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PERCEIVING, CONCEIVING, PROTECTING AND  
USING NEW ZEALAND LANDSCAPE SYSTEMS

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AND USING NEW ZEALAND LANDSCAPE SYSTEMS

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SUMMARY

New Zealand, as a persisting temperate remnant of Gondwanaland, has distinctively ancient flora and fauna with a high degree of endemism. It differs from other larger southern land masses in its characteristic landform variety by rejuvenation from volcanic, tectonic and glacial activity, and from most other lands in the comparative brevity of human occupation. Its landscape serves, therefore, as a discernible record of the recent interaction of Polynesian neolithic and modern European cultures with a complex and youthful topography inhabited by a mostly ancient and somewhat limited biota.

Attempts to classify New Zealand terrain in biogeographic or geomorphic terms have for many years been limited to describing up to 20 districts or regions. More recently, the publication of "Ecological Regions and Districts of New Zealand" as a schema for securing representative protected areas has proposed a much more detailed assessment of terrain, in which landform, soil and biogeographic features are integrated. Effective classifications have generally used genetic rather than morphologic or parametric criteria.

Important changes are occurring in New Zealand: increased awareness of ecological diversity of land and water systems; rapid changes in land use practices, accelerated in recent times, first, by strong interventionism, and then by radical shift to market-led agricultural and forestry policies; even

more radical change in structure and function of environmental administration in 1986; continuing growth of tourism with expanding attention to the experience of landscape as a visual, educational and recreational resource; the rise of Taha Maori and interest in Maoritanga, stimulating in turn a reassessment or search for cultural identity amongst all New Zealanders.

The term landscape is increasingly used to describe aspects of unity in land. Established usage includes perceptual and existential relationships with land, conceptual descriptions of natural and cultural landscape systems, discerning ordered relationship among components of landscape, design of representative nature conservation, and planning land use systems. These last professional usages are increasingly built on the hierarchical principles of landscape units within systems, focussed on ecological districts and regions.

Our current studies suggest that Old English and Middle English cognates of German landschaft may have designated a particular tract of land or even a community-on-the-land, just as both Old and Middle English tunscepe (township) first designated the community of a town. European and American uses of the term landscape and its equivalents are traced in their influence on New Zealand practice. It is timely to draw these threads together with the vital Maori sense of turangawaewae, and suggest a contemporary social response in the form of landship, landship now being a community of intent, rather than the ancient European community of limited experience.

Protected natural areas being selected to represent ecological districts can serve as the natural environment focus for such communities of intent, and as their reference areas or benchmarks for cultural land uses. For some districts natural areas can be competent in size and design for the role of conservation in its full and evolutionary meaning. For other more disturbed districts only fragments of nature, like morehu, survive. They must be preserved and their past understood so that they too can eventually share in natural and cultural evolution, for only the land endures.

## ABSTRACT

The biogeography of New Zealand is summarised for its influence on current landscapes and conservation needs. The classification of terrain in New Zealand is historically summarised. The present changes in land use and resource administration are outlined. Landscape usage is reviewed as perception and concept and comparative etymology examined to trace usage change. Cultural and natural littleness is identified as key to promoting landship, nature conservation and wise use planning.

## KEYWORDS

New Zealand; biogeography; landscape; landship; terrain classification; landscape usage; nature conservation; cultural interaction.

## 1. INTRODUCTION

The purpose of this paper is to analyse the summary record of how landscape has been perceived and thought about in New Zealand and to interpret the role of such perceptions and conceptions in providing unity and order in the contemporary nature conservation programme of New Zealand. It will also indicate the potential integration of protected natural areas with development, and suggest their relevance to the cultural identities and local and regional land use patterns of this country.

## 2. THREE FEATURES OF BIOGEOGRAPHIC SIGNIFICANCE TO CONSERVATION

### 2.1 Temperate Gondwanaland Persisting

New Zealand's first claim to biogeographic fame lies in its persistence as a temperate remnant of Gondwanaland. The ancient elements of its flora and fauna have remained isolated in a generally temperate regime, while comparable elements of other land masses of that ancient continent were obliged to adapt to warmer regimes, or perish as these land masses migrated northwards.

### 2.2 Intense Variety of Natural Landscape Systems

Ancient elements have been integrated with newer Australian, Indo-Malaysian, and more cosmopolitan elements, into plant and animal communities, intricately niched into a highly varied physical landscape. This variety has resulted from complex volcanic, tectonic and glacial activity, especially during Tertiary and Quaternary times. The second feature of biogeographic significance is therefore the intense variety and complexity of natural landscape systems.

### 2.3 Brevity but Complexity of Anthropic Influence

The third feature of special biogeographic significance is that nature has been under anthropic influence in New Zealand for a comparatively short period of time. Despite this short period, human influence has been complex and profound and by no means uniform in its effect.

Polynesians visited and settled in Aotearoa at most for little more than 1 000 years before the arrival of European settlers. Only 1 200 years span the total period of human occupation. Before that time the temperate forests, extending over a large proportion of all three main islands and many off-shore islands, harboured remnants of the ancient fauna of Gondwanaland in prolonged remoteness from mammalian or reptilian ground predators. Oddities such as the aberrant arthropod, Peripatus; the giant snail, Powelliphanta; the frog, Leiopelma; and Sphenodon, the tuatara, were accompanied by many ancient species of birds and insects with energy-saving flightlessness as a conspicuous feature (King, 1984). Most of such older species of birds, adapted to long term survival in the forest, appear to have had "equilibrium" (or "K-type") life strategies, in contrast to the "opportunist" (or "r-type") strategies exhibited by the similar number of newer bird species that had also become established in Aotearoa some 1 200 years ago. A similar argument might be advanced for K-type strategies in many of the paleo-zelandic elements in the flora, in contrast with opportunist or r-strategy of elements of more recent origin. Recent reviews (O'Connor, 1984; Lloyd, 1985; Ogden, 1985; McGlone, 1985; Wardle, 1985) of research on different aspects of the vegetation suggest, however, that at present no simple explanation can be offered for the range of strategies or the complexity of vegetation mosaics which exist in contemporary New Zealand, even where these are preserved from direct human influence.

Adaptation of fauna and flora to the vicissitudes of periodic vulcanism and glaciation had continued following a sustained period of tectonic uplift. Some species were undoubtedly lost, especially among the larger "equilibrium" types of birds. Adaptation of biota to mountain-building and consequent site instability has been outlined by Wardle (1963, 1978, 1985), Fleming (1979), O'Connor (1984), and McGlone (1985). There are grounds for argument, persisting to the present time that, even in natural conditions, the older endemic elements of New Zealand flora and fauna may have been especially subject to competition and risk of extinction from adventive elements. This may have occurred especially in the younger landscapes where newly generated soil fertility and open country presented a special advantage for new "opportunists".

Early species loss in this pre-anthropogenic Gondwanaland remnant was to be intensified by the arrival of man at Aotearoa. The hunting of birds, reptiles and larger invertebrates by Archaic Polynesian man, by kiore (Rattus exulans), and by the kuri or Polynesian dog (Canis familiaris), had catastrophic effects during the 1 000 years that Polynesians had the islands to themselves (King, 1984). At least 32 species of large birds, mainly rails and waterfowl, became extinct. Many species of animals including the tuatara became confined to off-shore islands. Forest was reduced from approximately 80 per cent to between 50 and 60 percent of total land area. While such habitat reduction had its effects, King (1984) argues that the susceptibility of "equilibrium" species of wildlife to predation accounted for the disproportionate loss of species in the Polynesian period.

What happened in 1 000 years of Polynesian occupation was repeated even more dramatically in the 50 years or more of early contact between Maori and pakeha, and in the 150 years of subsequently expanding European settlement. From around 1800 to the present, King (1984) calculates a reduction of 25 percent in species of native North Island avifauna, compared with a 29 percent reduction in the previous 800 years. Reduction in natural habitat seems to King to have been a more telling factor in European times than was predation of birds, even though mustelids, rats, cats, dogs and pigs all joined in the hunt. Clearly the destruction of natural habitat has been important (Nicholls, 1980), but predation, especially by rats, has also been significant not only for birds but also for larger invertebrates.

### 3. CONSERVATION NEEDS OF NEW ZEALAND

#### 3.1 Conservation and Preservation Functions Distinguished

"Conservation" of hardy species of plants, birds and invertebrates warrants protection of sufficient natural habitat in which evolutionary change can proceed (Soule and Wilcox, 1980; Frankel and Soule, 1981; Frankel, 1984). Such principles of habitat conservation have been endorsed by New Zealand biologists (e.g. Atkinson, 1961; Kelly, 1974; Nicholls, 1977; Molloy et al., 1980; Dawson, 1984; Wardle, 1985; Mark, 1985). They are now enshrined in statute and draft strategy

(Nature Conservation Council, 1981). Endangered species of plants and animals in New Zealand (Williams and Given, 1981) can benefit from such habitat conservation but, as pointed out by King (1984), they may have further urgent need for "preservation" management policies which provide for their maintenance as individuals or groups but not for their evolutionary change. In the present New Zealand aggregate of landscapes, "conservation" in the sense used above has become essential wherever it is still feasible because natural areas of sufficient size and habitat diversity remain. It is everywhere desirable, but is not always possible. Conservation is often insufficient on its own, and must be supplemented by "preservation" measures, sometimes on a scale which would be insufficient to achieve the evolutionary conditions of genuine conservation. It is in this area that the use of competitor-free and predator-free islands may have an important function (cf. Knox, 1973).

This conservation/preservation situation is distinguished from that of many larger land masses where large scale "conservation" remains possible because of the scale of remnant habitats and biotic populations. It is also distinguished from those other landscapes, often in the northern hemisphere, where human influence has been sustained for such a long period that nature conservation may be little more than the regeneration of an amenity where natural processes can again come into play.

Clearly one of the important areas for research in New Zealand is to discriminate between what are "hardy" and what are "endangered" species. There is little difficulty with the taxa at either pole on this axis. What remains difficult is discrimination among taxa where numbers of organisms are not large but where critical population size for continued evolution may vary greatly from one taxon to another. White (1986a, b) has suggested some valuable sequential criteria for selection of insect faunas for reason of their risk. This may be an approach worthy of greater attention and application for both other faunas and for flora.

### 3.2 Integration of Conservation into Land Use and Landscape Systems

Nature conservation had been provided for in a quite unrepresentative distribution until recent years. As pointed out by



Roche (1984), Mark (1985) and Davison (1986), this unrepresentative character of protected natural areas arose from both the differing priorities of the advocates of conservation, and the unequal opportunities with which they and land administrators were presented. From the outset nature conservation has been set apart from, rather than integrated with, land use. Land users for farm or timber production have therefore seen themselves and their uses of land as separate from and generally in contest with land use for nature conservation. There is a need for the protagonists of nature conservation to come to terms with the protagonists of other land uses, especially the local "productional" land users. This social need for integration of nature conservation into local patterns of land use systems reflects the biogeographic need for the existence of protected natural areas as a valid representation of natural landscape systems. Without the social integration in a cultural landscape the biogeographic integration in a natural landscape will not occur.

#### 4. TERRAIN CLASSIFICATION IN NEW ZEALAND FOR NATURE CONSERVATION AND CULTURE

##### 4.1 Botanical and Biogeographic

Terrain classification in New Zealand was first done in botanical terms on a regional or provincial basis as early as 1860s e.g. Buchanan (1868), Colenso (1868). Although major climatic zones and altitudinal belts were recognized in early sketches, the ecological breadth and vision of Leonard Cockayne in the second decade of this century were required before concepts of botanical districts emerged that covered the whole country (Cockayne, 1917). The 15 or 16 districts which he proposed were based on the floristic features of each, including both local endemism and adventive elements, as well as their agricultural and horticultural plants and practices. For appropriate districts he recognized also the coastal, lowland, and high mountain floras. The distribution patterns which he recognized, including the major disjunctions, were recognized in this and subsequently published work (Cockayne, 1919, 1921a, 1921b, 1928) to be genetic in character.

As pointed out by McGlone (1985), later reviews of vegetation and plant distribution (Wardle, 1963; Burrows, 1965) showed many features

coincident with Cockayne's. In some sense this was attributable to their concurrent record of "phytogeographic barriers". For more than half a century, however, no formal effort was made to classify the vegetation of New Zealand as a whole at any greater detail than Cockayne's. As noted by a surviving contemporary of Cockayne, to Thomson (1983):

"I rather have the impression that the old man (Cockayne) was rather formidable and cowed a whole generation of New Zealand botanists into accepting his statements on ecology without examining them critically. Somehow instead of stimulating ecological work he seemed to suppress it - no one was prepared to question his statements by publication of opposing views".

#### 4.2 Geomorphic

In the study of earth sciences themselves, genetic approaches have grown in prominence in New Zealand. In surveying landforms Cotton (1945) described the geomorphic provinces of New Zealand following Davisian genetic concepts of structure, process and form. Cumberland (1944) contrasted regional morphology of New Zealand soil erosion. Wallace (1955) lamented the inadequacy of genetic geomorphology and propounded an "objective" description of terrain where local relief, slope and profile were the differentiating parametric characters. Despite the emphasis elsewhere (e.g. Speight, 1968) on parametric description of landform elements (the simple components of landscape) as well as for land systems (the patterns formed by the arrangement of such component elements), New Zealand geomorphologists, as shown in Soons and Selby (1982), have asserted strongly holistic genetic approaches to both zonal and regional landform description and classification. Likewise at a detailed level, Burns and Tonkin (1982) and Tonkin (1984) have emphasised the genetic relationships of the micro-features that together constitute what they see as soil-landscape systems.

#### 4.3 Pedologic

New Zealand genetic approaches reached their most celebrated attainment in soil science. Under the leadership of the late Norman Taylor, the Soil Bureau of New Zealand devised a method of soil

survey (Taylor and Pohlen, 1962) which allowed a genetic classification of New Zealand soils, regional and district mapping and description of them, and interpretation of their relationship to land use (N.Z. Soil Bureau, 1968). At the same time, the genetic classification led to studies which were highly illuminating (as befits their attention to phosphorus) of natural and cultural soil landscapes (Walker, 1964; Walker and Syers, 1976; Cole and Heil, 1981).

#### 4.4 Unit Area Methods of Land Inventory

Land inventory mapping of New Zealand terrain has been carried out by soil conservators for a number of years (Ministry of Works, 1971). It records geology as main rock types, soils usually adapted from soil sets of the General Soil Survey of New Zealand, slope class, erosion in type and degree, and vegetation as grassland, cropland, scrub, forest or weeds. This inventory record (Water and Soil Conservation Organisation, 1978) is of considerable referential value, but it is also used to interpret land capability as erosion risk. Because it uses a "unit area method", the relationship between any mapped land unit and others in a landscape is not preserved in the mapping, although it could be discerned from the computerised record. The complexity of the entire New Zealand landscape was thus demonstrated cartographically.

#### 4.5 Emergence of Landscape Systems

Such convergence of genetic thought and the urgencies of nature conservation together built up a tidal pressure that the massed complexity of the elements of New Zealand landscape could no longer withstand. A High Mountains Workshop (N.Z. Dept. of Lands and Survey, 1978) recognised nature conservation as a use of land to be planned among other uses, and specified its range of objectives. A further workshop was convened in 1979 by the Commission for the Environment to consider the needs for biological surveys and recording. The outcome was the establishment within the Department of Scientific and Industrial Research of the Biological Resources Centre (Biological Resources Centre, 1982) and the beginning of methodology and planning for a Protected Natural Area Programme. At a local level, Nicholls (1976, 1977, 1979) proposed integrative protected areas that would represent sequences of landforms, soils

and plant and animal communities as they occurred in landscapes. In a disciplined review of hill country landform regions, Molloy et al. (1980) postulated 19 such regions for the country as a whole, and illustrated how, for a sector of the country in which four such regions were represented, there were 12 land systems with distinctive patterns of landforms, lithologies, regoliths, soils, erosion, vegetation, climate and characteristic land uses. It was time for New Zealand's variety and unity to be represented as landscapes. The sudden result was Simpson's (1982) compilation in the Biological Resources Centre of maps and a summary record of 235 ecological districts, combined into 82 ecological regions.

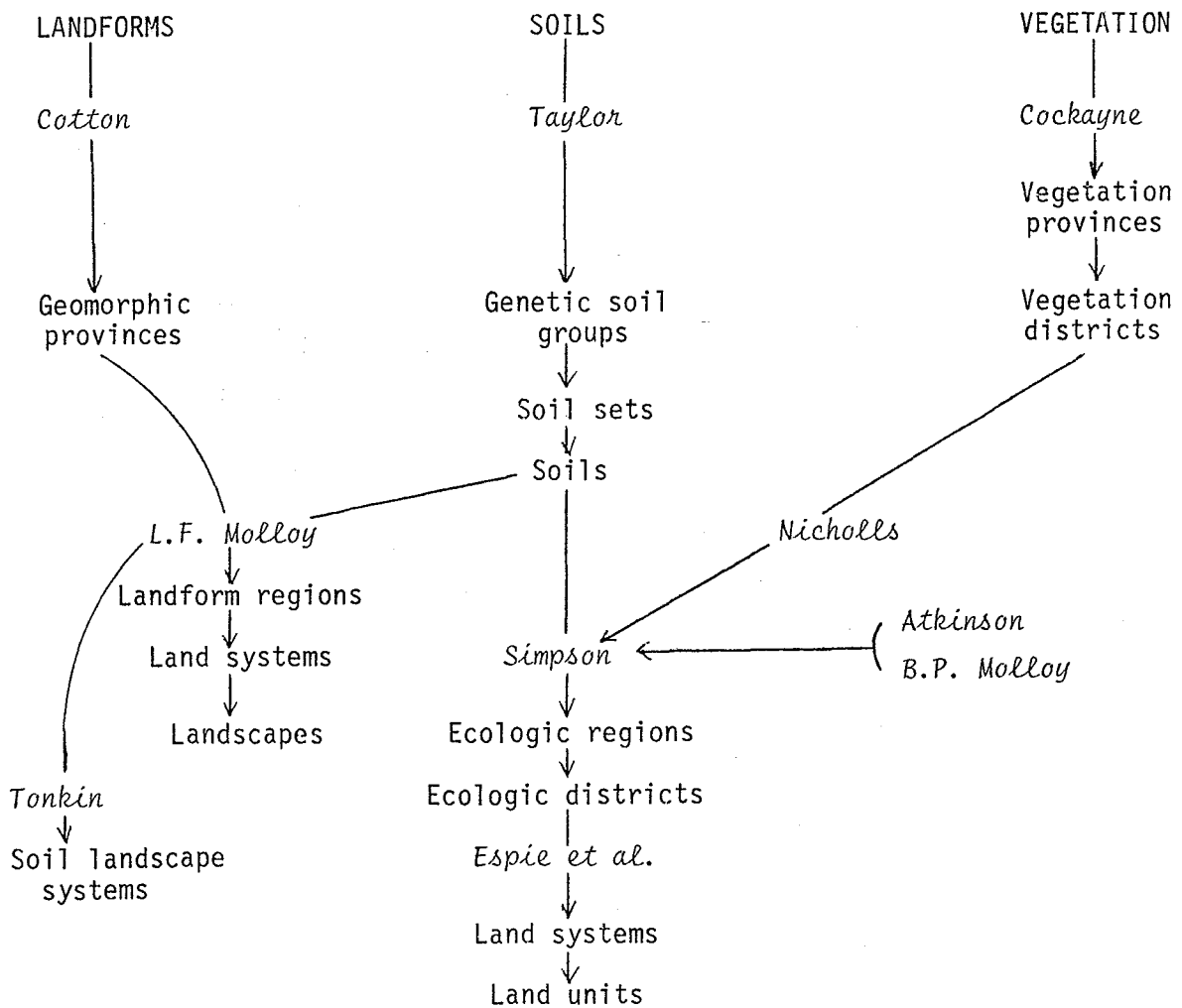


FIGURE 1: The evolution of integrated surveys and land classification in New Zealand, with emphasis on genetic approaches.

An integration of these land classification processes is shown in Figure 1. Regardless of the terminology of regions and districts and their relationships to other terminologies used in New Zealand and overseas, what has emerged is a set of "nested hierarchies", in which the ecological district, adequately defined and differentiated, plays a central role. In this the foresight and hopes of Christian (1957) are fulfilled in introducing to New Zealand at the 9th Pacific Science Congress the flexible scale and adaptability of the concept of land units and land systems. While Cockayne's "districts" remain as the basis for macro-systems, ecologic districts within them are the assemblages of landscape sequences or landscape systems at the micro-level, as delineated by Nichols (1977) or at the most detailed level by Tonkin (1984).

What was foreshadowed by Buchanan (1868), enunciated by Cockayne (1921a) and illustrated by Molloy et al. (1980) was now conceivable for New Zealand both as a whole and in detail. The broad "provinces" and "zones" of biogeographic reconnaissance could be resolved into assemblages of landscapes with particular characteristics which could be identified as "ecological districts". Some of these were sufficiently closely related to neighbouring districts to constitute an ecologic region. Particular landscapes are analysable into landscape systems and units, not only from their inherent characteristics important for nature conservation, but also for their use characteristics in farming, forestry and the like.

## 5. CHANGES IN LAND USE, CONSERVATION AND ADMINISTRATION

### 5.1 Recognition of Diversity and Resistance to its Implications

In recent years New Zealand has shared in the deepening scientific consciousness of the significance of such factors as diversity, naturalness, representativeness and area in the design and selection of natural areas for conservation as protected areas. (Spellerberg, 1981; Overmars, 1986). Although there has been increased public support for nature conservation, including the conservation of natural landscapes, there is by no means widespread understanding of these concepts or of their applicability in particular situations. There is some distrust for example, among farming and forestry circles of the

theme that each ecological district should make its own contribution of protected natural areas

"to ensure the preservation of representative samples of all the classes of natural landscape which in the aggregate originally gave New Zealand its own distinctive character, and by so doing thus promote diversity and aesthetic quality in the present New Zealand landscape." (Kelly, 1974).

One outcome has been both willing and unwilling growth in awareness of real diversity. New Zealand has still some distance to travel to formalise the preservation of diversity at all scales, not only in habitat content of protected areas, but in a network of multiple use modules which recognize the landscape context in which each protected area exists (Noss and Harris, 1986).

## 5.2 Land Use Contention

The clash of interests in land use has been one of the chief zones of contention in modern environmentalist v. traditionalist struggles in recent decades. As befits the essentially rural character of economy and culture in New Zealand, such land issues have generally dominated over more industrial issues such as toxic wastes and energy consumption. Indeed it is the land use aspect of major energy developments which often dominates over other aspects e.g. flooding from high dams, farmland loss from opencast coal-mining. The clash of interests has been a noisy rather than humanly costly war. The vulnerable and variable nature of New Zealand biota, however, often means that a conservation battle lost is never recovered nor compensated by a battle won. Nor is a battle won never to be fought again. One might conclude that in terms of respite earned, conservationists must be extraordinarily wicked.

What is noteworthy is the continually changing ground of battle and the continuing changes in alliances. A few years ago, massive governmental interventionism promoted overseas exchange earning by pastoral development, and by indigenous forest exploitation and pine forest plantations. Under such regimes, shrublands and recovering forests were sometimes cleared for the second, third, or even fourth time in the history of New Zealand, in the name of land development

for farming purposes. In tussock grassland terrains, such incentives were applied to the drainage of wetlands and the ploughing and fertilizing of grasslands, especially in the lowland and montane zones. A few years earlier, incentives had been offered to develop such lowlands in order to save the apparently more vulnerable high altitude lands from continuing pastoral use. Now it is lower country which is often under more serious contest of conservation versus development (Scott, 1979; O'Connor, 1982).

Farming and forestry are in the vanguard of market-led policy reform. At the same time as good forestry and good pastoral farming, not to mention the dictates of economy, often demand their prudent integration (O'Connor, 1986), these two kinds of major land use enterprises are being "corporatised apart", as part of government reform of environmental administration ("Environmental Administration", 1986). Clearly there are prospects that positive integration between different land uses and conservation may be designed in some of the lower altitude terrains. Short tussock grasslands are, in the main, induced vegetation. As such they are part of our cultural heritage, requiring grazing to sustain their present physiognomy. There are other areas which, as wetlands or tall tussock grasslands, require protection against intensive grazing use or development of any kind if they are to be maintained in those formations. There is increasing concern that tussock grasslands may be occupied by exotic conifers. While this is a real threat, it is believed by some that "natural" tussock grasslands, themselves induced from forest by fire, should be protected universally from the planting or ingress of conifers and from pasture improvement. What is not understood by such people is that sufficient exotic conifers already exist in the tussock grasslands to take them over by natural spread. If the unimproved grasslands are not protected by zones of intensive grazing management, feasible only on developed grasslands. As pointed out by O'Connor (1983,1986) the interdependence of each use is a design imperative.

Recreationists, as traditionally low density users of mountains, forests and open country, have allied themselves more closely with conservation lobbies. The deer stalking of New Zealand's "good keen man" middle years, once the bane of nature lovers, now functions in a more refined but more difficult alliance with conservationism. Low

density recreation and low density pastoralism have been good bedfellows. Increased numbers and varieties of people and of animals per hectare do not make for the same easy harmony. Recent and current studies (Chapman, 1986; Jebson, 1983) indicate that positive relationships can be cultivated between pastoral farming and most forms of recreation. The feared enemy now is enclosure of open country for touristic safaris, often but not always as an extension or adjunct to high country pastoralism. Equally high is the risk that even dedicated public lands such as parks and reserves will be effectively closed to the general public by the "sale as concessions" of touristic rights to particular entrepreneurs of different disposition, varying from complete market freedom to bureaucratic control. New Zealanders have only to reflect on their decades of exclusion from the Milford Track unless they joined the official walks. It is for such reasons that traditional recreationists grow to fear the development of touristic enterprises which exploit what had been a recreation commons. While tourism grows apace, at least so far as touristic investment and promise are concerned, local nature and local culture remain vulnerable, as in so many other parts of the world, to the risks of impact and of alienation of local people (Te Awekotuku, 1981; Pearce and Cant, 1981; de Kadt, 1979).

While all these changes are bubbling about an increasingly disconcerted rural and small town society, the increased consciousness of Taha Maori, first among rural and then with deracinated young urban Maori, has stimulated interest in the possibility of a more "normal way" among pakeha people. Among other effects, this in turn has for some people of European descent prompted a closer examination of their own spiritual and cultural roots. Such roots have been searched in the traditions of pre-industrial Europe and also in their own awareness of an unspoilt New Zealand childhood when nature seemed more available, when place seemed less contested.

Our perceptions of land and of environment generally are varied and are changing (Ericksen, 1980). People change. Only the land endures.



## 6. LANDSCAPE AS UNITY

### 6.1 Perceptual and Conceptual Unity

Landscape is a term increasingly used in New Zealand to describe aspects of unity in land. There is an established perceptual tradition in the art of landscape painting (Pound, 1984), and in the geographical description of the appearance of landform (Cotton, 1926), and of cultural landscapes (Cumberland, 1946). Popular usage combines appearance with action, 'landscaping' being used to describe the laying out of gardens. In recent years the term has been used to conceptualise geomorphological, edaphic, and ecological land systems (Davies, 1982; Tonkin, 1984; Simpson, 1982). Current interest is focused particularly upon the synthesis of perceptual and conceptual usages, through the design and management of the 'total' landscape (Jackman, 1986). Underlying these usages is a continuing Maori tradition of spiritual unity with land, which finds parallels in the contemporary European search for a more profound relationship with the land (Thom, 1981; Phillips, 1981; Molloy et al., 1980; Challenger, 1985).

This plurality of usage is reflected elsewhere in the world and leads to landscape being described as

"an attractive, important, and ambiguous term"

(Meinig, 1979)

Its attraction arises partly from the implication within the term that there is some unity in the phenomena being described; however this also gives rise to much of its ambiguity.

A recurring theme is the notion of unity in appearance: pictorial or scenic landscapes typically expressing either an implicit classical ideal of unity and harmony in nature (Pound, 1984), or a visual coherence in composition or technique (Clark, 1949). One suggestion has been that the suffix 'scape' implies a unifying principle, derived from the active perceptual engagement of a human observer with the material world (Peters in Cosgrove, 1984). Thus, unity arises from the act of perceiving as landscape forms:

"the visual context of human existence" (Relph, 1982)

It will become clear below that this meaning of 'scape' is a modern reinterpretation.

"What is seen depends upon what is sought" (Pocock, 1981) and cultural scholars have sought unity in the way a community or cultural response is structured by, and in turn structures, its setting. Perhaps the best example is the Vidalian notion of 'genre de vie', or lifestyle (Buttimer, 1971). Visual features of land also provide a record of human activity, that has been described as a visual code (Meinig, 1979), or a system of signs (Nuttgens, 1976). Hence unity arises in the sense of a common or shared language and set of meanings:

'the landscape and the language are the same'

(Conrad Aitken in Shepard, 1967)

and

"landscape mediates between physiographic reality and an idea of what it should look like"

(Stillman, 1975)

Concepts of a systematic unity in a physical landscape have also been influential; from Alexander Humboldt's use of landschaft 'type' to describe particular assemblages of landform, plants and animals, to the present discipline of landscape ecology (Naveh and Lieberman, 1984).

As these authors point out, landscape ecology is by no means a recent term or concept in Europe. As a term it is recent enough outside of Europe. However, as a concept, it is at least as old as this century. Thus Passarge, 1921 (in Fairbridge 1968) is quoted:

"A natural landscape is a district which so far as possible represents a unit according to its climate, vegetation cover, modelling of the surface, geological structure and soil. Generally all these characteristics do not coincide; some must however agree to unity, if a landscape is to result."

Here we can perceive the latent recognition of the independent and dependent "inherent characteristics" of land which later allowed Christian and Stewart (1968) to formulate land systems (or recurrent patterns) of

## 6.2 Emotional and Spiritual Unity

Perhaps the most enduring case for unity in landscape arises from a belief in its spiritual qualities, and in human emotional attachment to land. D.H. Lawrence asserted that the spirit of place is:

"a great reality" (Relph, 1976).

Throughout history cultures have found ways to express this belief, as Glacken (1967) has shown so compendiously in his exposition of cosmology in the west. Classical ideals describe the genius loci or pervading spirit of a place, with either one (Christian) God or many deities. The Victorian Transcendentalists and Romantics sought God in nature, best articulated for landscape by John Ruskin (as quoted in Cosgrove, 1984). Twentieth century writers, geographers and philosophers have explored unity between people and locality, in the concepts of sense of place, (Barrell, 1972; Relph, 1976; Tuan, 1977), landscape identity or image (Jackson, 1970; Dubos, 1972; Shuttleworth, 1983), or as Heidegger's idea of 'Home' (as quoted in Relph, 1976). In Taha Maori (the Maori dimension) and Taha Wairua (the spiritual dimension) in Aotearoa, the bond between a person and a place has long been known as turangawaewae, poorly translated as domicile, more literally as the ground between the feet, most fundamentally as the essence of belonging of a person in his whanau (extended family) or hapu (subtribe) to a particular place. The origins of this powerful spiritual force in Maoritanga are deeply rooted in Maori cosmology. Every being has mauri (life force) and this life force affects relationships of all kinds, between man and fellow man, between man and the past, man and the present, man the sea, rocks and sky (cf. Orbell, 1985).

To match in any way the power and riches of Maori tradition, pakeha New Zealanders have to dig deep into their own cultural store. To match the richness of the landscape itself they are wise to draw also on the cultural store of the tangata whenua, the people of the land themselves.

This plurality of the term landscape, both in its New Zealand usages, and in the varied senses of an implied unity, presents both opportunity and problem. In its very diversity there is a richness of meaning that suggests opportunity for more profound theoretical understandings, but in its apparent ambiguity and ambivalence lies the chance of dissent and

confusion in practical application, especially in land use and conservation planning and resource management.

### 6.3 Comparative Etymology and Usage

We have therefore sought to trace the origins and distinguish the principal influences of current New Zealand usage, the better to pursue the opportunities for unity, and give the lie to confusion. The Oxford English Dictionary traces the English term landscape to an early 17th century introduction from Dutch, to describe a painting of land. Subsequent use extended the meanings to a view of land, and to the generalised notion of natural inland scenery (O.E.D. 1927 Edition; Barrell, 1972). It seems that until well into the 19th century, landscape always connoted the visual, a limitation to which neither its Old English antecedents nor its Germanic analogues had ever been subject. This visual character seems to have been the form of its earliest introduction into New Zealand, in association with painting and tourism (Pound, 1984). Further development in England applied the term landscape gardening to the laying out of grounds in the 'natural' style, translated as 'landscaping' in popular usage in New Zealand. We shall also see how with the translation of geographic writings of German authors, the term landscape was widened in English meanings.

To gain insight into the conceptual meanings of landscape it is necessary to trace analogous routes commencing with earlier usages. The Old English form landscape, the Dutch landscap, and the German landschaft, all appear to share common etymological roots in the Teutonic languages. Land has retained its earliest meanings as territory, or the arable surface of the earth, whilst the suffix 'schaft', 'scape' or 'scap' can be traced to the Indogerman 'skab' by the Old High German 'Scaf', and the Middle High German 'Schaft', meaning a condition, quality or property, typically of a people (Tesdaorf, 1982). The comparable Old English suffix was -scip or -scipe, corresponding to our -ship. The earliest uses of landschaft related not to appearance, or even territory, but to the people of a territory, and their collective condition. The unity derived from their uniform structure of laws. Stilgoe notes that by the late medieval period usages of landschaft described a collective of dwellings within a clearing in a forest:

"An organization of space.... and the inhabitants of the place and their obligations to one another and to the land".

(Stilgoe, 1982)

A similar meaning has been noted for the early Dutch landscap, being a collection of farms or fenced fields (Tuan, 1974).

An interesting analogy is identified in the Old and Middle English 'tunscipe' from which our present township is derived. In Old and Middle English, the word means the community of inhabitants of a tun, a manor or parish (O.E.D. 1927 Edition). It would seem that the community and its laws and obligations came first, with the meaning then extended to their living space itself. However, a specific example of equivalent meaning for Old English landscipe has not yet been found in our searches, nor have we found clear evidence of survival of landscipe into Middle English.

Early 16th century Dutch 'landscap' paintings retained the recognition of community, (Relph, 1982), and it was in the subsequent translation of the description of paintings to English (and also Italian) that the meanings became 'garbled' (Stilgoe, 1982). Despite the post 17th century broadening of the meaning of landscape in English from a painting, to land as the object of the painting, and eventually to the land itself, any prior meaning as the community-on-the-land either never existed in English or was lost without trace and never recovered in the modern English term. In contrast to the circuitous derivation of the modern English "landscape", German "landschaft" has a continuous etymology which at no time was confined to the merely visual. The form landschaft retained the conceptual meaning of community or territory and the organizational implications within that, alongside the later acquired perceptual meanings (Tesdaorf, 1982).

The continuity of the German 'landschaft' is vital, for by the 19th century and early 20th century, pioneer German geographers such as Richtofen, Passarge and Schuller were using the term when seeking to express interrelationships between man and nature (James, 1972). Thus for example "a landscape (landschaft) must be viewed as a type, an assemblage of interrelated elements" (Passarge, 1904, in James, 1972).

Elsewhere in Europe the Russia geographer Doukachev sought structural 'landscape' unity in soils (Troll, 1971), and subsequently Isachenko and Gerasimov sought it in environmental systems (James, 1972). By the

1930s, systematic study of landschaft converged with emerging concepts of ecology to create Landscape Ecology (landschaftoecologie) (Troll, 1971; Naveh and Lieberman, 1984).

#### 6.4 Contemporary Influences on New Zealand Usage

Many of these systematic influences are clearly reflected in contemporary New Zealand usages in the earth sciences (Taylor and Pohlen, 1962; Davies, 1982; Tonkin, 1984). Other European usages are less evident, landscape ecology being expressed only recently in proposals for 'total' ecological planning (Jackman, 1986).

Cultural concepts of landscape in New Zealand have benefited from early 20th century development elsewhere. In France, the Vidalian school of possibilism developed in the early years of the century, and in America, the Berkeley school under Carl Sauer explored the contact of man with his changeful home, as expressed through the cultural landscape (James, 1972). Both were influential in New Zealand, particularly in the work of Kenneth Cumberland (Cumberland, 1946). More recently, attention in America has shifted towards the identification of landscape values and preferences (Zube et al. 1976; Andrews, 1979) seeking to identify commonality in response to landscapes. This has been expressed most clearly in New Zealand in the Auckland regional landscape study (Brown, 1985). The concern for the experience of landscape and for the cultural meanings inherent within it has reached poetic and scholarly heights in the American writings of J.B. Jackson (1970) and J. Stilgoe (1982), and in New Zealand by poets such as James K. Baxter.

America has similarly provided a stimulus for professional usages, initially with extension of landscape to become landscape architecture, the art of site planning developed by F.L. Olmsted, and subsequently with the renaissance of professional activity in the 1960s, with writers such as J.O. Simonds and I. McHarg seeking synthesis of perception and conception, in sense of place (Simonds, 1961) and ecological design (McHarg, 1969).

These combined with the English landscape design tradition to influence the emerging New Zealand landscape profession<sup>1</sup>. Thus, the New Zealand Institute of Landscape Architects, established in 1973, asserted that:

"The landscape reflects the cumulative effects of physical and cultural processes".

from NZIGA Statement of Philosophy, 1980 (NZILA, 1981)

It also endorses a land use ethic, an ecological overview to land use issues and, inter alia, seeks the protection and development of regional and local identities.

from "New Zealand, Where are you?" (NZILA, 1981)

In review, therefore, it can be recognised that whilst the strong British influence on New Zealand culture ensured early introduction of perceptual meanings of landscape, earlier European meanings, related more to organization than to appearance, have persisted in the Germanic and latterly American traditions. With increasing exchange of scientific and professional concepts these have, in turn, influenced New Zealand practice. In so doing they have struck a rich chord in the rebirth of Maoritanga and have stirred a comparable renaissance within some pakeha New Zealanders of their cultural roots in pre-industrial Europe and in New Zealand itself. Plural meanings are not, therefore, necessarily contradictory, but represent complementary traditions in seeking to describe the phenomena of land and of our relationships with it. The plurality of influences is represented in Figure 2.

Three observations can be made:

1. In seeking concepts of landscape, New Zealand has frequently turned to a concern with process, recognising the dynamic and evolving nature of the phenomena under study, and conceiving unity in genesis comprehended.
2. The current need is to link conception and perception of landscape to provide guidance for design and management. In this linkage the full use of New Zealand's multicultural antecedents demands our attention.

(1) The first lecturers of landscape architecture course at Lincoln College, S.C. Challenger and F. Boffa, had English and American training respectively.

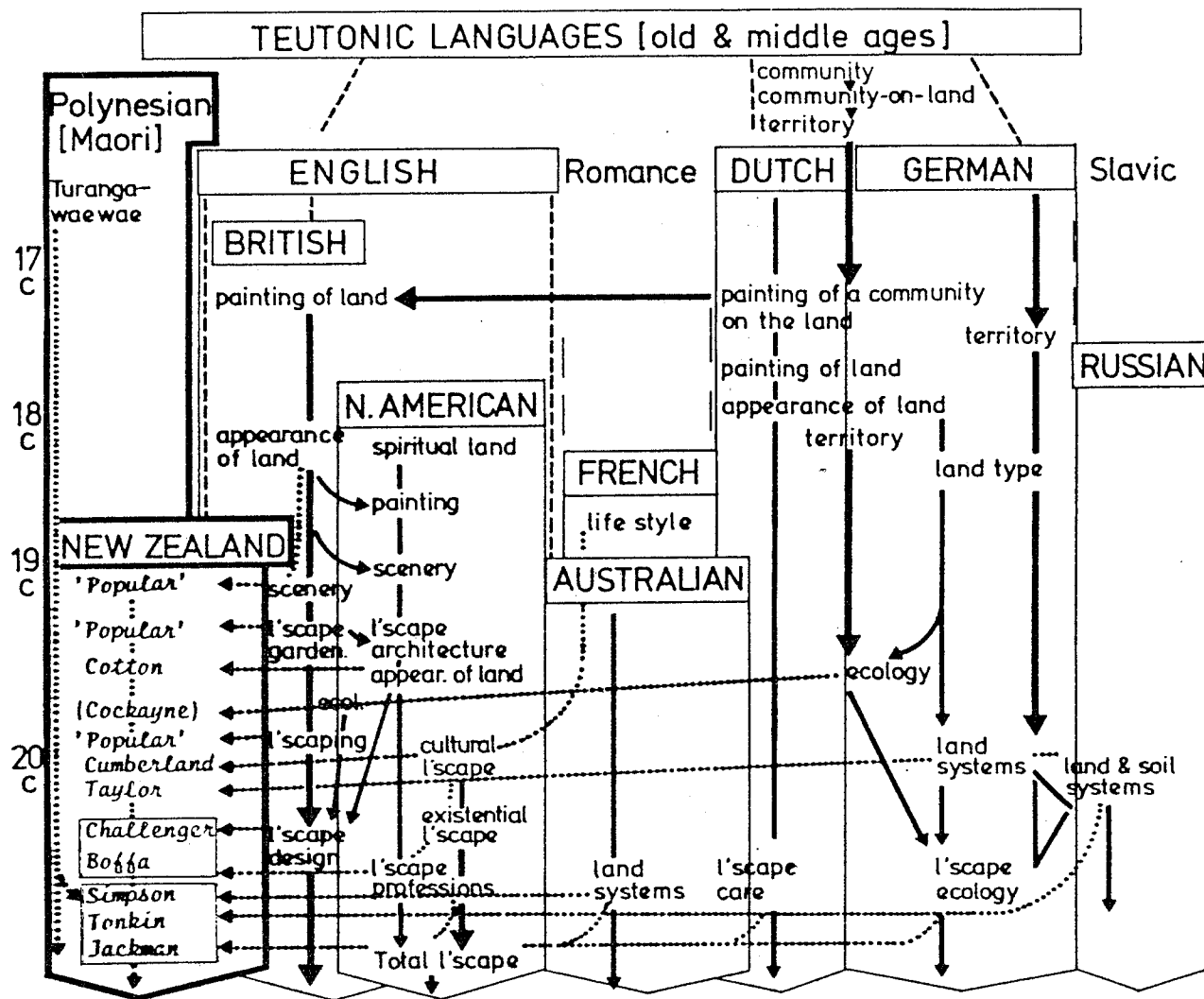


Figure 2: Linguistic origins and pathways of usage of landscape and its analogues affecting New Zealand usage.



3. Such linkage appears most likely to be achieved at a local level. The complexity of the possible meanings and the variety of landscape conditions can only be clarified by limiting the scope of the task.

## 7. IDEALS IN PROTECTING AND USING LITTLE LANDSCAPES AND FOSTERING SMALL COMMUNITIES

### 7.1 Promoting and Safeguarding Landship in Small Communities

Thus we return to the notion of ecological districts, providing some degree of natural homogeneity, and to the origins of a concept "landship" in the earliest sense of landschaft, as a unity in people, expressed as a defined community.

Sense of place has been described by Relph (1976) as having three elements: a physical setting, human activity, and a concentration of meaning arising from their interaction. Much North American and European writing suggests that "sense of place" develops from an 'accumulation of habit' (Luckerman quoted in Gregory, 1978), and from continuity of occupation (Lowenthal, 1975). Recent studies on the evolution of a rural community (O'Connor, 1978a) indicate that European settlers in New Zealand have rapidly developed a sense of community and attachment to locality. This relatively quick-rooting character of rural colonists is not unique to New Zealand. Phillips (1981) alluded to the century lag of European occupation of North America as recognized by Robert Frost:

"The land was ours before we were the land's.  
She was our land more than a hundred years  
Before we were her people"

The harshness of many southern hemisphere lands and the bitterness of the struggle to begin to seem to hold them in peace and relative comfort may well have abbreviated the lag before the man-land bond is soundly grouted. The strength of that bond cannot be doubted for the peoples of hunter-gatherer cultures in any southern continent. Can its power be doubted by those who know Afrikaaners. Can its strength be doubted by those who feel Mallee dust in their nostrils, or share "kowhai in the blood"? Such "newcomers" to New Zealand may not have a complete translation for turangawaewae or for mana, but if they share in the wairua, is there any doubting the reality of their own bond? For such

wairua, is there any doubting the reality of their own bond? For such reasons and in such a spirit have the tangata whenua, the people of the land, the first-comers of the seven great canoes, been prepared to accept also the eighth (non-Maori) canoe in Aotearoa.

Concepts of a contemporary community-on-the-land as landship have some validity among European New Zealanders, but they have a dominant role in Maori society in the form of turangawaewae as part of Taha Wairua (the spiritual side). Clearly the conceptual framework for modern landship would be very different from the bounded consciousness of medieval communities, and would instead be recognised as a community of abiding intent. Notions of a shared or collective understanding of responsibility towards land, currently expressed in striving for a national philosophy of rational land use (Nature Conservation Council, 1981), may contribute to such a community of intent. Neither science nor philosophy on its own is enough, for the spiritual dimension must also be seen in the mauri or life forces bonding man and place.

The little landscapes which characterise New Zealand (Hayward and O'Connor, 1981) thus have their social counterparts in neighbourhoods. The unifying factor must be related to shared values, perceptions, and agreed intentions. Clearly this is problematic, particularly in an increasingly economically stratified society. Shared interest is most likely to emerge and be sustained in clearly defined communities where certain social focusses already exist, in hearth and homestead, as well as in community hall, pub and church. (O'Connor, 1978a; O'Connor et al., 1982; Houghton, 1980; Healy, 1980; O'Connor et al., 1984). It is unlikely that genuine social community will be fostered unless there is mutual cultural respect.

The mixed effects of recreation and tourism of different kinds on different natural landscape systems are becoming increasingly discerned by experience. It is difficult to predict such effects. Davison (1986) gives us some warning of the drastic effects that might be expected if tourist growth is not matched with provision for increased protected natural areas. The counterpart effects of tourism on different cultural communities have been even less considered in New Zealand, except for such limited studies as that of the Te Arawa people of Rotorua (Te Awekotuku, 1981) and the local people of Queenstown (Pearce and Cant, 1981). As Devlin (1986)

points out, we are still in the early stages of distinguishing between those aspects of our culture which are resilient to tourism's impact and those aspects which must be cautiously rationed or protected.

## 7.2 Promoting Nature Conservation and Salvage in Ecologic Districts

The Protected Natural Areas programme, identifying areas for protection to complement the Ecological Areas of State Forests, existing Reserves and covenanted land, may provide a complementary natural focus within an ecological district. Such natural areas become the mainsprings of continuing evolution (Frankel, 1984; Lovejoy, 1984), the centres of refuge for the endangered biota, and the continuing sites for the monitoring of natural ecological processes. This last function is now recognised in the Biosphere Reserve concept internationally (Maldague, 1984), as being of heightened significance for the productive use of equivalent lands. Both for diversity of niche and habitat and for relevance to other land use, representativeness of protected areas should become a major social concern.

There is a continued interest in preserving the "morehu" or fragments of nature in transformed landscapes such as lowland Nelson (Walls, 1985) so that they, like the children of Tane, can once more stand tall in a new culture. In such a way were many of the forests of Europe allowed to restore themselves (Glacken, 1967). This must be accompanied by a will to conserve representative natural ecosystems in the landscapes not wholly altered e.g. Mackenzie (Espie et al., 1984). As Mark (1985) has pointed out, this will is not lacking in conservation lobbies, but it is not unequivocally expressed at either the local or national political level. Productive development must often be totally foregone if wetland, grassland, shrubland, woodland or forest is to be preserved in a truly natural and representative condition. In some cases, as in preservation of characteristic short tussock grasslands, the repeated and controlled use of grazing animals, and even periodic use of fire, will probably be necessary under a management agreement to sustain the characteristic tussock physiognomy of the long-thought natural landscape. To such protected systems modified systems suitable for recreational activities may be added, often as buffers,. As indicated earlier, pasture development may often be essential to preserve natural condition grasslands from as an effective buffer invasion by exotic conifers.

### 7.3 The Joint Focus for the Planning Imperative

The planning of all these areas and functions, in conjunction with farming and forestry uses, becomes a joint social and natural focus for community concern and interaction, the ecological district itself providing a general frame of reference. The statutory land use planning system is centred at the local or district level, providing a procedural mechanism for consideration, designation and recognition of protected lands. It is complemented at the national level by the QEII National Trust for covenanting of private lands as well as statutory powers for the designation from the Crown Estate of protected areas in the national interest.

Hayward and O'Connor (1981) went to great pains to convince landscape architects that they were not in a preserving role so much as a protecting, discriminating and directing role, because of the changing nature of "natural landscapes". But just as people had sought to tame the land, so the land has tamed people and made them "at home" in their own little landscapes. Rural people, both Maori and pakeha, tend towards conservation of their own local ways and own familiar scenes. Homogenization of the land, the removal of the signs of local or regional identity, can result in uprooting and death of local communities, just as bulldozers can destroy the sacred groves of centuries. It is the "littleness" of New Zealand in its landscapes and in its communities which is probably its most charismatic and differentiating feature. Are small communities to be trusted to do the right thing in conservation? Can they afford to save? Is the only alternative a multi-department centralist planning machine? How do we reconcile national, regional and local interests when they are in conflict, either real or perceived?

O'Connor (1978b) suggested: "A workable approach is based on three premises: (1) The reality of nationalism is accepted as the ultimate base for societal goals - there being no greater sovereignty; (2) The needs of the individual are guaranteed by central government but 'discovered', articulated and implemented at the local level; (3) The region exists as the co-ordinator of these national and local roles. On these premises policy must be determined nationally and within that framework of national policy, we design and operate our local systems with due regard to regional differences and preferences regarding resources, physical constraints, development, population distribution and the like."

The enormity of this task of "designing and operating local systems" is apparently in direct proportion to the perturbing force of outside influences. Moser and Moser (1986), reflecting on the MAB-6 systems study of Obergurgl, changing in many ways but asserting its essential alpine qualities under the pressures of mass tourism, give us clear examples of the importance of ethical issues in three kinds of relationships:

(1) people to nature, (2) people to people, and (3) teaching scientists to community. These are the relationships that formatively influenced such social decisions in any "little landscape". They must not be lost in the larger society.

Whatever decisions we face, we inherit the same spiritual word that has brought this endowment of nature to us: "People pass; but land endures"

Whakangarongaro he tangata;

Toitu he whenua!

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