ambitious. But perhaps that criticism is unavoidable when one deals with such a diverse family of complex phenomena. Finally, the book could have been improved if introductory and summary papers had covered the topics treated in the book more extensively than the ideas of the editor. Even though his ideas are interesting, they seem to be rather unrelated to the main body of the book. Perhaps it is unfair to expect an editor to remain a neutral collector of papers when, clearly, he has many unconventional ideas on the subject himself.

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Ecological Effects of Fire

Fire Ecology. United States and Southern Canada. HENRY A. WRIGHT and ARTHUR W. BAILEY. Wiley-Interscience, New York, 1982. xxiv, 502 pp., illus. $44.95.

The first plant ecology textbook to recognize fire as an ecological factor was published in 1947. Over the next quarter century a revolution in attitudes toward fire took place, and research on fire history and fire effects on plant communities has increased exponentially. The first book devoted solely to fire ecology was published in 1974 (*Fire and Ecosystems*, T. T. Kozlowski and C. E. Ahlgren, Eds., Academic Press), and now a second one is available. The authors of the present book fairly claim that it is a "progress report" in a rapidly developing field.

The book begins with chapters on temperature and heat effects, soil and water, and wildlife. Eleven chapters are devoted to particular types of plant communities, such as grasslands, chaparral and oakbrush, ponderosa pine, spruce-fir, and coast redwood and giant sequoia. These chapters discuss fire history, distribution, climate, soils, vegetation, fire effects, and management implications. A detailed chapter on prescribed burning techniques concludes the book.

Both authors are range specialists, and it is thus no surprise that chapters on grasslands and shrublands are excellent. Fire effects are related to various prescriptions for igniting controlled fires, and the effects of varying frequencies and intensities of fire are clearly presented. Each of the grass-shrub chapters exhibits considerable breadth, only occasionally at the expense of a thorough treatment of the plant community. The chapter on chaparral covers a much wider array of communities than was covered in *Fire and Ecosystems*. However, the treatment of California chaparral is far too brief in comparison to that in the earlier book and is marred by numerous misspellings (at least 10) of scientific names (including the most common species, *Adenostoma fasciculatum*).

Though there appears to be a slight overlap between some chapters (for example, those on seral ponderosa pine forests and the drier Douglas fir forests), the wide variety of forest types have generally been organized into sensible groupings. One surprise is the chapter on coast redwood and giant sequoia, related taxonomically but not ecologically; the discussion of fire effects in this chapter is largely species-specific and is less ecosystem-oriented than the discussions in other chapters. In most of the forest chapters, stand development as related to fire is covered, although only marginally, for the study of the subject has just emerged as a discrete subdiscipline. That it is covered at all is one of the reasons the authors consider their book to be an up-to-date treatise.

Some introductory treatment of plant adaptations to fire and fire history methodology would have been desirable. Both subjects are briefly discussed in the middle of the book in the chapter on Douglas fir, but a treatment of both subjects that was applicable to all the chapters on plants would have been useful. In particular, point, cluster, and area fire frequencies are seldom adequately compared in the open literature, and the proper interpretation of them would have been a strong addition.

The major strength of the book is a management-oriented approach, perhaps best exemplified by the long chapter on prescribed burning technique. The authors wisely avoid trying to present a complete fire behavior manual and suggest that proper training coupled with increasing levels of experience is the key to successful burning. A discussion of firing techniques, with emphasis on planned ignitions, makes up the bulk of the chapter.

Photographs in the text show many before-and-after scenes, and the maps of types of vegetation provide good orientation for the reader. In my copy, an occasional map did not print well (white pine, p. 330) and one map (Douglas fir and associates, p. 239) seems to have the same pattern designating two forest types.

The book is clearly the best work on the ecological effects of fire in the United States and southern Canada. It is an exceptionally balanced treatment of a tremendous variety of vegetation types and will be considered the definitive treatment of the subject to date.

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(Continued on page 1280)