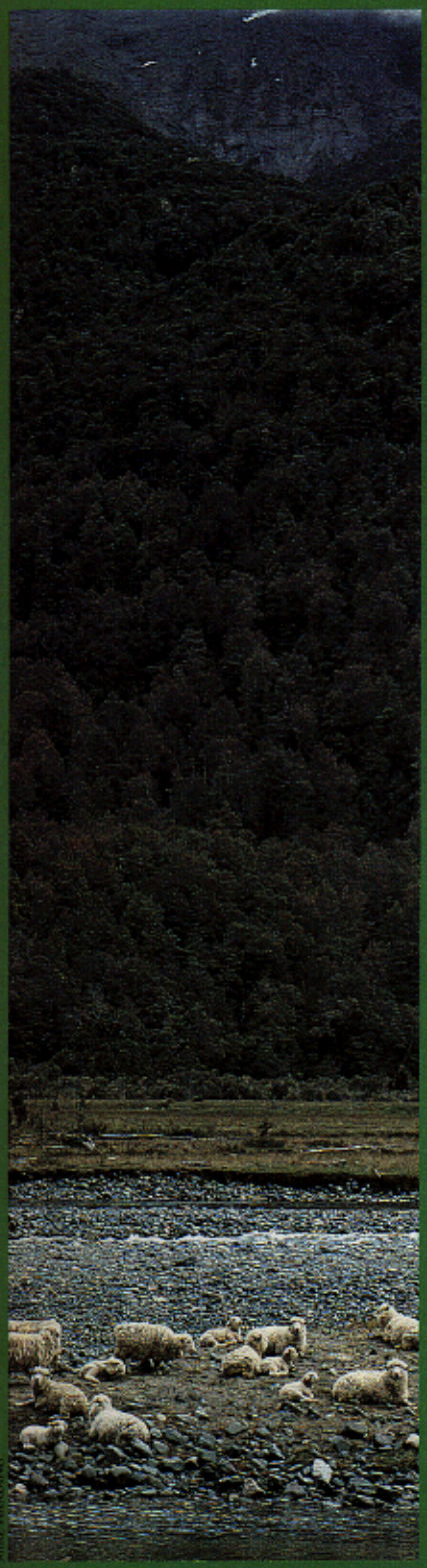
PARKS AND GRAZING



MIKE HARDING

Up to 4,500 sheep graze the Eglinton Valley within Fiordland National Park. A scientific assessment of their impacts in 1991 stated that sheep are restricting regeneration of forests and shrublands, trampling wetland margins, selectively grazing large native herbs and encouraging the establishment of weeds.

Visitors in national parks in the South Island, or one of many other protected areas, will often be greeted by the incongruous sight of farm animals among the forests, wetlands and tussock grasslands of the backcountry. Unrestrained, and usually with the approval of the Department of Conservation, they graze with little assessment being done of their environmental impact. The integrity of these major protected natural areas is threatened, says MIKE HARDING, and these unique remnant slices of natural New Zealand are being slowly transformed into examples of an English country park.

CROPPED PASTURE and muddy stock-trampled tracks are familiar images of the grazing lands that dominate the New Zealand countryside. However, the herds of curious cattle or straggling mobs of sheep that are a common sight from our country roads are not confined to farm paddocks.

Over 114,000 hectares of conservation lands are grazed with impunity by domestic stock. And that does not include over 4,000 hectares of grazing licences within national parks or the many cases of trespassing stock. Each winter, at Mavora Lakes Park in northern Southland, some 600 cattle graze dense red tussock grasslands – the best protected remnant of the extensive native grasslands that once covered the Southland plains. Wading into bogs and streams, they wallow in the water that feeds the Mararoa River – one of the country's best-known trout streams.

Alongside the scenic Milford highway hundreds of sheep graze the grassy flats of the Eglinton Valley within Fiordland National Park, surrounded by the towering peaks of this prestigious World Heritage Area. Straying freely into the tall red and silver beech forest, they browse young seedlings and inhibit forest regeneration.

And each autumn cattle trample their way through the magnificent beech forests of Mt Aspiring National Park to spend the winter grazing the grassy flats of the Dart, Wilkin and Siberia valleys. At the entrance to Mt Cook National Park, one of the country's key tourist attractions, sheep graze the Birch Hill flats, a rare area of eastern montane grassland within a national park.

Why are these destructive animals allowed to graze in areas set aside for nature conservation and specifically for the strict protection of the indigenous flora and fauna? Several arguments have been put forward: historic rights to grazing; reduced fire risk; the impracticality of fencing; the economic viability of adjoining farms; weed control; the maintenance of grassland conservation values; and even the contention that browsing mammals replicate the role of extinct native avifauna, such as the moa. Somewhere in the debate it appears to have been forgotten that the public conservation estate contains only the battered remnants of a unique indigenous flora and fauna. Surely grazing can only be justified in national parks and reserves if it directly assists in maintaining conservation values, such as the light grazing of some tussock grasslands.

New Zealand's flora and fauna evolved over millions of years in the absence of browsing mammals. Introduced wild animals have had a devastating impact on palatable native plants, slowly

JOHN DOWDING

Sheep stray for several hundred metres into the beech forest of the Eglinton Valley in Fiordland National Park, browsing beech seedlings and understorey plants.

transforming forest, shrubland and grassland ecosystems and threatening native bird and insect populations. Domestic stock have a similar impact except that they are concentrated on valley floor grasslands, wetlands and forest margins. These high-fertility ecosystems support rich native plant communities.

STUDIES of grazing patterns in South Westland show that the natural regeneration of forest on stable river flats is inhibited by domestic stock. Even light grazing and camping within the forest margin eliminates palatable understorey species, prevents the regeneration of broadleaved plants and can eventually lead to changes in the forest canopy. Concentrated grazing causes the forest margin to retreat. In beech forests east of the South Island's main divide, grazing animals inhibit the establishment of seedlings by camping and browsing in the shelter of the forest margin. Ironically, there is often healthier regeneration at beech forest margins on nearby pastoral lease country, where strict stock limits apply to the grazing of sheep, than in the major valleys of some national and forest parks. Natural succession of shrubland and forest on many river flats has been thwarted for years by domestic stock.

The impact of stock on forests is not limited to the grazing of palatable plants. Trampling at forest margins and along cattle tracks compacts the soil, restricts plant root development and reduces plant vigour. Compaction reduces the soil water holding capacity and increases runoff and soil erosion. Heavy trampling

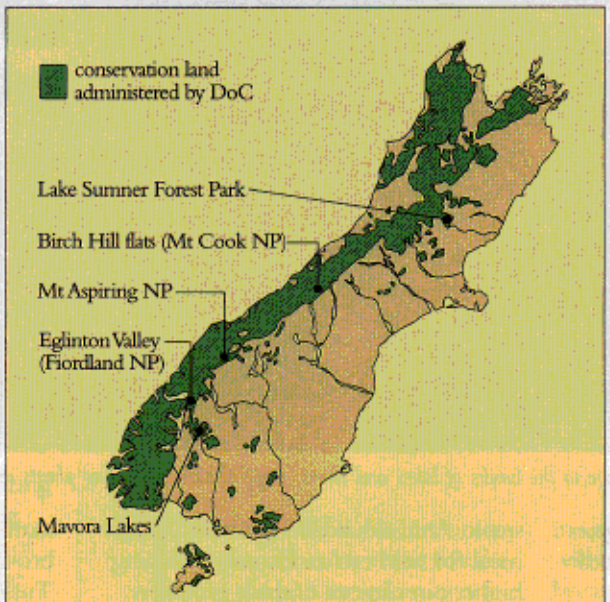
MIKE HARDING

In Lake Sumner Forest Park sheep and cattle have a major impact on forest margins, inhibiting regeneration and, in serious cases, causing the forest margin to retreat.

in wet areas leads to soil pugging. Many backcountry walkers are familiar with these slippery cattle tracks several metres wide, that alternate between muddy wallows and mounds of exposed tree roots.

This trampling has an even more devastating effect on wetlands, bogs and streams. Cattle require large quantities of water and enjoy wading and standing in the water they drink. Treading of the stream bed can increase suspended sediments and trampling breaks down the internal water balance of the wetland drainage system. In high-altitude wetlands cattle cause severe damage to sensitive wetland plants, expose the fragile peat soils and can alter the water holding capacity or water yield of the wetland. Turf margins of ponds and tarns can also be severely damaged by cattle trampling. The specialised turf plants may be able to withstand grazing and trampling from soft-footed animals such as waterfowl, but cannot tolerate the concentrated impact of clumsy, hoofed mammals.

Cattle also affect water quality by excreting directly into waterways. This leads to nutrient enrichment of the stream or bog and increases the risk of spreading disease-causing organisms. Many waterways within protected areas have a delicate balance between water quantity and flow and very low nutrient levels. Wetlands in the headwater catchments help maintain water quality in rivers that are important for wildlife, recreation, and downstream urban and industrial uses. Pollution of these waterways is both unnecessary and unacceptable.



Main grazing problem areas in South Island parks

Because introduced grasses dominate many river-terrace plant communities, graziers advocate stock access to control tall grass growth and reduce fire risk. Rapid grass growth occurs in spring and early summer and fire risk reaches its height in late summer and autumn. However, the demand for grazing is usually during the winter. Moreover, the intensity of grazing required to effectively reduce the fire hazard would be ruinous to the grassland vegetation and would devastate adjoining forest margins and wetlands.

The valley floor grasslands of national and forest parks often form long enclaves, extending for many kilometres into surrounding forest. There is increasing concern about the impact of grazing animals on the forest-grassland margin. This biologically rich transition zone suffers most from domestic stock. Fencing is often impractical and usually

DoC's grazing policy

RELEASED FOR comment late last year, this draft policy covers land administered under the Conservation Act 1987 and the Reserves Act 1977. It does not include national parks. The policy statement claims that conservation lands are a significant resource to the farming community, despite the fact that there are only 114,000 hectares of conservation land used for grazing compared with 17.7 million hectares of agricultural land.

The policy proposes that grazing be by licence with a 5-year term and no right of renewal, unless a conservation management strategy or plan is in place which allows for longer licence terms. It also acknowledges that it is either illegal or inappropriate to graze nature or scientific reserves (Reserves Act) and ecological, wilderness or sanctuary areas (Conservation Act). Commercial grazing of goats and deer, or the grazing of land where stock can freely enter adjoining protected areas, will not be permitted.

However, the draft policy does not go far enough in addressing the major impacts of domestic stock on protected natural areas. It repeats the time-honoured argument that low-grazed vegetation reduces fire risk and assists public access.

Except for stewardship areas where grazing could be permitted in special circumstances, provided there are no significant environmental impacts, grazing should generally only be allowed where there is a direct benefit for conservation. A good example may be the light grazing of native tussock grasslands to prevent the invasion of exotic woody shrubs. In other areas grazing should be phased out. This can often be accomplished without confrontation by letting licences lapse when the current lessee withdraws, or by purchasing a lessee's interest.

It must be remembered that grazing is a privilege on the DoC estate which can be withdrawn where there are unacceptable impacts. It is worth noting that traditional river flat grazing in southern South Westland was recognised by the Government in the 1989 decision to include the area in the South-West World Heritage area. A process of reviewing the leases and deleting the most sensitive ecological sites is currently underway.

Public access to conservation lands is also threatened under the policy as it proposes that hunters must gain permission from graziers to enter public land covered by a grazing licence. These are often river flats and provide the most practical access to the backcountry. Licence-holders' rights to prevent hunting access have already effectively closed whole valleys to recreational hunting in the South Island. Farmers wishing to graze public land must accept the restraints imposed by free public access.

A copy of Forest and Bird's submission on the grazing policy is available from PO Box 631, Wellington. Submissions closed with the Department of Conservation on 31 March, but members with outstanding concerns should write to DoC's Resource Use Manager at PO Box 10-420, Wellington.

MIKE HARDING

Cattle cause severe damage to the banks of lakes and rivers, pugging soil, trampling plants and reducing water quality.

very expensive. Besides, fences and gates are usually the last thing people want to see when they leave the farmland to venture into backcountry parks and reserves. The role domestic stock play in maintaining favourable grazing conditions for other introduced animals is unclear, though possums will travel long distances from adjoining forest to feed on short grassland.

Introduced predators may also benefit from domestic stock. Animal carcasses provide a ready meal for wild cats and stoats, sustaining higher populations of these predators. The short-cropped grasslands may also aid predator dispersal.

Domestic stock also spread weed seeds. Small hard seeds pass through the gut of grazing animals to be deposited elsewhere in dung. The occurrence of sheep's sorrel (*Rumex acetosella*) throughout the eastern South Island, from valley grasslands to alpine shingle screes, is a good example. White clover (*Trifolium repens*) is also spread by grazing animals. Pasturing stock on grassland with white clover before sending them out to backcountry blocks is a traditional method of establishing this important grazing plant in remote areas. Ground bared by trampling provides favourable sites for weed invasion, and increased fertility from dung often benefits introduced species. Wool, hair and hooves can carry seeds long distances and have been implicated in the spread of ragwort (*Senecio jacobaea*) in river valleys. Some grazed areas within parks have even been oversown with introduced pasture grasses to improve grazing.

EACH YEAR millions of dollars are spent controlling wild animal populations. Yet domestic stock continue to graze within some of the most important protected natural areas in the country. Most of this grazing occurs under DoC licences or permits. In its recently-released draft grazing policy DoC proposes to restrict grazing to 5-year licences with reassessment before renewal (see panel, page 35).

Light grazing by sheep can sometimes be beneficial to native plant communities. Monitoring of silver tussock grasslands has shown that sheep help maintain tussock cover by preferentially browsing competitive introduced grasses. Tussock grasslands are also susceptible to the invasion of introduced woody shrubs or herbaceous weeds. Controlled grazing may be a cost-efficient way of limiting shrub or weed growth. However, there is increasing evidence that grazing patterns influence the susceptibility of a grassland to the invasion of hawkweeds (*Hieracium* spp.). These opportunistic plants exploit exposed ground and out-compete native species. Increased long-term monitoring is required to determine whether grazing is beneficial in conserving particular values, such as maintaining tussock cover.

SEVERAL CONSERVATION boards and DoC conservancies are presently tackling the issue of grazing on conservation lands. At Mavora Lakes Park the Southland Conservation Board has decided that grazing is inappropriate and has recommended that grazing cease (see panel).

Also in Southland, debate over grazing in the Eglinton Valley has raged in the local papers. Farmers have backed the owners of Te Anau Downs, who graze the adjoining Eglinton Valley, claiming they are dependent on continued grazing of the national park. However, the lack of regeneration at the forest margin and the presence of sheep within the beech forest have alarmed conservationists and park managers. The red and silver beech forests of the Eglinton Valley are an important refuge for the endangered yellowhead and the site of important research into the ecology of forest birds and predators. Continued grazing of the park by domestic stock begs the question whether the park's primary purpose is nature conservation or to provide off-site benefits for

Grazing at Glenorchy, Mt Aspiring National Park

"THE FOREST up valley from the fence was inspected and found to be in a very poor state due to excessive browsing from cattle. There is the main beech canopy but no sub-canopy or replacement forest.

Regeneration and seedlings on the forest floor are virtually non-existent. There are the occasional subspecies of horopito, coprosma, and totara which have been heavily browsed.

As the canopy forest matures and falls there is no replacement regeneration to provide an acceptable healthy cycle . . . Regeneration is establishing well in areas where cattle have difficult access e.g. steep banks.

The track has suffered as a result of stock movement but this would have been the normal situation over many years.

Mud holes are common with deep ruts in soft erodible soils."

Report by Senior Ranger B. Ahern, February 1977

the farming community of Southland.

In Otago the review of the Mt Aspiring National Park management plan has prompted further discussion of grazing in the park's backcountry valleys. Farmers claim that they secured agreements that grazing would continue when the park was established. However, no one has been able to produce any such written agreements or binding undertakings. Cattle continue to graze in the park despite severe local damage to forest and stream margins and strong opposition from conservation and recreation groups. Despite the obvious impacts and the concerns of park users, expressed through submissions to the management plan review, DoC staff continue to reassure farmers that their right to graze the park will continue.

In Mt Cook National Park the grazing of the Birch Hill flats by sheep is being promoted in response to the problem of stock trespassing into the park from the adjoining Tasman riverbed. Potential impacts of stock have been countered by arguments about the difficulty of fencing the park boundary. Little thought has been given to the cause of the problem – stock straying from Glentanner Station onto the Tasman riverbed – or to monitoring of potential impacts of stock on the grasslands and shrublands of the national park. Ironically, Glentanner has probably benefited more than any other high country farm from the neighbouring national park as the station has successfully diversified into tourism enterprises.

National parks were set aside to protect vulnerable indigenous ecosystems from the depredations of introduced animals and to allow, where appropriate, public use. The Reserves Act 1977 has the primary purpose of protecting representative examples of the indigenous flora and fauna of New Zealand, particularly from the effects of introduced animals. As a country we have a proud record of setting aside important natural areas, but protection of those areas from introduced grazing animals is far from satisfactory. And, despite the fact that the vast majority of the countryside has been dedicated to pastoral production, there is continued pressure to compromise protected land for grazing.

The integrity of the country's national parks and reserves is at stake. While the uniqueness of New Zealand's natural environment and the curiosities it contains are extolled by tourist brochures, the agents of habitat destruction, introduced animals, are tolerated in the country's main nature tourism destinations.

If sheep and cattle and rural landscapes are what tourists come to see there are over 17 million hectares of farmland to satisfy that demand. If it is the unique and distinctive indigenous plants, animals and landscapes of this unusual land that excite visitors then let us be sure we protect them fully from the effects of domestic stock. The challenge now lies with the conservation boards and DoC to phase out all grazing of domestic stock in national parks and to ensure that the new grazing policy for other public conservation lands does not compromise their ecological and recreational values. ❖

MIKE HARDING

Cattle browsing has reduced this metre-high broad-leaved snow tussock, in the proposed Torlesse conservation park, to a stump. Repeated browsing will kill the plant.

Mike Harding is Forest and Bird's Christchurch-based field officer. He was formerly a ranger at Arthur's Pass National Park and is currently working on high-country conservation issues.

Mavora Lakes

ROGER SUTTON

North Mavora Lake looking towards the upper Mararoa valley. Forested margins along the western side of the lake are being slowly killed by cattle. Mature trees are dying and there is no regeneration.

THE SOUTHLAND Conservation Board is about to take on the bull by recommending that Landcorp's cattle be removed from the flowing red tussock grasslands of Mavora Lakes Park.

The Mavora cattle were once described by the now-defunct Land Settlement Board, as a "scenic dimension in an otherwise stark mountain landscape". Now there is a new body in charge and the board will soon announce the long overdue review of the management plan and call for public submissions.

At stake is the future health of the red tussock grasslands, cushion bogs, and beech forests of the park. Recent reports by botanists, Dr Bill Lee from DSIR, and Professor Alan Mark from Otago University, point to the damage caused by cattle.

On the other side of the fence Federated Farmers claim that the results of five years of monitoring are inconclusive, and that more damage will be done by removing the cattle because of increased fire risks and rank grass smothering the remaining native herbs.

These claims were refuted by Professor Mark who said that once cattle are gone the palatable native herbs will be given a chance to establish.

There are now very few opportunities left in New Zealand to protect lakes, red tussock grasslands and wetlands. These once dominated much of Southland's landscape. Mavora Lakes with its dramatic combination of high mountains, blue lakes, red tussocks, and olive green beech forests is of immense importance for nature conservation and outdoor recreation and deserves the highest protection. It is imperative that the cattle are removed as soon as possible.

Sue Maturin

More on Sheep and Forests...

Mike Harding's article on grazing in national parks and reserves in the last issue referred to a debate that continues to rage in Southland about the Eglinton Valley of Fiordland National Park. LES HENDERSON, retired farmer, a founder of Forest and Bird's Southland Branch and distinguished life member, put the case for the forest rather than the sheep in a recent letter to the Southland Times.

FROM MY observations in the Eglinton Valley over many years, the bush can only deteriorate further if grazing continues. What is advancing is pasture and weeds as would be expected in the presence of stock in this area of part-bush, part-clearings and open flats.

Although over the long period of utilisation by stock many species of trees on the margins have disappeared save for the odd relict specimen, most will return naturally.

With protection from stock and fire, effective restoration occurs and in many instances in New Zealand there have been spectacular results over 15 to 20 years. The mention of reserves in the context of national park grazing can be misunderstood. While grazing continues in some national parks as a transitional measure under special conditions, no bush reserves are approved or managed without appropriate fencing protection from stock. Even bush covered by QEII conservation covenants (that is privately-owned bush) is subject to strict requirements for provision of fencing. This official policy, in existence for many years, confirms the obvious that there is no point in having a reserve unless it is secured against destruction by stock.

On this matter, Federated Farmers' intemperate, convoluted rhetoric in the press is incomprehensible and certainly overdone. We know as farmers that good planning and alert practices are necessary to ensure that stock do not get where you don't want them especially in young plantations or shelter belts which can be severely damaged or even wiped out by stock well into the post-establishment stage. What then is so different in a national park?

Fiordland's appeal lies in the dramatic land-forms, the lakes, rivers, and abundance of pure clear water and the bush and birdlife. Most would know that the mature trees are 300 to 400 years old and not threatened by stock. The critical aspect, however, is the total disruption of the regeneration cycle and the species composition of the bush edge. Our custodial responsibilities to future generations demand that we correct this. The area in question is large. How large is hard to quantify, because the sheep penetrate up many of the side streams and well into the bush, but it must be several thousand hectares, a sizeable and important habitat for native animals.

Herbivores in general find most New Zealand native plants palatable. Those most avidly taken are the most important, especially in bush margins where they dominate unless suppressed by stock or deer. These are the flowering, nectar-yielding, fruiting, quick-growing range of sub-canopy species which have been a vital component of the habitat for countless millenia. Nectar, pollen and foliage, while taken direct by some native birds and probably by geckos and bats, support a vast range of native insects. A continuous supply of these is vital to nestlings of most native bird species and the total life support at all times for others.

The whole ecological fabric from the soil, vegetation, insects to birds, reptiles and bats has been an interdependent whole and damage to any part can gravely threaten a natural system. Just as the animals depend on the vegetation, many plants have evolved in response to their environment in such a way that they depend entirely for effective survival on pollination by insects and the distribution of seeds by birds. The whole robust dynamics of the bush edge, where ample light, moisture, space and shelter ensure relatively rapid change and vitality is being destroyed by sheep.

On the removal of sheep there will be some immediate response in seedling occurrence, local at first, then progressively over the whole area freed from grazing but excluding initially those areas where pasture grasses are established. It will take many years to achieve anything like healthy natural restoration. By the time the tree and shrub seedlings are joined by the fresh growth of ferns and the smaller plants, a significant further bonus will merge.

At present the furry predators, rat, stoat and ferret, have free range throughout with much less obstruction than they would encounter without browsing in the bush. As regeneration gathers momentum a damp micro-climate develops, at times dripping with moisture, which is an important natural deterrent to these foreign raiders. At present 90 percent of South Island robin nests are predated and the yellowhead is in serious decline. Obviously all native birds need any life they can get as soon as possible as well as the progressive restoration of their habitat with its attendant food resources.

The purpose of national parks is to protect important features and wildlife habitats along with the wide range of natural values involved. New Zealanders and visitors alike, in great numbers, seek out these areas for relaxation, recreation and in the pursuit of hobbies but expressly to enjoy the unspoilt natural environment. We are immediately seen to be insincere if we carelessly ignore the world-wide criteria, also embodied in our own National Parks Act "to as far as possible remove the exotic and as far as possible . . . protect native flora and fauna.

This magnificent valley deserves the best we can do for it. It demands that a well-planned vigorous course of restoration be adopted. The other option, continued grazing, offers an unthinkably dismal prospect – progressive deterioration and a horrifying weed problem already well advanced due to stockings.

It is my hope as the general health and attractiveness of the vegetation in the valley improves in the absence of stock, visitors, by merely stepping off the road into the bush margin, may experience that flash of insight at the beauty of tree, flower or bird which sets alight the soul and gives meaning and joy to life. We need this inspiration more than ever today. Sheep will never enhance the magic of our Fiordland, only destroy it. ❖