

1. Land/Rural Issues

1.0 Introduction

- 1.0.1 Soils and water are fundamental to the sustainability of the region's land resources. Soils have high value to the community; they provide habitat for plants, animals and other organisms, while high quality water resources are required to support natural ecosystems, human health and recreation.
- 1.0.2 Increasingly intensive land use is symptomatic of Southland's economic growth in the last 10 years, resulting in a loss of some soil and water values and the emergence of several new issues. Maintaining and safeguarding the values of soils and natural water resources is vital to the economic and cultural wellbeing of the people and communities of Southland.
- 1.0.3 Environment Southland is responsible for managing activities that have adverse effects on the natural values of soil and water resources under the Resource Management Act (1991). The Regional Policy Statement and Regional Water Plan for Southland identify and manage resource management issues in the region.
- 1.0.4 The district and city councils have control over the use of land. The Southland District Plan provides guidance and control over land use activities within the Rural Resource Area.
- 1.0.5 Ongoing land use change in the region and policy changes at the national level mean that resource management issues relating to rural areas will be key considerations for both the review of the Regional Policy Statement and Southland District Council District Plan.

2.0 Relevance of Existing Issues

- 2.0.1 The purpose of this section provides a summary of the detail discussed in the full issues and options paper that assesses the relevance of the issues, policies, rules and methods in the existing Regional Policy Statement and Southland District Plan.

2.1 Regional Policy Statement Issues

2.1.1 Lakes Rivers and Wetlands

- 2.1.1.1 The natural values of lakes, rivers and wetlands may be degraded by activities or events occurring within or near them. The existing Regional Policy Statement contains 14 resource management issues pertaining to lakes, rivers and wetlands. Many of these issues remain relevant and require consideration during the review process:

- there is a lack of protection and understanding of the intrinsic values of water bodies and wetlands. Intrinsic values may include the mauri (spiritual essence or life force of water), recreational values, ecological values and water supply for domestic, industrial or agricultural use. These values are under pressure from activities such as runoff from production land, discharges from stormwater drains, damming, and gravel extraction;
- the wetlands of the region have significant cultural value as areas for recreational activities and food gathering. Southland includes large areas of wetlands that as well as being culturally important as mahinga kai or food gathering areas, support socially important activities such as fishing, whitebaiting and duck shooting;
- the wetland areas of the region continue to be lost and degraded. Current regional council and district/city council rules fail to adequately protect wetlands from drainage, vegetation clearance, invasion by exotic species and conversion to productive land;
- the degradation and loss of freshwater fish habitat remains an issue. The rivers, lakes and wetlands of Southland contain fish populations of internationally significant ecological and recreational values. These values are threatened by discharges of waste, habitat loss and changes to the ecological balance;
- the people of Southland require access to certain areas. Access is needed to undertake economic activities such as farming, forest harvesting or mineral extraction and for recreational purposes. Tangata Whenua also require access to certain areas to undertake culturally and spiritually important activities;
- careful riparian management and the creation of buffer zones is necessary to prevent runoff or discharge of contaminants. While good riparian management is essential in all cases, the vulnerability of rivers, wetlands and estuaries varies with rate of discharge, soil type and sensitivity of the receiving environment;
- resource managers must attempt to balance the needs of the various components of the land-water system so as to ensure sustainable management. This issue is particularly relevant in the modern context as land-based activities such as dairy farming and residential subdivision continue to put increased pressure on land and water resources;
- ecological flows and water levels must be carefully managed to maintain the values of water resources. Activities such as water extraction, hydro-electric power generation, open cast mining or gravel extraction can result in modification of ecological flows and water levels. These changes must be carefully managed to avoid problems such as inability of waterways to remove debris or other contaminants, growth of algae, loss of biodiversity,

depletion of groundwater, loss or drying out of wetland areas and restriction of fish passage;

- hydro-electric power generation may result in inundation, changes to ecological flows and water levels, modification of aquatic ecosystems or loss of fish habitat and passage. While these effects are potentially very severe, they must be balanced against the provision of services such as flood control and sustainable electricity generation that are essential to providing safety and sustaining livelihoods. The issues around hydro-electric power generation are very complex and require consideration by both regional and district councils;
- gravel extraction may become unsustainable if demand exceeds supply. Such extraction occurs both within river beds and on land. This may cause modification to river flows or the alteration of river beds degrading river values. The recent economic development in the region has resulted in an increase in gravel extraction and more pressure on the resource. It is considered a more active approach to the management of the resource is required;
- vegetation clearance can affect waterways through removal of shading or increased runoff of sediments. The clearance of vegetation from wetlands requires address. This has particularly severe consequences as the area is invaded by exotic species or opened up for conversion to productive land;
- urban and peri-urban areas are served by river management works and community drains. Relevant regional or district council policies and rules must allow for ongoing maintenance and monitoring that enables protection against loss of life or property.

2.1.2 Soils

2.1.2.1 Southland's soil resources are under increasing pressure with associated threats to some values. The RPS lists 11 issues pertaining to soils. Many of these issues remain relevant and require consideration during the review process:

- soil loss and soil degradation may result from activities such as movements of heavy machinery or intensive winter grazing, grazing of highly erodible land or land development. The risks of effects on the soil resource increase as more intensive use is made of soils, either from damage to soil structure or accumulation of crop pests or fungal diseases. Some soils are inherently fragile and are therefore more likely to have issues such as compaction or erosion when farmed intensively;
- high producing or versatile soils are under pressure from intensive land use activities and subdivision for rural-residential and residential purposes. Versatile soils are able to support high production for sustained periods and

are favoured by industries such as dairying, intensive cropping and horticulture that put more pressure on the soil resource. Added to this, significant areas of economically valuable soils are being lost from production to residential subdivision on urban fringes, for example areas of Waikiwi soils to the north of Invercargill;

- discharge of liquid trade wastes, chemicals or sewage to land may result in contamination of soils or environmental effects. Historically, the discharge of chemicals such as PCBs, DDE, dieldrin and arsenic has resulted in contaminated sites, and accidental spillages. Industrial activities and unmaintained or substandard sewage systems remain an issue in the modern context.
- land application of animal waste may result in poor soil health as phosphorous or mineral salts accumulate to levels that are toxic to plants or grazing animals. If animal waste is applied when soils are at or near field capacity or during a weather event, transport of contaminants in runoff or subsurface flow is likely to have an adverse effect on waterways;
- research and improved information transfer is necessary to improve knowledge of appropriate soil management practice and enable farmers to achieve effective husbandry of the soil resource. For example, research and education on improved tillage methods has enabled farmers to improve soil health and avoid compaction, while maintaining high production;
- over recent years, land use change and agricultural intensification have increased pressure on riparian areas (the interface between water and land). Activities in riparian and near stream areas are of particular interest in 'sensitive catchments' where the risks of overland flow or proximity of intensively farmed land to streams means that contaminant loadings are high;
- activities such as production farming or expansion of the built environment can result in disturbance of the ground. Disturbing the ground can have effects such as burial or erosion of topsoil, sedimentation of waterways, invasion of pest plants, disturbance of archaeological sites, alteration of landscapes, windblown dust and the creation of hazards such as landslips, holes or unstable ground. Extensive disturbance of the ground is expected to result from the increase in open-caste mining and gravel extraction over the next few years;
- it is appropriate for resource users to provide for rehabilitation of soils. Useful practices include saving topsoil during earthworks, aerating compacted soils, converting gravel extraction sites to artificial wetlands and using conservation tillage to conserve organic matter. Rehabilitation is consistent with the concept of kaitiakitanga (stewardship) and is therefore of particular interest to tangata whenua;

- the proliferation of pest plants and animals results in loss of habitat values, degradation of landscapes, and loss of the productive value of land. Invasion and proliferation is a particular issue for wetland areas, particularly where changes to water levels result in vegetative succession;
- the uncontrolled introduction of new organisms can result in shifts in the ecological balance of ecosystems and may severely degrade the values of soil or water resources. Priority is given to anticipating and preventing the invasion of new pests as this is a more effective use of resources than suppressing established pests;
- the lack of protection for wāhi tapu and wāhi taonga from the effects of land use activities remains a concern in the current context. Activities of interest include mining, cultivation or land clearance, restrictions on access, peri-urban expansion and discharges to water.

2.2 Southland District Plan Issues

2.2.1 The current Southland District Plan requires review in response to policy changes at the national level and land use changes occurring in the rural resource area. These are the resource management issues that remain relevant to rural/land issues in the current context:

- the shift away from traditional rural activity to production forestry and dairy farming is putting pressure on soil and water resources. It is important to note however that these changes also create economic opportunities for Southlanders;
- remnant indigenous flora and animal habitats are under threat from changing land use. For example there is a specific need for adequate protection for bog pine shrublands in the Te Anau basin;
- residential activity in rural resource areas can create pressure on the District Council to extend services such as water and sewerage reticulation, flood control and road networks;
- residential activities can compromise the natural, open-space character of the rural environment, for example as houses are scattered across open farmland;
- inappropriate land management practices can adversely effect the aesthetic environment of the Rural Resource Area, which is an important component in the District's growing tourism industry;
- rural activities can have an adverse effect on the amenity values of the Rural Resource Area by creating noise, dust, odour, traffic generation and other objectionable characteristics. The adverse effects of storage and application to land of animal waste is an emerging issue in the region.

3.0 What has changed and what are the issues now and for the future?

3.0.1 Following consultation with stakeholders and review of the available information, several proposed changes have been identified. These proposals and the community's reaction to them have identified new issues that should be considered during the review of the RPS and preparation of the Second Generation Southland District Plan.

3.1 Regional issues that are also nationally significant

3.1.1 Several regional issues are also nationally significant and may result in a Central Government policy. Such issues include the growth of dairying, the intensification of drystock farms, arable farming, land use change in high country areas and climate change.

3.1.2 The growth of dairying has placed increasing pressures on soil and water resources over the past decade. Dairy farming involves activities such as high stocking rates, frequent movements of animals, and the accumulation and discharge of animal wastes that result in risks to water and soils. Dairy expansion is also driving economic and cultural change and is a source of opportunities for enterprising Southlanders. Factors such as predicted long term food scarcity, marketing factors and climatic suitability to dairying mean that dairying is predicted to continue to expand for the foreseeable future.

3.1.3 The intensification of drystock farms is a significant issue as sheep, beef, deer and dairy grazing farms are the dominant land use in the region and even minor changes may have substantial environmental effects at the regional level. Drystock farming involves activities such as winter grazing, development of run down land, fertilizer application and stock access to streams that have potentially adverse effects on the health of soil and water resources.

3.1.4 Arable farming has the potential to drive land use change if market conditions, changes to climate or technological innovations increase profitability. The risks of arable farming include leaching of nitrates to groundwater, and soil damage from cultivation or the passage of heavy machinery.

3.1.5 High country areas are valued for their landscape, ecosystem and biodiversity values and upland vegetation plays a vital role in capturing water in upper catchments. These values are under pressure from land use activities as high prices for primary products and changes to land tenure provide powerful incentives for high country farmers to intensify land use.

3.1.6 Problems with pest plants and animals occur at the interface between private and Crown land, such as road and rail reserves, river beds, national parks and reserves. The poor ecological values of boundaries of natural areas may make them a low priority for pest management and the resulting proliferation of pests creates problems for adjacent land owners.

- 3.1.7 New Zealanders enjoy rights of access across or adjacent to farmland by esplanade reserves, access strips, marginal strips and unformed roads. Access has become an issue as public expectations of access across or adjacent to rural properties can at times conflict with the desire of landowners to run economic farm systems.
- 3.1.8 Climate change has significant implications for Southland. If current trends continue, temperatures and rainfall will continue to increase and farms will become more productive. Although overall productivity will be higher, risks will be greater as droughts and storms become more common and more severe. Climate change is of particular interest to district and city councils as coastal settlements or built up areas will be affected by rising sea levels.
- 3.2 **Issues specific to Southland as a whole or to areas within the region**
- 3.2.1 Several issues have arisen that are specific either to Southland as a whole or to areas within the region. These include forestry, activities in national parks, activities in the coastal margin area, the lack of protection for indigenous vegetation, the loss of rural heritage and peri-urban expansion.
- 3.2.2 Forests planted during the forestry boom of the late 80's and early 90's will soon be ready for harvest and forest harvesting and wood processing are expected to increase substantially over the next few years. Effects on water quality, transport networks, amenity values and changes in the local economy are expected to result; effects that are of particular interest to district councils.
- 3.2.3 National Parks provide support for a variety of natural ecosystems as well as outstanding amenity values. The Fiordland and Rakiura National Parks are economically valuable in that they attract visitors and contain significant mineral and hydro-electric resources. The natural and economic values may be inherently incompatible, in which case the region's community will have to seek compromises in their management, by limiting visitor numbers to certain areas for example.
- 3.2.4 The coastal margin includes landforms, ecosystems and recreational opportunities that are a treasured aspect of life in the region. Coastal subdivision and land-use intensification have the potential to degrade these values through loss of amenity values, clearing of vegetation, road construction, erosion, loss of habitat values and loss of access. Activities within the coastal margin area are of particular interest to district councils.
- 3.2.5 The lack of protection for indigenous vegetation on private land has become a regionally significant issue and existing controls have proved inadequate to prevent the conversion of ecologically valuable areas of indigenous vegetation to production land. The Southland District Plan's provisions pertaining to the protection of remaining areas of indigenous vegetation require consideration during the review process.

- 3.2.6 Rural heritage is under threat as economic development and population movement results in the removal of old material and buildings, and the loss of knowledge of heritage sites and local history. Loss or despoiling of pre-European sites may also occur as land development disturbs the ground.
- 3.2.7 Peri-urban expansion can cause the loss of high-production soils, loss of amenity values and inefficiencies in the traffic network. Secondary effects occur where there is inadequate provision for sewage disposal fields or where reverse sensitivity results in interference with the activities of existing rural land users. The severity of effects and difficulty in reversing residential subdivision in rural areas means that this is a priority issue in the drafting of the Second Generation Southland District Plan.
- 3.2.8 Gravel extraction has increased significantly in the last decade and a carefully developed response is required to manage the gravel resource and to avoid large numbers of inconsequential consents.
- 3.2.9 Southland contains 72% of New Zealand's recoverable coal resource and mineral extraction is predicted to become a dominant activity in Southland within the life of the reviewed RPS and second generation District Plan. The scale of the region's mineral resource is sufficient to justify a focussed response within the planning framework so that environmental issues can be adequately addressed when resource consents are processed.

4.0 Options for Addressing Issues and Further Comments

- 4.0.1 The current RPS and District Plan identify a series of generic methods for management of rural and land issues. The revised RPS and second generation District Plan will need to develop new methods and provide further guidance to address the many resource management issues relating to rural land. The following are some options that may be considered during the review processes. If considered feasible, these options and their level of implementation in the planning framework will require further consideration.

4.1 Regulations and Economic Instruments

- 4.1.1 Regulations prevent adverse effects by controlling activities that are identified as having potential environmental risks. Economic instruments are tools that use financial incentives or penalties to drive behavioural change.
- 4.1.2 Regulations may control factors such as the circumstances under which contaminants can be discharged to air, land or water, monitoring or information requirements and the effects of activities on air, land or water resources. The advantages of regulations are that they provide a basic level of protection and assure stakeholders that adverse effects are prevented. The limitations of regulations are that they must be enforced and resources expended to ensure compliance.

4.1.3 District and city councils have indicated that controls focussed at the local level may be necessary to manage land use activities such as residential subdivision in rural areas, farming on erosion prone land and forestry. These include rural density controls and a review of the rules and regulations governing gravel and mineral extraction. There are also specific needs for improved protection of indigenous vegetation on private land, and better coordination and control of gravel extraction.

4.1.4 Economic instruments may be positive as when rates relief is provided in exchange for protecting areas of wetlands, or negative as when financial penalties prevent certain behaviours. For example, in some circumstances it may be appropriate for landowners to be paid or subsidised to carry out certain works or to protect important habitats such as wetland areas or indigenous vegetation in uplands. Economic instruments are limited by costs, in terms of enforcement, achieving compliance and measuring effects or results.

4.2 **Information**

4.2.1 Information is required, both to know what is happening to a resource and why, and to communicate to resource users how to achieve improved environmental results. Information is limited by the resources that can be devoted to gathering it and the willingness to use it (either by resource users or regional council staff).

4.2.2 Research is needed to determine the effects of human activities and to develop options for improving environmental results. In recent times, research has resulted in developments such as minimum or no-tillage planting methods and nutrient budgeting. Research has also resulted in improved understandings of soils and land use capabilities and values of coastal and upland landscapes in the region.

4.2.3 Monitoring and investigation is used to assess the state of the resource and to detect changes occurring over time. Environment Southland monitors water quality, water levels in surface and groundwater, pest populations and air quality. Monitoring may be needed to detect the accumulation of contaminants that are as yet unknown, for example the accumulation of Cadmium in production soils.

4.2.4 Education and guidance is intended to ensure resource users are fully informed of the effects of their activities and know what is expected of them in terms of complying with regulations or achieving improved environmental results. Education and guidance are useful in situations where it is difficult to prevent adverse effects using regulatory approaches. In the Southland region, education and guidance has been used to:

- convey knowledge of land use practices to farmers;
- manage the effects of activities that disturb the ground;
- enable resource users to assist with pest control;
- promote techniques for managing riparian and near stream areas;

- provide design guidance and information on issues that are of concern to particular communities.

4.3 **Voluntary Action**

4.3.1 Voluntary action has potential to save resources and achieve permanent and long lasting behavioural change. Types of voluntary action include codes of practice and accords, assistance from industry bodies, sharing information and collaboration, and community initiatives. Achieving results with these methods depends on the motivations of the resource user and some external motivating force or pressure is often needed.

4.3.2 Codes of practice and accords have proved useful in achieving agreement between local government and industry on action to improve environmental performance. A well prepared and appropriately applied code of practice may achieve environmental protection at a lower labour cost than through regulation and compliance. Currently, Environment Southland is preparing a code of practice to ensure effluent storage ponds are designed and constructed to an appropriate engineering standard.

4.3.3 Industry bodies may assist with resource management. For example, fertiliser companies can act to source phosphate rock with low levels of cadmium and fluorine, and agrichemical companies are in a position to inform resource users of environmental expectations with regard to proper use and disposal of agrichemicals.

4.3.4 Sharing information and collaboration is very useful in resolving some resource issues; e.g. collaboration between forest owners and territorial authorities to coordinate road maintenance programmes with forest harvesting operations. Collaboration with tourist operators may be necessary to balance the amenity, ecological and economic values of national parks. Negotiation with landowners is one way of resolving the issue of access across or adjacent to private land.

4.3.4 Community initiatives work by creating a collective sense of responsibility for environmental quality as a driver of behavioural change at the local level. The Living Streams Programme is a community initiative aimed at improving water quality, with activities focusing on riparian zones and areas adjoining streams. This community initiative shows some promise of achieving an improvement to water quality at the whole catchment level.

4.3.5 **Financial Support**

4.3.6 In some instances, local authorities provide financial support, either by providing assistance for environmentally focussed improvements or direct purchase of assets such as land in water supply catchments. Financial assistance is limited by resources available and cost implications to ratepayers.

- 4.3.7 Assistance from local authorities may be appropriate to support community initiatives or actions by individuals. In Southland, subsidies for fencing waterways and heritage protection projects have provided good results for relatively low financial inputs. Support to community heritage organisations has resulted in excellent results for the little that was received, for example the Southland Oral History Project has resulted in the collection of a substantial amount of information on the history and stories of the region.
- 4.3.8 Purchase of Land has been used in the past to achieve a given result; e.g. when a council acquires catchment areas to ensure a reliable supply of good quality water, or buys land to safeguard against inappropriate development on a floodplain. Large areas of high country land have been acquired through the tenure review process.

5.0 Conclusion

- 5.0.1 The natural resources of Southland support aquatic and terrestrial ecosystems, provide living space, support human health and recreation, and provide the basis of the majority of the economic activity in the region. The values of the resources of the region may come into conflict, particularly as economic activity intensifies and more pressure is put on the natural systems of the region. This tension results in the resource management issues that have been discussed in this paper.
- 5.0.2 Solutions to resolving these issues may be based on controls imposed by local councils or through other methods such as improved information, voluntary action or financial support. While each of the proposed methods has particular disadvantages and advantages, a balanced approach must be taken that reflects the resources available, structural or cultural frameworks and values and needs of stakeholders.
- 5.0.3 Achieving successful resolution of resource management issues through the implementation of appropriate methods will be the key concern during the review of the RPS and drafting of the second generation Southland District Plan.

6.0 Questions for Discussion

- 6.0.1 We need your thoughts on how to address the issues that have arisen since the RPS and District Plan became operative in the late 1990's. The questions outlined below will help to provide a starting point for our discussion with you about managing rural and land issues:
1. Do we have a complete list of land/rural issues in Southland?
 2. How can we better respond to the issue of intensification of land use and land use change?
 3. What is the role of central government in resolving land/rural issues in Southland?

4. How can the RPS assist district councils in achieving sustainable development of the land resources of the region?
5. What is an appropriate control on rural density? What are the advantages and disadvantages of the following options:
 - (a) continue with the current approach, a 150m separation requirement;
 - (b) use minimum lot sizes as a distance control;
 - (c) impose zoning regulations that set aside areas for intensive rural development;
 - (d) enable 'clustered' developments that set aside parts of farms for housing development, but leave the rest of the land in production.
6. Should the Southland District Council examine options for the protection of versatile or high production soils on the rural/urban fringe?
7. Should more isolated rural areas of the district be protected from rural/residential lifestyle development?
8. Should the Southland District Council act to identify and map high quality soil types and recognise which landuses are best suited to these soils?
9. How should the Southland District Council respond to the increased levels of gravel extraction that have taken place in recent years?
10. How can we create a sensible alignment of RPS, RMA and national policy that will enable us to protect remaining areas of indigenous vegetation?
11. What is the role of voluntary measures such as codes of practice and accords, industry assistance, collaboration and community initiatives in addressing regionally significant issues?
12. In your view, which of the issues discussed in this paper have priority in terms of action by local government? Why?