

WILD FORESTS, CONSERVATION BIOLOGY, AND PUBLIC POLICY

By Alverson, Kuhlmann, and Waller

A BOOK REVIEW BY ROBERT G. WILLHITE

HOW MUCH OF EACH TYPE OF FOREST must be set aside in a preserve to ensure its perpetuation? This age-old question is the premise of the consciousness-raising book, *Wild Forests, Conservation Biology and Public Policy*. Accompanied by an impressive literature review, the work examines the conservation ethic, history, law, and natural forest dynamics as they relate to preserving forest resources. The USDA Forest Service and its "multiple use" management policies are criticized for not adequately protecting forest lands, with some mention of the USDI, Bureau of Land Management. One solution the authors propose is to reassign the biodiversity protection responsibilities to another agency. The National Park Service might fit their model. The authors maintain views that closely fit the resource *conservation* mandates of the NPS Organic Act (legally interpreted as preservation), and they write that national parks and wilderness areas could form the core of many of the needed forest preserves.

On public lands where timber harvesting is part of multiple use, the authors propose that forest management planning should "require proof of harmlessness to be furnished by those who propose intensive disturbance of the landscape." Thus, they demand the impossible of these other federal agencies because throughout the book they "readily admit that vast amounts of this information are unknown to us all." Such an unrealistic view only further frustrates resolution of important issues and does not help the agencies charged with making appropriate environmental decisions. This unreasonable expectation clouds their otherwise valid discussion to seek change in forest management. In general, the au-

thors present concepts that need consideration by foresters, land managers, agencies, and timberland owners alike.

GUILT—REASON FOR CHANGE?

Early in the text, the authors succumb to, or apply, a popular belief that *guilt* about past human activity is the reason we must make changes for the future. For example, they hold rigidly to the view that precolonial forests were pure and pristine. To the contrary, research in the early 1900s by Harvard University found that journals of colonists like Cotton Mather in the 1600s described forests whose trees, intolerant of shade, could not reproduce in late successional stages. Surprised, the Harvard researchers analyzed the "pit-mounds" associated with windthrown root wads, and found that the precolonial forests did not retain their "virgin"-ity. Massive periodic disturbance from hurricanes had occurred about every 150 years, sometimes associated with subsequent fire. Although the authors recognize and thoroughly discuss the role of such natural disturbances, they do not fully incorporate these concepts into their arguments for improved forest planning and management.

Their theme of guilt continues when they suggest that humans caused extinctions of the ground sloth, giant beaver, saber-tooth cat, and horse. This is a highly controversial premise with little scientific evidence to support it. Some kill sites of mastodons with indications of butchering by humans are known, as well as "jump sites" where bison were run off

cliffs. Humans cannot be singled out as the cause of extinction, but may have added to the natural influences of vulcanism and climatic changes that forced adaptation or migration, in addition to extinction. The book effectively makes the point that changes in present forest management are needed without including these common guilt-directed justifications.

DIVERSITY MANAGEMENT AREAS

The authors call for diversity management ar-

reas (DMAs)—large tracts of forest that include old-growth and some natural disturbance—as a solution to the problem of diminishing forest resources (fig. 1). The DMA model uses concentric rings where management is minimal in the center and more intense on the periphery. This concept was taught in forestry schools in the late 1960s and is now widely applied in the protection of wilderness areas. They state that timber and game management, and many forms of recreation, would be focused elsewhere but they do not propose where. They recommend that the minimum-sized DMA be about 50,000 acres or roughly 75 square miles. They state that domestic law and policy need emphasize management precautions to prevent a loss in biodiversity. Their charge

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that species and site management need to be changed is well supported in their case studies and citations.

SOCIAL FACTORS

The authors do not address a dilemma in their call for natural disturbances by fire, wind, and ice damage; society probably will not tolerate *extensive* losses of forest resources imposed by unchecked

ness areas, developed after the Yellowstone conflagrations. After extensive wind damage, managers typically consider reforestation efforts or wood salvaging operations to reduce wildfire risks.

Addressed at length are the problems of fragmentation, "edge effects" from harvesting, and roads caused by rapidly increasing human infrastructure in much of our forest landscape. However, they never suggest how to resolve these problems. They also note the jurisdictional challenges posed by state, county, and private ownership of forest lands that would need to be addressed for DMAs to succeed in the eastern United States. They fail to mention a similar, widespread situation in the Sierra-Nevada mountains of California and Oregon where land ownership is fragmented as a result of railroad land grants meant to encourage westward expansion. Land acquisition by government is an integral part of their proposed solution, albeit not a popular one at present.

A major factor not pursued in their discussions is economics. As the U.S. government withdraws lands from timber harvest, it also reduces revenues to the U.S. Treasury. Reduced federal budgets affect agencies and their abilities to manage forest resources. How can lost production on federal lands be offset by more intense management on private forest lands? Only about 14% of the nation's forests is owned by industrial timber companies but more than 50% is owned by smaller, private entities; economics is the primary force affecting their decision whether to harvest or not. Reduced taxes for incentives further limit potential treasury funds. These issues

will require close examination and resolution before the authors' ideas can be put in to practice.

INFORMATION NEEDED

A key point made regarding managed forest lands is that human-applied processes must imitate nature. In citing forestry professor Jerry Franklin's "biological legacy" of leaving undisturbed remnants in managed areas, the authors furthered their call for responsible forest management. Foresters would probably provide the greatest environmental benefit by reflecting upon and applying these simple techniques. Conscientious foresters want to take good care of their lands, think they have most of the solutions, and believe that they understand the ramifications of their actions. Unfortunately, the authors correctly note, despite good intentions, many management decisions are not backed by complete information.

The authors make a clear and concise case for the importance of research and inventory and monitoring, matched with appropriate budgets. According to them, a separate agency, such as the National Biological Service (now the USGS Biological Resources Division), is the best way to meet this charge.

It would be interesting to hear the authors' opinions of some of the ongoing ecosystem management plans, such as the Snake and Columbia River systems in the West. One might guess that they would consider any planning venture to date as inadequate because necessary information is not yet available. Have the authors provided the solution for preserving forest biodiversity? Time and society will decide.

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Figure 1. The diversity management area idea proposed by the authors focuses on the preservation of large blocks of relatively unmanaged lands. Falling short of wilderness designation, the (lack of) management scheme concentrates consumptive and recreation uses elsewhere to conserve old-growth forest and biodiversity.

natural processes in the East and many areas in the West. Policies can be formulated that consider both the benefits of periodic fire, and weigh the potential risks of allowing fires to burn. An example is the NPS policy of fire control in wilder-