

# **ECOLOGICAL ISSUES IN RESTORATION ECOLOGY**

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This presentation explores two issues central to the application of restoration ecology in New Zealand. The first looks at the potential role of restoration ecology in biodiversity conservation in New Zealand in general and especially what we can realistically expect to achieve using restoration. The second considers some of the ecological principles that should underlie restoration ecology.

Restoration ecology is going to be one of the key tools for enhancing biodiversity conservation in the two thirds of New Zealand that is not managed primarily for conservation purposes. However, restoration should not be seen as an alternative to productive use, rather we should be looking for innovative ways to use the techniques of restoration ecology to integrate production and conservation in the same landscape (e.g., on a farm or in a plantation forest). However, in using restoration in this manner we need to be realistic about what we are trying to achieve in these landscapes. We must accept that New Zealand today is different to the past (because of extinctions, invasions and global climate change), and we need to accept that future ecosystems will be different to those present previously. Trying to force areas back to some former condition can only soak up our limited resources and be doomed to eventual failure. We need to look for new goals for restoration, goals that still focus on those things that are uniquely New Zealand but also goals that are compatible with the realities of New Zealand today.

In applying restoration ecology as a tool for enhancing the conservation of indigenous biodiversity we need to ensure that our actions are ecologically appropriate and hence successful – trying to force restorations towards conditions that are ecologically inappropriate will only waste valuable resources and are likely to fail. Some of the key principles that underlie the application of restoration ecology include: The Principle of choosing ecologically appropriate species including the concept of filters; The principle of using natural succession as a model for restoration; The principle of letting nature dictate composition and structure (with some subsequent management input); The principle of focusing on ecosystems rather than species. In addition to these ecological principles there are also some really key social principles that reflect the importance of restoration responding to the needs and aspirations of local communities.