

DEVELOPING FRAMEWORKS FOR RESTORATION

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A PLANNING PERSPECTIVE

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1 ABSTRACT

The Resource Management Act (1991) promotes the sustainable management of resources, which includes safeguarding the life supporting capacity of air, water, soil and ecosystems. Restoration of the health of ecosystems is therefore central to the purpose of the Act, and integral to the responsibilities of agencies working under this Act. This paper proposes that planning frameworks can provide local Government with a structured and co-ordinated approach to ecological restoration. These frameworks can encompass a vision (objectives), a plan of action (policy), tools to achieve outputs (methods), and indicators of success (monitoring). Restoration frameworks are essentially strategic plans that get us from where we are now to where we want to be in the future.

2 KEY WORDS

Restoration; Resource Management Act 1991; planning.

3 INTRODUCTION

In New Zealand ecological restoration is promoted under a number of different statutes. In particular, restoration initiatives are being carried out under the ambit of the Resource Management Act (1991) (RMA), the Conservation Act (1986), and the Biosecurity Act (1993). A number of agencies, including Crown Research Institutes, central and local Government, and non-Government organisations are involved in restoration initiatives, in conjunction with private landowners. These agencies have different functions and responsibilities, and often have quite different restoration visions.

This paper proposes a planning model for the development of a logical and strategic framework for restoration in an RMA context. The paper focuses specifically on the RMA, and on the role of local Government under this Act. However, the principles espoused will apply more widely.

4 AN RMA RESTORATION FRAMEWORK

The Resource Management Act (1991) promotes the sustainable management of resources, which includes safeguarding the life supporting capacity or air, water, soil and ecosystems, and avoiding, remedying and mitigating adverse effects of activities on the environment. It

can therefore be argued that restoration of the health of ecosystems is central to the purpose of the Act. Also, the effects focus of the Act, which drives resource management decisions, can be interpreted to provide justification for restoration: avoidance (e.g. ecosystem management); remediation (e.g. ecosystem repair); and mitigation (e.g. ecosystem reparation). While the Act does not specify restoration as a core function of local authorities, it does provide a mandate for restoration as a fundamental part of sustainable management.

In meeting their broad responsibilities under the Act, local authorities have typically drawn on basic planning principles and frameworks. That is, frameworks that encompass a vision (objectives), a plan of action (policy), tools to achieve outputs (methods), and indicators of success (monitoring). This paper proposes that these principles should also be employed in planning for restoration, to avoid *ad hoc* approaches. It is proposed that restoration frameworks are essentially strategic plans that get us from where we are now to where we want to be in the future.

5 INFORMATION AS A BASIS FOR RESTORATION FRAMEWORKS

Identifying a framework for restoration involves the assimilation, management and interpretation of multiple information layers. The key information layers in any restoration framework are as follows:

5.1 Science

Restoration science involves understanding ecological patterns, both past and present. It is about modelling changing patterns based on our knowledge of landform/soil, climate, and vegetation distribution. Resource managers need to understand ecological principles at a number of levels. Firstly they need to know about the extent of past and present of ecosystems (ie. what they are working with). Secondly they need to understand ecological interactions at a landscape level, such as the degree of fragmentation, successional processes, sustainability of sites, and the role of exotics in ecosystems (ie. how it all fits together). At a more specific level they need to know how to keep ecosystems working, for instance by understanding species dispersal, genetic variations, species vulnerability, and the effectiveness of ecological networks. Finally, they need techniques to successfully achieve outputs, including an understanding of specific planting techniques, corridor design, and maintenance.

5.2 Socio - economics

Community perceptions, attitudes and behaviour are fundamental to ecological restoration. Agencies interested in promoting restoration rely on the participation of landowners, and on support from the communities that dictate political commitment to projects. So what do we need to know about communities to develop restoration goals? In two words: obstacles and opportunities. For instance, it is not always clear what motivates conservation decisions on private land, what people value, or whether they are interested in changing their land use practices. For instance, research in Awhitu, Rodney and Franklin Districts and in Northland Region, has shown that the cost of conservation (e.g. lost opportunity, fencing, pest control, perceived loss in property values etc.), influences conservation decisions. Similarly, research has shown that it is important to know the extent to which attitudes are determined by age, race, geography, wealth, and reliance on the land for income.

5.3 Politics

Local councils are restricted in their functions by legislation. As previously outlined, the RMA is not explicit about restoration, but does provide a mandate for restoration as an essential part of sustainable management. In discharging their functions under the Act, councils can not disregard restoration, but they can apply themselves to restoration with differing enthusiasm. In many respects political commitment to ecological restoration is determined by resources, local situations, perceived priorities, political mood, and by the activities of other key players such as central Government. Understanding political constraints and opportunities is fundamental to any successful restoration strategy.

6 THE COMPONENTS OF A RESTORATION FRAMEWORK

Ecological, socio-economic and political information (as described above), provides guidance to resource managers for the development of restoration objectives, policies and methods:

6.1 What are our visions (objectives)?

In planning terms objectives are a desirable condition or position towards which effort should be directed. Developing objectives for restoration is perhaps the most challenging element of any restoration strategy. This is because objectives involve long term planning and the consideration of multiple values and attitudes, which sometimes conflict. Although objectives do not have to be easily achievable in the short term, they do need to be realistic. They also need to be consistent with other visions that an organisation or community might have, and be within the bounds of relevant legislation. Most importantly restoration objectives should point towards a desirable ecological condition, for instance an ecological baseline to which ecosystems are being restored, and the scale, spatial distribution and timing of this restoration.

6.2 What is our plan of action (policies)?

Once a vision for restoration is established, it is important to develop policies, or a guide to action (ie. we know where we are going, but how do we get there?). Policies should develop a course of action to achieve objectives, and define boundaries within which decisions can be made. Policies should also articulate broad restoration principles. For instance, Dave Slaven (Boffa Miskell) and Shona Myers (Auckland Regional Council) propose five principles for restoration: retain, rehabilitate, reconstruct, reconnect, and re-establish (personal communication). These principles can be interpreted as policies - they point a way forward, and they indicate a degree of effort.

Policies might also set priorities for restoration. For instance, policies could promote restoration of significant sites, rare habitat types or under-represented sites. Promotion of ecological networks and the development of buffer zones could also be espoused as priority actions as part of a restoration framework. Policies should therefore focus our actions, promote fair and effective use and distribution of resources, facilitate co-ordination, and avoid duplication or missed opportunity. Restoration policies should also give guidance about the methods that resource managers can use to achieve restoration objectives.

6.3 What are the tools we can use (methods)?

Following the development of restoration objectives and policies, resource managers effectively have a “destination” and “directions”. They know where they are going and they know how they are going to get there. The next step is making the “distance”, or making the plan work on the ground. The RMA promotes the rigorous analysis of appropriate methods to achieve objectives. The Act provides a regulatory framework for managing effects, but does not limit (and in fact promotes) the use of alternative methods such as education, incentives and purchase. Determining the most appropriate tools to achieve objectives involves an assessment of ecological, socio-economic and political structures.

In developing restoration frameworks, resource managers need to identify where land use practices can benefit from restoration (ie. where the problem is), and secondly what factors are influencing unsustainable behaviour (ie. what the problem is). Understanding constraints and motivations for restoration can help resource managers to tailor methods to achieve objectives. For example, the grazing of cattle in forests can be motivated by economics (e.g. the cost of fencing or lost opportunity), or by a lack of knowledge. This can determine the most appropriate method for addressing the problem (e.g. incentives, education or rules).

7 METHODS TO PROMOTE RESTORATION

7.1 Education and provision of information

Restoration initiatives hinge on landowner co-operation and sustainable land management practices. Education and the provision of information can actively seek to change attitudes where they are unsustainable. Education can also stimulate community interest and harness voluntary effort. In developing education programs, resource managers need to identify key messages (ie. identify where and what the knowledge gaps are), and the best way to deliver those messages. Delivery depends on the target audience, and an understanding of the likely best conduits of information for a variety of political, social and cultural scenarios. Education for restoration is not only about restoration pamphlets and “glossies”. Nor is it about selling a message to someone else when a vision has already been established. It is about shared visions, about person to person contact, farm days, focus groups discussions, Landcare groups, awards, joint enterprises, empowerment, and good press.

7.2 Incentives

The use of incentives in restoration is becoming more common, both as a result of landowner support for incentives, and as a result of local Government recognising the benefit cost equation of ecological protection and restoration. While the use of incentives is a “good news” story, there are some fundamental questions that should be addressed when assessing the use of incentives. In particular, who should provide incentives, how much should the community contribute, how will the community respond to assistance funds, what sites should be targeted for assistance, are there any equity issues, and what can be achieved through the use of incentives? A number of different techniques provide different interpretations on these questions.

(a) Assistance funds

Historically local authorities have justified assistance for soil conservation works on the basis that the benefits of retirement fall off site (ie. there is a regional benefit and therefore the regional community should pay). To determine appropriate levels of regional assistance, Environment B·O·P has used a contingent valuation approach to assess the benefits of retirement, and currently contributes up to 50% of the cost of retirement planting on the basis that regional benefits of retirement are high. This is quite a clear incentive to landowners, which coupled by the use of production trees for retirement purposes, results in a definite financial incentive for landowners taking up protection options.

(b) Material grants

Another incentive for restoration is the use of material grants, such as those provided for by the national Trees for Survival Programme. Under this programme landowners are provided with free native seedlings for the control of soil erosion on their properties. The programme facilitates involvement of children and the community in growing, planting and tending native trees. These goals do not always lend themselves to robust ecological restoration, but nevertheless have multiple benefits. In this situation co-operative landowners are being provided with stimulus and recognition for their initiatives. However, the level of assistance is unlikely to alter decisions where major obstacles to restoration exist.

(c) Subdivision incentives

A more complicated form of incentive, is the provision of subdivision rights in return for (in part), extensive native replanting. Essentially this is an environmental trade-off, and is an extension of long standing conservation lot subdivision incentives. Inherent to the use of this tool is the assumption that native planting benefits the community substantially, and that therefore the community should pay for this benefit by providing a substantial incentive to landowners. This may be a sound approach to promoting restoration initiatives. However, in some instances these initiatives are occurring in the absence of restoration frameworks, and in a policy vacuum. For this reason it is not always clear whether restoration is always occurring in priority areas, or what the long term objectives for planting are.

7.3 Rules

In contrast with the provision of incentives, the use of regulatory tools recognises that the cost of development (ie. adverse effects) often falls to the environment and the community. In most cases regulatory controls relating to restoration involve requirements to avoid, remedy and mitigate the adverse effects of development. This is usually achieved through consent conditions, assessment criteria, financial contributions and the taking of esplanade reserves and strips.

The requirement for restoration as a condition of consent has become common practice. Restoration planting is, for example, carried out as mitigation for vegetation removal and fragmentation. Planting may also be required for the creation of stormwater detention ponds to avoid contamination of waterways, as mitigation for earthwork activities, or for the creation of buffers between incompatible land uses. In some cases mitigation conditions can include requirements to fence existing habitat and to carry out pest control (e.g. ecological restoration is a fundamental component of State Highway 1 (Albany to Puhoi) realignment).

District councils can also require on subdivision, the setting aside of land for esplanade reserves or strips, including for the purpose of enhancing natural functioning of waterways and protecting natural values. Similarly, regional and district councils can require financial contributions to offset the effects of development. For instance, the Proposed Western Bay of Plenty District Plan requires a financial contribution on subdivision, to offset the adverse effects of development on natural values. Finances are channelled towards protection and enhancement works, such as fencing.

7.4 Summary

When assessing the range of methods that can be used in promoting ecological restoration, resource managers must consider whether these tools are largely proactive encouragement, a form of compensation, a reward, or a minimum requirement to avoid, remedy or mitigate the adverse effects of development. The use of a variety of methods should stimulate input from many different players, and maximise the use of limited resources. A robust planning framework, which encapsulates clear objectives and policies, and a clear understanding of the costs and benefits of various options, can guide the use of these various planning methods.

8 MONITORING

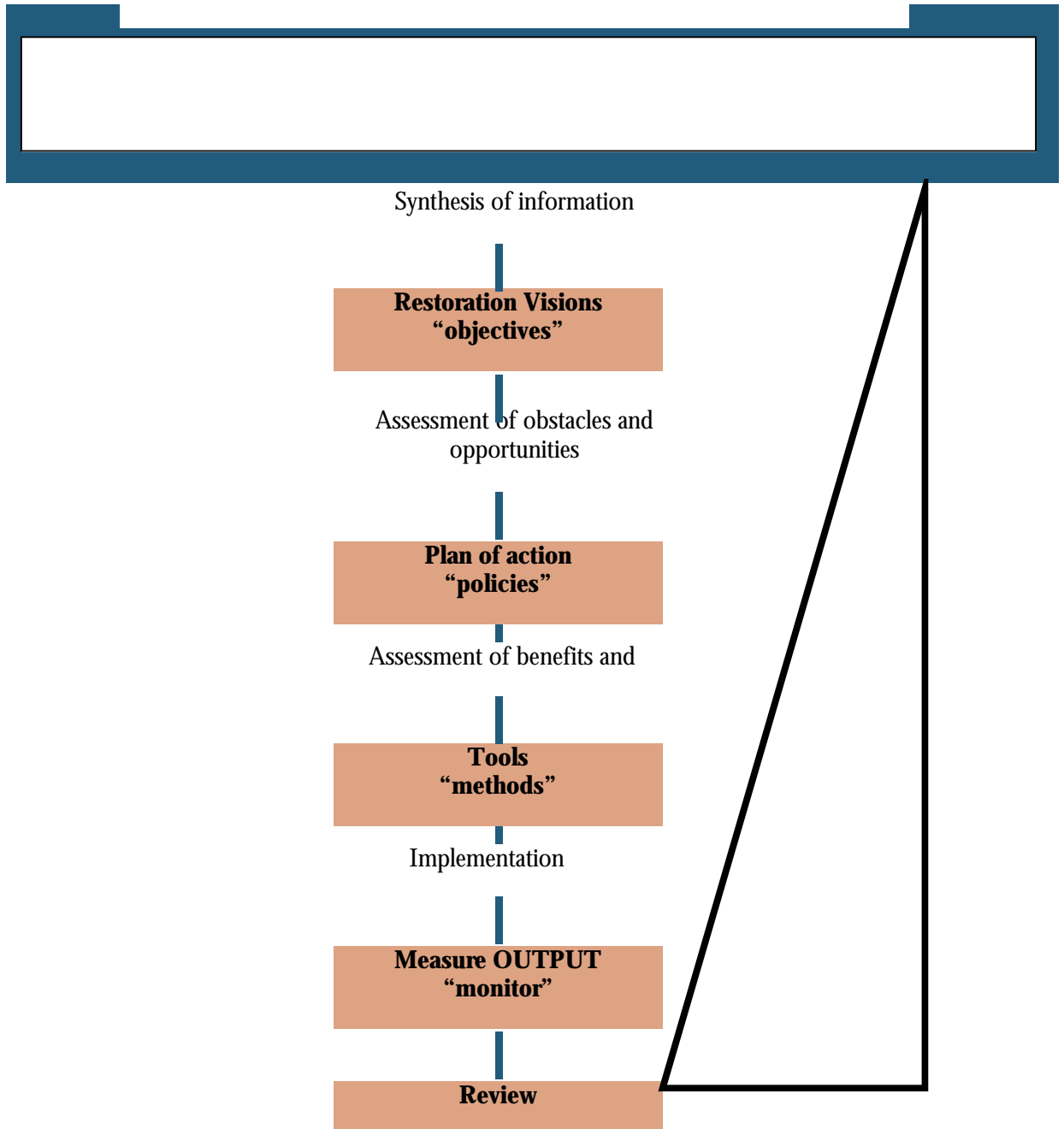
Drawing from the discussion above, there are three essential elements of any restoration framework that require monitoring. Firstly, resource managers need to determine whether objectives have been achieved, or whether these need to be reviewed. Secondly the success or otherwise of various policies and methods in achieving desired objectives, within stated timeframes and resource constraints, needs to be assessed.

Determining the success or otherwise of restoration initiatives is no small task, and will involve multiple research questions, and the assimilation of socio-economic, ecological and political information. A fundamental question for the review of restoration programs might include whether restoration initiatives are genuinely achieving the promised output, or whether they are simply unfortunate experiments. The development of a strategic planning framework, with clearly stated objectives, can provide resource managers with essential measures of success in restoration.

9 SUMMARY

This paper has proposed the use of planning principles for the development of frameworks for restoration. It is proposed that restoration frameworks encompass a vision (objectives), a plan of action (policy), tools to achieve outputs (methods), and indicators of success (monitoring). Restoration frameworks that encompass a logical process of identifying desirable objectives for restoration are essentially strategic plans, that get us from where we are now to where we want to be in the future (see Figure 1).

Figure 1: Frameworks for Restoration



Drawing from this information, restoration frameworks should assist resource managers to identify realistic and long-term goals that are owned by the community, and that are ecologically robust. They should promote fair and effective use of resources, identify the boundaries of restoration programs, and indicate the degree of effort needed to achieve objectives. Finally, restoration frameworks must analyse the benefits and costs of alternative methods to achieve restoration objectives and promote appropriate methods accordingly.

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