The South Island High Country of New Zealand

Authors: Swaffield, Simon, and Hughey, Ken

Source: Mountain Research and Development, 21(4) : 320-326

Published By: International Mountain Society

URL: https://doi.org/10.1659/0276-4741(2001)021[0320:TSIHCO]2.0.CO;2

Mountain Research and Development Vol 21 No 4 Nov 2001: 320–326

Simon Swaffield
Ken Hughey

The South Island High Country of New Zealand

Landscape Challenges and Future Management

In this scarred country, this cold threshold land,
The mountains crouch like tigers. By the sea
Folk talk of them hid vaguely out of sight.
But here they stand in massed solidity
To seize upon the day and night horizon.

From "The Mountains," James K. Baxter

These lines by J. K. Baxter capture something of the ambivalent role played by the South Island High Country in the collective psyche, science, and public policy of New Zealand. As Kevin O'Connor, Professor of Range Management, put it in 1993: "Most people in New Zealand would be disconcerted if their mountain skylines to familiar landscapes were removed. Nevertheless, the influence of New Zealand mountains on its national consciousness does not appear to have great significance in policy…" Nowhere is this more apparent than in regard to landscape issues. This article focuses on the landscape of the South Island High Country. We first define the High Country, describe its distinctive landscapes, and provide an overview of its landscape history. We then identify and review trends and issues in landscape change.

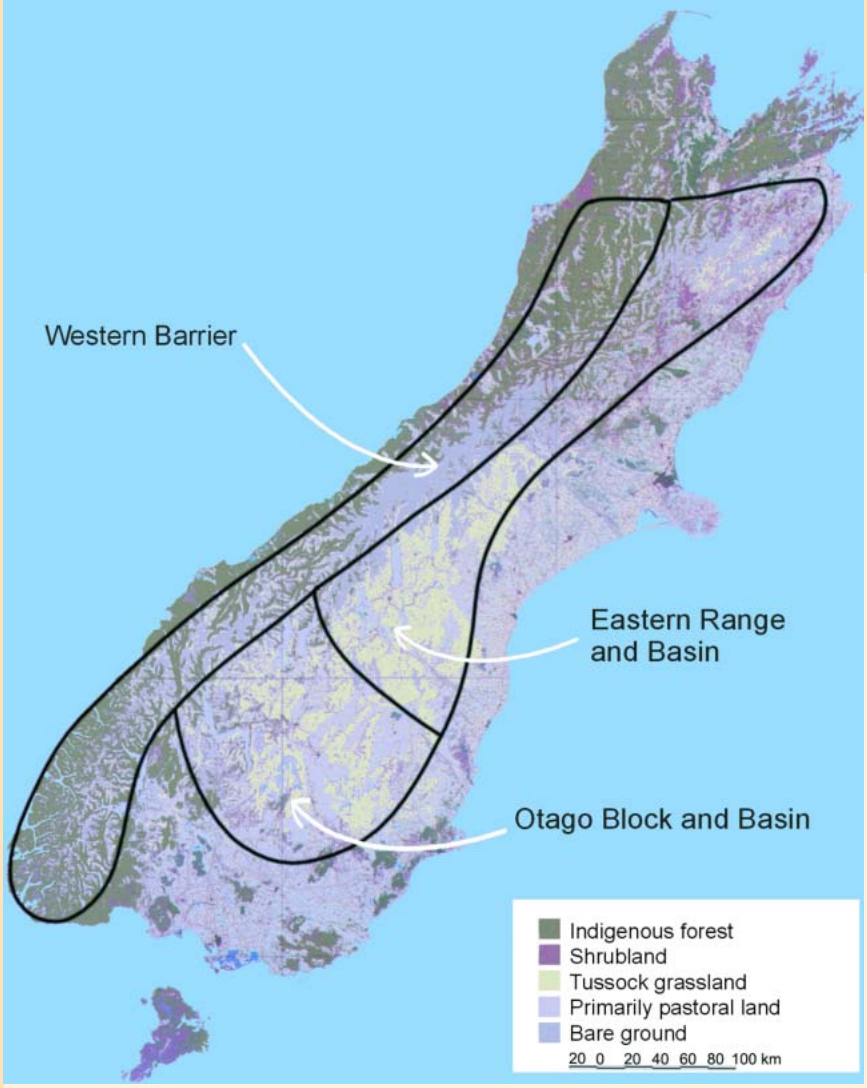

FIGURE 1 Landscape provinces of the South Island High Country. (Base date and cartography by Terralink Ltd and S. Thompson, Ministry of Agriculture and Fisheries; landscape provinces based on O'Connor 1993).

The landscapes of the South Island High Country

The South Island High Country comprises much of New Zealand's mountain lands. Extending the full length of the South Island, it is typically defined as land over 700 m. However, such a bald description says little of its distinctive landscapes (Figure 1). The High Country includes the main divide of the Southern Alps, a line of deeply glaciated mountains rising to nearly 4000 m, and the foothills and intermontane basins to the east. There are 3 broad elevational zones. The relatively stable high-altitude zone is above the treeline and below the permanent snowline; it is dominated by indigenous grasses, herbs, and small shrubs. The less stable middle-altitude zone was formerly dominated by beech forest but is now largely converted into extensive tussock grassland east of the divide, with a significant proportion of exotic species. The lower altitude zone comprises the lower slopes, terraces, and fans in the river valleys and intermontane basins, which on the east of the divide have been extensively converted into farmland. In the west, south, and close to the main divide, the valleys remain largely indigenous beech forest (see Germann and Holland in this issue).

These vegetation zones combine with the topography to create the iconic High Country landscape of snow-covered alpine peaks rising above slopes covered with beech forest, tussock grassland stretching out to the east, valley floors with a tapestry of braided rivers (Figure 2), lakes, improved pasture, and the dark green of shelter planting of the High Country sta-

tions. These qualities have been celebrated in poetry and song, painting and writing, and in recent years have been commercialized for promoting everything from adventure tourism to cheese, beer, and 4-wheel-drive utility vehicles. However, there are also very different interpretations of the meaning and significance of landscape.

Simon Swaffield, in a range of studies, has shown how High Country landscape is conceptualized differently within different disciplines, professions, and interest groups, with interpretations ranging from the scenic to the geographic to the poetic and spiritual. For South Island Maori, High Country landscapes carry deep cultural and spiritual meaning, developed over many generations of seasonal occupation and travel. There is also deep attachment among European New Zealanders, particularly those with generations of involvement in farming or in High Country recreation.

For many others, the High Country is a scenic backdrop to life on the coastal margins or a tourism or adventure destination. One expression of this diversity is the way that the High Country has become contested ground. To understand this, it is necessary to review the landscape history of the High Country, as unknown land evolved to become a familiar, cared-for landscape for some and a scenic backdrop for others.

The landscape history of the High Country

This history is usefully summarized in 4 broad phases: first, the prehuman situation; second, the pre-European phase, when Polynesian migrants arrived at one of the last remnants of Gondwana, an encounter described by Tim Flannery in his 1995 account *The Future Eaters*; third, the 19th century European colonization and establishment of a pastoral culture; and fourth, intensification and diversification of land uses during the 20th century. Figure 3 shows changes in vegetative cover over those 4 phases.

New Zealand is one of the last settled lands on earth, with a high proportion of endemic flora and fauna. Before the arrival of humans, the High Country was mainly forest. In the absence of indigenous terrestrial mammals, the fauna was dominated by avians, some of which browsed and grazed. The arrival of Polynesians some 800 years ago led to dramatic changes. The indigenous avian megafauna (particularly Moa) provided an easy source of protein, fire was used for hunting, and consequently, forest area was significantly reduced while tussock grassland area extended greatly. There were also extensive areas of scrub. The Moa were hunted to extinction before the arrival of Europeans, and the evolving Maori culture continued to utilize the High Country as a seasonal food source and as trading routes between either coast.

Pastoralism soon became the dominant factor in 19th century European settlement of the High Country. Those with venture capital invested in stock to graze across the extensive grasslands leased by the Crown to settlers. Gold mining caused dramatic, localized landscape change in some areas. But it was sheep that became the main ecological agents, along with other introduced species such as rabbits. The pastoral culture has continued to the

FIGURE 2 Eastern ranges and braided rivers, Hopkins Valley. (Photo by Ross Cullen)

"Many people have an affinity with high country and mountainlands. The sense of involvement extends beyond those who live there." (Claire Mulcock, 2001)

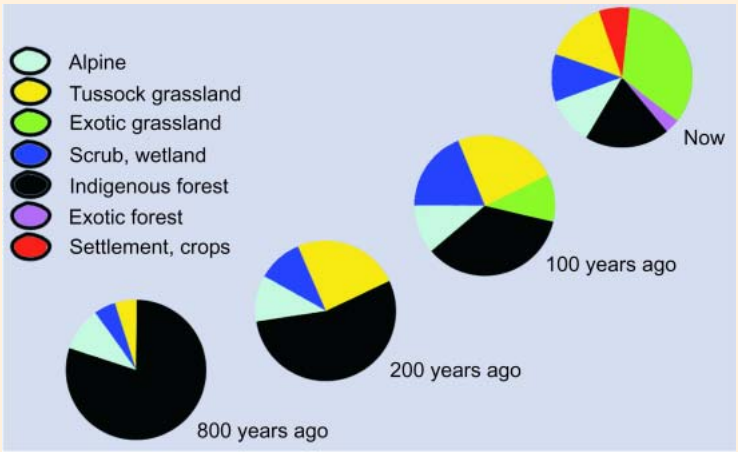

FIGURE 3 Changing vegetative cover following human modification. (Adapted from Mulcock 2001)

FIGURE 4 Looking west toward the main divide, across the eastern ranges by Lake Coleridge. (Photo by Kelvin Nicolle)

present day and is fundamental to contemporary debates over tenure reform and land management.

Kevin O'Connor summarizes the final period, from 1915 onward to the present, as one of intensification and diversification. A key feature has been the emerging dichotomy between production and conservation, which has come to characterize New Zealand environmental policy more generally. Large areas of the High Country have been designated as national parks or other conservation lands, with management focused on recreational use and nature preservation. In the pastoral leasehold country that constitutes much of the remaining area, the emphasis has been on production.

Public policy initiatives

Many public policy initiatives in the High Country have been responses to periodic economic and ecological crises. They have been aimed at maintaining or enhancing economic returns through improved pasture quality, conservation of soil fertility and structure, pest control, and improved stock management. Large-scale hydroelectric schemes have also had dramatic impact. These production initiatives have led to significant landscape change and diversification, for example, through irrigation and shelter planting, or afforestation, with most change concentrated in valleys and basins (Figure 4).

The most recent wave of change has been a consequence of the reforms of the New Zealand economy and public sector undertaken since the mid-1980s. One effect has been to further reinforce the spatial dichotomy in land management objectives. Crown-owned land was split between the newly established Department of Conservation (DOC) and commercially oriented state-owned enterprises, some of which have since been privatized. The withdrawal of price subsidies forced farmers to adjust land management practices; this further accentuated the differences between areas suitable for intensification and those that are not. Major diversification into tourism and, in Central Otago especially, into vineyards also occurred.

The statutory planning framework was also radically reformed. In 1991, the Resource Management Act (RMA) replaced a diverse range of environmental laws, with the overriding purpose being the sustainable management of natural resources. Central to its philosophy was a shift from public regulation of land use toward management of the environmental effects of land use. This shift reassigned rights to develop land to landowners but strengthened the nature of the public interest in the management of specified effects, including effects on landscape. Some consequences of this change have been bitterly contested.

Most recently, the Crown Pastoral Land Act 1998 accelerated the process of differentiation between conservation and production land on pastoral leases, with lower altitude productive land being freeholded and high-altitude land retired into the conservation estate. The intermediate zones retained in leasehold become subject to varying conditions depending upon their conservation value and the public interest in their future.

Trends and issues in landscape change

The RMA has brought the potential for differing interpretations of landscape sustainability into sharp focus in the High Country. Section 6 requirements in particular have caused much conflict and illustrate differing viewpoints on the nature of

landscape and its role in sustainable management. The section identifies several "matters of national importance," including protection of outstanding natural features and landscapes from inappropriate subdivision, development, and use and the protection of significant areas of indigenous vegetation. However, various local councils' attempts to develop and implement policies to meet these requirements have met vigorous opposition from rural landowners and managers. Ten years after the Act was introduced, there are, in practice, few parts of the High Country where agreement has been reached. In one high-profile case, the Environment Court has resorted to imposing policies where the local council (Queenstown Lakes District) has been reluctant to do so.

At the heart of the issue lie differences of understanding and ideology about the nature of landscape. For many landowners, landscape represents the scenic qualities of land, the appreciation of which they believe to be a matter of individual taste. It thus seems peripheral to issues of sustainable land management, which for them are related to soil fertility and stock carrying capacity. For many urban visitors, recreationists, tourists, and indeed conservationists, the appearance and experience of landscape represents the health of the environment. Careful management of appearance signifies care for underlying processes. Indeed, farmers themselves judge stewardship in part by the appearance of land—the cues for care identified by Joan Nassauer in 1995. However, cues are read differently by different people.

In the High Country, clean paddocks and shelter belts may be seen as good sustainable husbandry by farmers but as exotic deserts by conservationists, while indigenous shrubs are seen as weeds by farmers and as valuable biodiversity by conservationists. *The Press* of 8 August 2001 reported a major dispute between public agencies and the owners of Lakes Station, who had sprayed weedkiller on 400 ha of tall matagouri shrubland in order to protect the profitability of the land for stock. Matagouri is an indigenous species (Figure 5), and the stand has been described by ecologists as highly valuable but was reportedly dismissed as weed by the owner.

Attempts to manage such differences of perception through statutory planning have highlighted the second issue, the contested ground between public and private rights. This is perhaps the most bitterly fought aspect of High Country landscape politics. The tensions originate within the terms of the pastoral leasehold system, which limits the actions of lessees but assigns exclusive occupancy of the leased land. Hence, there is no automatic public right of access across the pastoral leases that border much of the higher altitude conservation lands. In the past, many runholders have willingly hosted visitors, but as tenure review of leasehold land has proceeded, attention has focused on the long-term future of public access across freeholded land, particularly if farmers seek to use the landscape for tourism activities.

These tensions were graphically illustrated in *The Press* of 23 July 2001, which reported that officials of a winter ice skating club were issued trespass notices when using Lake Ida. Although the shoreline is controlled by DOC, access is now (claimed to be) owned by the adjoining Ryton Station, which promotes ice skating as part of commercial recreation. Public and private interests thus compete directly over rights of use and access to public resources. In particular, New Zealanders living in the coastal settlements, who have come to regard the High Country as a 'public' landscape, must now compete economically with wealthy international tourists, brought in by land managers seeking to diversify the economic base of pastoralism.

FIGURE 5 Matagouri: indigenous biodiversity or weed? (Photo by Richard Suggate, Department of Conservation)

"Tussock grasslands and sheep are not well matched because the grasslands evolved in the absence of grazing mammals and frequent fires, and have a low natural productivity … periods of apparent recovery … have represented only temporary departures from deleterious long term trends …."
(Alex Wearing, 1997)

How fragile are the ecosystems?

Diversification into tourism is part of a wider response to environmental uncertainty. The High Country is a highly dynamic landscape: there is active uplift and high rates of erosion, its climate is subject to unpredictable droughts, and there are frequent but irregular intense rainfall events that lead to landslips and flooding. Ecological trends are also difficult to predict, particularly after human disturbance and introductions of new plant and animal species. Synchronizing socioeconomic systems with natural systems is therefore a major challenge, and living with uncertainty has always been a feature of High Country pastoralism.

Some commentators such as Alex Wearing argue that High Country productivity has been declining since the 19th century. Wearing questions whether managers can reconcile annual cycles and short-term financial requirements of pastoral agriculture with longer term and uncertain ecological change. He argues that long-term sustainability will require land use to be decoupled from its dependency upon creating an annual surplus in net productivity but notes that this would require cross-subsidy from other parts of the economy.

Others more closely aligned with the pastoral culture, such as Claire Mulcock, take a more sanguine view, suggesting that a partnership between private interests, science, and public agency can release the "immense opportunities" for a unique mix of uses in the High Country. The key to releasing such potential, in this view, is privatization of the most productive resources (reportedly described as "a decent divvy up [sharing out] of the resource …" by Dennis Marshall, former Minister of Conservation).

It is the terms of such privatization that create tensions between leaseholders and advocates for public access such as the High Country Coalition. The reallocation of significant areas of Crown land to Maori, as part of the government settlement of land claims under the Treaty of Waitangi, adds further complexity and caused tension during presettlement negotiations in the 1990s.

Exotic pests and weeds

European occupancy of the High Country brought not only sheep and cattle; many other exotic species have modified its ecology, especially in the drier eastern areas. Invasions of exotic weeds and pests have contributed to many of the contests occurring in the High Country. Three notable pests deserve consideration—the rabbit, the Himalayan *tahr,* and wilding trees.

After its introduction in the 1860s, the rabbit reached plague proportions in many pastoral areas during episodic events in the 19th and 20th centuries. In the 1990s, integrated farm management programs, designed to improve land management and limit rabbit impacts, were being developed with government help. However, many farmers continued to seek 'magic bullets' to destroy the menace. Although such solutions are looked on with suspicion by those living in other areas and by administering agencies, in the late 1990s, the RCD virus was (apparently illegally) introduced to New Zealand and released with devastating effect.

Himalayan *tahr* (Figure 6) were introduced for hunting into the central Southern Alps at the start of the 20th century. Numbers grew quickly so that, by the 1960s and 1970s, they were a resource for hunters but a major pest in national parks and other areas of the central Southern Alps. DOC developed a *tahr* control plan in 1993, which confirmed the animal as a pest but also acknowledged that, in maintaining numbers at or below certain densi-

FIGURE 6 The Himalayan *tahr,* a mammal introduced in the early 20th century. (Photo by Gordon Roberts)

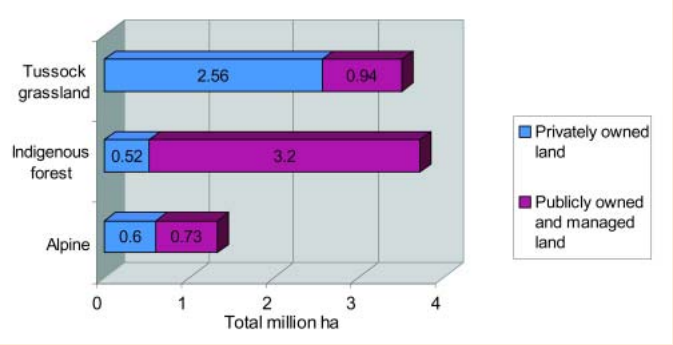

FIGURE 7 Public ownership and management of vegetation types in the South Island. (Adapted from Mulcock 2001)

ties, hunters could retain a significant recreational (and commercial) value in the animal. Pastoral lessees with *tahr* on their lands earn extra income from selling trophy heads for guided shoots; thus, the pest is also a resource that can be managed sustainably. However, DOC has moved recently to reassess the pest status of deer (and by implication *tahr*) and downplay the role of recreational hunting, thus moving away from the possibility of a shared win-win position.

As a formerly forested land, the open grasslands east of the divide are particularly vulnerable to invasion by woody species. The former forest cover, predominantly beech (*Nothofagus* spp), recolonizes only from the margins of existing stands. On undeveloped land, shrubby indigenous species, such as matagouri and manuka, and introduced species can rapidly establish. The exotic lodgepole pine (*Pinus contorta* Dougl) in particular is a vigorous colonizer, and self-sown wildings now cover approximately 100,000 ha. It is inevitable that, as land is retired from extensive grazing, woody species will recolonize and create a much more diverse mosaic of land cover throughout much of the High Country. Whether this comprises exotic or indigenous species depends on local seed sources and conditions, and in many cases, the future composition of shrublands and tall forest is difficult to predict, as the long-term interrelationship between exotic and indigenous species is little understood. DOC considers wilding spread the number one threat to ecosystem processes in the large Eastern Range and Basin country (see Figure 1). Others see commercial benefits from afforestation and opportunity to use exotic trees as a basis for soil rehabilitation. The difficulty in agreeing on action over wilding trees is indicative of the divide between production and conservation interests that, in the medium to long term, is not good for sustainability of the High Country.

Prospects for integrated management?

One of the longest standing debates over management of High Country landscapes relates to the prospects for integrating conservation and development. In the 1970s, there were significant attempts to produce an integrated policy for the High Country, which culminated in 1979 with the government policy statement "Deciding the Use of High Mountain Resources." However, the wider reform of governance in New Zealand overturned the multiple-objective philosophies that underpinned that approach and substituted a model of single-objective agencies and privatization. The current tenure review process represents the latest phase of those reforms.

The reform model presumed that the dominant mechanism for integration will be market allocation of land, supplemented by the management of effects of land use through the RMA. Hence, long-term landscape sustainability should result from councils implementing performance-based policies that establish environmental bottom lines within which private interests would operate. In the High Country, this model faces a number of challenges.

The underlying ecological systems are highly dynamic, and human disturbance appears to have created long-term instability in which prediction of effects and thresholds is problematic. The systems also operate and respond at different spatial and temporal scales to the current management paradigms and organization units. There is an extensive area of public land (57% of a total of 8.55 million ha; see Figure 7), for which the costs of sustainable management appear to exceed the funding allocated by government, yet there are strong cultural attachments to the land remaining in public ownership. Urban New Zealanders have high expectations of access to both public and leasehold land and express an active interest in its management, yet 150 years of pastoral occupancy has led to a strong attachment of farmers to "their" land. Many of the values of the High Country are strongly symbolic, yet the aesthetic outcomes sought by different users do not always coincide. Privatization accentuates many of these tensions and differences.

"For many years frustration has been building at the apparent impasse between differing views of how our tussock grassland heritage can be most effectively managed for the future."
(Claire Mulcock, 2001)

AUTHORS

Simon Swaffield
Landscape Architecture Group, Environmental Management and Design Division, PO Box 84, Lincoln University, Canterbury, New Zealand.
swaffies@lincoln.ac.nz

Simon Swaffield is professor of landscape architecture at Lincoln University. His research is concerned with peoples' perception of landscape and implications for environmental planning and landscape management. Recent research includes in-depth studies of a range of High Country management issues, including the implications of forestry expansion.

Ken Hughey
Environmental Management and Design Division, PO Box 84, Lincoln University, Canterbury, New Zealand.
hugheyk@lincoln.ac.nz

Ken Hughey is a senior lecturer in environmental management at Lincoln University. He has research interests in the environmental impacts of tourism, fisheries, state of the environment reporting, and the economics of endangered species management. He has previously worked for DOC and was Director of the Centre for Mountain Studies at Lincoln University.

FURTHER READING

Flannery T. 1995. *The Future Eaters*. Port Melbourne, Australia: Reed.
Mulcock C, compiler. 2001. *Tussock Grasslands: Our Heritage*. Timaru, New Zealand: South Island High Country Committee of Federated Farmers.
O'Connor KF. 1993. Rural and mountainland use. *In:* Memon A, Perkins HC, editors. *Environmental Planning in New Zealand*. Palmerston North, New Zealand: Dunmore Press, pp 120–149.
Swaffield SR. 1998. Contextual meaning in policy discourse: a case study of language use concerning resource policy in the New Zealand High Country. *Policy Sciences* 31:199–224.
Wearing A. 1998. Contested futures for the South Island High Country (New Zealand). *In:* Bliss E, editor. *Conference Proceedings. Second Joint Conference of Australian Geographers and New Zealand Geographical Society: Islands, Economy, Society and Environment*. January 1997, Department of Geography and Environmental Studies, University of Tasmania. Palmerston North, New Zealand: New Zealand Geographical Society, pp 18–20.

However, although High Country degradation is identified as a priority for action in the Sustainable Land Management Strategy of 1994, there is no longer any agency willing to accept responsibility for policy coordination across sectors. The Strategy was notable as a joint effort across 3 ministries but continued a long tradition of High Country reports in being largely a response to periodic crises. The Parliamentary Commissioner for the Environment has also reported, but no long-term framework has been established to coordinate policy development and implementation. Indeed, a major criticism of the current tenure review process is that it is a voluntary and piecemeal approach.

There are, therefore, 3 factors propelling the High Country landscape into an increasingly diverse mosaic of land use. First, there is the increasing fragmentation of land ownership and management and consequential diversification of land use. Second, there are diverse policy responses, as different agencies pursue their own agendas, and different territorial authorities negotiate the requirements of the RMA. Third, there are the ecological dynamics of the landscape itself, which are following a widening range of trajectories as the homogenizing effects of traditional pastoralism weaken.

Whether this will lead toward a more sustainable landscape in the long term is debatable. One view would argue that diversity, however it is configured, is in itself more resilient, and hence more sustainable, than the previous pastoral regime. An alternative view would be that, while diversity per se is desirable, it is not sufficient in itself and that it can easily degenerate into fragmented and inconsistent responses.

Perhaps the greatest cause for optimism is at the local level, where increasing numbers of landcare groups and other initiatives are focused on developing integrated responses to local issues, supported by NGOs such as the Rural Landcare Trust, and Crown research agencies such as Landcare Research Ltd. There is less cause for optimism when a broader ecosystem and landscape system view is taken. In particular, effective long-term management of the interfaces between public and private land, activities, and interests requires more time, trust, and resources than either central or local government appears willing or able to allocate.

Concluding comments

The South Island High Country has acquired its iconic status for New Zealanders as a consequence of 800 years of occupation, first by Maori and then European pastoralists, whose combined effects have led to a highly distinctive landscape. In recent years, these qualities have become commercialized through tourism and product marketing. In the past 2 decades, reforms have led to increasing privatization of the landscape and a separation of public policy functions. While the RMA is intended to promote integrated management, major difficulties in implementing its provisions continue, particularly in regard to the symbolic, "soft" dimensions of sustainable management. Yet the High Country is an intensely symbolic landscape. There are also continuing uncertainties about the long-term ecological status and trends of many High Country landscape systems.

Current trends suggest an increasingly diverse landscape will emerge. Some see this as desirable. However, others see the diversity serving merely to disguise a continuing extractive degradation of the country. Our view lies between these 2 positions. Increasing diversity provides for a greater range of adaptive strategies and thus widens the knowledge base upon which future management can draw. It may also provide greater ecological resilience against the possibility of system-wide collapse. However, many of the changes significantly shift the ownership of the landscape, in a number of cases apparently without adequate provision for continuing public use or public management input. Thus, not only does the landscape itself potentially lose something of its distinction but it also risks becoming alienated from the wider community. Whether New Zealanders as a whole will continue to express affection for the High Country as a national icon in another 150 years is open to doubt. That may prove to be a cause for regret.