

Reintegrating fragmented landscapes

Eds R. J. Hobbs and D. A. Saunders. 1993.
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THE dedication of this book is to Katie, Hamish, Samantha and Romayne — *May they live in hope for, not fear of, the future*. I think most of us would wish the same for our children, but few of us are as resolute as Richard Hobbs and Denis Saunders in their efforts to change the ecological future of the world. I can think of no group of researchers that has worked harder to understand the impact of human society on the Australian landscape and to find ways to accommodate human needs and desires with ecological reality than the CSIRO Division of Wildlife and Ecology laboratory at Helena Valley in Western Australia. While many of us work hard at our research, few can claim to have achieved the level of communication of the Western Australians. For nearly a decade now, Saunders, Hobbs and their colleagues have organized, held and published a series of symposia and workshops on the impact of agriculture (and to a lesser extent, forestry) on the landscape and its wildlife. These proceedings have been international in scope and have brought together, in a way few others have achieved, scientists, farmers, resource managers, politicians, bureaucrats and environmental groups. On behalf of my children, Jeni and Myella, I want to thank them for their efforts.

Reintegrating Fragmented Landscapes is the proceedings of a workshop held on Rottnest Island, Western Australia in 1990. The workshop was attended by farmers from the Western Australia wheatbelt, researchers in ecology, agriculture, hydrology and economics, and land managers. The focus was on problems of the central wheatbelt; land degradation and the loss of wildlife and agricultural productivity as a consequence of clearing more than 90 per cent of the region's original vegetation. The objective was to explore ways to integrate management on a landscape level to resolve individual and regional problems. Although this book deals with the Western Australian wheatbelt in some detail, the message is relevant to agricultural districts throughout the world.

The book begins with a series of chapters that presents the geological and social background to change in the landscape and which describes the changes in wildlife, soil and hydrology accompanying the settlement and clearing of the wheatbelt. These are followed by a chapter by Bert Main that defines the problem of landscape reintegration. Main sets out the principles that need to be followed to establish functional systems in the reintegrated landscape. According to Main, a reintegrated landscape is one with a mosaic of agricultural, natural, and seminatural systems which function together to maximize biodiversity and economic gain by minimizing land degradation. This makes sustainable agriculture

possible, while retaining (or creating) a functionally diverse natural system. The principles are simple; the problem is how to achieve and maintain these goals at an affordable cost. The next two chapters discuss the integration of economic and financial considerations in an ecological and social framework. Lefroy, Salerian and Hobbs take a theoretical approach to the integration of ecological, economic and social values. The success of this model requires indicators that monitor the condition of four fundamental ecological processes: the cycling of water and nutrients, the flow of energy, and biodiversity as an expression of evolution. Humanity is viewed as part of nature. The authors conclude that "... a pattern of revegetation that blurs the distinction between agricultural land and nature ..." is central to solving the problems of the present system of land use. Whether or not this is achieved will depend on economic viability and our willingness as a society to subsidize measures that are uneconomic in the short to medium-term; attaining optimal land use is a social problem. Kubicki and co-authors discuss the integration of physical, production, financial and social issues into farm management plans. Not surprisingly, the integration of conservation and other long-term development activities into farming practices is neither easy nor without their financial and social costs. Nonetheless minimum levels of conservation can be met at the farm level and will eventually increase productivity and economic return. In discussing conservation management in fragmented systems, Hobbs, Saunders and Main also argue that the expenditure of resources for conservation must be justified in social and economic terms. They stress the need to manage fragmentation and integrate natural areas within the agricultural landscape. While this needs to be done at the farm level, a landscape approach is required that extends integration to a regional (and wider) level. This, of course, is what Landcare groups seek to achieve; integrating the conservation activities of individual land owners to meet regional goals. Hobbs and colleagues conclude that education is a priority and increased community awareness and understanding is essential if conservation objectives are to be achieved.

In the concluding chapter, Hobbs and Saunders ask "can we reintegrate fragmented landscapes?". They use the wheatbelt as a model and review the geological, historical, social, ecological and economic constraints on integration. They make the observation that the degradation of the wheatbelt and the fragmentation of the landscape occurred rapidly (most of the clearing happened in the last 50 years). Hobbs and Saunders see two possible benefits in this. Firstly, equally rapid recovery may be possible. Secondly, the remnants of natural vegetation that remain may be small, but they are often in good condition and still retain a substantial complement of the original biota. Although a fragmented landscape necessarily means "fragmented management" (i.e., farm by farm, reserve by reserve), with a strong communication network, good understanding of the issues, co-operation and good will, landscape

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integration is realistic. Hobbs and Saunders answer the question as to whether fragmented landscapes can be integrated, by saying "... simply that we have to reintegrate fragmented landscapes if we want to retain viable production and conservation systems". They also pick up on one of my favourite themes, and say that it is not enough for researchers to remain impartial observers, merely recording changes for posterity. We must also contribute solutions and we must also be involved as educators and communicators. It is not enough just to talk among ourselves, we must communicate with, educate and train land managers, farmers, politicians, bureaucrats and the wider community.

It should be clear by now that I think this is a very useful book and an important contribution to the integration of nature conservation objectives with social and economic goals. It is easy reading and would be useful in a variety of university courses. I plan to use it both in my first year course, an introduction to resource management, and in my fourth year course in conservation policy. I consider that it will be especially useful in highlighting the gains that can be and are being made in resolving environmental problems and to reinforce my message of the importance of co-operation and communication. I hope that it will also be read by conservation biologists, resource managers, and those interested in green politics as a model of how we might proceed.