Identifying Acceptable Vegetation Change In High Country Landscapes

A thesis submitted in partial fulfillment
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The study sought to develop a method for identifying areas of agreement among stakeholders as to acceptable and unacceptable vegetation change in the high country.

The contentious issue of vegetation change in the high country has been explored through a case study survey. Accessing a wide array of stakeholders through a multi-round anonymous mail survey to minimise antagonism, participants were first invited to set the agenda by identifying past and expected vegetation change. To avoid the politics of place, a generic approach was taken. Based on land systems, images were generated and various vegetation change scenarios applied. Respondents judged these on their desirability, possibility, likelihood and sustainability.

The survey succeeded in identifying agreement on the majority of the vegetation scenarios circulated as to their desirability or undesirability.

Indigenous vegetation, particularly tussocklands, elicited the greatest agreement as to their desirability. No scenarios involved obvious land development or tree planting obtained any majority of support. The presence of wilding trees, and of geometric forest block, was judged undesirable by a majority.

Thus, the method developed succeeded in identifying acceptable vegetation change for the high country. However, whilst seen as possible, such vegetation was generally judged to be unlikely. No scenarios have been found to be considered sustainable.

KEY WORDS

Landscape; tussock; vegetation; forestry; grassland; exotic; indigenous; development; change; modelling; generic; imaging; agreement; consensus; acceptable; Delphi; anonymous; conflict; representative.

To my parents
for their
wisdom, faith and love.

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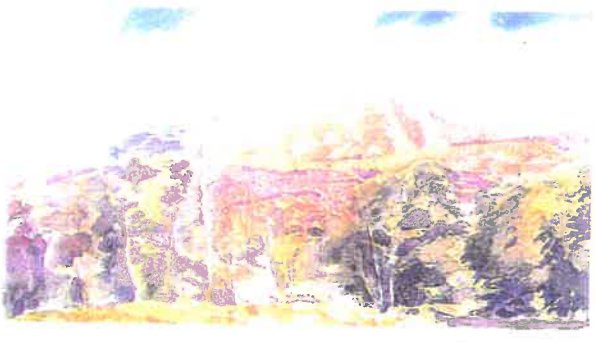
Abbreviations

a.s.l.	above sea level
BP	years before present
LAC	Limits of Acceptable Change [system or planning method]
OS & TD	over-sowing and topdressing; aerial seed and fertiliser application
TIPS	a video image editing programme



1. Introduction

1 Introduction

1.1 Background

The acceptability of vegetation change in the high country[1] of the South Island of New Zealand has been the subject of extensive and vigorous community debate. Through the 1980s two features became apparent. First, there was increasing evidence of tussock grassland deterioration; secondly, the undeniable potential of these areas to sustain shrub and tree growth became obvious. These two factors prompted the realisation that the familiar high country character and culture were at risk (O'Connor, 1986).

Evidence of vegetation change and the imminence of still further degradation have led to the investigation of alternative management practices, alternative vegetation (types) and alternative tenure as "solutions". The debate has also revealed a considerable diversity of interests in high country vegetation (Swaffield, 1994).

Vegetation change has been perceived to affect valued social, economic, productive and environmental resources, either positively or negatively. No common goal has emerged, nor a common "enemy" identified, that would unite the community in addressing change. Debate on the causes of changes has, instead, often resulted in attempts to shift the blame. Debate has become partisan and emotional, prompting suspicion, misunderstanding and fear (O'Connor, 1992).

Moreover, communication of vegetation options and limitations has frequently been generated by single issue interests. Communication has often been through news media, group to group meetings, or statutory process, each of which can encourage confrontation and preclude consensus.

In fact, there appears to have been little opportunity for the development of a "community of open discourse" (Drysek, 1987). The influence of differing agendas has made it difficult to identify agreement on acceptable vegetation.

Instead, community debate has indicated a need for decision-support systems (Stuth and Lyons,

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1 The high country includes the montane and basin country between the Southern Alps and the eastern front ranges of the South Island. No definition was provided in the survey so respondents were left to their own interpretation.

1993) which could access the views of diverse interests in a complex and conflict-ridden situation with many players.

1.2 Project Aim

This study sought to develop a method for identifying areas of agreement among stakeholders as to what vegetation changes in the high country are acceptable and what are unacceptable.

1.3 Methodology

Using a case study, a method was designed for investigating the kinds of vegetation change that were acceptable or unacceptable to the community.

The methodology that was developed drew on and adapted several decision-support and decision-making models. These included:

(a) landscape typology frameworks based on land systems (Christian & Stewart, 1953);

(b) a Limits of Acceptable Change (LAC) system, which is a planning method that involves ongoing community participation in identifying appropriate and acceptable resource, social and managerial conditions (Stankey, *et al.*, 1985);

(c) a Delphi multi-round mail survey of the opinions of informed persons (to identify agreement) on appropriate futures (Dalkey, 1983); and

(d) the computer manipulation of photographs to simulate landscape change.

The study sought to identify community agreement on what vegetation would be desirable, appropriate and achievable in high country landscapes of the future, and also what would be undesirable, inappropriate and not achievable. The method aimed to provide decision- support for directing landscape.

The study explored the potential to manage the landscape resource in the interests of community preference. The study did not attempt to understand the reasons behind preferences. It did not attempt to identify what was "more beautiful or useful", nor what management or tenure would be acceptable.

While recognising the diversity of "particular interests", this study focused only on identifying "generalizable interests" (Drysek, 1987)—that is, those interests held in common by the community. The Delphi survey technique is suitable for ascertaining all interests as it avoids the inhibitions and diversions of face-to-face group exploration (Cary and Salmon, 1976).

Attempting to identify what vegetation change was or was not preferred provided an indication of what may be valued in the landscape. The study thus attempted to identify agreement on *what* was meaningful, not *why*. Explicit identification of landscape planning issues was sought through investigating desirable, possible, likely or sustainable vegetation change.

Stakeholders approached in the mail survey initially described previous vegetation change and predicted future change. Seeking a common language, different vegetation predictions were then modelled using realistic visual imaging based on sample photographs of land types. The same stakeholders then assessed each scenario independently for (un)acceptability.

1.4 Study Area

Recognising high country vegetation change as a generic issue, the study focused on: a large sample area which contained many high country landscape types, including diverse geology, soils, climate and biota; a range of land use and management issues; distinct social communities; and wider community interest, knowledge and attachment. All of these areas had to be typical of Canterbury high country where there was both experience of, and opportunities for, developing different vegetation cover. The area chosen to represent this diversity lay between the Waimakariri and Rakaia Rivers of Canterbury, extending from the Main Divide in the west to the front ranges in the east.

1.5 Structure

Vegetation types, trends, opportunities and issues were reviewed (see Chapter 2). This provided a context for the opinion survey by identifying issues and appropriate questions. The vegetation issues revolved around an interplay between the balance of woody vegetation and grassland, exotic species and indigenous, whether resulting from disturbance or plant succession, induced by natural or human causes.

The survey method was developed (see Chapter 3) by designing a case study with which to investigate attitudes to change.

The case study results are presented in Chapter 4.

Finally, Chapter 5 provides an interpretation of the case study results with regard to attitudes to the controversial issue of vegetation change, critically assesses the survey method and compares the findings with those of other processes and studies.

1.6 Researcher Position

Lofland and Lofland (1984) argued that it was vital that the researcher clearly establish their identity (and interests) at the beginning of a research project. I have had lifelong experience in South Island high country—as resident, student, recreationist, appointed conservation management advisor, elected resource management decision-maker, landscape consultant and heritage conservation advocate—and have been involved with or worked with most "sides" in high country debates. However, at the time of undertaking the survey, 1989–1990, I had not had particular involvement in the study area.

The methodology was designed to identify generalised interests in a contentious issue in which a considerable range of participants were largely identifiable.