

Conservation Area Networks

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WHEN THE PRINCIPLES of systematic conservation planning were first being elaborated in the late 1980s and early 1990s, the problem to be solved was usually referred to as ‘reserve network design’ (Margules and Pressey 2000). That name reflected an unstated assumption: that the appropriate spatial units of conservation interest were reserves such as national parks and wilderness refugia. That assumption in turn reflected the view that human presence and activity is necessarily detrimental to biodiversity. This view was central to how conservation biology was initially conceived of in the Northern societies where it emerged as a new cross-disciplinary science in the 1980s. From this perspective, human interests are at best to be taken into account only for prudential reasons. As India’s Project Tiger demonstrated, lack of local support is a recipe for disaster for conservation projects. At the national level Project Tiger was implemented with unprecedented fanfare and initially heralded as a success throughout the international conservation community. What went largely unnoticed, especially in the North, was that the project led to the forcible displacement of thousands of local residents whose resentment provided ample opportunity for poachers and others who benefited from the destruction of wildlife.

Throughout this decade it was never recognised that the assumption of human activity being detrimental to biodiversity is an empirical claim subject to assessment and testing in the field. (Similarly, the claim that wilderness preservation is equivalent to biodiversity conservation is also an empirical claim that went unchallenged during this period [Sarkar 1999].) No one can reasonably deny that many types of human activity, for instance, the conversion of natural habitat to industrial parks or the ‘reclamation’ of wetlands, are inimical to the persistence of biodiversity. But it is a logical error to infer from individual instances that all human activity necessarily leads to biodiversity depletion. When human practices and the biotic composition of an ecological community co-evolve in tandem with each other, it is quite likely that the persistence of each depends critically on the

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persistence of the other. Moreover, in the highly fragmented landscapes of the Earth today, a sharp distinction between anthropogenic activity and natural processes is often impossible to operationalise in the field. Biological conservation often requires less than human elimination; even more often it requires human intervention rather than benign neglect of allegedly pristine landscapes. Once again, India provides an exemplary case. The Keoladeo Ghana National Park, one of the most biologically diverse avian habitats on Earth, is a human-made wetland created in the late nineteenth century. Its persistence requires human activity, especially the grazing of cattle. When, on the advice of US and Indian ecologists, grazing was banned in the 1980s, there was a precipitous decline of avian diversity as a few weedy species, which were kept in control by cattle, began to choke the wetlands (Lewis 2003).

During the last decade biologists have come to realise that conservation policy must take into account all empirical facts about habitats and should not be based on untested truisms, which ultimately reflect little more than the prejudices of the North with its own peculiar histories of relations with nature. Empirical facts have forced the broadening of what should count as an appropriate unit of conservation. While traditional reserves have some role in those few landscapes that are sparsely populated by humans, in most situations the units of conservation may be farms, gardens, ponds and village commons, all of which admit many forms of human use. The term 'conservation area' is designed to include all of these. By definition, a conservation area is simply a place at which a conservation plan is in effect. Such plans may range from wilderness designation to the preservation of individual trees on river banks if, for instance, the latter provide scarce nesting facilities to rare bird species.

A shift of focus to conservation areas is resulting in an important reorientation of conservation science. The design of a conservation area network can no longer be based entirely on the biological composition and viability of individual places. Rather, it must take into account the entire range of feasible policy options for a place. In one way this is a more difficult task than traditional conservation biology: it requires a broadening of methods to include much more than the well-worn techniques of traditional ecology. However, in at least two ways, it makes the task easier and much more interesting: (a) it allows the systematic incorporation of local expertise and practices, thus potentially providing continuity between traditional livelihoods and the relatively more recent focus on biodiversity; and (b) it encourages local participation, not merely because of the political value of local support for conservation, but because local practice is an integral part of good scientific conservation. In the design of conservation area networks in human-dominated landscapes, the expertise of conservation biologists is usually only one tool for the refinement of those local practices that are empirically known not to have an adverse effect on biodiversity.

References

- Lewis, M. (2003), 'Cattle and Conservation at Bharatpur: A Case Study of Science and Advocacy', *Conservation and Society*, 1: 1–22.
- Margules, C.R. and R.L. Pressey, (2000), 'Systematic Conservation Planning', *Nature*, 405: 242–53.
- Sarkar, S. (1999), 'Wilderness Preservation and Biodiversity Conservation: Keeping Divergent Goals Distinct', *BioScience*, 49: 405–12.