

Book Review

Editor's Note: Too late for the Summer issue, this review of Larry Harris' *Fragmented Forest* arrived at the editor's desk. The reviewer, Fred B. Samson, is a research wildlife biologist with the U.S. Forest Service's Old Growth Wildlife Habitat Program. His thoughts on the book add another dimension to the review by Will Moir, carried in the Summer issue.

Larry D. Harris. 1984. The fragmented forest, island biogeographic theory and the preservation of biotic diversity. Univ. Chicago Press, Chicago and London, xviii, 211 p. With foreword by Kenton R. Miller.

In 1935 then director of the National Park Service, Horace M. Albright, was alarmed by "the extreme difficulty of preserving these (Park) wildlife elements as to the completeness of species, numbers of each kind, and naturalness of the environment, in face of mushrooming growth in park travel and alarming depletion of wildlife resources" (1935:VI). His concern reflected the "failure of parks as independent units by virtue of boundary and size limitations" and. . . "the injection of man and his activities into the native animal environments" (1935:13). One could ask, have these challenges for wildlife conservation in parks changed and, are the issues raised different from those of the 1980s? The answer for many researchers and managers would be "no."

In the 1930s, the emerging field of wildlife management gained both acceptance among other sciences

and recognition from the public with the appearance of Aldo Leopold's classic book, *Game Management*. Since then, a number of books have made major contributions to the field of wildlife management, particularly to the biology and management of big game in the western United States. There has not been a contribution that addresses the major issues for wildlife management in the broadest sense as did Leopold's book.

This has changed however with the appearance of a book by Larry Harris entitled *The Fragmented Forest. Island Biogeography Theory and the Preservation of Biotic Diversity*, published by the University of Chicago Press. In the book, Harris uses the old-growth forests of the Pacific Northwest to illustrate the application of island biogeographic theory to preserve biotic diversity. The first five chapters review the history of the area in terms of the characteristics of plant and animal communities and timber management. One is impressed with the history and detail given to the fragmentation of the forest and the description of the current mosaic of habitat islands.

Chapters 6 through 8 apply the equilibrium theory of island biology and ecological genetics to preserving wildlife in this fragmented habitat. The importance of area and isolation of habitat are considered within a framework of species extinction.

The equilibrium theory of island biogeography has been a conceptual focal point in the design of parks, refuges and natural areas for nearly two decades. This is, however, the first clear application to an inland landscape. In this framework, the importance of area and isolation of habitat are considered with regard to species extinction. The need to consider the potential effects of genetic isolation of populations is reviewed and a number of recent efforts in this field are cited.

There is mounting evidence that as a park or natural area progressively becomes more isolated – either genetically or from similar habitat – the likelihood for species extinction increases. This leads to a discussion of a regional system of national parks, wilderness areas, and natural areas as “building blocks upon which a conservation strategy may be hinged” (1984:89). This latter topic, in principle, is in agreement with several recent symposia that are charting the direction to a more comprehensive landscape approach to preserve biotic diversity.

I have a few reservations about the book. It does ignore major criticisms of island biology by some authors and the known effects of factors such as migration and mutation on the genetic structure of populations. The influence of environmental and demographic stochastic events, particularly as they relate to the extinction of small populations, is not covered in the detail it deserves.

Nevertheless, this book is a very significant contribution to the field of wildlife management. It may not be the heir apparent to *Game Management*, but it is clearly a step in the right direction and should be required reading for all resource managers.

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