



Book Reviews

Of Fire, Water, People

■ **Fire Ecology of Pacific Northwest Forests.** James K. Agee. Island Press, Washington, DC, 1993. 495 pp., illus. \$50.00 (cloth, ISBN 1-55963-229-1).

Humans have had a long and complex, changing relationship with fire in the forest. In *Fire Ecology of Pacific Northwest Forests*, University of Washington professor James Agee makes clear that these relations are evolving at a quickened pace. The pace of change is particularly quick in the Pacific Northwest, where extensive forest cover, dry summers, and steep climatic gradients create a regional landscape in which fires play an important role, whatever their frequency, intensity, severity, and consequences.

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Agee is a most appropriate author to cover this broad topic: he has done research on fire history and effects for more than two decades and participated in many recent scientific panels advising policymakers on fire and ecosystem management. Agee tells the region's fire story in two ways. Technical aspects are covered in chapters on methods of interpreting fire history; effects of fire; and the fire regimes characteristic of the region's varied forest types, ranging from the very wet, infrequently burned coastal forests to oak woodlands where native people may have set fires annually.

Social aspects of fire are covered in chapters titled "The Cultural Forest Environment" and "Fire in Our Future," which consider the place of fire in management of ecosystems, parks, and wildernesses; new forestry; preservation of the northern spotted owl; forest health in the eastern Oregon and Washington Cascades; and climate change.

As we reevaluate our approach to managing the public forestlands of the Pacific Northwest, it has become clear that fire plays complex roles in ecosystems and in society. Agee summarizes the changing history of policies for fire suppression and burning of logging residues. He points out, for example, how management policy governing slash burning has shifted dramatically in response to concerns over escaped slash fires, loss of soil productivity, air quality, and other factors.

Agee makes it clear that the future role of fire in management of ecosystems will undergo further debate and change as society attempts to balance competing objectives of protecting homes and wildlife habitat while maintaining natural processes and forest health. This attempt is particularly challenging in ecosystems where fire suppression has contributed to buildup of fuel, pests, and pathogens. In all Pacific Northwest forest types, information on fire history has assumed a critical new role in design of ecosystem management, but this approach raises new questions—for example, how closely should we attempt to mimic wildfire in forest management? Agee argues that ecosystem management, "regulating internal ecosystem structure and function, plus inputs and outputs, to achieve socially desirable conditions" (p. 390), and adaptive management provide the best social processes for balancing environmental protection and commodity production objectives.

I hope that our understanding of fire history and effects will evolve substantially in the near future as well. Careful, quantitative, dendrochronologic analysis of fire history has been conducted in only a few dozen sites in the region; in

some widespread forest types, only a few studies provide a basis for interpreting fire regimes. I also hope that understanding fire regimes under natural and various management conditions will grow through increased modeling of fire behavior, paleoecological analyses of pollen and charcoal back through the Holocene, application of concepts and quantitative tools (e.g., neutral models) from landscape ecology, and mathematical and statistical approaches to relating patterns of fire frequency and severity to patterns of vegetation conditions. The objective is to better understand the influences of vegetation, climate, topography, and other factors on fire regimes.

Agee intends this book for wildland managers interested in the role of fire in natural forest systems of the Pacific Northwest, but it deserves a readership from other disciplines and regions. The book itself is nicely done and readable, although some photographs are small, and I would have appreciated more maps and aerial photographs of actual fire patterns on the landscape.

I have one suggestion for the next edition: that it offer a much stronger quantitative basis for characterizing fire regimes and their effects. Ecosystem managers will need that.

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- **Searching Out the Headwaters: Change and Rediscovery in Western Water Policy.** Sarah F. Bates, David H. Getches, Lawrence J. MacDonnell, and Charles F. Wilkinson. Island Press, Washington, DC, 1993. 242 pp., illus. \$35.00 (cloth, ISBN 1-55963-217-8), \$17.95 (paper, ISBN 1-55963-218-6).

Searching Out the Headwaters searches for a new water ethic that melds the best of the old with principles that will serve the future. It seeks the "truest headwaters" among the many ways that people relate to and use water. It aims to provide concerned citizens, policymakers, legislative staff members, and others with the information they need to help "unravel the accumulation of rules and practices, sort them out, dispose of some, keep others, and create some new ones."

A basic premise of the book is that the truest headwaters can only be found through a thorough understanding of the diverse ways that people have related to water in the past and present, and by addressing the needs of all affected communities in future water decisions.

The book's own foundation of diversity is created not only through its four coauthors, all associated with the University of Colorado School of Law, but through its reliance on ten discussion papers prepared by experts in law, policy, philosophy, Indian rights, and history (including Joseph L. Sax, Helen M. Ingram, Theodore M. Schad, Holmes Rolston III, and John E. Echohawk). The book came out of a collaborative workshop including the four principal authors, discussion paper authors, and others associated with the University of Colorado's Natural Resources Law Center.

Searching Out the Headwaters places the reader squarely in the present, with a strong sense of how we got here and some urgency about the need for reform. Part of the reason water policies do not work today is that the relationship between people and water has been viewed too narrowly in the past. Chapter 2 ("Water in a Changing West") conveys a broader picture, describing how water has been used for sustenance and small-scale irrigation, spiritual and community identity, navigation, large-scale irrigation, industry, urban development, and as an integral part of the natural and human environment.

The diversity of how people relate to water is amplified in chapter 3 ("Voices") with extended quotations from, among others, Wallace Stegner, Aldo Leopold, Mary Austin, William Kittredge, and Woody Guthrie. I especially enjoyed this passage from Wallace Stegner:

By such a river it is impossible to believe that one will ever be tired or old. Every sense applauds it. Taste it, feel its chill on the teeth: it is purity absolute. Watch its racing current, its steady renewal of force: it is transient and eternal. And listen again to its sounds: get far enough away so that the noise of falling tons of water does not stun the ears, and hear how much is going on underneath—a whole symphony of smaller sounds, hiss and splash and gurgle, the small talk of side channels, the whisper of blown and scattered spray gathering itself and beginning to flow again, secret and irresistible, among the wet rocks.

The text at times becomes too superficial, finding its voice again when describing a specific example that the authors are clearly familiar with. Chapter 4 ("The West Today"), for example, takes a slow ramble through population statistics and data on water use, punctuated with more engaging details like the story of the struggle over transmountain diversions in Colorado.

To some extent, unevenness is the price of addressing such a broad subject, but hard editing could have improved things (and eliminated an