IDENTIFYING ACCEPTABLE VEGETATION CHANGE

Diane Lucas, landscape planner
Lucas Associates, Marokapara, 351 Manchester Street, Christchurch/Otautahi.
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Abstract

The study developed an approach for managing landscape change through developing a method for identifying acceptable change.

In order to investigate both landscape values and the potential for the method to identify acceptable scenarios for change, stakeholders were surveyed as to the vegetation change they expected as being likely to happen. Images of these vegetation changes were developed and then assessed by a wide range of stakeholders to ascertain the desirability, possibility, likelihood and sustainability of each change.

The study was undertaken in the high country of North Canterbury between the Waimakariri and Rakaia Rivers where there are seen to be alternative land use futures, where these alternatives have different landscape impacts, and where there are differing views on the appropriateness of particular alternatives. Native grassland, developed pasture and afforestation were among the main vegetation alternatives assessed.

Results showed where there was broad consensus on the acceptability or unacceptability of particular scenarios for vegetation change. The data also provided clarification of differences between perceived desirability, likelihood and sustainability of some vegetation change.

A very high level of acceptability for future indigenous vegetation was identified. In the land types studied, wide agreement was obtained on the desirability of tussock grassland vegetation in the next 25 years. However the future sustainability of these grasslands was seen as less certain, as was the likelihood that they would, in fact, eventuate.

Exotic forestry with seedling spread was widely agreed to be undesirable. No general support was identified for exotic vegetation or evident modification of vegetation. However increase in exotic tree vegetation was judged highly likely to occur.

The non-adversarial technique involving a multi-round mail survey of a wide array of stakeholders was successful in eliciting wide agreement on acceptable and unacceptable vegetation change. Beginning with predictions of future vegetation provided by stakeholders themselves and the using of realistic imaging for subsequent assessment of a range of possible scenarios, are suggested to be key factors in the success of the technique developed.

Introduction

Vegetation change is a contentious issue in many areas of Aotearoa–New Zealand. Proposals for deliberatre schemes for vegetation change often have the effect of polarising individuals and groups with conflicting opinions. There is also a considerable spectrum of views on the desirability and appropriateness of spontaneous and insideous vegetation changes in high country landscapes.

In a research project for Lincoln University I set out to develop a technique for identifying areas of community agreement on what were regarded as desirable, appropriate and achievable vegetation change in high country landscapes. I also sought to identify what changes were perceived to be undesirable, inappropriate or not achievable.

A case study approach was taken. I selected an identifiable area of high country which was known to have a diverse community of interest, which had experienced various vegetation changes, and within which the issue of vegetation change had been observed to generate some debate. To ensure that the focus was limited to acceptable future vegetation, issues of tenure, use and management were not explored.

The study was undertaken in the North Canterbury high country lying between the Waimakariri and the Rakaia.

Survey Design

To see if there might be agreement over acceptable change, I explored the possibility of developing a non–adversarial technique that could involve all those with an interest in the study area. Potential problems were recognised in the use of group techniques such as workshops, particularly problems of dominant personalities and "band–wagon" lobbying. To avoid these influences, as well as that of researcher presence, I sought to involve each stakeholder as an anonymous individual. A multi–round mail survey of individuals was therefore used.

In attempting to establish a wide "community of interest" the following groups were included in the survey: land owners, lessees and managers; persons involved in statutory responsibilities and public planning processes; tangata whenua; recreation and outdoor education organisations; scientists and researchers; arts and advertising interests. An inclusive approach was taken with a "snowball" process allowing participants to suggest further farm advisory people to survey. Starting with 150 people, a further 27 were added.

The first step was an exploratory mail survey. Participants were asked to identify the vegetation that to them represented the Waimakariri–Rakaia high country, and to list the vegetation changes that they had noticed.

To allow the stakeholders themselves to set the agenda for assessing future change (particularly because of my known attitudes to high country vegetation change) participants were each asked to predict the types of vegetation change that they thought were likely over the next 25 years.

Communication Technique

From analysis of these predictions, a range of options were next presented to stakeholders for assessment as to acceptability. I recognised that the form in which they were presented could have a significant influence on participants' attitude and willingness to be involved. Previous community studies and planning in the area had involved representation by words, either oral or as text (Malvern County Council, 1988; Murray, 1986; Swaffield, 1991, 1994). Maps and line drawings have also been utilised as techniques for communicating appropriate change in the area (Bennett & Lucas, 1992). And, a pilot study by Wardle et.al. (1993) had used grid cell mapping to display preferred vegetation change options spatially.

All these communication techniques, were questioned in that they are all somewhat remote from reality on the ground. Academic, planner and bureaucratic terminology and expression, as well as maps and grid cell representations, can be very unfamiliar languages for many in the community, and therefore provide a barrier to their involvement. As everyone's mental picture differs in terms of what the words, maps, and grid cells are intended to convey, they are likely to be interpreted and judged in a variety of different ways. All of these techniques, including the drawings, enable selective consideration of options largely devoid of landscape context.

I sought to provide a more barrier-free means of communication by using a technique that would more closely represent real vegetation change in its landscape context. Photographs are now a familiar language in the community. People feel comfortable with photos, in both black-and-white and colour, as a means of landscape representation. Computer manipulation techniques allow for future scenarios to be presented in photographic format. For example, trees can be added, relocated or deleted.

Advantages of less direct means of representation such as words, drawings, maps and grid cells are that they can generalise a situation, focus on specific issues, and, avoid being distracted by other aspects evident in the real world. That is, they can generalise to avoid the politics of specific places. Actual photographs cannot avoid being place-based. A genuine photograph cannot be a generalised view, it is a real view, and therefore a view of a place. Hence, genuine photographs cannot avoid the politics of place.

To provide for both a realistic language and a generalised view, I utilised computer photo manipulation techniques to produce a generic representation in photographic form.

The case study area was first analysed in terms of land systems. Representative colour photo images were obtained, and generic land type images were then developed for each land system - that is, generic images were produced to represent a type of country rather than a particular place or location.

Scenarios Judged

From analysis of the first survey results, a series of predicted vegetation changes was modelled for each land type. Three vegetation change scenarios were produced for each of five land type images. Care was taken to minimise the likelihood of the aesthetic composition of images influencing responses. The intention was to present images that showed the vegetation changes in the context of that particular type of country, not in isolation. All scenarios involved change, there were no control or status quo images included.

Scenarios were distributed to participants as colour photocopies. Each scenario was accompanied by brief text describing the vegetation depicted. Although I tried as much as possible to use the language of participants in this text, I also endeavoured to ensure descriptive terms were neutral and not suggestive of positive or negative attributes for any particular vegetation (e.g. "native scrub/shrubland" and "exotic tree seedlings".)

Participants then judged each scenario independently on a 5–point Likert scale in terms of it being "desirable" to "undesirable"; "possible" to "not possible"; "likely" to "not likely"; and, "sustainable" to "not sustainable". Participants were not asked to justify their judgements, but were asked to assess their own competence at making these judgements ("competent" to "not competent"). For each set of scenarios there was opportunity for participants to add any comments they wanted to make.

Results

The first survey indicated wide agreement that the types of vegetation that were regarded as representative of this part of the high country were the indigenous communities – predominantly tussock grassland and native forest, but also native shrubland. The vegetation changes that had been noticed were predominantly shifts to increased woody vegetation, increased exotic vegetation and decreased non–woody native vegetation.

The response (75%) to the first survey showed that the major vegetation changes predicted were increased exotic tree plantings, increased exotic pasture, increased exotic tree spread, decreased tussock lands, and, increases in weeds, native shrublands, exotic scrub and native forest. Almost half the 377 predicted changes were for increased woody cover. Almost a quarter involved decreased tussock areas, or increased pasture, herbaceous weeds or bare ground.

89% of the first survey respondents completed the second survey, judging the vegetation change scenarios. All scenarios were judged by the majority as possible, and none were judged unlikely. Sustainability judgements were the most diverse and had least agreement. Judgements on desirability generated more extreme ratings, but also showed surprising areas of agreement.

Those judging themselves not competent provided nonetheless an almost identical response pattern on all scenarios to those who felt competent. As far as grouping these responses goes, women participants consistently assessed themselves as predominantly not competent.

Overall results showed wide agreement on the desirability of the indigenous scenarios, particularly tussock grasslands, but also beech forest. One tussockland scenario received 98% support for its desirability – but only 31% judged it likely to occur. Indeed, of the six scenarios widely supported as desirable, only one was judged by a majority as likely to eventuate.

In contrast, three scenarios, all containing some increase in exotic trees, were widely judged to be undesirable by up to 88% of participants. Two of these undesirable scenarios were however judged by a majority as likely to occur. The fourth exotic plantation scenario – of naturalistic design and with no wildings – produced a three–way split of opinion, desirable/non–committal/ undesirable. However, it was considered the least likely (29%) and the least sustainable of the plantation scenarios.

Comparing results from those involved in different aspects of vegetation management highlighted some anomolies. The science group identified a short tussock scenario as desirable (70%) and possible (67%), whilst only 15% considered it to be sustainable. No one however thought it likely to happen and 62% judged it unlikely. Similarly, for one of the exotic plantation scenarios, a majority of the science group judged it both desirable and unsustainable. None of the science group felt "not competent" to make these judgements.

Overall results showed that the vegetation perceived by participants to be representative of the Waimakariri–Rakaia high country landscapes(ie the indigenous communities), was also the future cover that participants most desired.

Identifying Acceptability

The technique succeeded in obtaining a high level of involvement of stakeholders, a minimal demand on their resources to contribute, and clear results to guide decision–making.

The technique involved a diverse array of stakeholders, a fifth of them being farmers in the area. A high degree of agreement was obtained for many scenarios across all groups of participants.

The technique succeeded in finding clear agreement as to various vegetation change options that were either wanted or not wanted. The technique identified a conflict between what was wanted (indigenous vegetation) and what the community considered was the more likely direction to change (increased exotic vegetation). The survey thus identified the broad fact that people thought they would get the vegetation they did not want and which they did not see as sustainable, and would not get the vegetation they did want.

Key aspects of the technique are suggested to be:–

- an inclusive approach for those with a known interest;
- the non–adversarial survey method of anonymous postal surveys without any researcher presence;
- the provision for participants to "set the agenda";
- the depiction of the predicted changes as generic and realistic visual images with minimal and neutral accompanying text; and,
- the avoidance of any pressure to justify judgements.

Results suggested the technique enabled wide agreement to be obtained on an issue where stakeholders had otherwise appeared polarised. It also demonstrated there was a conflict between what was desired and what was likely to occur. This conflict needs to be addressed in decision–making processes. The study results suggested a need to intervene to avoid what was not wanted and to achieve what stakeholders valued.

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