual) to ensure that the natural environment of the Fiordland type is not degraded.
- 6 Liaise with the Department of Conservation to carry out an ecological evaluation of the Fiordland landscape type and creation of a multi-agency data base which identifies areas of local, regional and national significance, the attributes which give them this status, current methods of protection (if any) and land ownership, values/areas of significance to tangata whenua.
- 7 Develop a set of criteria against which the appropriateness of development can be assessed within the Fiordland type. This must account for ecological sensitivity, visual impact of development, interconnections between landscape and ecological connections and should be undertaken in conjunction with the Department of Conservation.
- 8 Develop a set of criteria against which it can be judged whether or not a structure is substantial criteria to be included (at a minimum) include height, bulk, colour, and the scale of the building in relation to setting.

5 STEWART ISLAND LANDSCAPE CHARACTER TYPE

5.1 Stewart Island Unit

5.1.1 Introduction and General Description

All of Stewart Island is dominated by the sea, and no division has been made between coast and inland parts. The influence of the oceanic climate is felt throughout the island, and views of the sea, cliffs, dunes and islets are seen from almost everywhere. The islands immediately offshore (eg Ulva, Muttonbirds) are included in the unit.

Most of the Island is in Crown Estate, managed by the Department of Conservation. The foci of District Planning concerns are around Halfmoon Bay and the blocks of private land around Port Adventure. The economy of the Island has always been based on its natural resources - fish, shellfish, trees, minerals, natural history and landscape.

Native forests and shrublands are the dominant vegetation throughout the Island, although there are dune and tussocklands at Mason Bay, alpine vegetation on the mountains, and gums and pines closer to the township. With the exception of those buildings immediately around the Bay, most buildings settle into the bush, creating a unique Southland township character. Although their construction has been achieved with varying degrees of landscape disturbance, vegetation still visually dominates from both within the township and when viewed from beyond. The wharf area of Oban is a lively area, with fishing, recreation and passenger ferry boats in the water and tourist, fishing and other commercial activity on the land.

A strong characteristic of the Island's landscape is the continuity of bush from ridges right down to the water's edge. Where this vegetation occurs in combination with clear sandy beaches the landscape is particularly charming.

Tourism is growing, reflecting an increase in interest throughout the world in plants, animals and "unspoilt" or remote places. Stewart Island offers the tourist the opportunity to see large numbers of seabirds, unusual bush birds and a largely unmodified flora, as well as spectacular scenery. The challenge is to provide for the needs of the residents while retaining the quality of the environment.

5.1.2 Special Feature and Areas

Protected areas

Paterson Inlet

Halfmoon Bay (ie the developed area including Oban)

5.1.3 Landscape Ecological Values

The important things about Stewart Island are:

- the outstanding landscape features of the island - mountains, bush, coast etc
- the visual and ecological sensitivity of the small scale coastal landscapes
- the delicate visual balance of buildings and bush around Halfmoon Bay
- the view of Oban from the Bay
- the "fishing village" character of Oban
- the rural character of urban roads
- the diversity of the plants and animals
- the numbers of seabirds and the health of their populations
- the diversity and health of the coastal and marine plant and animal communities
- large areas of intact plant community sequences from coast to mountain tops
- the presence of highly visible native birds (eg NZ pigeons) in the residential area

5.1.4 Issues

The landscape of Stewart Island is outstanding, and supports significant plant and animal communities. These attract visitors from around the world at the same time as supporting the community in Halfmoon Bay. The residents value the character and quality of their life-style and are looking for ways to allow them to retain those values at the same time as develop opportunities to bring economic sustainability.

The issues identified in Stewart Island include:

- the continued conservation of the island's landscape and ecology
- the sensitivity of the coastal environment to urbanisation
- the inappropriate location of some land use activities
- the retention of a balance between bush protection and further housing development in and around Oban
- the refinement of roadside maintenance to conserve soil and vegetation cover
- the change in character of roads through straight line trimming of vegetation
- the limitations on growth of the township because of constraints on services
- the need to identify a strategy for further growth if service constraints are overcome
- the need to accommodate further commercial fishing or recreation shore facilities without compromising landscape and ecology values



The approach to Oban - note bush water relationship and dominance of vegetation.

5.2 Desired Environmental Outcomes

The protection of the island's outstanding landscape and ecology and the retention and enhancement of the character and quality of Oban township.

5.3 Objectives

Preservation of natural character of the Stewart Island coastal environment, its wetlands, lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development.

Protection of Stewart Island landscapes from inappropriate subdivision, use and development.

Protection of all natural vegetation, habitats and ecological processes.

Maintenance and enhancement of public access where the benefits of public enjoyment outweigh any damage to ecosystem and landscape values.

Recognise the individuality of island community and culture.

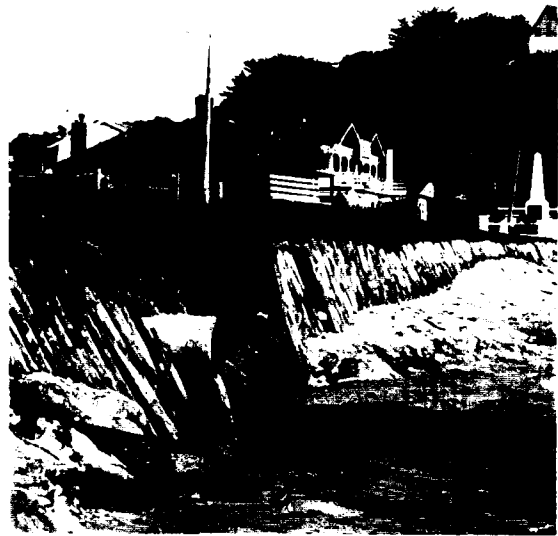
Retain and enhance the unique character and qualities of Oban township.

5.4 Policies

- to ensure that development and action under District Plan control have regard to Management Plans prepared under the Reserves Act (1977).
- to prepare detailed landscape management guidelines for Oban incorporating community views, tourism and recreation trends and the need to conserve the townships unique character and qualities.
- to recognise that large scale development is inappropriate in the existing small scale landscape.
- to recognise that subdivision beyond the currently modified areas near to the township is inappropriate.
- to require a high standard of siting and design - with the objective of minimising adverse landscape and ecological impact, where structures are proposed.
- to identify and protect critical views in and around the township.
- to retain the bush that appears on the skyline when viewed from the bays.
- to avoid the adverse effects of roading and services on soils and vegetation.
- to provide advice on the protection and enhancement of vegetation within and around the township.
- to identify areas of coastal shoreline suited to on-shore facilities associated with marine activities.
- to minimise earthworks and vegetation removal within the township.



Retention of vegetation reduces impact of services etc



Problems at the Water's edge

5.5 Mechanisms

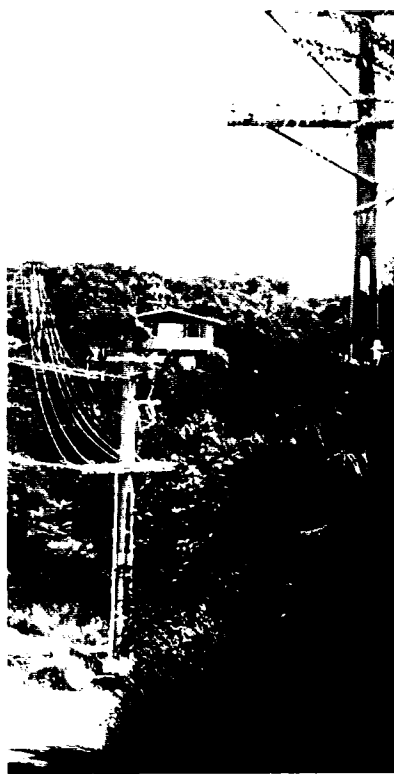
- 1 Establish a steering committee to initiate preparation of landscape management guidelines for Oban. Provide appropriate funding. Involve the Department of Conservation, Regional Council and District Council personnel, heritage authorities etc and all interested persons. This would have the dual purpose of reflecting the community 'vision' for the area, and educating people about of the sensitive nature of the environment.
- 2 Develop a database for the island detailing landscape and ecological values and sensitivity, areas of modification, protected land, land ownership, values/areas of significance to tangata whenua.
- 3 Investigate methods of protection for resources which have the potential to be irreversibly affected as a result of current management practices/development ie. conservation agreements, kaitiakitanga.
- 4 Place stringent conditions on resource consent applications to minimise earth working and vegetation removal.

- 5 Establish performance standards and environmental bottom lines to ensure the natural environment of Stewart Island is not degraded. These should be included in the District Plan and incorporated as conditions on resource consents.
- 6 Require community involvement in all resource management decisions and plan preparation.

Informal edges retain natural dominance



Houses and powerlines can dominate

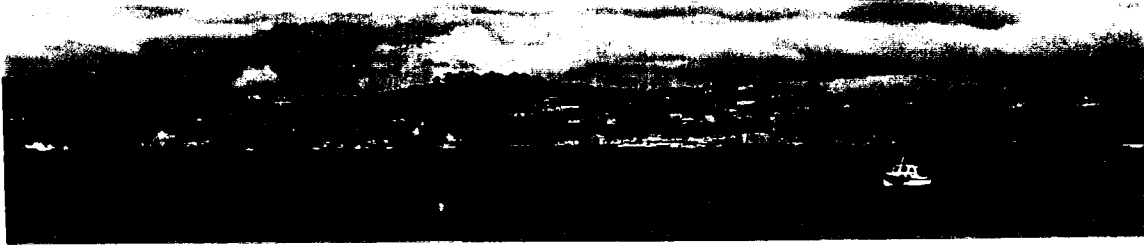


Inappropriate location of houses can result in loss of natural character



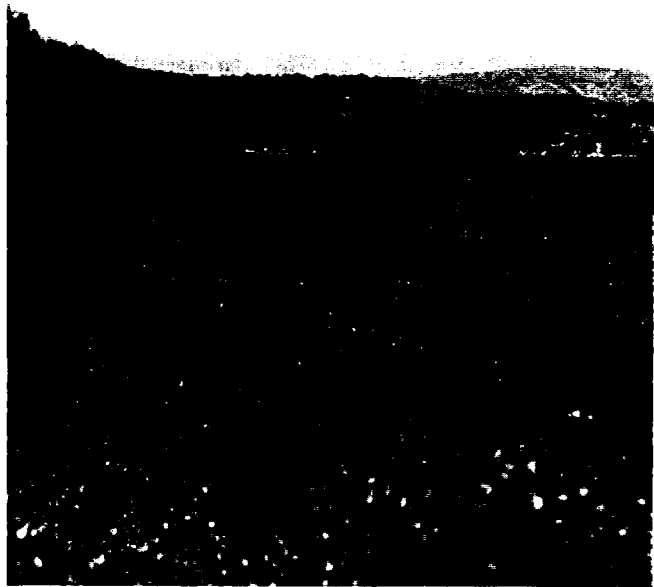
Stewart Island - an outstanding landscape and ecological resource

Oban housing is close to visually dominating the vegetation cover (as occurred in the past). Further planting would be valuable.



The vegetation -
water relationship
is vital.

Buildings reflect their purpose.



Stewart Island - natural character.

6 THE COAST LANDSCAPE CHARACTER TYPE

Introduction

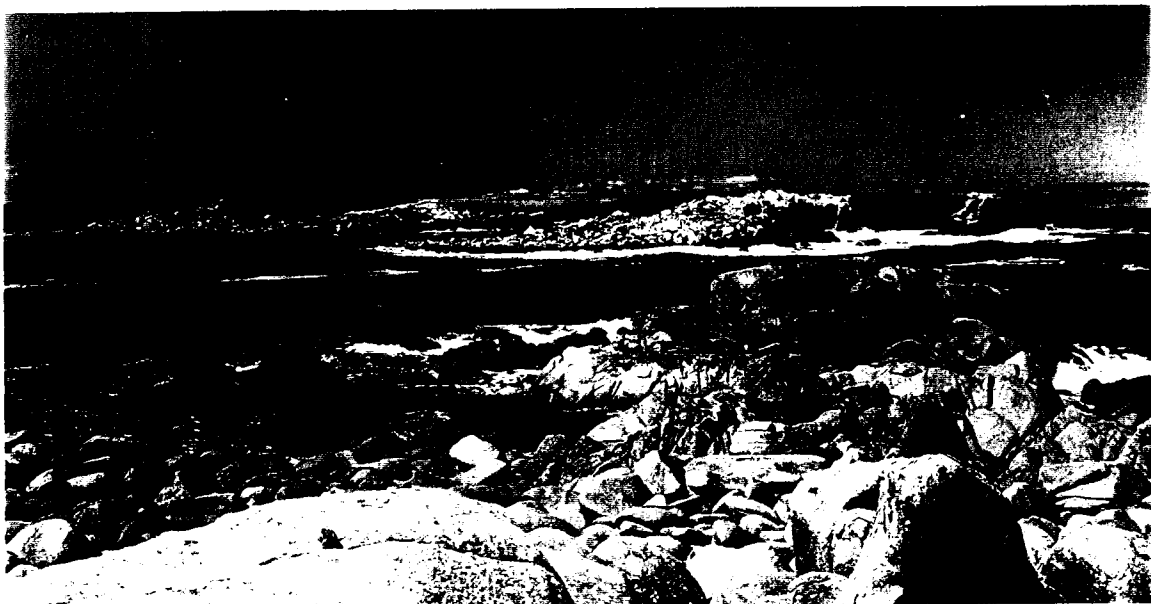
We have defined "the Coast" as "the area in which coastal factors are dominant". Immediately inland there may still be some coastal influence for example from salt spray or views to the sea, but they are no longer dominant. Further inland still, there are processes which will affect the coast, for example erosion producing silt which is carried in rivers to the sea. The landscape and ecological interconnections are readily apparent. To manage the resource wisely it is important that the District Plan is well integrated with the Regional Policy Statement and the New Zealand Coastal Policy.

There are also strong connections between the management of the coast and the health of sea fisheries (because, for example, estuaries are nursery areas for fish caught at sea).

The Department of Conservation has carried out a national coastal resource inventory, which provides a good picture of the conservation values of the Southland coast.

The coast is extremely varied, ranging from high cliffs to low dunes and estuaries, reflecting the different rock-types and degrees of exposure to wind and wave action. There are strong connections between the character of the coast and of the land immediately inland. Much of this has been developed into pastoral land, although the natural character of most of the coast remains. It is a focus for recreation and of the fishing and shellfish industries.

Sea-level rise and coastal dynamics are common issues for all parts of the coast.



6.1 Catlins Coast Unit

6.1.1 General Description

Diversity is the key characteristic of the Catlins Coast unit. From the District boundary at The Brothers Point to Fortrose there are rocky reefs and high cliffs with estuaries at Waikawa and Haldane, and long beaches and dunes, such as Porpoise Bay and Waipapa Beach. Immediately behind the dunes, there is a series of coastal lagoons. The quality of the coastal landscape reflects the largely unspoilt appearance of the coastline and the links inland to the Catlins Hills Unit. These coastal lagoons provide important animal habitats. Coastal shrublands, together with those along the coast north into Otago, form a major breeding area for the endangered yellow-eyed penguin.

Throughout, the coastal vegetation is windswept, and native remnants of shrubs and former forest cover are scattered along the upper shore.

There is evidence of early Maori use of the coastal resources in this area, as well as early European settlement. Stock graze down to the foreshore in many places, and "development" of grasslands close to the sea continues. The area is visited for fishing, shooting, educational trips (eg Curio Bay), and for general coastal recreation. Waikawa Harbour has a small fishing fleet and is the largest settlement in the Unit.

6.1.2 Special Features

Much of the Catlins coast has high value for conservation, because of its diversity, naturalness and landscape quality. In particular, areas around Waikawa Harbour, Curio Bay, Haldane, Waipapa Beach and Fraser's Beach are significant for plant and animal habitats. There is a scenic reserve at Haldane and a scientific reserve protects the fossil forest remains at Curio Bay.

The Waikawa - Niagara area and Fortrose are the most densely settled parts of the coast and provide a social focus for the resident and holiday communities.

6.1.3 Landscape Ecological Values

The significant things about the Catlins Coast Unit are:

- the diversity and natural appearance of the coast - the coast is a series of small, varied landscapes
- the visual linkage between forested land and the coast
- the (growing) popularity of the area for recreation and tourism, including overseas visitors and the opportunities for this to increase
- the ecological connections between the interior, the coastal edge and the sea (eg food chains, bird movements, fish migrations)
- the large number of significant sites for a range of ecological values
- the scattered and isolated nature of settlement



The visual link between the forested land and the coast.

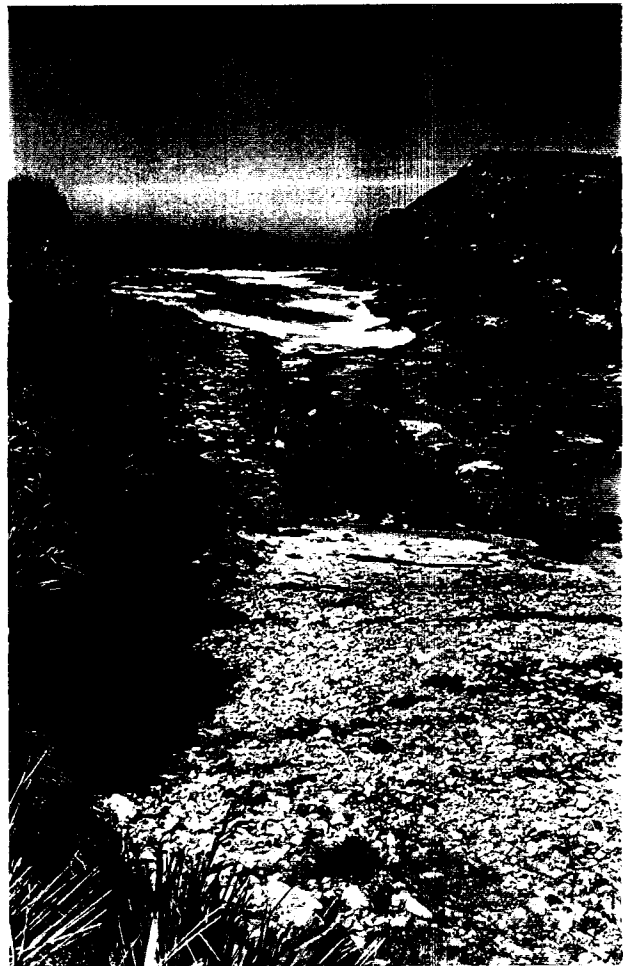
- the presence of rare and endangered species

6.1.4 Issues

The Catlins coast is one of high landscape quality with attributes of vividness, naturalness and coherence. It has many valuable and healthy areas which support a range of plants and animals. It is very sensitive landscape and a popular place for visitors; much of this attraction comes from the strong links between the sea, the shore and adjacent farmland. There is potential for inland activities and coastal developments to break those links.

The issues identified in this unit are:

- the small scale nature of the landscape makes it sensitive to change
- threats to native vegetation with effects on species using the habitat (eg yellow-eyed penguin)



Native vegetation - the habitat of many native animal species.

- threats of siltation in streams and estuaries, through the effects of changes in management of catchments (cross ref Inland Catlins unit)
- retention of landscape quality and ecological values, whilst encouraging and enhancing tourism and recreational use
- the unaesthetic appearance of bush clearance in adjacent areas
- threats to coastal wetlands and estuaries from silt, and possibly toxins, from developments and normal surface run-off (eg roads)
- access to and along the coast



6.2 Estuaries Coast Unit

6.2.1 General Description

The stretch of coast between Fortrose and Invercargill is characterised by large estuaries and lagoons, sand spits and bars and low coastal vegetation. It is an impressive, horizontal, isolated landscape with wild and windswept qualities. The only settlements east of Invercargill city are scattered crib communities on Awarua Bay road and at Waituna.

Agricultural development comes close to the shore for much of this stretch, so that the band within which coastal factors dominate the landscape is often very narrow. Water, in the form of wetlands, lagoons, estuaries and the sea is a strong feature of this Unit.

The coastal habitats are important for birds and fish, as well as unusual turf plant communities. Recreational fishing and shooting is popular, with cribs at access points, such as Waghorns's Road at Waituna. Tiwai Smelter lies within the Invercargill city at the western end of the Unit and is the dominant structure, visible from long distances.

6.2.2 Special features

(note: several of these areas are administered by Invercargill City - they are included here because of the environmental interconnections)

The Tiwai area is unique, being the only industrial complex in the Unit.

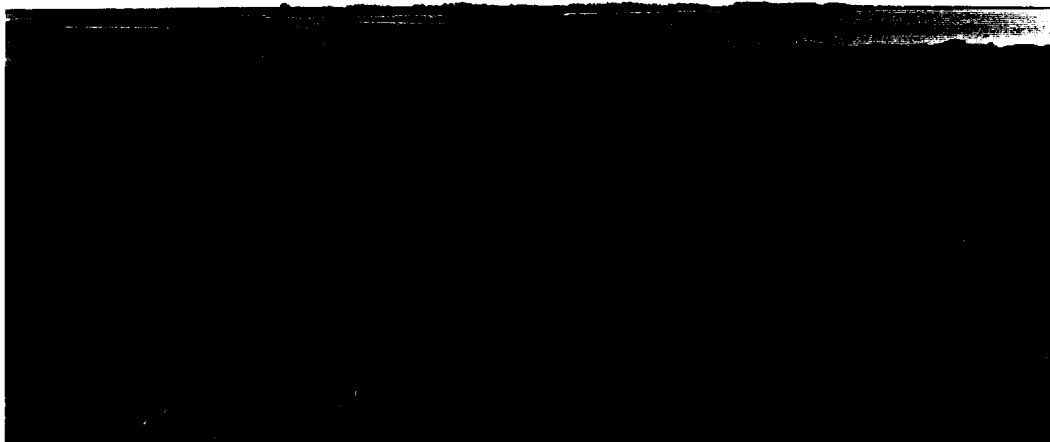
The New River Estuary, Bluff Harbour, Awarua Bay, Waituna Lagoon and Toetoes Harbour are of national and international significance because of their populations of birds, fish and plants - many of the birds using these areas migrate each year from the northern hemisphere, while some fish which spawn there travel into the Pacific Ocean.

The bars and spits which contain these waterways are also important landform features.

6.2.3 Landscape Ecological Values

The significant things about the Estuaries Coast Unit are: (not in any order)

- the sense of isolation and space caused by the open landscape and its natural appearance. Whilst many people do not find estuaries attractive they do have visual qualities of simplicity and naturalness



The Estuaries unit gives a strong sense of isolation in an area of dynamic natural processes.

- landscape simplicity is reflected in a visual sensitivity to change, although relatively few people visit the area
- the rarity of such an extensive complex of relatively unmodified lagoon landscapes
- the dynamic nature of the coast, with sand bars building up, water courses changing and seasonal animal movements and requirements
- the large number of significant sites for a range of ecological values



- the inter-connectedness of all the coastal waterbodies and wetlands (Awarua Plains Wetland Group) and the way they together form a single area of international significance for birds and fish
- the presence of rare and threatened species
- the sheer number of wading and seashore birds that congregate in the estuaries
- its use for fishing, with other recreation in Awarua Bay
- its role in the lives of migratory fish such as brown trout and whitebait
- its connections with the Plains Unit, particularly through drainage
- the closeness of parts of the Unit to large proportion of the Region's population, offering education, recreation, and tourism opportunities

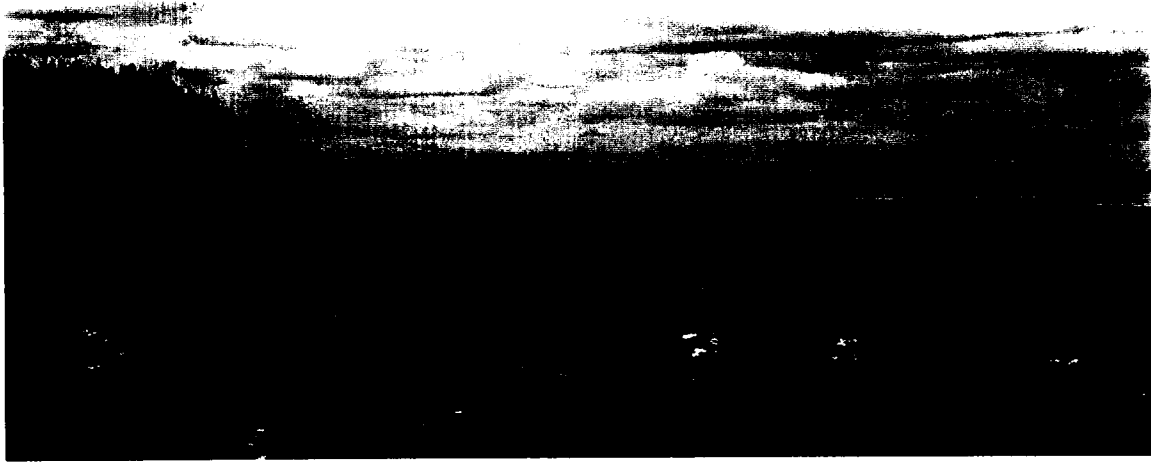
6.2.4 Issues

This unit has very high nature conservation values in areas which are currently not protected, and which could be affected by activities outside the immediate coastal area. Some threats also come from outside the Southland District boundary (ie within Invercargill City).

The issues identified in this unit include:

- threats to air quality from discharges from Tiwai Point (being monitored)
- threats to the coastal hydrology through drainage of wetlands (and possibly by lignite mining)
- loss of coastal wetland habitat through drainage
- degradation of the New River Estuary by activities affecting the Oreti, Makarewa and smaller watercourses (eg pollution, silting, flow changes)
- threats to natural values of the coast through industry which affects the New River Estuary (eg mining, chipmill, rubbish dump) (cross ref Invercargill City Plan)
- threats to sensitive plant habitats through spread of weed plants (eg gorse, pines)
- threats to sensitive coastal habitats through tourism and recreation

- threats to estuarine and shores from silt, and possibly toxins, resulting from developments or normal surface run-off (eg stormwater from roads)
- retention of scale and natural dominance in the landscape



6.3 Bluff-Omaui Coast Unit (cross ref Invercargill City Plan)

Although Bluff Hill and Three Sisters at Omaui are visible for some distance north, the whole of this unit lies within Invercargill City. These two hills, the cliffs, and the narrow neck of land between them are distinct from the rest of the coast - they are of volcanic origins, they have large windblown sand areas and their low windswept vegetation is more like that of Stewart Island than adjacent coasts. The unit includes Mokomoko Inlet and land on dunes north beyond Stanley Township Road.

There is a high proportion of native vegetation in this Unit, with shrublands on the coastal cliffs and headlands, and remnants of lowland forests on the sandhills which provide important animal habitat. Some, but not all, of these remnants are protected. Apart from the small settlement at Omaui, houses and industry are concentrated in and around Bluff township.

6.3.1 Special Features and Areas

Mokomoko Inlet

Bluff township

Ocean Beach

6.3.2 Landscape Ecological Values

The important things about this Unit are:

- the unusual vegetation and internationally significant plant species found on the hill and dunes
- the international significance of Mokomoko Inlet as part of the Awarua Plains wetlands group
- unusual bird and invertebrate species at Tiwai Point
- the volcanic landforms
- the windblown sands and the dunes at Three Sisters as unusual habitats and landforms
- the strong presence of the sea and coastal climate, and their overriding influence on the whole unit
- quality of coastal walking experience and potential to develop visitor numbers

6.3.3 Issues

This is a distinctive landscape unit which is a great natural asset to Invercargill City. It offers a wild and varied coastline as well as a high degree of cover by native vegetation. At the same time there is a commercial and industrial area at Bluff into which further developments could be focussed rather than expanding into the residential areas. The decline in some industries leaving some large buildings, such as the Ocean Beach Works, vacant provides opportunities to enhance the harbour area. Change in the unit could come through increase in tourism, expansion of the Tiwai complex or change in fishing industry.

The issues identified for this area include:

- threats to dune habitat and native vegetation through natural erosion and human activities (eg farming)
- future use of unoccupied works at Ocean Beach
- threats to shrublands, and forest remnants through location of buildings in or close to them, with potential for clearance and other edge damage
- threats to shore and coastal habitats, plants and animals through run-off from urban area (including industrial areas) into harbour
- threats to shore and coastal habitats, plants and animals through sewage disposal into harbour
- threats to estuary values through run-off from agricultural areas
- threats to native vegetation through spread of pine trees from forestry area
- threats to coastal habitats, plants and animals through reclamation in harbour area

6.4 Sandy Point-Riverton Coast Unit (cross ref Invercargill City Plan)

6.4.1 General Description

This long stretch of sandy beach from stretches immediately east of Riverton to the mouth of the New River Estuary (within Invercargill City Council) It is backed largely by farm land - once again the band of land still dominated by coastal factors is often narrow. Although the beach has a natural appearance, it has been modified - marram grass covers the foredunes and virtually all native vegetation cover has gone. This is likely to mean that most native insect life has also disappeared too. The exceptions are in the wetter hollows and around lagoons lying behind the beach, such as at Waimatuku Mouth.

For much of its length it is an isolated area, with few access roads. Fishing, shellfish gathering and shooting take place at a few locations. Closer to Invercargill shingle is extracted, casual beach recreation (eg kite flying) is popular and there are some houses.

At Riverton, part of the township lies between beach and estuary.

6.4.2 Special features and areas

At Waimatuku River Mouth there is a Wildlife Refuge (owned by Southland Fish and Game Council and QEII covenant over one of the string of lagoons along the coast.

Sandy Point Domain (in Invercargill City)

6.4.3 Landscape Ecological Values

The significant things about the Sandy Point to Riverton Unit are: (in no order)

- the quality of the isolated character of the beach
- the simple horizontal emphasis of the landscape with views to Bluff, Omaui, Stewart Island and the Inland Hills
- the recreational opportunities offered by the beach
- the Unit's connections with the Plains Unit, particularly through drainage into the rivers and Estuary
- the closeness of parts of the Unit to large proportion of the Region's population, offering education, recreation, and tourism opportunities
- the native vegetation and animals in Sandy Point domain

6.4.4 Issues

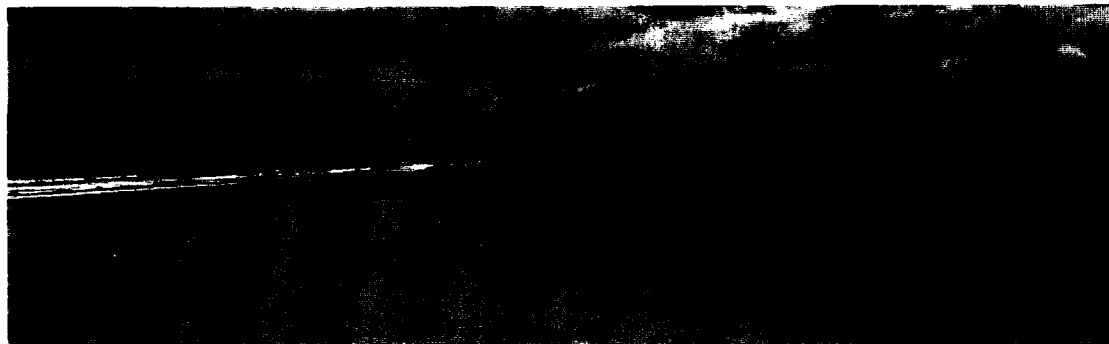
Much of the shoreline here has a natural appearance and wilderness quality which results from the lack of structures. The Estuaries, lagoons and wetlands are important habitats, but are mostly unprotected and subject to influence by factors from outside this Unit.

The issues identified in the Unit include:

- degradation of the Waimatuku Estuary by activities affecting the watercourses (eg agricultural pollution, silting, flow changes)
- threats to dune habitats through weed spread (eg lupins, pines)
- sensitivity of dune habitats to disturbance eg. from recreation, refuse dumping



Dune and coastal habitats are sensitive to disturbance.



- conflicts of interests within Sandy Point Domain (dealt with in Management Plan)(cross ref Invercargill City Plan)

6.5 Riverton to Orepuki Coast Unit

6.5.1 General Description

This section of coastline includes a variety of landforms. It is mainly rocky shore backed by grazed grassland or windswept forest, but there are long sandy beaches (eg Colac Bay), dunes (eg Kawakaputa Beach), and lagoons (eg Lake George). It includes the Jacob's River Estuary and its immediate margin.

It is an attractive landscape with small inlets contrasting with sweeping bays. It is a popular area for recreation, and collection of shellfish, and there are a number of small settlements. The unit together with the adjacent Longwoods Unit has a long history of human occupation based on resource use, from traditional Kaimoana to whaling, mining and farming. Riverton is a growing township with a fishing fleet; it is popular as a holiday base and as a home for people travelling to Invercargill to work.

The "Southern Scenic Route" along SH99 and with side visits to the coastal settlements such as Cosy Nook, makes this a highly visible part of the Southland coast to local and overseas tourists.

There is no formal protection for any of the coastal features, except the offshore Scenic Reserve of Pig Island.

6.5.2 Special Features and Areas

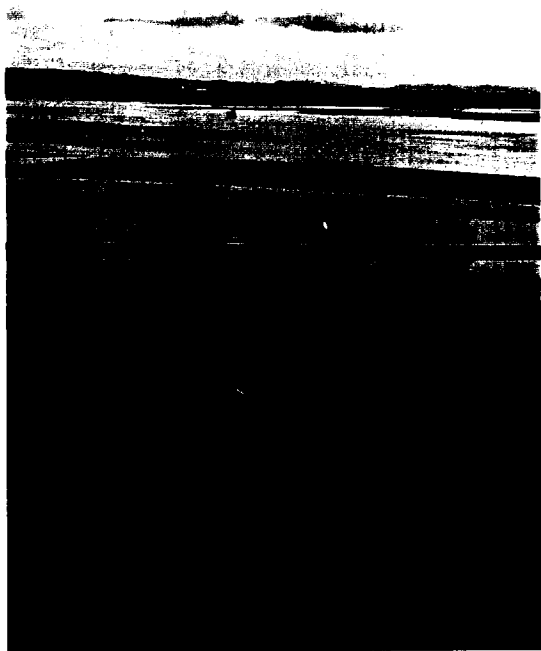
Riverton township and the Jacobs River estuary. The estuary is important in relation to the township, as a harbour for the fishing and recreation fleet, as well as a nursery area for flatfish.

Crib and permanent settlements such as Cosy Nook, Colac, and Orepuki scattered through the Unit.

6.5.3 Landscape Ecological Values

The important things in this coast unit are: (in no order)

- the high quality of the landscape which is dependent on the clean sea water, clean beaches, small scale developments and variety of views and shore line
- the above average visual sensitivity of the area which reflects its small scale and natural appearance
- the historic use of the coastal resources, and the continuation of some of these activities today
- Lake George, the scattered podocarp forest remnants between the lake and the dune, and some of the plant communities along the shore are representatives of pre-Polynesian vegetation
- the importance of the forested land next to the coast in the landscape quality of the Unit
- the popularity of the area for recreation and tourism, including for overseas visitors and the opportunities for this to grow ?
- the setting and character of Riverton township
- the importance of the Jacob's River Estuary for birds, salt marsh vegetation, shellfish and fish, especially linking with the coastal network of waterbodies to the east
- the role of the Jacob's River Estuary in the lives of migratory fish such as brown trout and whitebait



Jacob's River Estuary is important to migratory fish.

6.5.4 Issues

It is widely accepted that this is a very attractive part of the Southland coast, and efforts have been made to attract people to it through promotion of the Scenic Route. However, some of that quality depends on the small scale of both the natural and built elements of the landscape, and this could be affected by poorly planned changes.

The issues identified for this unit include:

- threats to natural values of the coast from industry within Riverton (eg industrial area), which affects the Jacob's River Estuary
- degradation of the Jacob's River Estuary by activities affecting the Aparima, Pourakino Rivers and smaller watercourses (eg agricultural pollution, siting, flow changes).
- threats to dune habitats through spread of weeds (marram, lupins, broom)
- threats to water quality and quantity of Lake George through effects of adjacent land-uses
- potential for loss of township and built character in small settlements and Riverton resulting from structures out of scale, badly sited or of inappropriate design and from changes to the landscape setting
- the need to balance increased visitor numbers to boost the local economy, and the retention of the quality of the area that attracts people to the area
- the need to consider the visual impact of the bush clearance and other land development visible from the coast

- damage to coastal turf communities by sheep grazing and trampling
- the protection and enhancement of an outstanding area of coastal landscape
- threats to coastal natural values from poor siting of some activities, eg rubbish dumps



The highly visible remains of former forest cover.

6.6 Te Wae Wae Coast Unit

6.6.1 General Description

The long sweeping bay from Orepuki to the edge of Fiordland National Park is made up of a coastal terrace and gravel beach backed in places by high cliffs covered in grassland and windswept shrublands. It includes the forested coastal section adjacent to the Waitutu Hills Unit. The Waiiau River carries gravels into the sea here, although its flows have been modified by the power scheme upstream. Long-shore drift forms the gravels into bars and beaches further east, and there is a lagoon behind the bar at the Waiiau mouth.

There are a few houses in the coastal unit, and many are cribs, while the Scenic Route along SH99 runs above the cliffs in the eastern part. There is some fishing at the Waiiau mouth, and a coastal walking track in the Waitutu Forest section.

6.6.2 Special Features and Areas

Waitutu Forest and coastal Maori-owned land are unique in the Region because they have forest right down to the coast.

Waiiau River mouth has ecological, landscape and cultural values.

6.6.3 Landscape Ecological Values

The important things about the Te Wae Wae Coast Unit are: (not in order)

- the views across the Waiiau Valley to Fiordland from the cliff tops



The views across to Fiordland are a strong feature of this unit.

- the sweeping and open vista of the Bay
- the lagoon as a fish and waterfowl habitat
- the influence of the river flows in the Waiau on the condition of the beach and coast
- the native vegetation on the cliff faces and in gullies as remnants of former cover
- the coastal forest vegetation, as part of the larger Waitutu forest area

6.6.4 Issues

This is an exposed and open piece of coastline, being strongly influenced by the Waiau River. It provides some dramatic views for the SH 99 traveller going west.

The issues identified in this unit include:

- threats to the natural qualities of the coast (Waitutu part)
- sensitivity of open landscape particularly where visible from SH 99
- impacts on land management of the dynamics of the Waiau bar
- potential threats to lagoon and beach through modifications to flows in the Waiau (under study)
- threats to coastal native vegetation through grazing
- threats to native forest from potential logging of timber on private land
- potential conflicts of use through increased recreational access needs



6.7 Fiordland Coast Unit

6.7.1 General Description

The Fiordland coast is long and diverse, and has numerous unique, unusual and outstanding natural features and processes. It is totally within the Fiordland National Park, with the exception of some small pieces of freehold land of historical interest. The indentations of the fiords brings the coastal factors far inland and the strong influence of the oceanic climate makes it difficult to say exactly where the "coast" stops.

The settlement at Milford Sound is in this unit.

Because so much of this area is under the management of DoC, the brief discussion here deals with the matters which may be of interest to the District Council.

6.7.2 Special Features and Areas

The freehold land at Cromarty differs because of its tenure and the recent construction of buildings there.

Milford Sound.

6.7.3 Landscape Ecological Values

See Fiordland National Park Management Plan

6.7.4 Issues

This is a coast unit of outstanding visual and ecological quality, and of recognised international significance. Because of that, it offers outstanding experiences to the visitor. Allowing people to have those experiences without damaging the environment is one of the challenges facing the Department of Conservation and the District in managing the area.

The issues identified in this unit include:

- threats to coastal processes and quality from effects of developments
- threats to outstanding natural character of the coast through developments on private land
- threats to outstanding natural character through effects of increasing tourist popularity of coastal area

6.8 Big Bay Coast Unit

6.8.1 General Description

This is a very small piece of coastline between the northern boundary of Fiordland National Park and the northern boundary of Southland District. It includes some rocky reefs, but is mainly the large sand and gravel beach area at Big Bay, backed by a large dune system. Most of the land is in Pyke Forest which extends far inland but there is some freehold land. This is one of the more natural parts of the Coast. While there are significant Maori occupation sites and early Europeans settled briefly, there are few permanent residents now. Whitebaiting and fishing focus around the Awarua River mouth and off the Fiordland coast.

6.8.2 Special Features and Areas

Waiuna Lagoon

6.8.3 Landscape Ecological Values

The important things about this Unit are:

- the naturalness of habitats and landscape
- rare, unusual and endangered species of plants and animals
- the remoteness
- water quality protected by intact forest and dune vegetation
- intact unusual landforms (dunes, lagoons)

6.8.4 Issues

This unit is significant because of its remote and unspoilt landscape; however, the growth of tourism and increased interest in the "remote experience" make it a possible location for tourism and recreation related development.

The issues identified for this area include:

- outstanding landscape quality and visual sensitivity to any major change
- threats to fragile coastal communities through spread of weeds
- threats to coastal water quality through unplanned developments
- threats to natural character and ecological values from increasing tourism and recreation

THE COAST LANDSCAPE CHARACTER TYPE

6.9 Desired Environmental Outcome

Maintenance of the quality of the coastal landscape as a setting for recreation, traditional food gathering and appropriate commercial activities.

6.10 Objectives

Protection of significant areas of native vegetation and habitats, and their self-sustainable management.

Protection of all waterways and waterbodies, including the sea, from pollution by human activities.

Provision for recreation.

Provision for sustainable use of coastal food resources.

6.11 Policies

- To recognise the variation in the coastal environment throughout the District, and to plan accordingly
- To recognise the international significance of the Estuaries and lagoons
- To recognise the importance of the coastal area in the health of marine life and in the lives of migratory species
- To recognise that the coastal environment is a dynamic and unpredictable one, and to plan accordingly
- To encourage coastal communities to take responsibility for management of their local environment
- To recognise the potential positive and negative effects of tourism on some of the townships of the District's coastal area
- To recognise that stormwater systems are a source of water pollutants, that coastal ecosystems are particularly sensitive to pollution, and that direct disposal of stormwater into waterways should be phased out.

- To protect the rural landscape from intrusion of inappropriately located or designed buildings or other developments
- To protect significant natural features, including sites of geological value, wetlands, and other habitats identified through the Department of Conservation's INDEX database, and Coastal Resource Inventory
- To recognise the importance of the landscape through which the major tourist routes pass, and to protect those aspects which give it its high quality.
- To discourage, control, or prohibit those land-uses and activities which pollute waterways and waterbodies, including estuaries.
- To take Esplanade Reserves or strips wherever the opportunity arises to protect ecological values and public access to the Coast
- To require a detailed assessment of environmental effects wherever a proposal affects a waterbody, waterway, native vegetation or a significant natural feature.
- To recognise the importance of riparian vegetation in the sustainable management of waterways and waterbodies, and to ensure that any riparian land owned by the Council is appropriately managed.
- To recognise both the positive and adverse effects of shelter planting, and to provide advice to farmers on its management.
- To ensure that rubbish dumps are appropriately sited (eg away from rivers and coast)
- To protect native vegetation growing along roadsides
- To control the clearance of coastal native forest and shrubland
- To control the conversion of native grasslands and wetlands
- To protect the coastal landscapes and ecosystems from the adverse effects of growing tourist and recreational use
- To recognise the cross-boundary concerns in the coastal unit with Invercargill City on management of the New River Estuary, and with Southland Regional Council on water management

6.12 Mechanisms

- 1 Liaise with Department of Conservation and Southland Regional Council on preparation of databases of native plants, animals and their habitats

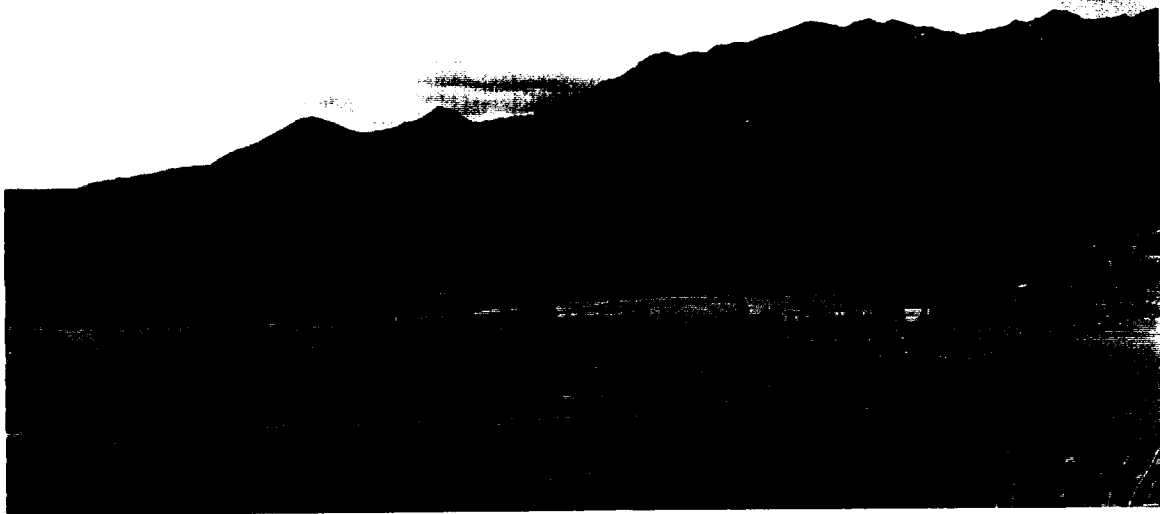
- 2 Require assessments of environmental effects and management plans to accompany consent applications for all large scale coastal changes
- 3 Develop criteria to define "large scale" for the above for the Coast
- 4 Facilitate the establishment of local/ community groups to prepare landscape management guidelines for their own areas
- 5 Prepare guidelines on the location and design of buildings, shelterbelts and other structures in the Coast unit
- 6 Prepare management guidelines for the landscape, heritage and ecological values of major tourist routes
- 7 Prepare guidelines for management of these values along all roads in the District
- 8 Liaise with Department of Conservation to identify esplanade reserve requirements on all waterways and estuaries
- 9 Give rating reductions for land placed in QEII National Trust covenants or otherwise privately protected
- 10 Liaise with Federated Farmers, MAF, and local landowners to investigate and encourage new approaches to sustainable farming in the Coastal unit
- 11 Control drainage of wetlands to protect significant sites and coastal habitats
- 12 Prepare a development plan for Riverton to set out its township values and ways of using them, and design guidelines for changes
- 13 Prepare an inventory of coastal recreational opportunities, with guidelines for their development
- 14 Ensure that development on private land close to Fiordland or Mt Aspiring National Parks meets standards that reflect their location.

7 MOUNTAINS LANDSCAPE CHARACTER TYPE

Introduction

The northern boundary of the District (and of the Region) runs across a series of high mountain ranges between the SH 94 to Milford and the boundary with Otago in the Umbrella range. There is a gradient from east to west of increasing rainfall, and correspondingly wetter soils and increased native forest cover. The land to the east of the SH6 to Kingston is predominantly in freehold, and is described in the Umbrella-Garvie Mountains Unit, while that to the west is mainly Crown estate and is described in the Livingstone-Eyre Mountains Unit. The other high altitude area in the District (apart from Fiordland) is the western side of the Takitimu Mountains and is described as a third Unit.

These mountains are very important in water management in the District, since they contain many of the headwaters of almost all the rivers which flow across the plains (ie Waiau, Mararoa, Aparima, Oreti, Mataura). They are important in recreation (eg tramping, fishing) and provide additional high country grazing for a number of runs.



7.1 Umbrella-Garvie

7.1.1 General Description

These eastern unit includes the Umbrella and Garvie Ranges around the Waikaia and Nokomai River valleys. They are predominantly covered by tussock grasslands, the lower slopes of which (generally below 1000m) are oversown, but there are patches of beech forest in damper areas and gullies and open alpine vegetation on the tops. The slopes are moderately steep, with rocky schist outcrops and screes in places. There are a variety of wetlands.

At the Dome, at the western edge of the Unit, there are soil erosion problems which are related to the early burning and grazing of native vegetation by sheep and rabbits. Pines spreading from erosion control plantings now pose a threat to native vegetation in the area. The area has a long history of modification by fire, farming, forestry and browsing.

Some of the mountains are quite rounded and often criss-crossed by tracks. There are no settlements at altitude; recreational use is predominantly hunting, tramping and fishing.

The SH6 to Kingston and Queenstown is an important tourist route along the western edge of the Unit.

7.1.2 Special Features and Areas

The upper parts of the Waikaia Valley towards Piano Flat provide an attractive forest contrast with the surrounding tussocklands. The Waikaia Forest lies within the Unit.

Much of this area is described in the Protected Natural Area (PNA) report for the Nokomai Ecological District, and sites warranting protection are identified.

7.1.3 Landscape Ecological Values

The things which are important in this Unit include:

- the natural qualities of the landscape - providing a backdrop to the Waimea Plains
- the extensive higher altitude tussocklands are valuable because of their diversity, large area and intactness
- the areas identified by the PNA report for their habitat and vegetation
- the apparent naturalness of the tussock covered lower slopes
- the presence of rare yellowheads in Waikaia Forest
- the attractive forested valley landscape eg Piano Flat



Piano Flat is an attractive valley in the forest.

7.1.4 Issues

This high country area has been grazed and burnt for at least 150 years so that today's landscape is in the process of change, and recovery (where fenced). In some places erosion indicates the sensitivity of the soils to these sorts of uses, and restoration has been started where the problem threatened roads and houses (Mid-Dome).

The issues identified in this Unit include:

- the inability of the landscape to absorb inappropriate structures
- threats to landscape naturalness and coherence from land use changes
- loss of large areas of continuous habitats through burning, oversowing, afforestation and grazing
- threats to the water quality and quantity of the rivers, through the effects of some land-uses (eg mining, logging) which affect the relationship between vegetation cover and flow patterns
- damage to tussock and alpine areas through spread of lodgepole pine (including that from soil conservation planting)
- uncertainty about sustainability of old forest soils under current agricultural practices (cross ref Soils and Sustainable Agriculture papers)

7.2 Livingstone-Eyre Unit

7.2.1 General Description

These are the wetter, western ranges at the north of the District and encompass the Mavora Lakes valley (Mararoa River) and the upper reaches of the Oreti and the Mataura Rivers. They are generally higher and more dissected than the more eastern unit and have greater cover of indigenous vegetation, particularly of beech forest at low altitude. Much of the area has been affected by glacial processes giving features such as U-shaped valleys with isolated tarns. West Dome is a highly visible mountain landmark above Mossburn while the Snowdon Forest forms a backdrop to the Te Anau Basin.

The Conservation Estate in the Unit includes the Snowden, Eyre and West Dome Forests and these are used for tramping and fishing as well as protection of habitat and water quality. The Eyre-Cainard area includes extensive tussock grasslands.

There are few roads in the unit, although farm tracks are common. The Mavora Valley provides access to the interior, and there is a metalled road through the Von River valley to Mt Nicholas on the shore of Lake Wakatipu.

In the northern part of the unit some land is in Mt Aspiring National Park

The western boundary follows the Fiordland Park boundary in part.

7.2.2 Special Features and Areas

Protected areas in the Unit include Eyre Forest, Eyre Creek, Cainard, West Dome, Mavora Park and Snowden Forest.

The open Mararoa valley and the Mavora Park areas are particularly accessible and popular for recreation. The issue of cattle grazing on land with identified ecological values has been raised here.

7.2.3 Landscape Ecological Values

The things which are important in this Unit are:

- the natural qualities of the landscape - providing a backdrop to the basin and upper Waimea Plains
- the visual sensitivity of the landscape resulting from its lack of modification and the vulnerability of its ecology
- the extensive tussock grassland communities in the east, including rocky outcrops
- the highly visible forests at the edge of the Te Anau Basin
- the extensive forest habitat
- the role of intact forest and other vegetation cover in the maintenance of water quality downstream

- the natural resource-based recreation values of the Mavora Park, including the link to the Wakatipu Basin
- the fishery of the upper Oreti



The Mavora Park is a popular area for recreation based on natural resources.

7.2.4 Issues

Much of this area is in Crown ownership, although land management ranges from protection for nature conservation to extensive farming. Change could take place in farming practices, which might give greater emphasis to the values of the land for tourism, recreation, soil protection and water conservation.

The issues identified for this unit include:

- threats to tussock and wetland through some land use practices, eg grazing
- the loss of riparian vegetation and the threats to water quality and quantity and habitat values, from some land-use practices (eg stock grazing and trampling)
- potential growth in visitor numbers and resultant loss of wilderness from sewage and rubbish disposal problems, roading demands etc
- threats to water quality through waste disposal problems when visitor numbers increase
- threat to soil and habitat quality through burning of tussock grasslands
- threats to rare and unusual species of plant from some land-use practices eg grazing

7.3 Western Takitimu Mountains Unit

7.3.1 General Description

This unit is made up of the steep and rugged mountains which lie along the eastern side of the upper parts of the Waiau River, including the Blackmount area. The mountains are made up of rocks of volcanic origin, which gives them a different appearance from the lower, more southern and eastern hills (see Taringaturas Hill Unit). The upper slopes are bare and scree-covered, although lower slopes have good beech forest and mixed shrubland cover. The whole area was extensively burned long before European settlement. The Aparima and Wairaki Rivers have their headwaters in these mountains, and the good fishing in the Aparima at least results from the good forest and wetland vegetation still found alongside the streams, much of which is in the Crown managed Takitimu Forest. There is some afforestation of the lower slopes, especially near Blackmount.

The Takitimus are an important landmark of northern Southland, having a rugged silhouette and dominant scree features not seen elsewhere. This is especially important for travellers along the "Scenic Route" through Blackmount from Tuatapere to Te Anau.

Erosion is a problem caused by a mixture of factors - early burning of vegetation, grazing and browsing by sheep, deer, rabbits and goats, and the natural processes of river movement.

7.3.2 Special Features and Areas

The Blackmount area where forestry dominates the landform and the Waiau River is at one of its narrowest points

The protected forests of the eastern slopes and the Aparima River and its tributaries

7.3.3 Landscape Ecological Values

The important things in this Unit include:

- the natural qualities of the landscape - providing a focus and backdrop to the Plains, Valleys and Basin
- the extensive eastern beech forest and regenerating shrubland habitats
- the protection of water quality by vegetation cover
- the insect fauna, which has been well studied and includes some unusual species
- the views from the State Highway/ Scenic Route to rugged mountains
- roadside vegetation as remnants of former cover
- the Aparima trout fishery

7.3.4 Issues

This unit is characterised by steep, high mountains in which erosion is an active cause of change. The mountains are important in the hydrology of both the Aparima and Waiau

Rivers. They offer both a remote recreation experience and major features along the Scenic Route around the South.

The issues identified in this Unit include:

- threats to water quality through loss of healthy vegetation cover leading to erosion
- threats to tussock and alpine vegetation through the spread of trees if inappropriate species used in forestry or erosion control
- the significance of views to the unit
- conflicts between users of "Scenic Route" eg tourist cars and logging trucks



MOUNTAINS LANDSCAPE CHARACTER TYPE

7.4 Desired Environmental Outcomes

Maintenance of extensive sheep grazing on modified grasslands, while managing the native habitats for their ecological and landscape values.

Maintenance of the ecological and landscape qualities which provide recreation and tourism opportunities.

7.5 Objectives

Protection of significant areas of native vegetation and their management to become self-sustaining.

Preservation of the quality of the mountain landscape.

Protection of significant features and landscapes.

Protection of all waterways and waterbodies from pollution by human activities.

7.6 Policies

- To encourage communities to take responsibility for the management of their local environment
- To protect the Mountains landscape from the intrusion of inappropriately located or designed buildings or structures (including shelter belts or forest blocks)
- To protect significant natural features, including sites of geological value, wetlands, tussock grasslands and other habitats identified through the Department of Conservation's INDEX database and Protected Natural Area surveys
- To recognise the importance of the Mountains landscape through which major tourist routes pass to the tourism values of those roads, and protect those aspects which give it its high quality
- To discourage, control or prohibit those land-uses and activities which pollute waterways and waterbodies
- To take Esplanade reserves and strips wherever the opportunity arises to protect water systems

- To require detailed assessments of environmental effects wherever a proposal affects a waterbody, waterway, native vegetation, a significant landscape or a significant natural feature
- To require assessments of environmental effects for large-scale forestry proposals
- To recognise the importance of riparian vegetation and wetlands in the mountain sections of waterways and waterbodies, and to ensure that any riparian land owned by the Council is appropriately managed.
- To protect native vegetation growing along roadsides and to manage roadsides for their contribution to landscape and ecological diversity
- To control the clearance of native forest, shrubland
- To control the conversion or burning of native tussocklands and wetlands
- To protect the Mountains landscapes and ecosystems from the effects of growing tourist and recreational use
- To protect tussock grasslands from invasion by aggressive weeds, including species planted for forestry

7.7. Mechanisms

- 1 Liaise with Department of Conservation and Southland Regional Council on preparation of databases of native plants, animals and their habitats
- 2 Require management plans to accompany consent applications for large-scale forestry or other developments
- 3 Develop criteria to define "large scale" for the above for the Mountains
- 4 Facilitate the establishment of local/ community groups to prepare landscape management guidelines for their own areas
- 5 Prepare guidelines on the location and design of buildings, shelterbelts and forest blocks in the Mountains
- 6 Prepare management guidelines for the landscape, heritage and ecological values of major tourist routes
- 7 Prepare guidelines for management of these values along all roads in the District

- 8 Liaise with Department of Conservation to identify esplanade reserve requirements on all waterways
- 9 Give rating reductions for land placed in QEII National Trust covenants or otherwise privately protected
- 10 Liaise with Federated Farmers, MAF, and local landowners to investigate and encourage new approaches to sustainable farming and forestry practice in the Mountains
- 11 Control drainage of wetlands to protect significant sites

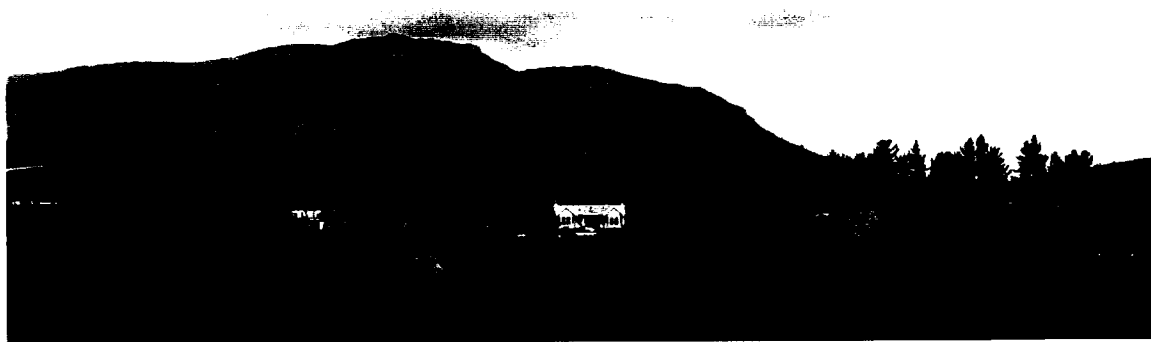
8 THE HILLS LANDSCAPE CHARACTER TYPE

Introduction

This type includes the ranges of hills which surround the Plains - the Hokonuis, Taringaturas, the Longwoods and Waitutu Forest. Because they are formed from softer, sedimentary rocks types, they are characterised by gently rolling slopes. Places where there are localised steeper ridges, such as in the Bastion area of the Hokonuis, represent outcrops or bands of harder rock types.

Compared with the Mountains, the Hills are generally low in altitude, up to about 700m, but reaching over 1000m along the Hump Ridge in Waitutu. Fires, farming and forestry have had a variety of effects in the Hills - changes in vegetation cover, introduction and removal of animals, changes in openness, introduction of roads, houses and services etc

(Note: The Catlins are treated separately from the Hills Type, because of the lower altitude, more intensive land management and their extension into Otago.)



Diverse landscapes of the Hokonui Hills.

8.1 Hokonuis Unit

8.1.1 General Description

The Hokonui Hills are striking features in the Southland landscape. They are visible from Invercargill and provide important landmarks for travellers along State Highways 1 and 6. The more rounded southern parts are formed from sandstones and siltstones, whereas the strong ridges of the norther parts towards Dipton and Josephville are of older rock types. These rocks, which formed deep under water and were later lifted up and folded, are part of the "Southland Syncline" - the strong line of ridges and valleys which cuts across the landscape from Fiordland, along the south side of the Waimea Plains, south of Gore and into Otago. The eastern slopes of the Hokonui Hills are in Gore District.

Before the arrival of humans the hills were probably mostly forested, with tussock on the tops or steeper slopes. But the Hokonuis have a long history of use and change - from early fires which allowed tussock grassland to replace forest, through Maori settlement and early European mining, flax collection and timber clearance to more recent forestry, farming and recreation.

Today, the hills reflect these activities. Paddocks on the lower slopes provide good grazing, with native forest, extensive in places, and shrublands on steeper land and gully or stream sides. There are some large areas of native podocarp forest, much of it providing valuable protection for soil cover and water management - many of the tributaries of the Makarewa River are in the Hokonuis. The higher areas are predominantly tussock grasslands much of which has been oversown with introduced grasses. There are commercial pine forests of small to moderate size. Characteristic of the Hokonuis landscape, especially in the northern part are the rocky outcrops and the shrub vegetation growing on them.

These hills and forests provide good areas of habitat for birds, as well as introduced animals including Tb- carrying possum. The rocky shrublands are valuable habitats for more unusual native lizards, although little survey work has been done to confirm their distributions.

8.1.2 Special features

Within the Hokonuis unit there are a number of protected natural areas including the Otapiri Stream Scientific Reserve (which contains important fossils). Many of the smaller areas have been protected privately through the use of QE II National Trust covenants, and these covenant sites are now linking up to form valuable larger blocks of, mainly, forest cover.

The Otapiri Gorge is a popular "day-drive". It brings the visitor into the heart of the southern Hokonuis, with the road following the Otapiri Stream. There is a mixture of pastoral land and remnants of native forest and shrubs. The roadside vegetation here, and in some other smaller roads in the unit, is notable since it remains in predominantly natural vegetation cover, linking with that alongside streams.

Within the Hokonui Forest is the Dunsdale Ecological Area which protects the type of forest and hill country which was once more widespread in the Region.

8.1.3 Landscape and Ecological Values

The significant things about the Hokonuis are:

- the diverse landforms, and the differences between north and south parts
- the importance of the views of the Hokonuis from the Plains, and of particular parts of them eg The Bastion
- the remnant native forest and shrubland vegetation; the potential for some of the smaller blocks to be linked by remnants along roadsides and streams and to be protected through covenants to form larger, more valuable habitat mosaics



Roadside vegetation which can provide visual and ecological links between more substantial areas.

- the popularity (based on the "scenery") and ease of access of the area for passive recreation, for people from Invercargill

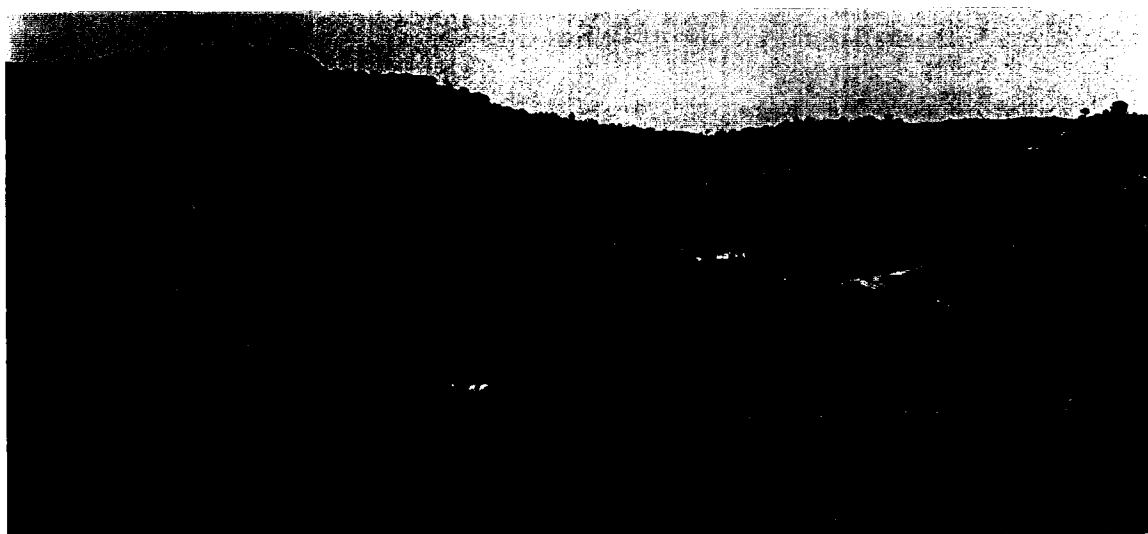
8.1.4 Issues

The present pattern of pastoral farming, exotic forestry and native vegetation cover seems to be attractive to many residents and visitors. However, there are concerns about water quality because of inadequate riparian management, and potential loss of native forest and shrubland habitats through further land development.

The issues identified in this unit include:

- the lack of information about the plants and animals particularly in the tussocklands and amongst rock outcrops
- threats to remnant vegetation from afforestation, farm clearance, oversowing, tussock burning, roadside maintenance, logging

- lack of knowledge about remnant tussock and roadside vegetation on which to assess effects
- intrusion of inappropriate buildings into an attractive and coherent landscape
- introduction of artificial patterns into a natural landscape
- threats to native vegetation through the spread of trees if inappropriate species are used in forestry or erosion control (as has happened elsewhere)
- damage to waterways from stock grazing, trampling and removal of riparian vegetation (this has water habitat, flow and flood management implications downstream on the Makarawa and ultimately on the Oreti River)



In places riparian vegetation protects gullies and waterways.

- inappropriate siting, design or management of exotic forestry planting and logging

8.2 Taringaturas Unit

8.2.1 General Description

This unit is made up of the Taringatura Hills and their extension north towards White Hill and North Range, and the lower, south-eastern hills of the Takitimu ranges. It includes some of the streams which are tributaries of the Aparima River running through the middle of the unit. To the south, streams feed into the Orauea River, and thus into the Waiau. The gently undulating landscape is generally under 800m and this is one of the characteristics which make it distinct from the Takitimu Mountains Type. Tussock grasslands and pine forests dominate much of the area, with improved pasture on the lower slopes. The underlying rock type is similar to that of the northern Hokonuis and the ridges and valleys of the Southland Syncline are clearly visible from the State Highway. Towards the south there are coal-bearing strata, and the townships of Ohai and Nightcaps have developed through mining activities. Further north, there are limestone outcrops which are both a source of the mineral and a series of significant landscape features.

Much of the lower slopes of the hills were once forest covered, with wetlands in some valleys and alpine or tussock vegetation on the tops. Following fires during the period of Maori movement into the south, the main vegetation cover changed to tussock grassland which has been further modified by farming and forestry. Most of the lower tussock grasslands have been oversown and grazed, so that their composition is changing. Manuka is common. Other areas have been planted with pine trees and afforestation is continuing. Some areas of beech forest remain, for example in the upper reaches of the Etal Stream and Mt Beaumont areas.

Few public roads cross the unit. Most people visit the area only for fishing in the Aparima or for the walks and picnic area in the pine and beech forest at Big Hill.

8.2.2 Special features

The only gazetted protected natural areas within this unit, is the small Taringatura Scenic Reserve south of Dipton West, containing remnant forest.

The limestone outcrops at Castle Rock are notable geological features, as are the ridges and valleys of North Range.

The townships of Ohai and Nightcaps lie within the unit, and rely for much of their existence on the coal mined within it. They are closely related to the Plains Units.

There are streams feeding into two major catchments - the Waiau and the Aparima which must be considered.

8.2.3 Landscape and Ecological Values

The significant things about the Taringaturas Unit are:

- the remaining native forest, especially where it is alongside streams and thus protecting water quality
- the rolling hillslopes and plateaux





Rolling hill slopes and plateaux characterise the Taringatura's

- the limestone outcrops at Castle Rock



Limestone outcrops at Castle Rock

- the townships of Ohai and Nightcaps which provide services to smaller settlements, as well as having many buildings of special character and historic value
- the strong ridges and valleys of the North Range, which have geological as well as visual values

8.2.4 Issues

The Taringaturas Unit is characterised by low, rolling hills which support a mixture of extensive sheep grazing on tussock and increasing areas of pine plantations. In the south there are two important mining townships where visual quality is decreased by the run-down appearance of some buildings and the industrial "wastelands" close to housing areas.

The issues identified within this unit or related to it include:

- threats to existing grassland and open ground plant communities through overplanting by forests

- lack of knowledge against which to assess effects on remnant tussock grassland and wetland communities



Little is known about the ecological values of natural or modified tussock grasslands in the hills.

- the loss of riparian vegetation and the threats to water quality and quantity and habitat values, from some land-use practices (eg stock grazing and trampling)
- the effect of planting patterns, logging, and forestry-related changes (such as roading) on the tussock-dominated landscape;
- threats to forest or native vegetation remnants, including manuka shrublands through some land-use practices (eg forestry)
- threats to outstanding landforms (eg limestone outcrops at Castle Rock) due to some land-uses (eg mining)
- threats to water quality from siltation from erosion where vegetation cover is disturbed
- cumulative effects of roading arising from increased access needed to forests as plantings mature
- the quality of the environment of Ohai and Nightcaps due to decline in mining activity

8.3 Longwoods Unit

8.3.1 General Description

The Longwood Range of hills including Woodlaw to the north forms the core of this unit. It includes the forested slopes as well as the paddocks around the lower fringes such as Scott's Gap and along the coast. To the south it merges with the Coast Type and is otherwise surrounded by Plains Units. The long hump shape of the Longwoods is familiar to residents of western Southland, and can be seen from Invercargill.

Seen closer, the slopes of the hills are covered by forest and regenerating shrublands, with open tops. The vegetation is a mixture of silver beech and podocarps (rimu, totara, miro etc) with rata at higher altitudes. Much of the area has been logged over, and in some places stark trunks stand in paddocks as a reminder of the former extent of the forest. Pine

and other exotic species have been planted, forming extensive cover in some parts, for example Woodlaw.

The underlying rock types are complex, but are mainly very old volcanic types, which have been weathered to give the rounded hill slopes. These are related to the rocks of the Takitimu Mountains.

Settlement is scattered around the fringes of the hills, while recreation in the area focusses on the Pourakino Valley. There, the high quality of the scenery, a mixture of bush and pasture, attracts a number of trampers, walkers and picnickers as well as fishers. Most streams from the eastern slopes of the Longwoods run into the Pourakino River; the intact forest cover contributes to high water quality and fish habitat in its upper reaches. A few flow into the Aparima, while those streams to the west join the Waiiau River, and some southern rivers and creeks flow straight to the sea.

About one third of the Unit is in the Conservation Estate.

8.3.2 Special Features

The Pourakino Valley is a focus for recreation in the unit, as well as having considerable flat farmland. Within the forest, the Longwood Ecological Area protects a good example of vegetation types from lowland to high altitude forests.

8.3.3 Landscape and Ecological Values

The significant things about the Longwoods Unit are:

- extensive, relatively intact, native forest and regenerating shrubland cover which protects soil and water quality in the upper catchment (this is important for the state of the Pourakino River, and to some extent of the Jacob's River Estuary)
- visibility of major ridgeline from Plains
- visibility of lower slopes from Scenic Route (SH99)
- the recreational use of the Pourakino Valley which is based on the landscape quality of the area
- the commercial value of the plantation forestry; but also the potential for associated activities to have adverse effects on waterways
- strong links between hills, forests, farming and coast

8.3.4 Issues

The Longwoods Unit is characterised by the long ridge of the forested hills and the contrasting pastoral fringe. It is closely linked with the quality of water in downstream rivers and streams, and with the Jacobs River Estuary. Because of the high visibility of the Unit, visual effects may also be felt beyond its boundaries.

The issues identified within this unit or related to it include:

- the effect of planting patterns, logging, and forestry-related changes (such as roading) to change the native forest landscape;
- the loss of riparian vegetation and the threats to water quality and quantity and habitat values, from some land-use practices (eg stock grazing and trampling)
- damage to waterways from stock grazing, trampling and removal of riparian vegetation
- threats to natural values through forest clearance on private properties
- threats to landscape quality through forest edge clearance introducing artificial boundaries



8.4 Waitutu Unit

8.4.1 General Description

The Waitutu Unit comprises the hills to the west of the Waiau river valley as far north as Monowai, and to the West of the Fiordland National Park Boundary. Over 75% land is in the Conservation Estate and most of that is in native forest cover.

The underlying rocks are soft and have been weathered into rounded hills and wide valleys. Some large, often meandering rivers run through the area, including the long Wairaurahiri draining Lake Hauroko and the Lillburn which enters the Waiau above Clifden.

The Lillburn valley and fringes of the unit are in pastoral farming and have the only settlements, while beech forest management continues in the Dean and Rowallan Forests. Recreational use of the area focusses on the adjacent Coast Unit and up the Lillburn Valley, which provides access to Lake Hauroko and the National Park.

8.4.2 Special Features

Within the forests there are three Ecological Areas protecting representative areas of the range of vegetation types.

The Lillburn Valley is distinct in having been modified by farming and in the upper areas, by forestry.

8.4.3 Landscape Ecological Values

The significant things about the Waitutu Unit are:

- the integrity of the forests of Waitutu, grading from coast through a variety of forest types to open tops
- the diversity of forest types not found elsewhere within Waitutu Forest with their associated diverse animal communities
- the populations of endangered yellowhead remaining in the Dean/Rowallan forests
- the scenic importance of the boundary of forest and pastoral lands for visitors to the National Park
- intact riparian vegetation important in maintaining water quality of upper reaches of streams and rivers
- importance of regenerating shrublands to habitat diversity and soil conservation in lower valleys
- large areas of native forest in Maori ownership

8.4.4 Issues

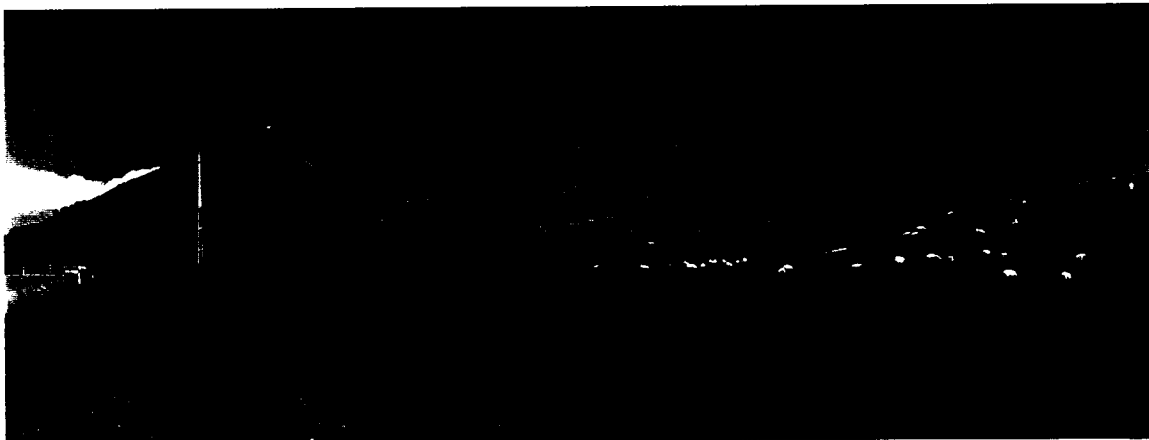
The Waitutu unit contains some of the last intact lowland forests in the South Island, including sequences from coast to tops. Associated with these are animal communities of at

least regional and probably national significance. These areas are complementary to the forests of the National Park and are an attractive transition.

These habitats and animals are threatened by the continued logging of beech forest and clearance of regenerating shrublands.

The issues identified within this unit or related to it include:

- threats to native beech forest and cumulative effects on habitats and outstanding landscapes through logging
- threat of soil loss and siltation of waterways through clearance of vegetation on lower slopes



Land development threatens native shrublands as well as water quality.

THE HILLS LANDSCAPE CHARACTER TYPE

8.5 Desired Environmental Outcomes

Balanced land-uses so that the productive capability of land is maintained and large areas of intact tussock grasslands and other native vegetation are protected.

Maintenance of the high quality landscapes within the Hills.

8.6 Objectives

Protection of large, intact areas of native vegetation for ecological and landscape values.

Preservation of high quality landscapes and significant natural features.

Maintenance of vegetation cover to protect the water quality in rivers and streams which have their sources in the Hills.

8.7 Policies

- To encourage communities to take responsibility for the management of their local environment
- To recognise that stormwater systems are a source of water pollutants and that direct discharge of stormwater into waterways should be phased out
- To protect the Hills landscape from the intrusion of inappropriately located or designed buildings or structures (including shelter belts or forest blocks)
- To protect significant natural features, including sites of geological value, wetlands, tussock grasslands and other habitats identified through the Department of Conservation's INDEX database
- To recognise the importance of the Hills landscape which is viewed from the Scenic Route, SH99, to the tourism values of that road, and protect those aspects which give it its high quality
- To discourage, control or prohibit those land-uses and activities which pollute waterways and waterbodies
- To take esplanade reserves and strips wherever these are appropriate to protect water systems, access etc.

- To require detailed assessments of environmental effects wherever a proposal affects a waterbody, waterway, native vegetation, a significant landscape or a significant natural feature
- To require assessments of environmental effects for large-scale forestry proposals
- To recognise the importance of riparian vegetation in the hill sections of waterways and waterbodies, and to ensure that any riparian land owned by the Council is appropriately managed.
- To protect native vegetation growing along roadsides and to manage roadsides for their contribution to landscape and ecological diversity
- To control the clearance of native forest, shrubland
- To control the conversion of native tussocklands and wetlands
- To protect significant views in the Hokonui Hills
- To recognise the significance of the Hokonui Hills as a regional recreation resource
- To recognise the importance of the landscapes of the North Range as geological and visual features
- To protect the integrity of the Longwoods habitats and vegetation
- To protect the major ridgelines of the Longwoods Range from intrusive developments
- To ensure that the recreation and landscape quality of the Pourakino Valley is not degraded by changing land-uses
- To protect the habitats and landscapes of the Waitutu, Dean and Rowallan Forests

8.8. Mechanisms

- 1 Liaise with Department of Conservation and Southland Regional Council on preparation of databases of native plants, animals and their habitats
- 2 Require management plans to accompany consent applications for large-scale forestry or other developments
- 3 Develop criteria to define "large scale" for the above for the Hills
- 4 Facilitate the establishment of local/ community groups to prepare landscape management guidelines for their own townships or other areas

- 5 Prepare guidelines for landowners wishing to protect, enhance or create new plant and animal habitats on their land
- 6 Prepare guidelines on the location and design of buildings, shelterbelts and forest blocks in the Hills
- 7 Prepare management guidelines for the landscape, heritage and ecological values of SH 99
- 8 Prepare guidelines for management of these values along all roads in the District
- 9 Liaise with Department of Conservation to identify esplanade reserve requirements on all waterways
- 10 Give rating reductions for land placed in QEII National Trust covenants or otherwise privately protected
- 11 Liaise with Federated Farmers, MAF, and local landowners to investigate and encourage new approaches to sustainable farming and forestry practice in the Hills
- 12 Investigate ways of protecting the forests on land owned by Maori
- 13 Control drainage of wetlands to protect significant sites
- 14 Prepare township plans for Ohai and Nightcaps

9 CATLINS LANDSCAPE CHARACTER TYPE

9.1 Inland Catlins Unit

9.1.1 Introduction and General Description

The area known generally as the Catlins includes a number of low hill ranges running north-west to south-east and extending into Otago. About a third of this is in Southland District, about a fifth in Gore District and the remainder in Clutha District. This Landscape Type has not been further divided into units, although the more forested eastern parts may be thought of as different from the more intensively farmed western areas.

The soils are yellow-brown earths which together with the good rainfall and gentle slopes has made intensive farming development possible. This has involved extensive clearance of forests and drainage of wetlands. Some native forest is now protected within the Catlins Forest Park, but there are many areas remaining on private land. A small number of these are protected by QEII covenants and scenic reserves. Characteristic of the western parts are the deeply incised streams with flax and other native vegetation along the banks. These are probably important habitats for native fish, and the vegetation helps to maintain their water quality. However much remnant vegetation is grazed by stock and goats, and not likely to survive for many years. There has been both large and small scale forestry planting, but native vegetation remains visually dominant in many areas.

Because of the scattered nature of settlements and houses in a gently rolling landform, and the position of the Catlins at the "edge" of the District, there is a sense of isolation in many parts. Generally it is an attractive landscape, although there are symptoms of poor land management, such as erosion and clearfelling which are visible from the roads. The area is popular for the passing tourist, on the coastal scenic route (SH 92), but most recreational use of the Forest Park focusses on the areas outside this District.

9.1.2 Special Features and Areas

The larger areas of forest encompassed by the Park

Development of houses and services focussed on the State Highway corridor.

9.1.3 Landscape Ecological Values

The important things about the Catlins Unit are:

- the quality of the rolling landscape with its mixture of native forest and shrublands and agricultural development
- the large number of small bush remnants in private land ownership which provide extra habitat to that in the Forest Park
- the backdrop of forest and farmland it provides to the Coast Unit
- the sense of isolation

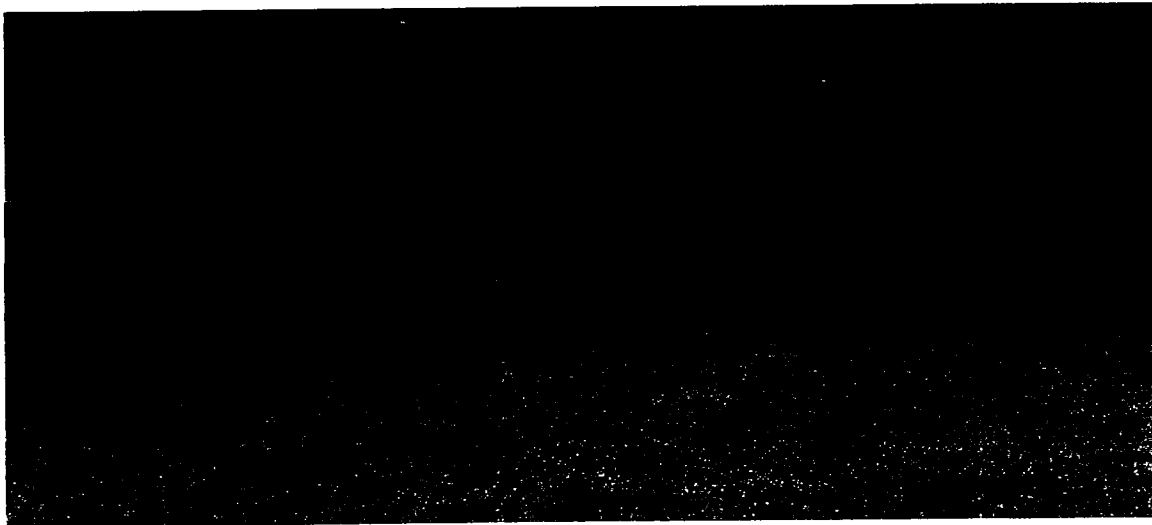
- the presence of native vegetation along roadsides, and its potential to link remnants
- the small watercourses, particularly those with less modified riparian vegetation

9.1.4 Issues

This is an attractive agricultural landscape where change could take place within the Plan period as the bush remnants die out through grazing and browsing. If further clearance and drainage take place this could have adverse effects on landscape and water quality, as well as decrease the buffer areas for the western edges of the Forest Park. The tourism and recreation potential, based on the natural environment, could be developed providing that the quality is maintained.

The issues identified in this Unit include:

- clearance of native vegetation from private land by logging or drainage

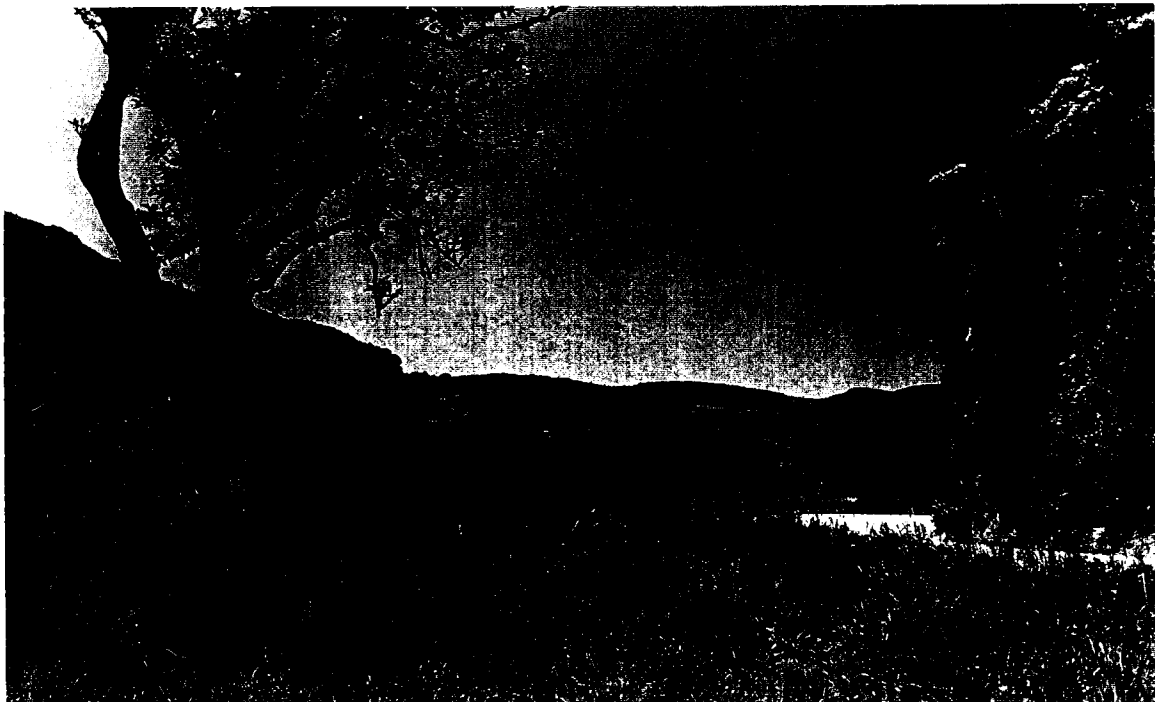


- the adverse visual effect of logging on the ridgelines
- loss of riparian vegetation cover and its effect on water quality and habitat values
- long-term sustainability of agriculture on old forest soils
- effects of activities on the Coast Unit



Land development on the hills can have effects on coastal wetlands and waterways.

- loss of remnant native vegetation through stock or wild animal grazing, to invasive weeds (eg Muehlenbeckia) or roadside maintenance activities
- introduction of straight lines into the rolling landform, through inappropriate location or design of developments
- degrading of "Scenic Route" by poor land management



9.2 Desired Environmental Outcomes

Maintenance of the productive capability of land and water in a high quality, diverse, small scale rural landscape.

Long-term viability of native plant and animal communities and natural habitats.

9.3 Objectives

Protection of significant areas of native vegetation and their management for self-sustainability.

Preservation of the quality of the forested rural landscape.

Protection of significant natural features and diversity of landscapes.

Protection of all waterways and waterbodies from pollution by human activities.

Maintenance of the rural community.

9.4 Policies

- To control the clearance of native forest and shrubland
- To control the removal of native vegetation from riparian zones
- To protect significant natural features and landscapes, including sites of geological value, wetlands and other habitats identified through the Department of Conservation's INDEX database, from the adverse effects of land uses
- To recognise the significance of the Catlins Coast, and to take this into consideration when planning for inland areas
- To promote the types of management for native vegetation which will enable habitats to be self-sustaining
- To protect the rural landscape from intrusion of inappropriately designed or located buildings and structures (including shelter belts and forest blocks)
- To recognise the importance of the landscape through which the major tourist route passes, and to protect those aspects which give it its high quality.
- To support and encourage the Regional Council in its programme for the disposal of hazardous wastes

- To encourage communities to take responsibility for management of their local environment
- To discourage, control, or prohibit those land-uses and activities which pollute waterways and waterbodies.
- To create Esplanade Reserves or strips wherever the opportunity arises and resources permit
- To require a detailed assessment of environmental effects wherever a proposal affects a waterbody, waterway, native vegetation or a significant natural feature.
- To recognise the importance of riparian vegetation in the sustainable management of waterways and waterbodies, and to ensure that any riparian land owned by the Council is appropriately managed.
- To recognise both the positive and adverse effects of shelter planting in the Catlins, and to provide advice to farmers on its management.
- To protect native vegetation growing along roadsides, and to manage roadsides for their contribution to landscape and ecological diversity
- To recognise the potential positive and negative effects of tourism on the townships of the area
- To recognise that stormwater systems are a source of water pollutants and that direct disposal of stormwater into waterways should be phased out.

9.5 Mechanisms

- 1 Liaise with Department of Conservation and Southland Regional Council on preparation of databases of native plants, animals and their habitats
- 2 Require management plans to accompany consent applications for large-scale forestry or other developments
- 3 Develop criteria to define "large scale" for the above for the Catlins
- 4 Facilitate the establishment of local/ community groups to prepare landscape management guidelines for their own areas
- 5 Prepare guidelines for landowners wishing to protect, enhance or create new plant and animal habitats on their land
- 6 Prepare guidelines on the location and design of buildings, shelterbelts and forest blocks in the Catlins

- 7 Prepare management guidelines for the landscape, heritage and ecological values of the main tourist routes through the Catlins
- 8 Prepare guidelines for management of these values along all roads in the District
- 9 Liaise with Department of Conservation to identify esplanade reserve requirements on all waterways
- 10 Give rating reductions for land placed in QEII National Trust covenants or otherwise privately protected
- 11 Liaise with Federated Farmers, MAF, and local landowners to investigate and encourage new approaches to sustainable farming practice in the Catlins
- 12 Investigate new technologies for energy sources and transfer to remote areas
- 13 Liaise with Department of Conservation and Southland Regional Council to monitor the changes in native habitats and prepare guidelines for stock, pest and weed control
- 14 Control drainage of wetlands to protect significant sites
- 15 Prepare stormwater management plans for townships to phase out direct discharge into waterways as resources become available.

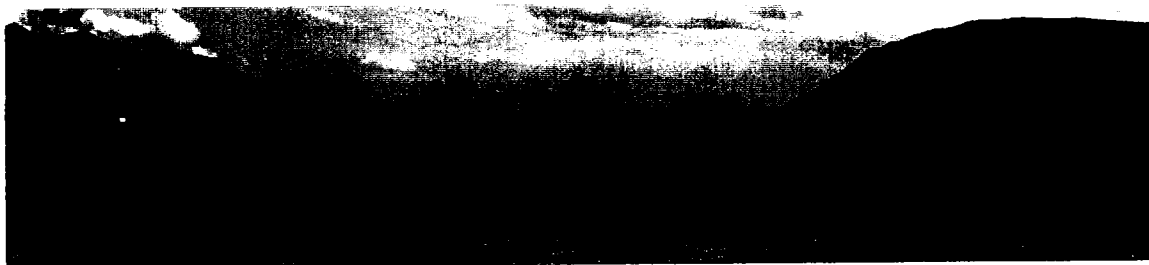
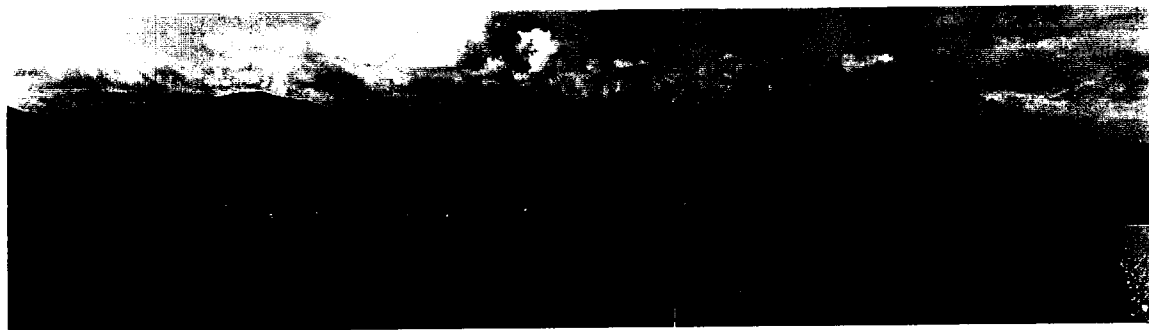
10 THE PLAINS LANDSCAPE CHARACTER TYPE

Introduction

The Plains type includes all the lowland parts of the District and the Te Anau Basin. It groups together those areas where the land is flat or gently undulating, which are also generally the parts where greatest changes to land and water have taken place since settlement. Most of the District's population lives on the Plains; consequently they also have the greatest concentration of services - roads, power lines, waste disposal sites etc.

The ecological aspects of the landscape are dominated by cultural patterns and processes - pastoral production, cropping, growth of towns, channelisation of rivers and streams, high energy inputs etc. However, the ecological aspects remain important - dependence on soil health for agriculture, value of trout fishery etc.

Four units have been distinguished within the Plains Type. The Southland Plains are the largest, being the flat and rolling areas from the Mataura River in the east, to the Longwoods in the west; the Waimea Plains running from Mandeville to Mossburn; the Te Anau Basin; and the Waiiau valley south of Blackmount. Invercargill City is a special area within the Southland Plains Unit.



10.1 Southland Plains Unit

10.1.1 General Description

This Unit includes the lands east to the Mataura River, north to Wairio, Avondale, Josephville, Brydone (boundary with Gore District) and west to Otautau. It takes in those lower slopes of the Hokonuis which are developed, and its southern boundary is with the Coast Units. In much of the unit, the widespread agricultural development which has taken place hides the relatively diverse ecological patterns which make up the Plains. However, they can be seen in the rivers, where flooding and erosion are common; and in the peatlands, where early attempts to "improve" the land for pasture have opened them up for gorse and other weed infestation.

Water plays an important role in the Plains although every watercourse has been modified in some way. The Plains originated from the ancient river gravels carried down from the glaciated mountains to the north. To the east of the Oreti valley, the plains are rolling, with loess cover over the river gravels, and streams and rivers cutting down through this softer surface layer. Nearer the sea, the inter-relationship between build-up of sand bars, flooding and fluctuating sea-levels caused ponding to form the large lagoons and peatlands as seen at Awarua and Waituna. Inland, there are outcrops of limestone, which are mined in the Forest Hill - Browns area. There are some areas of important pre-European forest and peatland vegetation protected in reserves or covenanted areas.

To the west, the Plains are flatter, with thinner soils and wider rivers meandering across the gravel surfaces. Cropping is more extensive here than further east. Smaller vegetation remnants, fewer in number, are protected here.

In the north, the Southland Plains extend along the valleys of major rivers - the Aparima, Oreti and Mataura (into Gore District) - to join the Waimea Plains.

Settlements are scattered across the Plains, often reflecting the historical use of resources and natural patterns, for example the limestone mining areas around Browns. Invercargill is the main settlement and has strong links with the rest of the Region. Much of the built city is on the floodplains of a series of rivers with origins in the Plains, Hills and Mountains; the suburb of Otatara is on an old dunes system. The City's economy depends on the health of the natural resources of the land and water, and even at a distance from the Coast is vulnerable to changes in sea-level.

Human settlement has brought resource management concerns to the Southland Plains, including the long-term sustainability of high input farming and the pollution of waterways by a range of activities.

10.1.2 Special Features and Areas

The urban area of Invercargill is a separate area of the Unit and is dealt with in a separate report to Invercargill City Council. The rural part of the City is similar to the rest of the

Unit, so that resource management objectives, actions, controls, rules etc should be consistent at either side of the political boundary. Other settlements have not been singled out.

The large peat mosses near the coast are significant because of visual and ecological reasons; not all parts are protected. (Cross ref Coast Type and Invercargill City Plan)

Rivers are important in the Unit, particularly the Mataura, Oreti, Makarewa, Aparima, Waihopai and Waikiwi.

The Hokonui Downs area is at higher altitude than most of the unit, but is intensively farmed and consequently included within this Plains Unit.

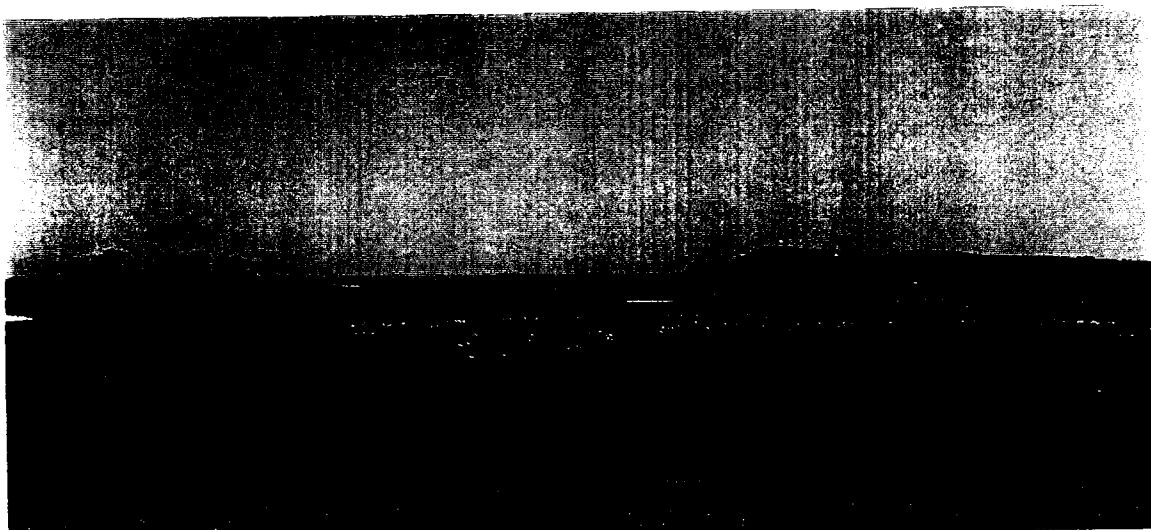
Forest Hill is a highly visible landmark in the Unit, as well as having an important limestone and forest reserve.

There are many small protected areas, particularly protecting old forest remnants; some of these lie within Invercargill City, but represent types which would have been more widespread on the Plains.

10.1.3 Landscape and Ecological Values

The things which are important in the Unit are:

- the remnant areas of native vegetation, and the potential to link some of them through further protection and enhancement
- the major rivers and their tributaries, as habitats and as water resources
- Forest Hill as a landform feature



Forest Hill stands out clearly on the Plains

- the quality of some features of the rural landscape
- significant views to the surrounding hill and coast landscapes

10.1.4 Issues

The Southland Plains has a strong rural character of scattered settlements in a gently rolling pastoral landscape.

Watercourses are significant features and are the links with other landscape types. The health of the Plains depends on its soils. Because of the intensive modification which has taken place in the past, the remnants of native vegetation and less modified stream channels have high value.

Adverse environmental effects can occur when the nature of farming or other land-uses change or where urban elements are not carefully located or designed.

The issues identified in this Unit include:

- threats to distinctive rural landscape characteristics and qualities that reflect the subtle diversity within the unit
- threats to water quality through agricultural practices (eg dairy shed cleaning)
- threats to water quality through stock trampling and grazing, and the potential for this to increase with changes to dairying and deer farming
- the loss of riparian vegetation and the threats to water quality and quantity and habitat values, from some land-use practices (eg stock grazing and trampling)
- threats to water quality through location of rubbish dumps close to rivers and streams
- inappropriate location and design of buildings in rural landscape
- threats to water quality through pollution of waterways and groundwater by industries, farming and urban uses (eg stormwater run-off) (cross ref Coast units)
- threat to wetland habitats and species through Sphagnum harvesting at sites of ecological value
- threats to peatlands and native shrubland through drainage and clearance during lignite and peat mining
- loss of significant views from highways for example through structures or shelter-belt planting
- threats to tussock vegetation on roadsides in Hokonuis area during road maintenance activities



10.2 Waimea Plains Unit

10.2.1 General Description

This is the intensively farmed area running NW to SE from near Mandeville to north of Mossburn, with "fingers" into the Waikaia and Garston valleys. The Oreti and Mataura valleys cut through these glacial gravel plains often forming stepped horizontal terraces. In other places, there are stopbanks. There is some irrigation of the soils at the southern end of the unit, while at the higher altitude above Mossburn there are some areas of red tussock land. It includes the area around Castle Downs Swamp, which is in the upper catchment of the Aparima River, enclosed by the Taringaturas and eastern hills of the Takitimus.

On the flat terrace lands, the landscape is dominated by long, mature shelter belts, mostly of pine, above a very regular pattern of fence lines. The settlements are rural service centres, and as such have a very open character with wide streets, and mostly single storey buildings. There are no native forest remnants in the Unit. At the western end, red tussock occurs in paddocks and on roadsides, usually in modified communities.

10.2.2 Special Features and Areas

Castle Downs Swamp is one of the largest wetlands in the upper Plains. Although grazed by cattle, it is managed for duck habitat by its owners.

The downlands above Lumsden which despite their topography and altitude are considered to fall within this Plain's unit.

The major rivers crossing the unit which link the Hills and Mountains with the lower Plains and Coast.

The Garston and Waikaia Valleys.

10.2.3 Landscape Ecological Values

The things which are important in this unit are:

- the rivers as habitats and water supply
- the productive soils, although their productivity is constrained by water
- the open vistas to mountains and hills
- rural character of settlements
- rare red tussock vegetation and other wetlands at altitude
- contrast with surrounding mountains and hills
- landscape variation from west to east

10.2.4 Issues

The character of this unit is one of contrast between the open paddocks and views to the mountains and hills, and smaller spaces enclosed by pine shelter belts. The settlements retain their rural character with features such as stock yards and wide streets. Two major tourist routes pass through this Unit, although most visitors are carried through it by coach without stopping! Change in the area could be related to changes in tourism patterns (eg through the proposed international airport) or farming (eg through market changes).

The issues identified in the unit include:

- threats to water quality through stock trampling and grazing, and the potential for this to increase with changes to dairying and deer farming
- the loss of riparian vegetation and the threats to water quality and quantity and habitat values, from some land-use practices (eg stock grazing and trampling)
- threats to water quality through agricultural practices (eg disposal of chemicals)
- loss of significant views from State highways (tourist routes) eg to rivers or mountains, resulting from planting or structures
- visual conflicts between natural landform patterns and shelter-belt planting or other development
- the loss of the subtle landscape characteristics that distinguish between the west and east of the unit eg. the frequency of natural remnants, dominance of riparian vegetation.
- potential for increased numbers of tourists in Lumsden and Mossburn, and a resultant change in rural character



10.3 Te Anau Basin Unit

10.3.1 General Description

The Te Anau basin has a complex geological history, which is not entirely understood. This shows through in the variety of landforms, river patterns, natural vegetation patterns and present day uses of the area. It is strongly influenced by the Fiordland mountains which dominate the climate, but also by the rivers which flow out of the inland mountains carrying gravels and eroding banks.

This unit extends south to the Redcliffs Stream, east to include the Burwood Bush area and the roads into Mavora, and north to the Fiordland National Park boundary in the Eglington Valley. Its eastern boundary with the Livingstone-Eyre Mountains Unit is based on change of slope and dominant vegetation cover. Te Anau and Manapouri are the largest settlements and have dual roles in servicing both the agricultural industry and the tourist and recreation industry. Both these activities are dependent on natural resources, although the farming is focussed on the Plains, while visitors usually move out into the Mountains and Fiordland units.

Extensive clearance of native vegetation took place under the Department of Lands and Survey farm development programmes, although a number of larger areas of forest remain close to the eastern and northern edges of the Unit. The high rainfall and unusual soil complexes support a number of wetlands of different types. There are extensive areas of manuka shrubland in the Te Anau Downs area. The Waiau River flows are modified, and the river is the subject of a major study at present.

This is a rolling rural landscape in which small scale changes in land use (eg forestry or subdivision) are taking place. Its character is one of variety - of different types of housing, different trees in shelter belts, variety of stock, variety of landform.

10.3.2 Special Features and Areas

Te Anau township.

Scattered, mostly small, protected natural areas.

The wetlands proposed for inclusion in the Te Anau Basin Wetland under the Ramsar convention - Dome Mire-Dismal Swamp, Kepler Mire, Ameoboid Bog, Kakapo Swamp, Duntoon Bog, and two areas within Snowden Forest.

10.3.3 Landscape Ecological Values

The important things in the Unit are:

- the role of Te Anau as a focus for resource based activities
- wetlands proposed for Ramsar recognition

- the influence of activities in Te Anau township on lake water



There is a close relationship between agricultural land, the township and lake Te Anau.

- the rivers of the upper basin as habitats with relatively clean water and unmodified flows
- the remnants of native vegetation including wetlands and the potential to link them along roadsides or waterways
- Burwood Bush reserve and surrounding tussocklands as habitats and for rare species management
- presence of wetlands and riparian tussock which helps to protect water quality and sustain flows



Wetlands are vital in the total water quantity and quality patterns of the upper catchment.

10.3.4 Issues

This area is characterised by the rolling, rural landscape backed by the mountains of Fiordland and the Livingstone Range and dotted with houses and native vegetation remnants. Variety is a feature, and is related to the underlying natural patterns. Change is likely to take place over the next few years with tourism growth throughout the area, diversification of farming, and growth of Te Anau township.

The issues identified for the Unit include:

- threats to shrublands and wetlands through clearance or drainage for subdivision or farm development
- threats to water quality through stock trampling and grazing, and the potential for this to increase with changes to dairying and deer farming
- the loss of riparian vegetation and the threats to water quality and quantity and habitat values, from some land-use practices (eg stock grazing and trampling)
- threats to water quality through agricultural practices (eg disposal of chemicals)
- threats to lake and waterway water quality through urban activities (eg stormwater) (cross ref Fiordland unit)
- potential for (tourism) developments in Te Anau to be out of character with township





- potential for commercial forestry to change quality of rural landscape if badly sited, designed or managed

10.4 Lower Waiau Unit

10.4.1 General Description

This unit includes the farmed lands of the Waiau Valley from the Monowai- Blackmount area down to the boundary with the Coast. It extends through the Orauea Stream valley to Nightcaps, and includes the rolling limestone country around Clifden. The Waiau valley is a broken landscape with a mixture of small terraces and plains and a series of hills, scarps and cliffs. It is intensively farmed, although there are remnants of tussock and shrubland in places (eg Merton Creek, Lillburn Road). The Waiau varies in this unit from a wide, braided river meandering over shingle to a single channel with rocky bluffs. Its flows have been greatly modified in the past and the Waiau Working Party is currently assessing how change might take place in the future.

Tuatapere is the main settlement of the area. It grew as a timber town, based on the native forests of Waitutu and the Longwoods, but more recently has expanded into recreational servicing. Some remnants of beech forest form an attractive riverside reserve in the town, and the State Highway 99 is part of the "Scenic Route" to Fiordland. Further north, the road offers good views of the river and towards the Takitimu Mountains.

The northern part of the valley is less intensively developed with larger bush remnants (eg Lonnekar's Bush Scenic Reserve), and quite intact roadside vegetation communities.

10.4.2 Special features and Areas

The limestone hills along the eastern side of the valley have a distinct landform character with rock outcrops, bluffs and caves.

Tuatapere is a township significantly larger than others in the Unit.

10.4.3 Landscape Ecological Values

The important things about this Unit are:

- the limestone landscape, especially where it has historical links, as at Clifden
- the Waiau River habitat and water supply
- the remnant pieces of native vegetation, and the potential to use roadsides and watercourses to link some of them
- high visibility of the Unit from the Scenic Route



At Clifton, historical, visual and geological values are high.



Remnant native vegetation makes an attractive edge to the road.

10.4.4 Issues

This unit is strongly influenced by the adjacent ones - its timber industry was based on native forests on the hills; tourism and recreation interests lie in the hills, mountains and coast, and the Waiiau River, is affected by hydro-power management in the Te Anau area. Thus change is likely to come from changes outside the unit - tourism growth and diversification, a halt in native forest logging, and the increase in pine and gum forestry as recently planted forests come on stream.

The issues identified in this Unit include:

- threats to water quality through stock trampling and grazing, and the potential for this to increase with changes to dairying and deer farming
- the loss of riparian vegetation and the threats to water quality and quantity and habitat values, from some land-use practices (eg stock grazing and trampling)
- threats to water quality through agricultural practices (eg disposal of chemicals)
- threats to remnant or regenerating native vegetation (eg Lillburn Road) through some land-use practices
- threats to roadside vegetation during maintenance or when changed from shingle to tarseal
- potential for afforestation to have adverse effects on Scenic Route values
- loss of Tuatapere township identity from the development of inappropriate structures



Modernisation of older buildings can have an adverse effect on their character and the image of the township.

THE PLAINS LANDSCAPE CHARACTER TYPE

10.5 Desired Environmental Outcomes

Maintenance of the productive capability of land and water.

Long-term viability of self-sustaining communities of native plants and animals.

Retention of a diverse and attractive rural landscape.

10.6 Objectives

Protection of large areas of native vegetation and their management towards self-sustainability.

Protection of all native plants with potential to form self-sustaining communities and habitats.

Protection of all waterbodies and waterways from pollution by human activities.

Protection of rural landscape character and quality.

10.7 Policies

- To support and encourage the Regional Council in its programme for the disposal of hazardous wastes
- To encourage communities to take responsibility for management of their local environment
- To recognise the potential positive and negative effects of tourism on some of the townships of the District
- To recognise that stormwater systems are a source of water pollutants and that direct disposal of stormwater into waterways should be phased out.
- To recognise that valuable plant and animal habitats can be created and enhanced as part of many development proposals, and seek evidence of this in planning consent applications.
- To protect the rural landscape from intrusion of inappropriately located or designed buildings

- To protect significant natural features, including sites of geological value, wetlands, and other habitats identified through the Department of Conservation's INDEX database.
- To recognise the importance of the landscape through which the major tourist routes pass, and to protect those aspects which give it its high quality.
- To discourage, control, or prohibit those land-uses and activities which pollute waterways and waterbodies.
- To create Esplanade Reserves or strips wherever appropriate.
- To require a detailed assessment of environmental effects wherever a proposal affects a waterbody, waterway, native vegetation or a significant natural feature or landscape.
- To recognise the importance of riparian vegetation in the sustainable management of waterways and waterbodies, and to ensure that any riparian land owned by the Council is appropriately managed.
- To recognise both the positive and adverse effects of shelter planting on the Plains, and to provide advice to farmers on its management.
- To ensure that rubbish dumps are appropriately sited (eg away from rivers)
- To protect native vegetation growing along roadsides.

10.8 Mechanisms

- 1 Liaise with Department of Conservation and Southland Regional Council on preparation of databases of native plants, animals and their habitats.
- 2 Require management plans to accompany consent applications for large-scale forestry, horticultural or agricultural developments
- 3 Develop criteria to define "large scale" for the above
- 4 Facilitate the establishment of local/ community groups to prepare landscape management guidelines for their own areas
- 5 Liaise with Department of Conservation to investigate effects of Sphagnum harvesting on peatland ecosystems
- 6 Prepare stormwater management plans for townships to phase out direct discharge to waterways

- 7 Prepare guidelines for landowners wishing to protect, enhance or create new plant and animal habitats on their land
- 8 Prepare guidelines on the location and design of buildings and shelterbelts in the Plains landscape
- 9 Prepare management guidelines for the landscape and ecological values of the major tourist routes through the District
- 10 Identify and locate existing industrial practices which are sources of pollution
- 11 Liaise with Department of Conservation to identify esplanade reserve requirements on all waterways
- 12 Prepare design guidelines for Te Anau township
- 13 Prepare management guidelines for all roadsides with vegetation remnants
- 14 Require a bond to cover rehabilitation from all successful applicants for land-use consents which involve large-scale landscape change.
- 15 Give rating reductions for land placed in QEII National Trust covenants or otherwise privately protected
- 16 Liaise with Federated Farmers, MAF, and local landowners to investigate and encourage new approaches to sustainable farming practice.

11 CONCLUSIONS AND RECOMMENDATIONS

- 1 This study has highlighted the wide range of environments within Southland District. It is the view of the study team that the landscape character types would provide an appropriate division of the District for resource management purposes. It is recommended that once other resource material is available from on-going background papers the 'Types' are adopted (with or without amendment as appropriate) and used as **resource management areas** in the District Plan.

Each of these areas would have its own desired environmental outcomes, goals, objectives, policies, methods of implementation and monitoring. It is the study team's view that this would be a justified response to the resource. Also it would more closely reflect a meaningful community of interest.

The district plan would be tailored to a) the resource base, b) local community aspirations and c) the statutory agencies and organisations charged with the management of particular areas eg. the coast. The flexibility and focus that this would give the plan would have many advantages.

- 2 This study has been prepared largely in isolation of other background studies required for the District Plan. The format in which the report has been presented was chosen to simplify the next stage in the Plan preparation process. Resource descriptions, assessment of values and predicted issues for each of the 23 landscape character units provide the justification for the desired environmental outcomes, objectives, policies and implementation mechanisms prepared for each of the 9 landscape character types (resource management areas). The study team recommend that **the next stage in Plan preparation should be the integration of all natural resource material for each 'resource management area'**.
- 3 As well as providing the basis for the District Plan, this study has also highlighted the need for certain additional planning initiatives.
 - a) Several of the rural townships have exceptional qualities that reflect their landscape setting. This is particularly in the case of Oban, Riverton and Te Anau. The study team recognises that the qualities in these towns are very fragile. They could be easily lost through incremental growth, even before they are fully recognised. However, with imaginative forward planning, their values could be secured and their undoubted potential realised. We recommend, most strongly, that the **Council assist each of these communities to recognise the necessity for a comprehensive town study**. The study objectives should be to recognise and conserve existing qualities that give the towns their particular identity and to maximise their advantages through a programme of enhancement works. This would not be a 'beautification exercise', valuable though that might be. It would be a comprehensive look at what gives the town its special identity, what the community values, and how the community wishes to see it develop. Study outcomes would provide clear directions for district planning and for the future allocation of resources. The study process would provide a community focus

(increasing awareness of the issues), and the opportunity to make the physical fabric of the town reflect community aspirations.

By contrast, the historic townships of Ohai and Nightcaps have declined as the mining industry on which they were based has contracted. Nonetheless, the same 'townscape' approach could be applied here to look at the historic and landscape resource and how these communities would like them to develop.

- b) The tourism potential of Southland is essentially limitless. New Zealand is marketed overseas on the basis of what the southern part of the country has to offer. With increasingly discerning tourists, attracted to New Zealand because of its contrast to their own polluted and heavily modified landscapes, Southland can anticipate an increase in overseas tourists. At the same time domestic tourist numbers are also likely to grow. Whilst, many of these visitors will be attracted by the fiords, lakes, mountains and coast, their enjoyment will be substantially affected by what they experience 'on-route' to their destinations. The study team recommends that a **tourism corridor study be completed**. This would identify the qualities and detractions along each tourist route (beginning with SH 99). It would propose management strategies to ensure that future changes on or adjacent to these routes recognise that their value to tourism is a significant district asset.
- c) This report has reinforced the view that many of the rivers and lakes of Southland are outstanding natural features with a wide range of values. In many parts of the plains and valleys they are the dominant landscape feature. The watercourses, riparian planting and associated features contribute to the amenity of surrounding areas. The significance and vulnerability of these features suggests that their qualities and the values people place on them should be carefully assessed and the findings reflected both in the District Plan and through the actions of the various management agencies. The study team recommends that the **District Council prepare an esplanade study**, jointly with the Southland Regional Council, Department of Conservation and Southland Fish and Game Council. This study would identify the ecological, aesthetic and recreational significance of the main rivers and their tributaries. It would feed into the District Plan through the esplanade reserve provisions and would provide management guidelines to further encourage the protection and enhancement of river and riparian values.
- d) This report has treated the coastal environment as a distinct landscape character type (resource management area). Resource management responsibilities within the coastal environment are shared by the Department of Conservation, Regional Council and District Council. The interdependence of issues and responsibilities suggests a coordinated approach to Coastal Planning. The study team recommends that the **District Council liaise closely with the other agencies to ensure that coastal landscape and ecology polices etc are compatible**.
- e) The Resource Management Act is an enabling rather than prescriptive piece of legislation. Innovative methods of resource management are possible particularly

using the GIS statistical base. Overseas examples of modelling potential future outcomes, and testing community responses to them, can be a very effective resource management technique particularly where there is little apparent consensus on desired environmental outcomes. By seeing clear illustrations of the outcomes of different resource management decisions people can develop their understanding of their environment and how they relate to it.

We recommend that **the "alternative outcomes" approach be developed.** The Catlins could be a suitable trial area given its diversity. In this case, co-ordination with Gore and Clutha Districts would be necessary. (X-bdy issues).

- 4 A large number of sites have been listed here which have local ecological significance, and for which the District Council has some responsibility under the Resource Management Act.

However, the Council needs more detailed information about them to make sound planning and management decisions. Some information is already held by the Department of Conservation, Southland Fish and Game Council and Southland Regional Council; other data may be available through voluntary groups or individuals. The study team recommends that **the Council prepares a programme for liaison** between these bodies to ensure that ecological information about the District is updated and shared.

- 5 The landscape and ecology of Southland has shaped the District in the past and sustains it in the present. With careful and imaginative management they can play a vital part in a sustainable and prosperous future.