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ABANDONED VILLAGES



CULTURAL PLANTING
in the
RELICT LANDSCAPES
of
CENTRAL OTAGO



MEANINGS and MANAGEMENT



Paula J M Smith

1987

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1. Introduction

"Whenever we look at the countryside, we are always looking into the past: We see exposed after millions of years, rocks compressed of sediments once at the bottom of the sea, or of volcanic origin. We see the landforms of glacial erosion, ice deposition, meltwater and wind action from the last Ice Age.... Next we see a great number of features created or modified by wind, rain, frost, snow, sun and running water since the glaciers last retreated. Finally, in a tissue-thin slice of geological time, we see in the landscape the hand of man."

Roger Millman 1979 (1)



CULTURAL LANDSCAPES

We have only to look for clues to the past as we move around, to realise that our history lives on, in the landscapes that surround us. Landscapes keep a record of change. When he defined the expression "Cultural Landscape" Carl Sauer (1963) spelled it out: *"The cultural landscape is fashioned from a natural landscape by the cultural group. Culture is its agent, the natural area is the medium, the cultural landscape is the result."* (2). Robert Melnick (1983) suggests that cultural landscapes, especially rural ones, are best understood as complex human ecological systems existing within complex natural ecological systems. It is the manipulation of natural forces and elements by people which results in continuous evolutionary change to the landscape. Melnick highlights the close relationship between cultural landscapes and land use when he writes *"Cultural landscapes represent a continuum of land use that spans many generations, they have evolved from, or exhibit remnants of earlier known human settlement patterns or land use practices for that area."* (3). With evolution in methods of land use, the landscape becomes a complex pattern of overlays built up through time, rather than a series of isolated examples of historic land uses (de Lambert, 1985). The interaction between people and the land is complex and intricately woven. When land use changes over time, determined by political, social, cultural and economic forces, new landscapes are created, often inadvertently (Goin, 1982 ; Hearn, 1976). *"Old landscapes give way to new, surviving as fragmentary relics which are our keys to the past. Each landscape is a commentary on its creators"* (4)

As far as Melnick (1981, 1983) is concerned the significance of cultural landscapes lies in their usualness. He regards ordinary landscapes, places which ordinary people have settled, lived in, manipulated, developed and changed as important. The concept of cultural landscape, he writes, places greater emphasis on everyday places than on monuments, and stresses greater interest in the common people than in heroes.

Obviously, many components of any cultural landscape are the results of human actions, but behind these actions lie ideas about images of reality (Johnston, 1975; Melnick, 1983). This is why cultural landscapes exhibit, either conspicuously or subtly, long-held values of their area or culture (Melnick, 1981). Even abstractions like the aspirations and ideals, emotions and beliefs of our forebears are manifest in the cultural landscape, if we know how to interpret the clues (Stilgoe, 1982).

HISTORIC LANDSCAPES

Historic landscapes are a special class of cultural landscapes. Indeed, few landscapes are not historic landscapes in the sense that all cultural landscapes are built up and enriched with layer upon layer of change through time. Rachel de Lambert has defined historic landscapes simply, as 'past cultural landscapes', but there is an underlying implication that we have attached, along with the label 'historic', some special value to such places. It seems that cultural landscapes endowed with the 'historic' label are more likely to be protected in some way from wholesale change, than cultural landscapes generally.



Photo 2. Cultural landscapes endowed with the 'historic' label are more likely to be protected. A decrepit apricot tree marks the hotel site at the abandoned quartz mining village of Logantown, near Bendigo.

For a long time the expression 'historic landscape' was understood to mean an appropriate garden setting for an historic building or monument (e.g. Gruffydd, 1977; Favretti and Favretti, 1979). But worldwide there has been increasing interest in historic landscapes in Sauer's broader sense, as records of past cultural values, and especially in the historic landscapes fashioned by the common people (Melnick, 1981; Stilgoe, 1982).

RELICT LANDSCAPES

Relict landscapes are a special category of cultural/historic landscapes. They are past landscapes which have largely escaped subsequent cultural accretions of time (Hearn, 1976). Sometimes such remnants exist in the context of present landscape in a condition little changed from their original form, apart from by the processes of decay, and by natural regenerative forces (Goin, 1982). St Bodfan Gruffydd (1977) in a survey of historic gardens and parks in Britain accorded a 'relict' designation to parks, gardens and farming landscapes in various conditions of disrepair. In some cases landscapes had disappeared entirely and were only known from record; the bones of others could still be discerned beneath years of weed growth and surface cultivation. He observed that often the boundaries were difficult to discern. With his relict designation, such places were classified more as archaeological sites awaiting excavation and interpretation.

PLANT MATERIALS AS INDICATORS OF CULTURAL MOVEMENT

'The Portmanteau Biota' is a collective name given by Arthur Crosby (1986) to migrating people and all the organisms that they carry with them, both intentionally and inadvertently. An important and easily recognisable component of any portmanteau biota, plant materials are often studied as effective indicators of the movements of people. Helen Leach (1984) is one of several anthropologists who use knowledge of plant materials as evidence to improve understanding about the movements of Polynesian migrants around the Pacific and later European settlement in New Zealand.

The close link between plant materials and the movements of people is clearly illustrated in a study of naturalised plants in Fiordland (Johnson, 1982). Of 140 exotic species found there, 24 were originally intentionally planted at now abandoned settlements such as Cromarty and Martin's Bay. The rest were associated with roads, tracks, huts and airstrips, all sites disturbed by human presence. Even if only inadvertent introductions are considered, the colonisation process appears to be rapid: 11 species were naturalised around a new hut just 10 months after it was built.

Migrating people have always carried with them as many of their domesticated plants as their means of migration permitted (Grey, 1984; Leach, 1984). Ukrainian emigrants to Canada carried thimblefuls of grain, vegetables, herb and flower seeds neatly tied or sewed into tiny pockets in each

corner of a kerchief. Haunted by fears that they would never return to the homeland they took with them carefully wrapped shoots of their revered Kalyna Bush (Rees, 1982). Longing for familiar plants, one Scottish immigrant to Otago urged other would-be immigrants to bring *"some haws, and some Scotch thistle and a bit of heather with a root, and take care of it on the voyage."* (5)

So, just as Maori people brought to Aotearoa their kumara, taro and gourd, so too later immigrants from Britain, Europe, North America and Australia brought with them valued grasses, grains, vegetables, trees and decorative plants (Leach, 1984).

Crosby has argued that the whole point of migration was to live a familiar lifestyle more comfortably. For this reason New Zealand was favoured by British immigrants because, with its temperate climate, this country clearly had potential to produce many of the same commodities in demand in Britain. Rather than adapting to existing food sources such as kumara and gourds, immigrants set about ensuring for themselves a diet based on old world staples (Crosby, 1986). Samuel Butler (1864) articulated this attitude clearly when he instructed prospective pastoralists:

"You will set about a garden at once. You will bring up fowls at once. Pigs may wait until you have time to put up a regular sty, and to have grown potatoes enough to feed them"... 'In a year you will find yourself very comfortable. You will get a little fruit from your garden in summer, and will have the prospect of much more. You will have cows, and plenty of butter and milk and eggs; you will have pigs, and, in fact, may live upon the fat of the land, with very little trouble, and almost as little expense.'" (6)

Many immigrants to New Zealand brought plants and seeds with them, or arranged their own importations. Emphasis in importations was initially on fruits but later shifted to ornamental plants (Challenger, 1983). Exotic plants from all over the world arrived in New Zealand with visitors and immigrants not only as part of familiar agricultural and pastoral suites, but were injected as a result of a curiously reckless experimentation which Alan Grey calls 'biological dilettantism'. Many plants also arrived by accident (Grey, 1984). David Streatfield (1981) has proposed a general model (discussed in chapter 2) which puts particular emphasis on plant materials as instruments in the processes of cultural colonialism.

PLANT MATERIALS AS CULTURAL ARTIFACTS and AS SYMBOLS

Plant materials are an important element of the cultural landscapes in which we live. Robert Melnick (1983) has identified thirteen essential components of cultural landscapes of which vegetation patterns, especially as related to land use, is one. Plant materials, including native, cultivated and naturalised species, also play a role in other listed components, such as boundary- controlling elements. As he points out, plant materials can be both functional (as windbreaks or boundary markers, for example), and fulfill aesthetic purposes (for example, trees near dwellings confer identity).



Photo 5. Trees near dwellings confer identity. Ruins of stone cottages at Bendigo marked, like many other sites in Central Otago, with a Lombardy poplar.

A case study on cultural landscapes in Nebraska researched by Richard Sutton (1985) stresses the importance of early plantations into the 'limitless' space of the Great Plains in forming the distinctive rural landscapes that exist today. He documents the political and social factors that gave rise to the plantings through 120 years: planting for wood production, for enclosure, for psychological relief from the harsh climate and unending space of the plains, and for 'beautification' where both familiar and experimental species were planted close to houses, churches, cemeteries

and schools to humanise the pioneer landscape. *"Trees and other woody species"* writes Sutton *"enrich the image of events that occurred there, especially the efforts of the early settlers who sought to transform the prairie's harsh reality. Trees, as central elements in the pioneers image of the garden, are SYMBOLS of how pioneers interacted with their prairie environment and how they felt about it as a place to live."* (7). William Tishler has also written about historic landscapes emerging from time to remain as important symbols of our past (Tishler, 1982). For migrants and settlers, the cultural use of plant materials served to bridge the geographical and cultural gap between the old world and the 'wilderness' of the new (Jackson, 1980); thus plants in recently colonised cultural/historic landscapes symbolise the transplanting of culture itself.

Notes:

1. MILLMAN, Rodger. 1979. Page 4.
2. SAUER, Carl. 1963. Page 343. Quoted in TISHLER, 1981. Page 128.
3. MELNICK, Robert. 1981. Page 56.
4. MUIR, Richard, 1981. Page 17.
5. Quoted in SOPER, Eileen. 1948. Page 40.
6. BUTLER, Samuel. 1864. Page 141 in 1923 edition.
7. SUTTON, Richard. 1985. Page 106.
1985. Page 106.

2. The Miners and their Cultural Baggage

"The reader who is unable to draw upon memory and personal experience cannot possibly conceive more than a very faint idea of the absolute solitariness which in those days pervaded and enveloped the interior of Otago - the solemn loneliness of its mountains; the ineffable sadness of its valleys; the utter dreariness of its plains. The weary traveller pursued his lonely way from point to point, always viewing around and before him a continuous and apparently interminable expanse of lofty hills - range succeeding range in monotonous uniformity, everywhere clothed in a sober livery of pale brown vegetation, relieved only by grim rocks of fantastic form, sharing the desolation to which they contributed - backed by distant mountain peaks, which bounded and encompassed the horizon in every direction, piercing the blue ether, and clad in dazzling snows - an expanse diversified by no pleasant forests; devoid of animal as of human life; where the profound stillness was painful in its prolonged intensity; and the only sound that greeted the ear from dawn to dusk was the melancholy wailing of the wind among tussocks".

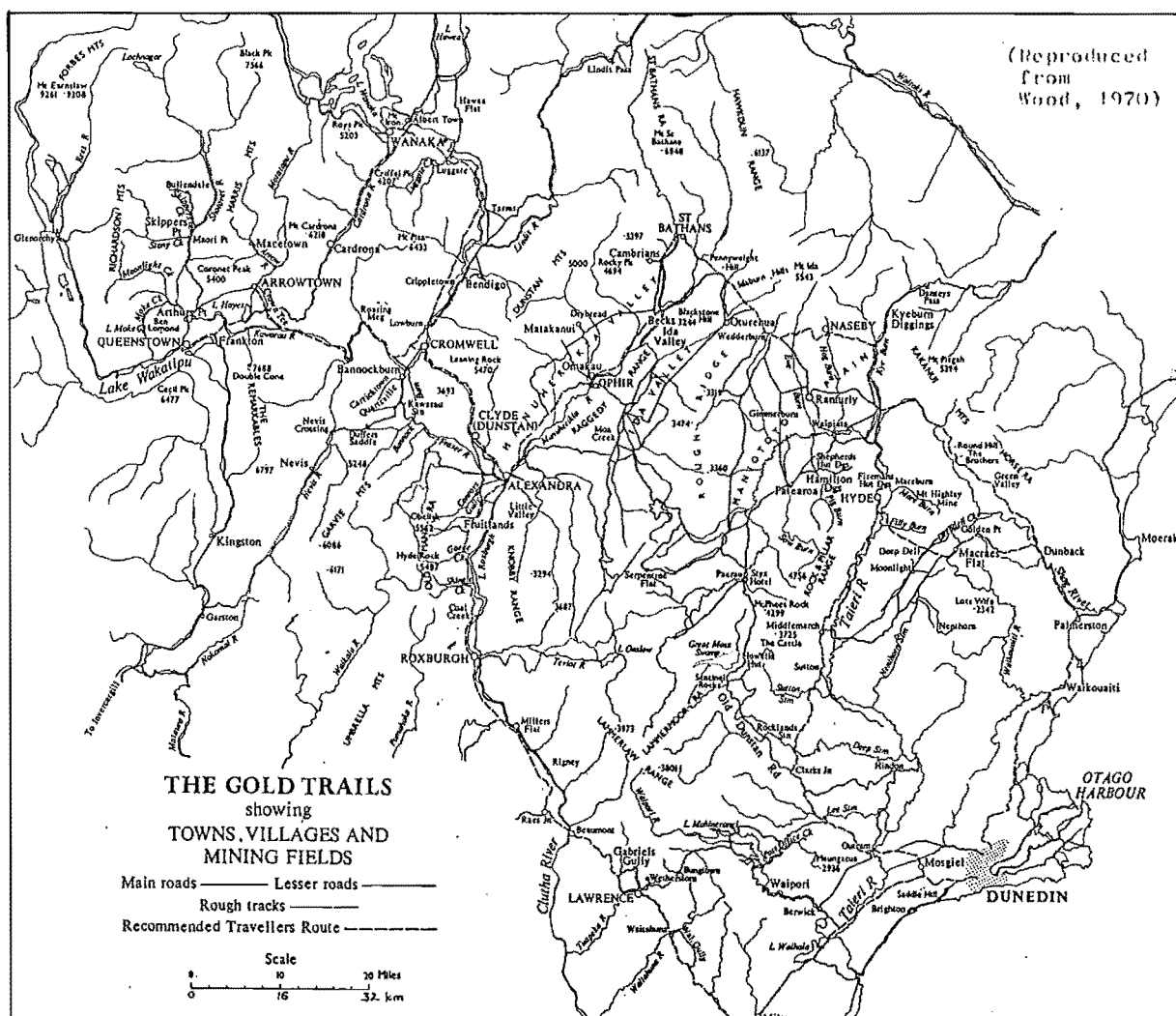
Vincent Pyke 1887 (1)

GOLDRUSH DAYS

In the few years of pastoral occupation that preceeded the first gold discoveries in 'the interior' of Otago, only a few runholders, cadets and shepherds (perhaps a sparse 300 people all together, watching over 200,000 sheep) extended a tenuous web of settlement across the "apparently interminable expanse" (Forrest, 1961; McCaskill, 1962).

But following the first publicised discoveries at Lindis and Tuapeka in 1861, miners began to swarm westward in the wake of each new discovery. Vincent Pyke writing above about the character of Central Otago in 1861 or so, was describing a remote wilderness; unknown, empty, and even threatening. With his description he lists some factors contributing to the experience of the first prospectors:

"Gold-seekers of that time had to find or make their way, unaided by roads of any description, and seldom assisted even by 'tracks' of a defined character. To this account must be added the uncertainty prevailing as to the locality of the 'new goldfield', the length of the journey, and the inclement season of the year." (2).



Many miners came from overseas, especially to search for gold in Otago. For these the main point of entry was Dunedin. In the summer of 1862-3 prospectors penetrated far into the inaccessible headwaters of the Clutha, alluvial miners, initially working with pans and cradles, finding rich returns in the Cardrona, Arrow and Shotover Rivers (McCaskill, 1962). The swelling population was volatile, mainly men in the prime of life, footloose and subject to seasonal variation, as each winter many returned to Australia to avoid the harsh Central Otago cold. Most had no intention of settling (Phillips, 1981), they came to make their fortunes and to return to where they came from. These were the days of transitory towns built from canvas stretched over simple wooden frames, quickly established and just as quickly deserted.

By the summer of 1864-5 the extent and pattern of gold discoveries in Otago was more or less complete, the swirl of population movement subsided and the goldfields population peaked at about 22,000. From this time until the 1870's there was relatively little change in the distribution of population, although later rushes to Marlborough and Westland in 1865 thinned the population fairly uniformly throughout (Forrest, 1961).

Like all frontier societies, the earliest economic activities in Central Otago involved the exploitative picking off of the most accessible resources. The goldmining industry depended on an itinerant workforce, people who took what they could find and moved on in search of more. Partly because they felt themselves to be here only temporarily, these miners had neither the opportunity nor the interest to develop a long term concern for the landscapes in which they worked (Phillips, 1981). Moreover, life for these early miners was hard : they were often working in opposition to, and frustrated by, the forces of nature. They were frequently cold, hungry and diseased. Many died in floods, landslides and snowstorms, and reports of suicide occur in unexpectedly high numbers in the newspapers of the times.. It is likely then that they had little affection for the remote and unfamiliar surroundings in which they found themselves. Their affections would lie with other landscapes, in other countries.

These first five years or so of goldmining in Otago can be related to Stage one of David Streatfields (1981) four or five stage theoretical MODEL OF CULTURAL COLONIALISM. His first, PIONEER PHASE is characterised by :-

1. the colonising group laying claim to desirable landscape, in this case to preclude others from engaging in commercial activities.

2. definition of boundaries, dividing up the physical landscape into spaces for communal and individual occupation (in Otago disputes and litigation over claims and boundaries were common)
3. short duration
4. temporary buildings.

SETTLING DOWN

The departure of many miners to Marlborough and Westland in 1865 marked a transition from the heady enthusiasm of the gold rush days to the more stable outlook of regular industry (Forrest, 1961). Those with good paying claims formed co-operatives and companies and bought equipment for more efficient mining methods, leading to greater stability in the life and economy of goldfields settlements. By 1867 the efflux of miners slowed and then reversed. Numbers began to increase again towards 1870 partly because of the development of quartz mining at Bendigo, up Skippers Creek and around Twelve Mile (Macetown). Women arriving began to redress the imbalanced gender ratio; another indicator of individual's changing intentions, from itinerancy, to a disposition to stay in one place, at least for a while.

Unlike the first swarms of footloose miners, these later arrivals did not find themselves in an unpopulated frontier wilderness, devoid of human landmarks, but it was still a raw landscape, with a distinct air of impermanence. It is not surprising that those deciding to settle began to make landscape changes of a different, more permanent nature, both out of necessity and out of a cultural imperative, a need to make themselves at home. David Seamon (1985) has suggested that an active involvement with the land, with the physical environment, is an important element in the settling process. He believes that the actions necessary to turn an unknown environment into a home are intimately connected to the psychological adjustments required for becoming at home in that new place.

Some earlier temporary gold towns disappeared almost overnight, but others with similar canvas beginnings, usually those with a slightly wider range of functions, survived, servicing large areas or as links in communications systems (Yule, 1978; Boyd, 1967). Increasingly, new buildings were made of more permanent materials: stone, sod, wood, iron. *"The dwellings began to assume the appearance of homes and in many instances well furnished gardens were attached to them"*. Settlements took on *"a healthy, prosperous air."* (3).



Photo 6. Increasingly the buildings were made of more permanent materials. Main street of St Bathans about 1889.

The replacement of temporary shelter by more permanent forms of housing is consistent with the second stage of Streatfield's model: PERMANENT SHELTER. He suggests that settlers deliberately selected sites that reminded them of home. For pioneers arriving in the Canadian Prairies, it was standard practice to select a location that resembled the homeland, however slightly, then to set about making the new land in the image of the old (Rees, 1982). But in Central Otago, especially the Wakatipu fields, the siting of settlements was largely constrained by the physical character of the country (McCaskill, 1962), and house sites were determined by the surveyor, who generally laid out towns in geometric grids.

The experience of Chinese miners in Central Otago also varies from Streatfield's model. Chinese first began to arrive in 1864 and in steadily increasing numbers became widely distributed throughout, including along the Arrow and Shotover Rivers. They nearly always reworked alluvial ground that was first turned over in the first goldrushes. Even though Chinese miners came not to settle, but to make their fortunes and return to their families in China, they

rarely used tents, preferring to build robust huts immediately: "... of turf on the grassy plots, of slabs in the bush, of cobblestones on the shingle, of adobe where stones were scarce ... of whatever stuff came handiest." (4)

Regular goldmining worked itself out over many years. Increasingly miners supplemented gold incomes with farming, store-keeping, hotel-keeping or market gardening. None-the-less, in many cases gold mining in some form lasted well into the twentieth century.

WHO WERE THE MINERS?

During the first wave of major Otago goldrushes (1862-1864), most of the gold seeking population came from Australia, mainly from goldfields in New South Wales and Victoria. Some were descendents of convicts and labourers, but more often they were themselves relatively recent immigrants there, coming from all over the world including Britain, Ireland, California, Italy, Canada, Germany, Scandanavia, and from all occupations. Generally though, they were rough, undisciplined, poorly educated and male (Clark, 1949; Forrest, 1961; McCaskill, 1962). Most had left New Zealand by the early 1870's (McLintock, 1949; Phillips, 1981).

Later miners (1865 onwards), who came and settled, were also diverse, both in origins and in status. Headstones in the cemetery at Skippers testify to this with names from Cornwall, Scotland, Ireland, and China (McGill, 1980). All New Zealand's settlers came from societies adjusting to change, from lands in geographical flux. But the effects of crowding and change in Europe had fallen most heavily on tradesmen and labourers, so that immigration to New Zealand in the late nineteenth century was weighted this way (Grey, 1984; Clark, 1949). For example, many assisted immigrants of the 1870's were dispossessed English farm labourers who brought with them a particular village outlook (Arnold, 1981). Although the range of skills varied, Helen Leach argues that it is reasonable to suppose that few men and women would have arrived in New Zealand without skills and knowledge of kitchen gardening and suggests that the level of skill may even have been higher since immigrants must have been confident of their ability to support themselves off the land (Leach, 1984).

HOW DID MINERS RESPOND TO CENTRAL OTAGO?

Phillips has pointed out that settlers coming to New Zealand were used to densely settled surroundings which everywhere bore the evidence of human activity. He argues that though immigrants may have granted New Zealand landscapes a certain awesome and rugged beauty, they more often felt fear and hostility:

"... They often experienced an awful loneliness, a sudden and terrifying exposure to raw nature. In England a river had been a gentle stream, a place to boat and fish, a waterway for transport. In New Zealand a river was a source of danger - something which might flood your land, sweep away yourself or your sheep in a raging torrent, which might isolate you from food or human contact." (5)

Certainly Vincent Pyke's response to Central Otago's emptiness is consistent with Phillips assertion. And like Pyke, another traveller, Alexander Bathgate was also bothered especially by the treelessness of Central:

"The same treeless character is met with in the interior and one may travel for days in succession without ever seeing anything larger than a bush of tumatakuru (discaria toumaton), a straggling, prickly almost leafless shrub, attaining sometimes a height of ten to fourteen feet, known to the colonists as "wild Irishman". This utter treelessness is the more strange as in many places evidences are abundant that the country has at apparently not very distant date, been thickly wooded. I have frequently seen charred logs of a large size lying on the tops of mountain ranges distant many miles from the nearest living forest owing to the want of trees, the scenery is very monotonous in many parts of the country, the yellowish green of the tussock grass being only relieved by dark grey schist rocks." (6)

But many of the first wave of miners had spent time in California and Australia and may have been less disturbed by what they saw than those fresh from England's green and pleasant land. Central's landscapes are more like Ballarat or Bendigo than most places in New Zealand (Field and Olssen, 1976), and Oliver Duff (1956) has even gone as far as to suggest that it may have been appreciated because in form and tone resembled biblical lands which many settlers were, through their reading, intimately acquainted. Immigrants responses to their new places are complex and often quite personal (Seamon, 1985). Some individuals may have responded positively to the special character of Central Otago immediately:

"It is not surprising that the dry desolation of Central, with its intense light, golden ochres and blacks and browns, and strange rocks, sculptured by wind and rain across the centuries, has claimed the spirit of many and the passing affection of most. Many who have tried to describe their response to this barrenness of land have sensed the timelessness, the precariousness of human existence where whims of climate are almost transposed into the tones of an angry Jehovah." (7)

It seems more likely though, as Rollo Arnold has surmised, that miners arriving may have experienced mixed feelings initially:

"When one creates in the imagination the colonial landscapes of the 1870's, it is not difficult to see that settlers must have felt a sense of both welcome and rebuff. The new land held some promise that it might be shaped into a new and better England, but it also displayed a disconcerting toughness and wildness, forboding a determined resistance to all efforts to mellow and tame." (8)

But as both individuals and families, miners were concerned in the first instance with staying alive (Streatfield's Phase One), secondarily with making themselves comfortable (Phase Two) and only later with making themselves at home (Phase Three). With the passing of time, becoming familiar with their surroundings, some may even have learned to like their new place.

"But always as the decades unfolded, there were haunting memories of a far and loved countryside to guide the eyes and hands of the immigrant settler. Even the colonial born carried something of the vision in their minds." (9)

Ronald Rees (1982) has remarked that pioneers, physically in one world, remain spiritually in another. This disassociation lasts for as long as the new world is seen from inside another culture, affecting not only the immigrants, but their children, and their children's children. To feel at home emigrants or their descendents, must acquire new ways of seeing.

THE BEGINNINGS OF GARDENING

A correspondent to the Lake Wakatipu Mail from Skippers Gully on 16 July 1863 wrote:

"The prevalence of scurvy in this place is frightful and every day fresh victims are added to the list of the sick. We can scarcely obtain anything here but rusty bacon and flour, without the sign of any vegetables; and this with the constant exposure to every inclemency of the weather, will affect the strongest constitution."
(10)

At the same time from a few kilometres downstream at Maori Point another correspondent writes:

"It has been a matter of much surprise to me and indeed to most parties, that no-one has yet started a market garden of some description or another, as there are some splendid terraces here, well adapted for growing most kinds of fruit, vegetables, etc. Considering the great amount of scurvy prevalent, caused, no doubt by the perpetual (not damper and mutton, for the latter seldom gladdens our eyes) soda damper and rusty bacon. I am certain it would be hailed as a boon by miners generally, and almost any price would be given for the green stuff."

The soil on the terraces alluded to is a fine black loam, and I am sure were two active men to cultivate, say about an acre or two, they would be amply repaid by their first crop, and there cannot be a shadow of a doubt that at all events, there always will be for the next two or three years to come a population of a more or less extent, here.

The vegetables that I would suggest to be the most suitable for this climate would be the following, viz:- turnips, carrots, parsnips, cabbages, savoys, greens, cauliflower, onions, leeks, radishes, beans, peas, artichokes, spinach, herbs, cresses, etc; and last though not least, potatoes." (11)

Part of the problem lay with the Goldfields Act of 1858 which did not allow the sale of agricultural or town sections. After an amendment in 1862 parcels of up to ten acres could be leased for seven years at low rental, but there was no right to purchase. This same amendment also granted every holder of a miners right a town section of half an acre, with full rights and title, or compensation if the land proved to be gold bearing. Only after 1866 was the ten acre limit for agricultural purposes increased to fifty acres (Forrest, 1961). This agricultural reform was a



Photos 7 and 8. Later miners, the ones who came and settled were diverse both in origins and in status. Residents of Skippers and surrounding districts (above) assembled outside the stone school on the day of the annual picnic c.1900. Limbs cut from mountain beech trees growing in nearby gullies have been used to decorate the photograph. Later this building was used as a shearing shed by Mount Aurum Station, and today most of it still stands (below), penetrated by elderberry (*Sambucus nigra*) with a backdrop of Douglas fir.



popular one and the landscape repercussions were described in a report from the Arrowtown warden just seven months later:

"The features of all the flat country around Arrowtown are rapidly changing; in all directions the plough is busily at work, and no time is being lost in fencing the land and erecting neat homesteads on it." (12)

The tall tussock and matagouri was giving way to fields of oats, potatoes, wheat and barley. An 1878 report from the Wakatipu goldfield describes the effects of the allocation of town sections in gold settlements:

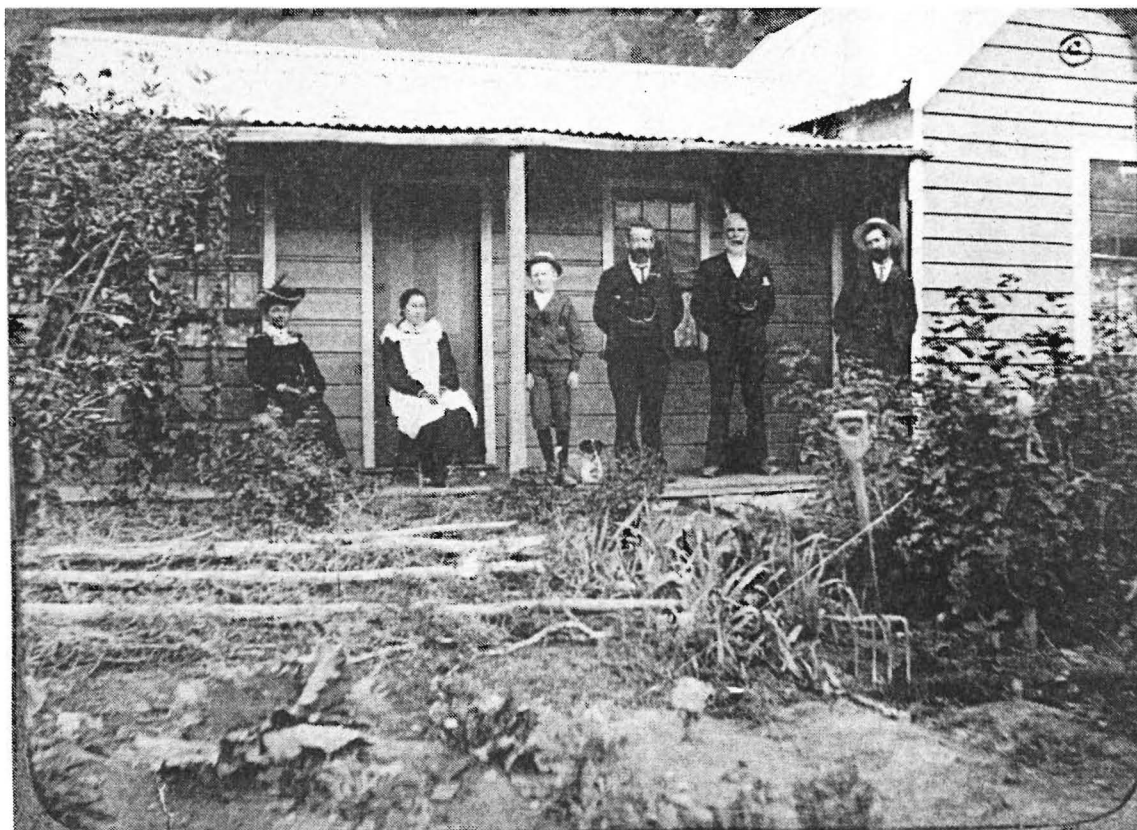
"Ten percent of our population of 4,000 have taken advantage of this boom and on the sunny slopes of our ranges may be seen pretty gardens well laid off with vegetables, bushes, flowers and trees. The latter so much needed in this otherwise treeless part of New Zealand, the whole surrounded with gorse and thick fences. The fencing in our gardens has brought about a better style of housing being built by the mining class, and following this improvement, in many cases, marriage, children, contentment with less gold returns rather than moving about, and a disposition to settle - a quality so much to be encouraged in this colony." (13)

Mining technology was adapted to meet the needs of this diversification:

"Near Queenstown I observed that one of the numerous water-races (which are so striking a feature in Otago) had been turned on to irrigate a garden, and the result was the production of vegetables of enormous size." (14)

Pioneers moving to a new area invariably brought with them the seeds and cuttings of plants that would be useful, although often they had little sense of what was appropriate to plant in these new and unfamiliar places (Streatfield, 1981). At this second stage of cultural colonialism, Streatfield suggests, there was little opportunity for cultivating ornamental plants. Not until his third stage: ASSIMILATION are settlers concerned with creating landscapes less dependent on sheer survival. Ornamental planting begins as a range of new plant materials becomes available with improvements in communications, influenced by increasing access to the popular and academic standards of the parent society.

How neatly this model with respect to ornamental planting fits the experience of miners in Central Otago is



Photos 9 and 10. Vegetable gardening at Skippers. Mount Aurum homestead c. 1900 and a similar scene in 1987.



questionable, partly because Streatfield has put more emphasis on the Victorian tendency to create gardens for show, rather than an ornamental planting being motivated by nostalgia, and partly because the issue is complicated by class. Certainly communication lines between miners in Central Otago and their parent cultures were open; at Skippers there was a telegraph from 1867 and a telephone from 1883 (Matthews, 1986). Co-operative Anathaeums like the one at Moonlight which contained 500 calfbound classics including Carlyle, Dickens, McCaulay and Trollope (McGill, 1980), were common in goldfields settlements and miners were enthusiastic readers of newspapers (Field and Olssen, 1976). But miners were not generally of wealthy or leisured origins and in most cases were only making enough to live on. It seems more likely that their ornamental plantings were motivated more from homesickness, or from a desire to recreate familiar settings, than from a wish to be leaders of fashion. Moreover the model's separation of useful and ornamental planting may be misleading. Familiar plants, both useful and ornamental were carefully preserved by people moving from one place to another:

"Mother gathered flower seeds and at the last dug up roots of all the flowers that she had, and put them with a few strawberry plants and raspberry canes and roots of rhubarb etc. Also there were a dozen or more young trees that she had grafted herself. She gathered up hundreds of young hawthorns she had grown from pips that the boys had gathered on the road from school the year before." (15)

Abigail Gordon who settled in Kingston in 1877 regarded 'beautifying the barren landscape' a priority (Harper, 1980). She planted a hedgerow of may flower (hawthorn) along the road frontage from cuttings obtained from nearby Fairlight Station, and planted pink cabbage roses. From Windsor Castle (where her sister-in-law worked in the dairy) she received boxwood seeds from which she propagated enough plants to border the paths around her garden as it became established. One particularly prized rose, a yellow climber called 'Marechal Niel' which she purchased from an Invercargill nursery, had been hybridised in France only thirteen years before (Harper, 1980). But Gordon was a farmer's wife, likely to be of class more inclined to make pleasure gardens for their own sake than miners who planted for food and possibly out of nostalgia but who had neither time nor inclination to take ornamental planting to this level. Among miners there may also have been an awareness that the gold would not last forever.



Photos 11 and 12. As people began to settle orchards and berryfruit were planted. The hotel site at Skippers (above) with Aspinalls house (set among elms) in the background. The gully in front of the hotel was planted as an orchard with apples, pears, plums, raspberries and gooseberries, which sill bear fruit today (below).



WHAT MOTIVATED PLANTING?

Clearly one of the strongest motivations for planting was the need, especially in more remote gold settlements, for fresh food. In some cases individuals or groups may have planted for their own use. In others the demand presented by communities of miners and the high cost of carting food from Invercargill or Dunedin, meant that for some, financial returns from growing vegetables for sale, were a useful supplement to returns from their claims. Chinese miners at Arrowtown cultivated extensive gardens in the 1870's (Lands and Survey, 1986) and their produce was sold locally. Initially, while the mining population was in flux it is likely that only short term vegetable crops were grown but later as people began to settle, orchards and berryfruit were planted.

"It is no problem to account for the introduction of the blackberry, Stapelton, in a humorous speculation, laid it to West-Country men desirous of eating their 'clotted cream with the familiar pie of that delectable fruit'."
(16)

A second likely motivation, in the days before barbed wire, was the need to form enclosures for horses and other animals with hedges of gorse or hawthorn. Streatfield (1981) has emphasised that the initial act in the first PIONEER phase of cultural colonialism was to establish boundaries. Boundary planting with hedging species may also have played this territory defining role.

The critical lack of fuel may have been an important motivation for planting. Alexander Bathgate (1874) wrote:

"The want of wood was always a great source of complaint with the goldfields population in the early days of the diggings, coming as most of them did from well wooded Australia. An old gin case was then, and even now is, a thing not to be despised in many of these up country regions. A favourite joke of the diggers of those days was that in order to get a little hot water they were obliged to set fire to the grass, and run along holding their 'billy' over the flames till it boiled." (17)

Perhaps the most persuasive motivation, especially for ornamental plantings, was a need to create a familiar setting. The harsh brown wilderness of Central Otago was a painful contrast with the culturally enriched landscapes immigrants had left behind. Moreover, the Central Otago goldfields must have seemed very remote coming at the end of one or more long journeys (Seamon, 1985). Nature seemed threatening; both climate and scale were extreme. Pioneers in eastern Nebraska planted for psychological relief from similar conditions (Sutton, 1985).

Planting familiar species was an attempt to bridge the gap between the old world and the new, a transplanting of culture (Jackson, 1977). In an old society, culture evolves in context with the particular characteristics of the environment, but immigrants to a new place must bring their culture with them (Phillips, 1981). Thus miners arriving in Central Otago brought with them, not only Crosby's 'Portmanteau Biota', but also a weight of cultural baggage, including a particular image of beauty (Phillips, 1981; Rees, 1982; Grey, 1984). Phillips believes that for many settlers, the pain of exile, and the terror of the wilderness could best be alleviated by converting the land into a replica of home, into an English Garden. In Central Otago, as in Nebraska, pioneer planters often started with landscape beautification efforts that were directly adjacent to their dwellings (Sutton, 1985).

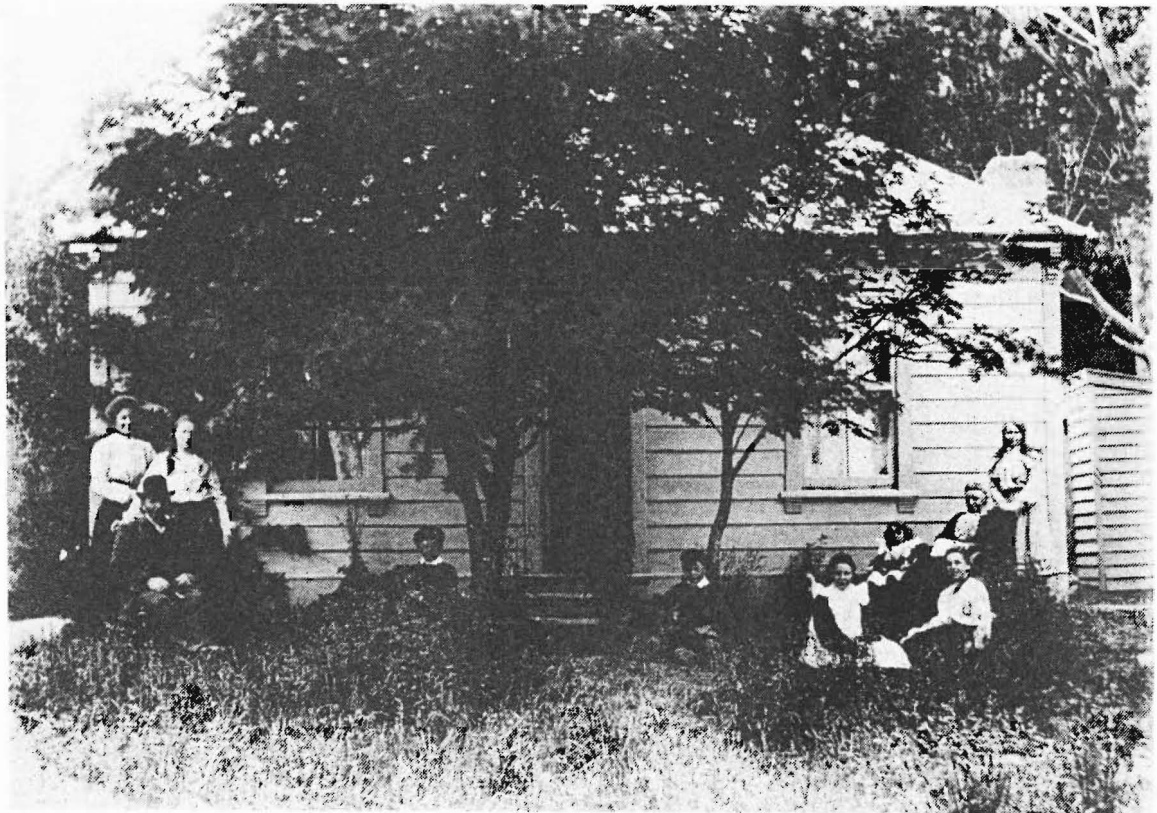


Photo 13. In Central Otago pioneer planters often started with landscape beautification efforts adjacent to their dwellings. Miners cottage at St Bathans c.1908. A pair of rowans emphasise the entrance.

Distilling motivation still further, J B Jackson argues that creation of a garden is an attempt to reproduce, next to the house, a certain familiar, traditional setting. Gardens stand for something much larger, beauty of a special familiar kind, an abstraction of a pastoral scene (Jackson, 1977). In the old world such gardens linked people with

their villages, enriching their culture, but in the new world the garden was confronted by a strange and unpredictable environment and was obliged to play the role of frontier outpost, a defence against a threatening world.

HOW DID MINERS CULTURAL VALUES MANIFEST THEMSELVES?

"Seeing little use in the indigenous mantle of life beyond its destructive exploitation, New Zealand's settlers removed and replaced it." (18)

As long as miners felt that they were only in Central temporarily, they had little incentive to conserve, or plan for the distant future (Phillips, 1981). We see this attitude throughout Central in hectares of unproductive tailings, hillsides scarred by water-races, whole terraces sluiced away and further reduced forest cover.



Photo 14. "Seeing little use in the indigenous mantle of life beyond its destructive exploitation New Zealand's settlers removed and replaced it". Terraces sluiced away at Skippers Point, around 1900. The stone hotel on the left with its orchard hedged in front still exists (see photo 12). Aspinall's house to the right has gone, but the rows of elms (*Ulmus x hollandicus*) around the boundary can still be identified though now the whole area is forested with self-sown conifers.

That people saw little use in what was already here, apart from gold, is illustrated by the 1863 outbreaks of scurvy in the Shotover. Locals saw the solution in growing familiar old world vegetables. It did not occur to many that the prevention and cure for scurvy might be right under their noses in the edible plants of tussock grassland like *Anisotome* species, speargrass or snowberries. These same plants largely sustained Alphonse Barrington for five months on his epic prospecting journey to the West Coast the previous summer (Barrington in Taylor, 1959).

People went to considerable trouble and expense propagate or buy plants. The fact that plants, especially ornamental trees, were laboriously transported from nurseries in Invercargill and Dunedin when native trees were available for the taking, is revealing.

Notes:

1. PYKE, Vincent. 1887. Page 21. Describing the character of the country through which goldminers travelled in the early 1860's.
2. *ibid.* Page 21.
3. OTAGO WITNESS, 13 February 1864. This description of the gold town of Weatherstones is quoted in FORREST, James. 1961. Pages 76-77.
4. McNEUR, G.N. 1951. Page 10. Quoted in FORREST, James. 1961. Page 80.
5. PHILLIPS, J.O.C. 1981. Page 13.
6. BATHGATE, Alexander. 1874. Page 70.
7. FIELD, Tom and OLSSSEN, Eric. 1976. Page 74.
8. ARNOLD, Rollo. 1981. Page 357.
9. *ibid.* Page 357.
10. LAKE WAKATIPU MAIL, 25 July 1863. Page 4.
11. *ibid.* Page 4.

12.OTAGO WITNESS, 15 September 1866. Quoted in FORREST, James. 1961. Page 81.

13.APPENDICES TO THE JOURNAL OF THE HOUSE OF REPRESENTATIVES, 1878, H-4, p18. Quoted in YULE, S. J. 1978. Page 63.

14.CRAWFORD, James Coult. 1880. Page 249. Crawford's observations were made in 1864.

15.SOPER, Eileen L. 1948. Page 40. Origin of this quote not clear, probably from a letter or diary.

16.CLARKE, Andrew Hill. 1949. Page 359.

17.BATHGATE, Alexander. 1874. Page 70.

18.GREY, Alan H. 1984. Page 67.

3. Historic Landscapes Today

"An empty tailrace winding around a desolate hillside, the ruins of a sod cottage by the banks of a stream which once flowed placidly over its bed of gold, the waving broom and gorse where once a canvas township pulsated with lusty life, a broken pipeline long since abandoned to the ravages of time, valleys scarred and disfigured by the blue shirted diggers, a solitary unnamed grave, a simple cairn - these are Otago's monuments to those on whom 'the iniquity of oblivion' has long since fallen."

McLintock 1949 (1)



Photo 15. Evidence of miners efforts to change their surroundings can be seen everywhere in Central Otago today. Abandoned garden at Bendigo with Lombardy poplars, fruit trees, and a lilac hedge.

VALUING PAST LANDSCAPES

More than 100 years have passed since miners arriving in Central Otago were incited by the gleam of gold, disturbed by the desolation of their surroundings and motivated into changing them. Today we can see evidence of their efforts everywhere in Central Otago. People began to write about it even as it was happening, and have been writing about it ever since. Why does the interest persist? Bearing in mind that the landscape is a record of change, an historic document, Rachel de Lambert made a list of the reasons that historic landscapes are valued:

1. Knowledge of History

Physical evidence (relics, artifacts, ruins, old things) puts us in touch with the past, it is a tangible link which enhances our knowledge of history and makes the past more meaningful (Begg and Hamel, 1985).

Moreover, the historic landscape is, in the physical sense, a SPATIAL KEY, giving breadth to history by enabling us to locate past events geographically within the present day landscape.

2. Expression of cultural values

"Cultural landscapes exhibit, either conspicuously or subtly, long held values of their area or culture." (2)

This historical depth is a major source of our sense of belonging. As we identify ourselves through family relationships, so each generation in a community identifies itself by links with its own historical past (Historic Places Trust, 1985). If all traces of the past were removed, we would suffer individually and collectively from a sort of cultural amnesia (Tishler, 1981).

3. Evidence of continuity

Historic landscapes are an important source of evidence of evolution from the past, confirming confidence in the future (Lubbe, 1987). This continuity implies a living past bound up with the present, not one that is estranged or obsolete (Lowenthal, 1985).

4. Learning from the past

Understanding the processes (both natural and cultural) by which landscapes have been formed can be a useful tool in directing management and predicting future change.

An appreciation of the processes which have moulded and fashioned historic landscapes is a prerequisite for sensitive awareness of their value (Hearn, 1976)

5. Nostalgia

When we imagine how life must have been for people living in past landscapes, our picture is distorted by our own experience in the present. We imagine a past that never was. Moreover, nostalgia requires a certain estrangement (Lowenthal, 1975). It is almost as if there has to be an interval of neglect, a discontinuity, before historic landscapes are valued nostalgically, and the incentive for restoration is felt (Jackson, 1980).

6. Formal visiting

Visiting historic places is an enriching pastime not only for visitors and tourists, but is also important for local people in contributing to their regional identity.

Some of these reasons for valuing historic landscapes have implications for those concerned with the management of historic landscapes.

THE DILEMMA OF CHANGE

A fundamental dilemma which recurs time and again in issues related to the management of historic landscapes concerns the dichotomy: 'museumisation' and innovation. Museumisation means the arrest of change so that an historic

landscape is preserved (as far as possible) as it was at a certain fixed point in the past. In contrast, innovation means valuing and allowing for subsequent change, possibly even total change. Larry Ford (1984), tackling the question of why it seems to be so difficult for preservation and innovation to proceed together pointed out that although we realise that the past is essential, it can also be a burden which inhibits progress and the acceptance of new uses. This is why the past can make us feel ambivalent. Similarly, Kenneth Helphand (after Stilgoe, 1983) has referred to the constant centripetal (inward) force of tradition opposing the centrifugal (outward) force of innovation. One of the reasons that we value historic landscapes is as evidence of the continuity of our own existence (number 3 above) but other reasons such as knowledge of history (1) and nostalgia (5) are related to history for its own sake, not so much as it effects us, now.

"The virtues inherent in continuity often conflict with those prized in antiquity. Preservation and restoration principles reveal a similar opposition: those who hold antiquity supreme would excise subsequent additions and alterations to restore buildings to their original condition; those devoted to continuity would preserve all the accretions of time, witnesses to their entire history." (3)

In the Australian gold town of Beechwood, for example, Tom Griffiths (1986) identified a tension between two different types of historical consciousness. There were those who proudly valued the town's history as something to be displayed and preserved in monuments and plaques, and those locals, closely connected to past events and places by individual and collective experience and memory, who felt that exposing the past meant relinquishing a private and familiar relationship with the history of the town in which they were living their lives. This, Griffiths suggests, may be partly because European Australians are still so close to their past that there is some uneasiness about seeing it as separate from the present. There has not been that gap, that period of estrangement that both Lowenthal (1985) and Jackson (1980) observed is necessary.

All landscapes are dynamic, subject to natural and cultural processes of change, and for this reason historic landscapes do not readily lend themselves to attempts to arrest change. Rachel de Lambert (1986) realises that in managing cultural landscapes a balance needs to be struck between the two extremes: WHOLESALÉ CHANGE, a tendency towards landuses which erase the visible past, and THE ARREST OF CHANGE, because maintaining past landuses is not usually economically feasible, nor desirable. Moreover, future landscapes are also important in the ongoing evolution of cultural landscapes. The balance would be a broadscale cultural landscape reflecting our past, within which are small areas protected from change for interpretation and experience of history. In this way, she believes, historic values are integrated.

Another avenue for resolving the dilemma in the management of historic landscapes is to approach management as a

maintaining of SENSE OF PLACE, so that the distinctiveness, the essence, of the place endures, despite some change.

SENSE OF PLACE

Although generally unarticulated, the desire to maintain and enhance sense of place often underlies and motivates the protection of historic landscapes. The decision to adapt an abandoned farm house at Whariwharangi for use as a hut on a new track in Abel Tasman National Park was made, not so much for expediency or because the building was fine architecturally or in a good state of repair, but because the decision-making ranger was *"captivated by the wild and desolate nature of the place"*. It was resolved that development at Wharwharangi be very low key so that the *"all-pervading atmosphere of quiet and abandonment that the place engenders"* is not disturbed (Rennison, 1982).

Many see historic landscape protection as a means of achieving a stronger sense of place (Datel and Dingemans, 1984), contributing to the recognition of a place as a distinct and separate entity, unique and identifiable. Management for sense of place works because historic qualities contribute, often powerfully, to sense of place. The most important historic attributes will therefore be protected and possibly enhanced, yet innovation can be



Photo 16. Interpretation is important for long term protection of the essential qualities of historic landscapes. Otago Golfields Park interpretation board at St Bathans.

valued and allowed for provided distinctiveness persists. There is a danger, as Relph (1976) has pointed out that museumisation (arrest of change) can work against the existence of sense of place unless change is related to a particular geographic location, and integrated with the present (Datel and Dingemans, 1984; Lowenthal, 1985).

Appreciating sense of place depends on an awareness of the differences between places and times. Some level of interpretation is therefore important for long term protection of the essential qualities of an historic landscape (Hearn, 1976; Tuan, 1980; Datel and Dingemans, 1984). People will not value and therefore protect, unless they are aware that a place is special.

EXPERIENCING HISTORIC LANDSCAPES

Experience of place is complex, as much in the experience, eye and mind, and intentions of the beholder as in the obvious physical appearance of the landscape. Relph (1976) has identified three basic components of place which are inseparably interwoven in our experience of historic landscapes:

1. the physical SETTING and the OBJECTS present
2. the ACTIVITIES that happen in the place
3. the MEANING of all these, the SIGNIFICANCE that is attached to them.

Objects and settings are important in providing tangible evidence of the existence of history. For example, we know that a gnarled lilac tree growing in the centre of a ring of stones must have been planted by someone in the past. Finding a lilac tree with which we are familiar in our own contemporary lives, may make the lives of those who planted it more real. Its location, on a terrace surrounded by steep tussock covered hills may speak, to a sensitive observer, of homesickness, or of the process of making a home in a remote location. Tuan (1980) has written about the importance of objects, or artifacts, in appreciating historic places. Even when written documents about past events remain, without artifacts, an imaginative empathy for the continuity of time and the full flavour of the past is difficult to achieve. This is why we feel sad when objects from the past are destroyed or lost.

Because identification of place is subjective and quite personal, different visitors may attach different meanings

to the same historic landscape. At Macetown, for example, some visitors may be interested in the mechanics of quartz stamping batteries, others may respond more to an abandoned garden. Some may be enthusiastic about panning for gold while others prefer to search among the tailings for wild raspberries

Notes:

1. McLINTOCK, A H. 1949. Page 481.
2. MELNICK, R.Z. 1981. Page 56.
3. LOWENTHAL, David. 1985. Page 62.

4. Cultural Planting in Central Otago Gold Settlements

CULTURAL PLANTING IN CENTRAL OTAGO GOLD SETTLEMENTS

Nearly every town in Central Otago today had its origins in the goldrushes of the 1860's, but from similar beginnings each has evolved a different character. Subsequent overlay of change, the results of variable social, political and economic forces, and different rates of change, have given rise to diverse settlements which can be broadly classified along a continuum as relict, historic or cultural landscapes. Within each class, cultural plantings can be indicators - imperceptible, subtle, or clear - of the origins and subsequent development of these towns.

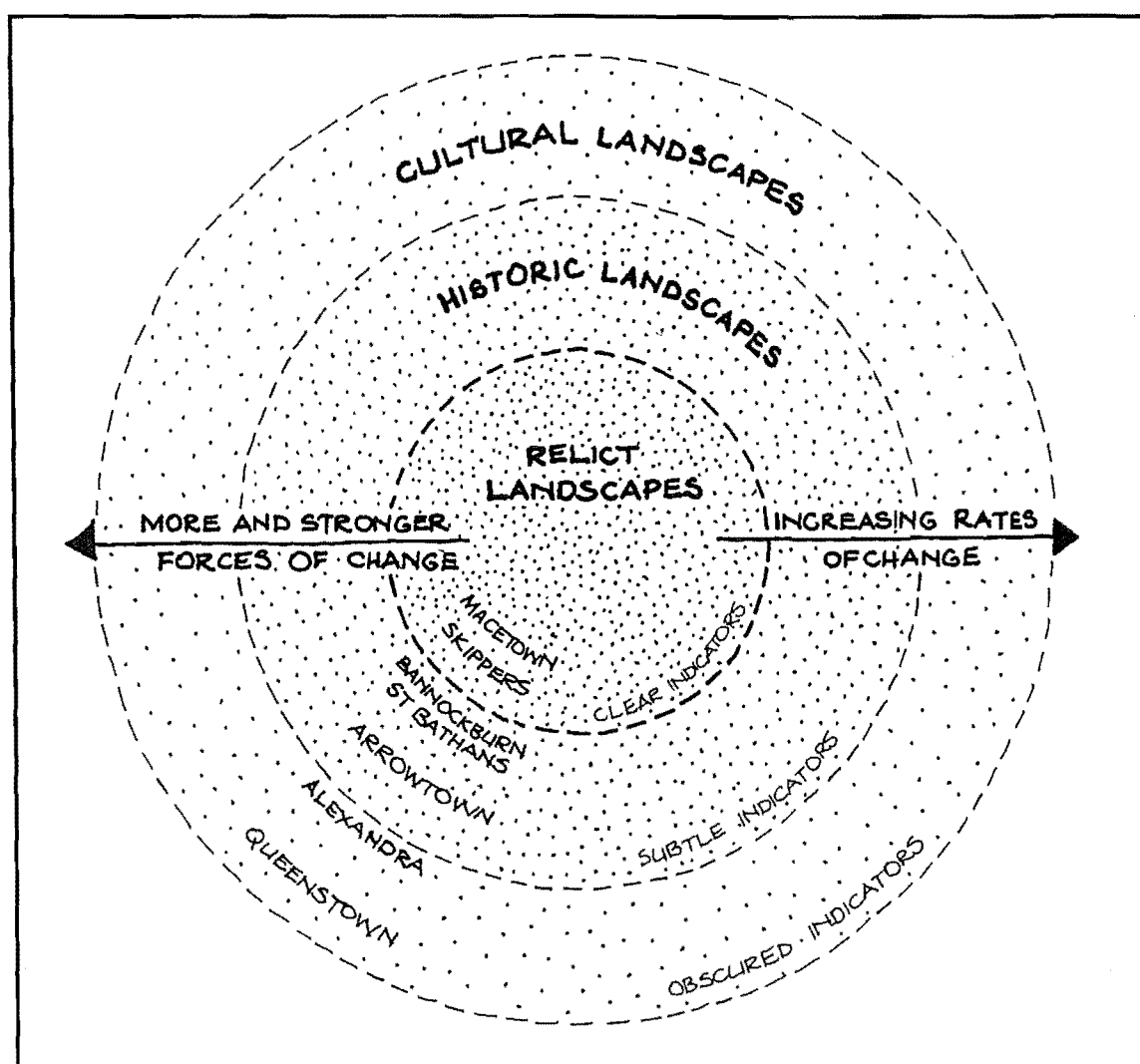


FIGURE 1. GOLD SETTLEMENTS WITH SIMILAR ORIGINS, SUBJECT TO VARIABLE RATES AND FORCES OF CHANGE, ARE TODAY SUFFICIENTLY DIVERSE TO RANGE RIGHT ALONG THE CONTINUUM, FROM CULTURAL LANDSCAPES, WHERE CLUES TO THE PAST ARE OBSCURED BY DEVELOPMENT, TO RELICT LANDSCAPES, WHICH REMAIN LARGELY UNAFFECTED BY HUMAN CHANGE.



Photo 17. A pair of fruit trees, one either side of an entranceway, at the southern end of Macetown (see map ...).

RELICT LANDSCAPES

Subsequent accretions of time have more or less passed by settlements like Macetown, Skippers, Bendigo and Nevis, because they were abandoned when goldmining, their initial reason for existence, became uneconomic. In these relict landscapes, cultural forces of change are less important than natural forces of regeneration, and the processes of decay. Such settlements often occur as enclaves of cultural planting within more or less 'natural' landscape settings; miners plantings are easily distinguishable from the tussock grassland surrounding them.

Cultural plantings in relict landscapes can be recognised in several forms:

1. Planted Trees

Clearly identifiable as individual mature specimens, like the spruces at Macetown, or where they are planted in formal arrangements, such as a pair of fruit trees, one either side of an entranceway.



Photos 18 and 19. Self-sown trees most obviously mark relict settlements in the landscape. Larch and Douglas fir enshroud the terraces at Skippers on which the locals played cricket around 1900. The trees in the middle distance define the cemetery boundary.



2. Self-sown Trees

Particularly well-adapted species with efficient seed dispersal and a competitive edge can cause problems by suppressing other forms of cultural planting and undermining sites with archaeological value, so that information is being obscured and lost. Yet it is the self-sown trees which most obviously mark relict settlements in the landscape and the way that the settlements become overgrown contributes to the lost-in-time quality which can be important in our present day experience of sense of place at these locations. At Macetown the deciduous species sycamore and poplar are the most common self-sown trees while at Skippers the conifers, Douglas fir and larch form extensive forests.

3. Hedgerows

Hawthorn is the most notable hedgerow plant. At both Macetown and Skippers straight rows of hawthorns which were trimmed hedges when the towns were lived in by miners, are still identifiable, but now they have grown into trees. Some other tree species also appear in rows, like elms and Douglas fir at Skippers, marking property boundaries.

4. Orchards

At Bendigo, Macetown and Skippers orchard apple, pear, apricot, plum and cherry trees still exist. Younger fruit trees are more likely to be self-sown. Granny Barker's cottage near Macetown, for example, was once set in an extensive orchard but the fruit trees have been overtopped and killed by poplars and are now only discernible as decaying skeletons within a dense poplar thicket.



Photos 20 and 21. Fruit trees have been overtopped by poplars and are now only discernable as decaying skeletons within a dense poplar thicket. The site of Granny Barkers cottage near Macetown from outside and within (see map...).





Photo 22. Gooseberry bushes planted near a stone cottage at Bendigo.

5. Berryfruit Patches

Because the seeds of gooseberry, raspberry, blackberry, red currant and blackcurrant found in these relict settlements are distributed by birds, it is often harder to interpret which berry fruit patches were planted by miners and which were self-sown.

6. Abandoned Gardens

The remnants of gardens are often associated with the ruins of miners cottages, e.g. collapsed stone walls, or rows and rings of stones marking the edges of garden beds. At Macetown ornamental garden plants such as lilac, ivy, daffodils, snowberry bush and *Mahonia aquifolia* are found growing together. At Skippers laburnum, cherry, day-lily, snowberry bush and mock orange grow together at an old house site.



Photo 23. Remnants of gardens are often associated with the ruins of miners huts. A cultural bouquet: snowberry (*Symphoricarpus albus*), *Mahonia aquifolia*, and blackberry (*Rubus fruticosus*) grow intertwined at Macetown.

7. Garden Escapes

Often ephemeral herbaceous plants with garden origins can be found living out their life cycles as wild flowers for many generations: species such as mint, majoram, foxgloves, pinks, toadflax, feverfew and self-heal are to be found in the long grass in these relict gold settlements.

HISTORIC LANDSCAPES

Where efforts are made to weave new development into the original historic fabric of gold settlements like Clyde, St Bathans and Arrowtown (Lusk 1975), historic qualities are retained and sense of place is enhanced, while at the same



Photos 24 and 25. Ephemeral garden escapes such as (above) marjoram (*Origanum vulgare*) and St Johns wort (*Hypericum perforatum*) grow everywhere at Skippers, while a *Campanula* sp. (below) is confined to one or two locations around Aspinall's and the hotel site.



time allowing life to go on for those who still live there. However, often only mature trees, such as Arrowtowns oak avenue, can be identified as nineteenth century cultural plantings. Smaller scale cultural plantings like gardens or orchards are mostly indistinguishable from later additions. Unless such plantings are researched, and some form of interpretation of existing vegetation patterns is available, they cannot be appreciated. This has been done for plantings made by Chinese miners at the Arrowtown Chinese Settlement (Department of Lands and Survey, 1986).



Photo 26. Where efforts are made to weave the present into the original historic fabric of gold mining villages like St Bathans, historic qualities are retained and sense of place enriched.

CULTURAL LANDSCAPES

In mining settlements like Queenstown, Cromwell and Alexandra, where the social and economic forces of change have been stronger and rates of change faster, cultural landscapes have evolved in which nineteenth century gold town origins are obscured and can only be glimpsed as vestiges of stone buildings peeping out from below layers of later accretions, or in the layout of streets and open spaces that have endured. Exceptions occur where the history has deliberately made explicit, perhaps as an expression of local identity, or in response to the economic opportunities associated with tourism. To an even greater

extent, early cultural planting has been lost, or is indistinguishable from twentieth century additions, and can often only be discerned in parks, along riverbanks and lake edges, and occasionally as mature specimen trees within the towns themselves.

Case Study : Macetown -
Relict Landscape

"Take us Macetownites all together, as a whole we are a fairly contented community. We eat, drink, and many of us take our smoke, get our "Witness" on Saturday, assist each other in sickness or trouble, gossip, mildly scandalise each other, and generally make things lovely, very much the same as the natives of hundreds of other quiet villages in New Zealand" (Lake Wakatipu Mail, 1897).



Photo 27. School picnic at Macetown, 1902.

MACETOWN'S PAST

Following the discovery of gold in the Arrow River in 1862, a town of calico tents appeared near its junction with the Richburn (Twelve-mile Creek).

Initially, settlement was concentrated on the northern bank on what became known as Graveyard Terrace, but later a cluster of dwellings began to form south of the Richburn, at the site of Macetown as we know it today (Lands and Survey, 1984). By December 1862, five or six hundred miners were at work along the three kilometres of the Arrow River between Eight-mile Creek and the Richburn. A few miners built stone or sod cottages, sometimes thatched with tussock and sometimes rooved with corrugated iron. Some of the stores were given false fronts and corrugated iron walls and the settlement began to look more permanent. By 1865, when the West Coast gold rush reduced the area's population to just over one hundred, Macetown was one of the more permanent-looking settlements in Central Otago (Lands and Survey, 1984). Like other fly-by-night settlements with similar beginnings, Macetown might have declined into oblivion had it not been for the existence of gold-bearing quartz lodes up the Richburn and its tributaries. Although their existence was known as early as 1863, quartz mining did not become economically attractive until fourteen years later in 1876. Production peaked around 1886 (Boyd 1967), then declined erratically, with the last mine closing down in 1914 after nearly forty years of quartz mining in the district.

At first, access from Arrowtown was by foot up the river, but a pack track over Big Hill was being used within a year of the first discoveries. Both the gorge and the Big Hill tracks were difficult; the return journey took at least two days, longer in winter, so the cost of freight was exorbitant. The road up the gorge, which is still used today, was not completed until 1884 coming too late to really effect Macetown's development (Boyd, 1967). Often the community at Macetown was cut off for weeks at a time by snow and ice. Many inhabitants left each winter rather than endure the isolation and the possibility of starvation.

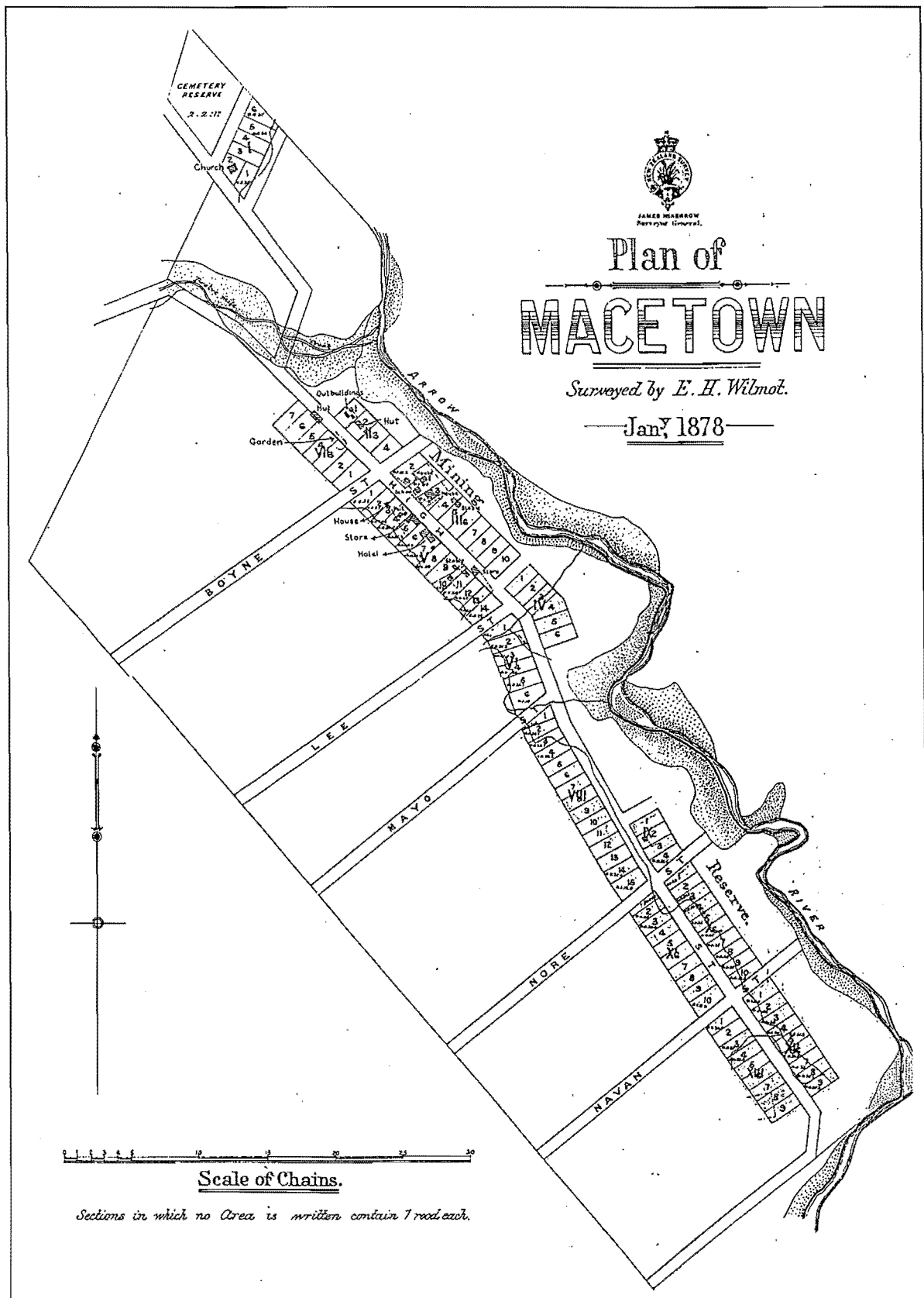
During its hey day (1880s and 1890s), Macetown with a population that varied between 150 and 200, was the nucleus for a largely self-contained community of up to 3,000 living and working in the surrounding district (Hearn, 1976). The town itself included several stores, a bootmaker, blacksmith's shop, butchers, carriers, mining managers, and two hotels, as well as a community hall, school and Post Office. The buildings were mainly corrugated iron attached to wooden frames with chimneys of various designs (Sligo, 1922 in Boyd, 1967). The Chinese miners' houses were more often constructed of sod (Boyd, 1967).



Photo 28. The road up the gorge from Arrowtown was not completed until 1884, but even then Macetown was often, and still is, cut off by floods.

Stone walls neatly separated some of the cottages. The jumbled layout of the town was influenced by the pattern of disturbed ground from mining. Macetown was not officially surveyed until 1878. Constrained by the terraced topography, the surveyed layout is distinctly linear, with sections each of about 1000 m² lined up along each side of High Street, strung out over a distance of about 1.4 km. The survey really only formalised the existing layout. From 1881 residents were able to purchase sections in the town, crown land thus becoming private property (Beaton, 1971).

As happened elsewhere, the regular gold-mining industry worked itself out over many years. The falling returns combined with harsh winters and its remoteness contributed to Macetown's decline around the turn of the century. By the mid 1920s, mining activities had all but ceased. There was a brief revival of activity during the 1930s depression, but after that the village of Macetown was abandoned.





Photos 29 and 30. The buildings were mainly corrugated iron attached to wooden frames. Macetown's main street in the 1880's (above) and a similar scene in 1987.



PRESENT-DAY MACETOWN

The mountain backdrop of Macetown is much the same as it was last century, but only three buildings now stand in the village. Stone foundations, collapsed chimneys, and crumbling walls mark the former locations of other houses and huts. Two of the remaining buildings have been restored and these together with all the other relics in the township are included in an Historic Reserve which is part of the Otago Goldfields Park. The 145 hectare reserve includes all of Macetown as surveyed in 1878 plus a 2.5 kilometre extension up the Richburn to include additional relics (Lands and Survey, 1984). Gazetted in 1979, the land which now makes up the Macetown Historic Reserve was released from surrounding Coronet Peak Station. Five of the original 110 town sections are still freehold land. The Historic Reserve is administered under the Reserves Act 1977 by the Department of Conservation, and is managed from Queenstown.

To protect the landscape surrounding Macetown from inappropriate development, the Lake County Council in 1974, established a 2832 hectare Rural Historic Zone covering the Richburn Catchment (Lakes-Queenstown combined Planning Committee, 1983). This land is grazed and managed as part of Coronet Peak Station.

Despite its isolation at the end of 12.5 kilometres of rough track, with 22 fords which limit access during floods, Macetown has many visitors, especially from Christmas to Easter each year. They arrive by four-wheel drive vehicle, motorcycle, horseback and on foot, to camp, walk, fossick and experience Macetown's abandoned qualities. The three components of place are inseparably interwoven in visitors experience of Macetown (Relph 1976):

1. Physical setting and the objects present

"The most important aspect of Macetown ... is that these remnants of the town and [the mining relics which are evidence of] the basis of its existence may be seen against the beautiful but environmentally harsh backdrop of mountain landscape which has remained largely unchanged since Macetown's origin. Thus while there are only remnants of the town's previous existence, the powerful landscape enables the viewer to imagine the rigorous living conditions experienced by the men and women and children who lived there and the powerful attraction of the gold that induced them to remain." (1)

2. Activities that happen at this place

Evidence of past activities is important in experiencing Macetown, but so are present-day activities:



Photos 31 and 32. The Mountain backdrop to Macetown is much the same as it was last century. It has been protected by a Rural Historic Zone since 1974.



* Recreation: camping, horse trekking, four-wheel driving, off-road motorcycling, rabbit shooting, swimming, tramping, exploring, interpreting relics to understand the past, eating raspberries, just being there, etc.

* Mining: both recreational and commercial.

* Grazing and associated pastoral management practices e.g. spraying noxious weeds, rabbit poisoning

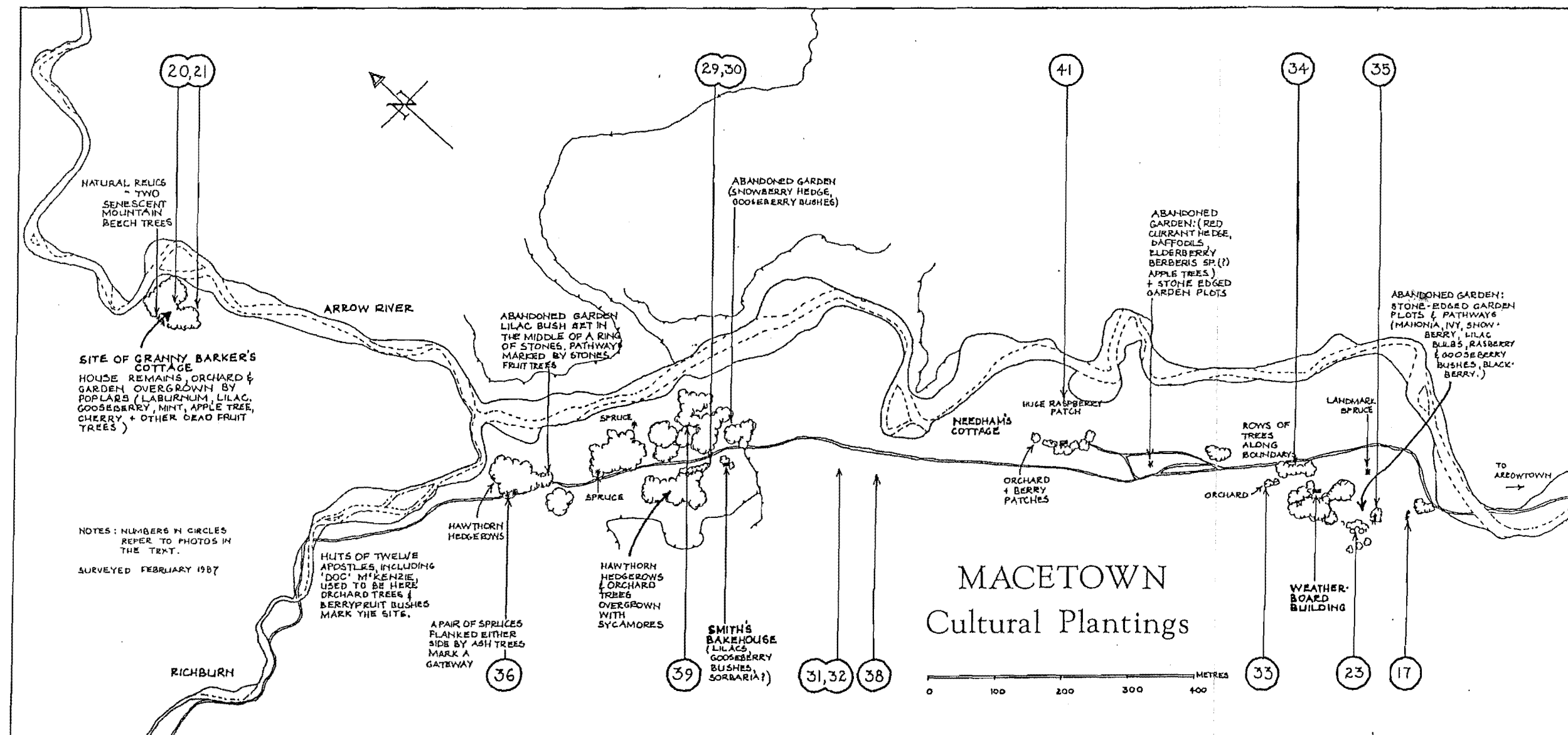
3. The meaning and significance of these

Visitors respond individually to present-day Macetown, but their experience can be enriched if additional meaning distills from some knowledge of the settlements past. Terry Hearn (1976) has even gone as far as to say that

"Any appreciation of the unique character of the Central Otago goldfields landscape requires an awareness not only of the 'facts' of pastoral occupation, of the rise and decline of the gold mining industry, of the establishment and expansion of orcharding and small scale farming, but also of the conflicts and debates which raged about the form and direction land settlement policy should take, the disputes over riparian rights, and the control of water, over-mining on private property, debris accumulation and the destruction of valuable agricultural land. The manner in which these and other conflicts were resolved had a direct bearing on the way in which the landscape was fashioned and the way in which it now records the past." Only when we have a sensitive awareness and understanding of the processes which created these landscapes, will the full value of relict landscapes and the importance of preserving them be fully appreciated. (2)

CULTURAL PLANTING

"Today Macetown is marked on the landscape mainly by mature specimens of the various trees and shrubs planted by the early settlers - bluegums, willows, poplars, sycamores, pines, apples, pears, apricots, cherries, plums, raspberries, gooseberries and currants. All but one or two buildings have gone, the only evidence of the extent of the former town being the remains of a few chimneys, stone walls, foundations and areas of levelled ground" (3)



We already have an understanding of how miners and settlers responded generally to Central Otago. We know a little about how gardening began and we have some idea about settlers cultural and personal motivations for planting. It is in relict landscapes like Macetown that we can best see the evidence. Sensitive visitors, even those with only a little background understanding, can interpret what they see in these terms. Notwithstanding, thorough primary source research and/or an archaeological survey would contribute much more to our understanding of cultural planting in particular, and life in the goldfields in general.

We can consider cultural planting at Macetown in the light of the motivations for planting identified in Chapter Two.

1. Fresh Food

In winter especially, going hungry if supplies couldn't get through from Arrowtown was a distinct possibility. Macetown was often cut off for weeks at a time. This worry may have been in the back of the Lake Wakatipu Mail's Macetown correspondent when s/he wrote in January 1900:

"Our gardens are looking very well so far as vegetables are concerned but as usually very late. The fruit crop is a failure, the consequence of a night frost which occurred at the time the trees and bushes were just blossoming and which killed nearly all the bloom. Our housewives will have to purchase nearly all their fruit for their annual preserves." (4)

and again in the following spring:

"But as yet there has been very little growth in the ground and here, amongst the mountains the summer season is so short, that we require rapid growth in the spring and early summer to enable vegetation to ripen sufficiently for keeping during the ensuing winter. By all appearances we shall have a very successful crop of small fruit this season, unless, like last spring, a late frost nips everything in the bud."

There are still orchards around Needham's cottage and near the weatherboard building at the south end of the township, but odd fruit trees and berry patches, many apparently not planted but grown from seeds carried by birds, are found in other places around Macetown. It is clear from the decaying fruit trees now swamped by poplars that Granny Barker's cottage was also surrounded by orchard until relatively recently (photos 14 and 15).



Photo 33. There is still an orchard near the weatherboard building at the southern end of Macetown (see map ...), in this picture apples and pears.

No visible trace remains of vegetable gardens though we know that some residents had their own gardens and at least one miner, William Birth, cultivated a market garden (Beaton, 1971). A 'garden' is marked on the Wilmots 1878 survey near the north end of the settlement. We can assume that Chinese miners, who collected urine for use as fertiliser, also grew vegetables (McGill, 1980; Beaton, 1971).

2. Enclosure and Defining Territory

We know from photographs (e.g. photos 21 and 23) that wooden fences and rock walls were used to enclose stock and house yards. Some walls are still more or less intact; others can now only be discerned as long heaps of stones. But there are also identifiable hedgerows of overgrown hawthorns, that were probably clipped hedges at one time. In other places, windblown seeds of sycamore and poplar have lodged under stone walls and the seedlings that grew from them are

arranged in relatively straight rows. Vegetation of this sort is not so much a cultural artifact as the outcome of natural regenerative processes. Broom, rosebriar and gorse growing wild now, may originally have been bought up the Arrow as hedgerow plants (Barker, 1883).



Photo 34. Some enclosing walls are more or less intact. It is difficult to say which of these sycamores are original plantings, and which are self-sown. Ring counts using an increment borer could help.

3. Timber and Firewood

A single overmature mountain beech tree still stands behind the site of Granny Barker's cottage, and there are relict stands of beech forest downstream in the gorge, towards Arrowtown. But even if there were more extensive patches of native timber around Macetown when miners first arrived, they would not have lasted long with the high cost of freight. It costs six shillings to freight each mine prop from Arrowtown to Macetown in 1878 compared with six pence for a similar distance from Frankton to Arrowtown. Coal was freighted in at 20 shillings per hundred weight (Lands and Survey 1984).

Tree species that still grow in Macetown include:

Acer pseudo platanus

Cupressus macrocarpa

Fraxinus excelsior

Picea sp.

Populus canescens

Populus nigra var. italica

Pinus sp.

Salix fragilis

Sycamore

Macrocarpa

Ash

Spruce

Cottonwood

Lombardy Poplar

Pine

Crackwillow



Photo 36. Spruces planted either side of a property entrance, which are now towering landmarks, are just visible in the mid-ground of this 1900 photo taken in winter looking south down macetowns main street.



Photo 35. In places stones are arranged in rows defining pathways and the edges of garden plots. The double row of coarser grass in this photo indicates a stone edged pathway. Garden plots are similarly defined near the top of the path but cannot be seen. The rounded foliage behind the hedge in the centre of the photo is ivy (*Hedera helix*) growing over a stone outhouse. At the base of the Lombardy poplar is a thicket of snowberry (*Symphoricarpus albus*) which is home to hundreds of rabbits. A browse line at rabbit height is clearly visible.

4. Creating a Familiar Setting

Besides the useful plants like fruit trees, hedges and firewood trees which themselves contribute to the creation of a familiar setting, a number of purely ornamental plants are still growing in abandoned gardens at Macetown:

<u>Dianthus</u> sp.	pinks
<u>Digitalis</u> <u>purpurea</u>	foxgloves
<u>Hedera</u> <u>helix</u>	ivy
<u>Laburnum</u>	golden chain tree
<u>Linaria</u> <u>vulgaris</u>	toadflax
<u>Mahonia</u> <u>aquifolia</u>	
<u>Narcissus</u> sp.	daffodils
<u>Sambucus</u> <u>nigra</u>	elderberry
<u>Symphoricarpus</u> <u>albus</u>	snowberry
<u>Syringia</u> <u>vulgaris</u>	lilac

In places, stones are arranged in rows defining pathways and the edges of garden plots. A distinct circle of stones surrounds a knarled lilac in one abandoned garden. A miner called Doc McKenzie is known to have tended a garden with roses and geraniums at the Richburn end of the settlement (McGill, 1980). Later, in the 1930s, Mrs Beal also had a flower garden at Macetown (Beaton 1971).

Some trees, found in pairs, were clearly planted to mark property entrances, for example a pair of spruces flanked by a pair of ashes still growing at the Richburn end of the settlement are visible as young trees in photo 36. Two fruit trees mark the gateway to a house platform at the south end of the village (photo 1). During the Boer War, daily bulletins were posted on a tree which grew between the school and the hall (Beaton, 1971).

Motivation for making gardens is something we take for granted because it is as much part of our own cultural conditioning as it was for Macetown's settlers. If the mining settlers had not felt such motivation, Macetown would only be discernible today from its 'natural' landscape surroundings, by localised patches of inadvertently introduced weeds, sluicing scars, tailings and water-races.



Notes:

1. HEARN, Terry. 1976. Page 3.
2. ibid. Page 2.
3. ibid. Page 3.
4. LAKE WAKATIP MAIL, February 2, 1900.
5. ibid. October 26, 1900.

5. Vegetation Management in the Relict Landscapes of Central Otago

*"The least tangible resources are
often both the most essential and
the most difficult to manage."*

Matthew Potteiger 1987 (1)

VEGETATION MANAGEMENT OPTIONS

Like other remnants of the past - abandoned equipment or ruined cottages - miner,s plantings are meaningful cultural artifacts, tangible clues to past lives. These surviving relics are threads from the past which have been carried through time and are now woven into the fabric of our own everyday lives. Cultural plantings, like other artifacts, are important evidence of the continuity of existence.

However, cultural plantings, unlike other artifacts, are alive and dynamic and do not lend themselves to the arrest of change. This complicates the dilemma of change always faced by the managers of historic places: the idea that the continuity of life conflicts with the value attached to antiquity itself. Should the management of cultural plantings in relict landscapes be directed at recreating the landscape which existed at a single point in the past? Or should historic landscapes exhibit some or all of the changes that have occurred during that particular place's long history? These two approaches can be seen as points along a continuum of management options as illustrated by Rachel de Lambert (1985):

Restoration Preservation Conservation Evolution Destruction
<----->
limited area extensive area

To be useful in arriving at a management philosophy, these terms need to be more clearly defined. At one extreme of the continuum is:

1. Restoration

Restoration is *"the act or process of recovering the historic appearance of the historic cultural landscape"* (O'Donnell, 1987). This usually means the return of a site to its original appearance during a selected period. Strict authenticity of overall form and attention to detail often requires extensive research and funding, as restoration is often undertaken to remove incompatible natural and human-caused accretions and to replace certain elements (Kunst and O'Donnell, 1981). James Fitch (1977) has pointed out that not only is time stopped, but the cumulative record of historic evolution through the length of the selected time period is artificially compressed.

At Kemp House, Keri Keri, the garden is laid out now just as the Reverend John Butler designed it in the 1820s. Most of the flower garden consists of plants that have their origins in that era (More, 1987; see also Davies, 1987).

2. Preservation

Preservation has been defined as *"the act or process of applying measures to sustain the terrain and vegetative cover, and the form, integrity and materials of the landscape. Preservation may include stabilization of extant forms, elements or features from earlier periods and removal of threatening elements such as plant overgrowth by volunteers or exotic species. Preservation may take the form of a maintenance activity to a prescribed standard that includes routine, cyclic and special maintenance."* (2) No more change is implied, than that necessary to keep the artifact in existence (Dobby, 1978). For example, penetrable thickets of briar around hut sites in Kwarau Gorge might be maintained as an effective management option in preserving archaeological remains (Ritchie, 1983).

However, writers like J.B. Jackson (1977) object to the principle of preservation because they feel a sense of the stream of time is more valuable and memorable than a formal knowledge of remote periods. Functional landscapes, especially settlements for example, evolve and change but preserved historical landscapes exclude not only later and future changes, but also the remoter past. Jackson writes: *"...the preserved environment is no more typical of its period than a brand new subdivision ...all ... are essentially sterile."* (3)

3. Conservation

Conservation is a passive process of preservation. It protects an historic landscape from loss, or the infringement of incongruent uses. As Lisa Kunst and Patricia O'Donnell (1981) say, basically it is stewardship of a site. Conservation includes all the processes of looking after a site so as to retain its cultural significance - aesthetic, historic, scientific or social (Australian Garden History Society, 1983).

4. Evolution or Integration

Evolution or integration is the management response to seeing the landscape as evolving through time; change is incorporated, while the past is respected (de Lambert, 1985). Patricia O'Donnell (1987) calls this ADAPTIVE USE which she defines as retaining and reinforcing the historic cultural landscape while accommodating contemporary uses, needs and conditions. Thorough research which addresses history, use, management, maintenance, ecology, safety and other relevant factors should accompany adaptive use strategy development. Management should reinforce historic integrity and retain extant historic fabric while integrating appropriate new factors.

This is partly what is meant by approaching management as maintaining sense of place (see Chapter 3). The most important attributes, those which contribute most powerfully to sense of place, are protected and enhanced, yet innovation can be allowed for, provided the distinctiveness of the relict landscape is not compromised. Taking this philosophy even further, J.B. Jackson (1977) argues that giving such places a living function is the only way to keep them alive:

"the power which an ancient environment possesses to command our affection and respect derives from its having accepted change of function; its beauty comes from it having been part of the world, not from having been isolated and protected."(4)

5. Destruction

Destruction, at the other extreme of de Lambert's continuum is the management option which allows new land uses to completely erase accumulated historic clues and symbols in the landscape, resulting in the permanent loss of that landscapes historic values.

Some other management options which might also be included on de Lambert's continuum include:

6. Reconstruction

Reconstruction describes the creation, from the ground up, of a complete landscape setting usually, but not always, on an original site. For example, true to America's melting pot tradition, 'Old World Wisconsin' is an outdoor museum near Milwaukee where historic structures, typical of the major ethnic groups who settled and developed Wisconsin, are being moved from every part of the state and combined with artifacts to produce a 'multicultural living museum' (Landscape Architecture, 1980). In New Zealand a similar approach was taken at Shantytown in Westland.

The problem with reconstruction is that by its nature, it destroys existing values of the sites and structures, and should only be considered when these criteria are met:

- (i) no significant preservable remains will be obliterated or altered
- (ii) historical archaeological, ethnographic and landscape information is complete enough to enable accurate reproduction with minimal conjecture

- (iii) the reconstructed landscape is in the original location
- (iv) the strategy will not effect other resources negatively
- (v) all prudent and feasible alternatives have been considered and reconstruction is shown to be the only way to foster public understanding and appreciation (O'Donnell, 1987).

7. Rehabilitation

Rehabilitation is a management option which improves use, function and/or appearance of an historic cultural landscape while its historic integrity remains. Consideration of safety, natural resources, environment and administration are often involved (O'Donnell, 1987). Rehabilitation differs from conservation or evolution in its emphasis on function: the historic landscape is returned to a useful condition, generally bringing it to a state of good repair, and possibly including some adaptation. The degree of authenticity is secondary (Kunst & O'Donnell, 1981).

8. Enhancement

Enhancement is a management option defined by Dobby (1978), mainly for application to historic buildings, but it might also be considered as an option for vegetation management in historic landscapes. Enhancement allows an indefinite degree of change and embellishment.

9. Release

A 'do-nothing' management option which allows natural succession of local vegetation communities to proceed unimpaired (O'Donnell, 1987). The long-term effect is to hide or obliterate traces of cultural landscape features. Many small West Coast and Coromandel mining settlements have probably met this fate.

VEGETATION MANAGEMENT CONSIDERATIONS

1. Vegetation is Dynamic

All vegetation, both natural and cultural, is constantly changing. Changes are the outcome of competition for requirements of growth like light, water and nutrients. Different species, even different individuals, have evolved different competitive strategies which, under a certain optimum set of favourable environmental conditions, allow those plants to assume competitive advantage over others. Furthermore, the effects are cumulative - successful plants become more successful at the expense of not so well adapted ones. So when settlers arrive in a new location - bringing with them their 'portmanteau biota' - the effects of physical disturbance combined with the range of new plant species, arriving in what may have been a relatively stable existing community (like snow-tussock grassland) can be quite unpredictable. At first miners hold some of the forces of competition in check through cultivation, but after the settlements are abandoned, nature takes over and it's every plant for itself. With the easing of human controls over growth, the processes of succession begin. Succession can be understood as the consequences of differential growth, differential survival and differential colonising ability of species adapted to growth under different conditions (Drury and Nisbet, 1973). Successional change is the outcome of competition between species and individuals in which faster growing plants, larger plants, and plants which live longer tend to have the advantage. The dynamic nature of vegetation has implications at all levels in the management of cultural plantings in relict landscapes.

2. Wilding Trees

At Skippers and Macetown some of the tree species introduced by miners turned out to be particularly well adapted to environmental conditions in Central Otago. At Skippers, Douglas fir and larch, originally planted round the boundaries of the school and cemetery, have spread via windborne seed to enforest the hills and terraces of the whole settlement (see photos 18 and 19). Deciduous poplars and sycamores sucker and seed to form dense copses throughout Macetown. How these vigorous woodlands should be managed depends on the chosen management option for the site. If the goal is to RESTORE these relict landscapes, to make them much as they were during their heydays, then all self-sown trees would need to be felled and taken away. Early photographs show that even up to the turn of the century, the settlements were open (photos 10 and 21). What trees there were, were small; the parents of all the self-sown sycamores at Macetown were themselves only adolescents

at that time. If wildings were already appearing, grazing pressure around the settlements may have kept them down. Today some parent trees, the originals planted by miners, can be distinguished from their progeny by careful observation. Their right to remain could be confirmed by comparative ring counts using an increment borer to accurately age the trees.

If the goal is one of EVOLUTION or INTEGRATION then all the self-sown trees might justifiably remain as evidence of the site's long history, except for those which threaten the historic integrity of the site. Features such as ruins, abandoned gardens and orchards which contribute powerfully to the sense of place must be protected and could even be enhanced, while ongoing vegetation change is accepted and new uses be considered, provided the overall distinctiveness of the relict landscape is not compromised. In fact, retaining the self-sown woodlands would make it easier to integrate appropriate new uses. In a way the overgrown quality of this rampant vegetation contributes positively to sense of place by making the settlements seem lost in time, abandoned.

Curiously, at Skippers land managers are clear about what action is needed where Douglas fir are seeding into surrounding 'natural' tussock-grassland community: unequivocally the spread is to be controlled, but the question of the effects of rampant tree growth on the historic values of the mining settlement at Skippers has hardly been addressed (Lands and Survey, 1985).

3. Maintenance, Mortality

The question arises: should cultural plantings in relict landscapes be maintained? For example, should an overgrown hawthorn hedgerow be left as it is or removed and replaced with one kept trimmed as a hedge as it was in the 1890s? If it is assumed that cultural plantings are valued as historic artifacts, just as houses and mining equipment are already, then questions arise about what should be done when plants become diseased or die, as they must inevitably do. Should diseases be treated? Should dead plants be replaced? If so, should that same old variety of fruit tree be used? Is that variety still available? Would any fruit tree do? If cultural planting is not managed actively, and if plants die and are not replaced, eventually the only species remaining will be those like sycamore and poplar which are competitively advantaged, and detailed information on the formal arrangement of plants will be lost. Only when managers of vegetation at relict sites are clear about what is to be achieved can decisions be made on these questions.

4. Garden Escapes

Some species of herbaceous plants, finding a suitable niche in the modified vegetation of relic landscapes, are now widespread. A future is assured for species like feverfew, marjoram and wild strawberries at Skippers. Others, like toadflax and pinks at Macetown, or Canterbury Bells at Skippers are found only as rare individuals, or single populations which are apparently in decline.



Photo 38. Garden escapes like this toadflax (*Linaria vulgaris*) growing on a dry bank, inaccessible to stock, are found only as small populations, apparently in decline. How should these be managed?

Questions arise about if and how these transient populations should be maintained by vegetation managers, as part of the relict landscape flora. Should declining populations be allowed to disappear under the pressure of competition? Or should such populations be encouraged by clearing away competing vegetation using gardening techniques? Perhaps seed should be gathered from remaining individuals, nursery propagated, and daughter plants returned to the site of their parents. Because, in many cases, their purpose was purely ornamental, they are particularly poignant reminders of settlers efforts to make themselves at home in an unfamiliar landscape. Wildflowers like these contribute colour and richness to the experience of present day visitors.

5. Archaeological Values

With a few exceptions, notably Chinese settlements at Cromwell and Arrowtown (Ritchie, 1983), nineteenth century goldfields settlements in Central Otago have not been the foci of archaeological research. However, as time passes and historic sites become an increasingly rare resource, research values of relict landscapes will increase. Two approaches are taken in archaeological surveys: the first is an assessment of surface earthworks like ditches, banks and terraces, and the second is a controlled excavation of stratified layers of occupational material. This second method is called a stratigraphic excavation. Consecutive layers are stripped from the site, the soil is sieved and the cultural contents are removed to a laboratory for analysis. The exposed layer below is examined for evidence of holes, pits, trenches, modified garden soils, hearths, etc. In this way, evidence of the arrangement of human activities over the whole site during a single period of time can be interpreted. There is often a general clearing of surface vegetation associated with an archaeological survey. Obviously for successful stratigraphic excavation the stratigraphy (layers) must remain undisturbed. An important cause of disturbance is root growth, especially from large trees growing on the site.

"Once the stratigraphy of a site is destroyed the association of cultural evidence within the site is entirely lost" (Hamel and Jones, 1982). (5)



Photo 39. An important cause of stratigraphic disturbance is root growth, especially from large trees growing on the site. Self-sown poplars undermine a ruined stone building at Macetown.

Hamel and Jones (1982) have identified five principles of vegetation management for sites with archaeological value:

1. The manager needs to be able to make predictions about how the successional processes are likely to proceed, and so should seek information and experience about local vegetation patterns from all sources.
2. Root growth, especially that of large trees should be prevented from invading and damaging the stratigraphy.
3. All forms of erosion and any disturbance of the soils surface should be controlled.
4. Vegetation management techniques should be ecologically appropriate, and meet with the approval of neighbours and those who use the site, because goodwill is important in the long term protection of any site. It is wise to consult anyone who may have an interest in the site about vegetation management proposals.
5. Consideration of safety is important if the site is to be used by members of the public.

Archaeological goals in the management of vegetation in relict and historic landscapes may not be entirely consistent with other objectives.

"Historic sites have two major values; their visual or landscape value, as links with the past, and their archaeological research value ... evaluation ... depends on the assessment of each sites potential for research or its contribution to the historic landscape."(6)

6. Implications for Recreation

Where the public have access to relict landscapes, especially for recreation, there are implications for the management of vegetation.



Photo 40. Where the public have access to relict landscapes there are implications for vegetation management. Tourists visit the cemetery at Skippers every day during summer.

There is an increased likelihood that relict vegetation will be partly or wholly depleted, damaged or destroyed by vandalism, deliberate and unwitting, or by wear or fire. At Macetown, where many groups four-wheel-drive in from Arrowtown and camp during summer holidays, dead trees and possibly live ones are felled and cut up for firewood. Vegetation managers need to assess the risk to, and impacts of public use on, historic planting and consider whether action is needed for protection. In many cases interpretation - simply raising the level of public awareness of the values of cultural planting - may be all that is needed. An accurate survey becomes an important source of information for replanting if relict vegetation is destroyed.

7. Grazing Pressure

Vegetation managers need to assess the impact that grazing, both by stock and by feral animals like rabbits and hares, on the vegetation dynamics in a relict landscape. In many cases, sustained grazing by stock over many years has undoubtedly contributed to losses from the cultural flora. Grazing pressure certainly puts transient populations of palatable herbaceous garden escapes at risk. Also, at

Macetown, burrowing rabbits unearth daffodil bulbs and leave them to die on the ground surface in the sun.

Animals can have quite unpredictable effects. In Macetown the apparently huge rabbit population is an important agent in maintaining the parkland character of the abandoned settlement by keeping the grass sward closely grazed to an almost lawn-like texture (see photo 22). To make decisions about vegetation changes resulting from changing animal populations. Grazing pressure often holds successional forces in check.

8. Noxious Weed Control

Cultural plantings in relict landscapes are likely to be effected by regulations arising from the Noxious Plant Control Act 1978. Potentially, awkward questions could arise for vegetation managers, not only about how noxious plants in relict landscapes should be controlled, but even if they should be controlled at all. Some 'noxious plants' might be interpreted as part of the cultural suite; in nineteenth century New Zealand broom was used as initial shelter when gardens were made (Barker, 1883) and in the days before barbed wire gorse was a common hedge plant. Such plantings should be identified and if valued, possibly protected.

If control of noxious weeds is considered appropriate, then the control method selected should be sensitive to the historic values of the site. A large raspberry patch on the terrace riser below Needham's Cottage at Macetown was badly damaged by herbicides when adjacent gorse populations were sprayed.



Photo 41. A large raspberry patch (greyish foliage) on the terrace riser in front of Needham's cottage at Macetown was badly damaged by herbicides when adjacent gorse populations were sprayed.

9. Present-day Mining

There is no reason why technological developments or the fluctuating prices paid for gold might not make goldmining in Otago's relict landscapes economically viable again. Although low impact recreational mining may contribute positively to people's present-day experience of these places, commercial mining operations could be a threat to their essential historic qualities. Vegetation managers need to have a thorough knowledge, both a complete record, and a sensitive understanding, of cultural plantings to be able to make informed recommendations, not only when applications for mining licences come up, but also when advising on revegetation requirements following mining, or as mining is proceeding.

SOME TECHNIQUES FOR VEGETATION MANAGEMENT

To be able to make informed management decisions about cultural plantings in relict landscapes, an understanding of the ways in which the vegetation has changed, is changing and will change throughout the history of the site is fundamental (figure 2). It is also important to assess which planting is most significant in contributing to the historic quality of the place. Research and survey must precede action so that cultural planting is not unknowingly destroyed.

1. Research

According to Robert Harvey (1981) the role of research into historic landscapes is to 'reconstruct the past systematically and objectively' - to establish facts and form DEFENSIBLE conclusions. Its purpose should be clear; research should be focussed toward a general direction and should be rigorous, systematic and exhaustive. He has made a checklist of possible sources of information about vegetation in historic cultural landscapes.

1. Catalogues and Bibliographies: e.g. In New Zealand, the Union List of Theses may be a useful source of earlier research on the site.
2. Historical Literature: especially local histories (e.g. Wood, 1970).
3. Biographies: and autobiographies of people who lived there or who were influential (e.g. Glennie, 1960).
4. Periodicals: especially old newspapers like the Lake Wakatipu Mail, Tuapeka Times, Otago Witness.
5. Government Records: e.g. Department of Conservation's Otago Goldfields Park Files, Property title searches at Department of Survey and Land Information.
6. Local Records and Sources: e.g. Records at the Lakes District Centennial Museum.
7. Private Records: such as diaries and letters.
8. Photographs: Harvey (1981) suggests some techniques for analysis of historic photographs.
9. Historic Maps and Plans: e.g. Wilmots 1878 Plan of Macetown.
10. Paintings: local and visiting artists sketches and watercolours.

It is helpful to find out about the original 'native' vegetation at the site - what grew there before the first miners arrived, as well as information about their cultural planting and modifications. This makes it easier to identify remnants of the original vegetation within the cultural vegetation. If a restoration management objective is found to be most appropriate it may be necessary to recreate an original 'native' vegetation cover in areas currently occupied by self-sown 'cultural' species.

2. Survey

Skilled interpretation of existing vegetation can reveal information about past patterns. Making management decisions is difficult and risky unless the decision-maker knows exactly which individual plants and arrangements of plants are culturally meaningful, and has an understanding of how the vegetation is changing. Therefore, an accurate and thorough survey of existing vegetation patterns is essential, not only to find out about past patterns, but to be able to assess what is of most value to us in the present, especially where new uses are to be integrated. Relict planting should be observed over a whole growing season to pick up more ephemeral plants like annuals and bulbs.

Some techniques used by ecologists to study natural vegetation dynamics can be useful when looking at dynamics of cultural planting at historic sites:

- * increment borers which extract a small core sample so tree rings can be counted are used to accurately date trees. This would be particularly useful to identify the original, deliberately planted, parent tree where well-adapted species like sycamore have surrounded themselves with their own progeny. When interpreting vegetation history from existing populations, it is sometimes unrealistic and dangerous to assume there is a direct relationship between age and any measure of plant size such as DBH (diameter at breast height). For example, adolescent trees can remain suppressed below an adult canopy for many years, barely growing at all. In such cases it is necessary to check the relationship. However, because there is a risk that increment boring may introduce disease into trees, this technique may not be appropriate where historic trees are highly valued (Harvey, 1981).
- * aerial photographs are often taken at intervals over many years can be used to assess the rate at which self-sown trees are spreading. This technique has been used on wilding Douglas fir at Skippers.

- * tagging individual trees with small numbered aluminum tags is a technique which can be used in monitoring future vegetation changes. It may be appropriate to resurvey cultural planting at regular intervals of five or ten years so that in the future some of the guesswork is taken out of understanding vegetation dynamics for management purposes.
- * an archaeological survey may yield information about the location of cultivated garden soils and other aspects, such as the position of walls and terraces relevant to the form and layout of abandoned gardens.

When it comes to action, vegetation management techniques in relict landscapes are likely to be chosen from the range of techniques used generally. There may be a tendency to prefer 'softer', more localised options: for example, rather than controlling unwanted vegetation by aerially sprayed herbicides, control by hand, or mechanical methods may be more appropriate. Vegetation managers should think creatively about methods; using local volunteers on a 'working bee' basis could have spinoffs in raising people's awareness of the special value of relict landscapes. If the chosen management option prescribes enhancement planting, propagation from extant plants on site may be preferable, especially if historic varieties are no longer available. Sometimes urgent remedial action is needed to stabilise a deteriorating site, simply to maintain the status quo, but it is unwise to rush in - drastic clean ups can destroy valuable evidence (Harvey 1981).

DECISION-MAKING

Benign neglect is possibly the best way to describe the way in which cultural planting in Otago's relict landscapes have been managed in the past. Only recently has the importance of goldfields sites been officially appreciated and the contribution which cultural planting makes to the historic whole at such places is now being realized.

When decisions are made about vegetation management in relict landscapes (or for that matter any aspect of management in historic cultural landscapes), decision-makers need to be very clear about their objectives (Figure 2). To establish management objectives fundamental questions must be asked, such as why is this landscape valued? How is this site used? Is the site to be protected primarily for public access and education, or for its research potential? For example, if a site is to be protected for its archaeological research potential, priorities will be quite different than if it is intended for recreation. If the public have

access, some degree of modification and deterioration is inevitable but the benefits of public awareness may outweigh the disadvantages (Hamel and Jones, 1982). As Rachel de Lambert has pointed out, management objectives are site specific and relate to:

- * the physical characteristics of the site
- * the values for which it is being protected
- * the way in which it is used by the public
- * the relationship that the relict landscape has with its encompassing landscape and other historic sites.

Obviously decisions about vegetation management in relict landscapes cannot be made in isolation from the broader context. Practical factors like finance, equipment and labour will also influence decisions. Nor can management decisions be made with only a superficial familiarity with the site. It is critical that the elements which contribute strongly to that site's sense of place be identified, because if these are lost or overpowered then the relict landscape will lose its meaning. Moreover, management decisions about cultural planting made without an awareness of the ways in which that vegetation is changing, both through natural forces and human influence, may well prove to be bad decisions in the long run.

Notes:

1. POTTEIGER, Matthew. 1987. Page 41.
2. O'DONNELL, Patricia. 1987. Page 96.
3. JACKSON, J.B. 1977. Page 194.
4. *ibid.* Page 194.
5. HAMEL and JONES. 1982. Page 10.
6. RITCHIE, Neville. 1983. Page 85.

6. Summary

SUMMARY

Almost all landscapes can be considered cultural landscapes. Set within the context of the wider cultural landscape, occur locations where evidence of the past is more apparent than elsewhere, labelled historic landscapes. Some historic landscapes are special places which have escaped change. This group, relict landscapes, includes the abandoned gold mining villages of Central Otago

Settlers arriving at a new location bring with them not only a comprehensive 'Portmanteau Biota', but also a weight of cultural baggage - ideas about how they should live in their new environment. Planting is one of the ways in which settlers change their surroundings to make themselves at home.

The past and the present intertwine when we experience relict landscapes. Managers of relict landscapes should be aware of the important contribution that cultural plantings make, along with and inseparable from, other continuous threads from the past such as buildings, earthworks and artifacts. Cultural plantings often contribute strongly to the sense of place to which we respond when we experience relict landscapes, and should be valued and managed accordingly. Good management decisions can only be made with a thorough understanding of the dynamics of relict cultural vegetation, and with clear objectives in mind.



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