



Can Nature Protection be Unsustainable?

Models Behind Nature Protection in New Zealands National Parks

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Nature protection can be justified by intrinsic values of life. Western culture sees nature as an autonomous system. Thus, nature protection is often synonymous with refraining from human interference as much as possible. This, however, can pose at least technical problems. Indeed, historical human impacts such as introduced species are often irreversible. In such cases refraining from human interference to protect threatened species is not an adequate management response.

Nature protection in New Zealand is a prominent example. Many introduced species make a non-interventionist attitude infeasible to protect endemic species such as kiwis. Actually, active human interference is necessary to attain this goal. Therefore, one may consider nature protection as another form of land use. As any other form of land use, it needs standards of proper management (i.e. explicit goals, assessment, intervention etc.). In other words, it has to be shown to be sustainable. However, sustainability may rigorously be defined as an attribute of *past* land use only. Instantaneous positive indicators of sustainability may be elusive. At best it can be decided by observation whether or not a land use has been (not) sustainable until now.

Stakeholders of nature protection have often different (implicit) concepts or models of nature in mind. This can lead to conflicts when it comes to management decisions. For example, the methods by which conservationists in New Zealand seek to re-establish historical species assemblages (e.g. aerial drop of poison into national parks) have come under criticism of animal rights groups as non-humane. We propose to use abstract modelling language to classify these concepts of nature protection and related issues.

We show that from modelling perspective these conflicts pose a basic science problem rather than an applied science problem. This makes the delegation into existing disciplines so hard. We discuss possible implications for nature protection: depending on the concept, it may be sustainable or not. In addition, we show how models can help organising learning and communication about land-use conflicts more reasonably.