

INDUSTRY PERSPECTIVES ON ECOSYSTEM MANAGEMENT: AN EVOLUTION IN FOREST SCIENCE AND POLICY

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ABSTRACT

After more than fifteen years of public planning, decision-making, appeals and litigation, ecosystem management holds potential to reduce the conflict and ease the gridlock which plagues our national forests and other federal lands. To be successful, we must reach a common understanding of what "ecosystem management" is and what it is not.

As a tool to achieve land management goals, ecosystem management is an evolution in current thinking, not a "revolution." It must be based on science and past experience, coupled with sound research. On the national forests, ecosystem management must be implemented through the forest planning process. Goals must still be defined through national forest planning and, consistent with plan requirements, ecosystem management must be broadly applied across the land base to achieve those desired goals. Such an approach will still require a range of forestry practices, identification of projected outputs, monitoring to assure success and improve our knowledge, and a commitment from everyone involved to accomplish results. Only then can ecosystem management lead to decisions which may be implemented on the ground, provide positive benefits to the land, and promote greater certainty for communities dependent upon the federal lands for their economic and social well-being.

Keywords: ecosystem management (EM), federal lands, science-based, results-oriented, adaptive management, land management planning

INTRODUCTION

I am pleased to be here to offer industry's views on ecosystem management. As you might imagine, there is a great deal of diversity within the forest products industry when you ask what they think about this subject.

The answers reflect the diversity of our membership: the American Forest & Paper Association (AF&PA) includes both wood products and paper companies; large private landowners, small non-industrial landowners and Tribal timber corporations; companies wholly dependent on public timber supplies; large integrated corporations and small "mom and pop" sawmills; and regional and specialty-product associations. Our members also reflect the regional diversity of our nation's forests—from the

West Coast and inland forests, to the dry Southwest, the upper Lake States, the Northeast, and the deep South.

WHAT IS ECOSYSTEM MANAGEMENT?

In spite of this diversity, or because of it, the industry has been working together to consider what ecosystem management means to us. In doing so we discovered many of the same challenges Dr. Jensen described—especially in coordinating the different views and reaching common goals. We define "ecosystem management" (EM) as a resource management system designed to maintain or enhance ecosystem health and productivity.

It must include the production of essential commodities and other values, but it should not be driven by output targets, land allocations or management constraints. Instead, it should be based on defining the forest conditions desired to achieve ecosystem goals and objectives. But the goals and objectives must include economic and social needs, since humans are a part of the ecosystem.

For federal lands, industry believes EM holds potential to reduce the conflicts that are now plaguing decision-making and management of our national forests and BLM lands. It also is essential if we are to provide for the long-term health and ensure the sustainability of our national forests. But for this to work, we need a common understanding of what ecosystem management means to federal land managers and to the public. We have to find a way to "speak the same language" so that we can communicate and understand what each other is thinking. Clearly articulated definitions and principles are also essential so that we can determine how to implement ecosystem management.

ECOSYSTEM MANAGEMENT MUST BE BASED ON SCIENCE AND EXPERIENCE

AF&PA agrees wholeheartedly with Chief Thomas' principle that ecosystem management must be based on "the best science." I would add that this science includes the knowledge gained from our past experience—and in the Intermountain West, we have nearly 100 years of experience managing and altering forested landscapes (not counting the much longer history of management by Native Americans). But admittedly, our experience and knowledge has focused mostly on managing trees, not the whole ecosystem.

The shift from past practices to ecosystem management means we must now take a broader look—to better integrate the sciences of wildlife management, hydrology, entomology, pathology, soils, sociology (and the list goes on) with the more traditional

fields of silviculture, pest management, economics and fire science. However, we must also recognize that although we do not have all the answers, we must move forward with the information that we do have, while working to improve our knowledge base. Taking a “don’t do anything until we know more” approach will do nothing to improve our knowledge, nor will it enable the agency to meet its mission to take care of the land and provide goods and services for the American people.

As we take that broader look, we must continue current research and initiate new efforts to improve our understanding of ecosystem processes and function, so that we can better determine the impacts of our actions and identify the options available. We must incorporate adaptive management principles into everything we do to test our predictions against the results, to improve our actions, and to reduce the uncertainties. Such an approach helps to limit the risks of taking actions. We must then act based on our best knowledge—and understand the risks of taking a “no action” approach as well.

ECOSYSTEM MANAGEMENT IS AN EVOLUTION, NOT A REVOLUTION, IN FOREST MANAGEMENT

Forestry practices and federal policies have continued to evolve over time, but with change there have been some constants as well. For example, the forest reserves were established to provide a continuous supply of timber and to protect water supplies. Today the mission of the Forest Service has been broadened to provide for recreation, fisheries and wildlife, protection of historic resources, and other public values. But timber, minerals and forage remain important components of the multiple-use mandate. When Congress enacted the Resources Planning Act (1974) and then the National Forest Management Act (1976), it established a process for integrating the management of the many and varied resources on each national forest. But after more than fifteen years, most of the plans have now been developed and implemented with varying degrees of success. I believe the success has depended in part on how well different resource uses were integrated—did they take an interdisciplinary approach, or was it “multidisciplinary”?

We hope the agency’s adoption of ecosystem management will help to strengthen the interdisciplinary nature of the planning process and enable each forest to better respond to public concerns for resource management and use. But in this evolution of policy development, several principles must be adopted. AF&PA believes the following six principles are key to making ecosystem management an effective tool.

KEY PRINCIPLES OF ECOSYSTEM MANAGEMENT

1. Recognize that humans are part of the ecosystem and EM must consider the full range of human needs.
2. Healthy, functioning ecosystems are essential to the health and sustainability of human societies and the quality of

human life. Human activities must maintain or enhance long-term sustainability of the ecosystem.

3. Forest ecosystems are dynamic, resilient and subject to a variety of on-going disturbances. They cannot be “preserved” in a static condition.
4. Active resource management is an important and often essential component of ecosystem management and the conservation of biodiversity.
5. Ecosystems are adaptable to change. A wide range of biologically-sound management options exists. Identifying the “best” option is both a social and biological issue.
6. It is not possible to predict with complete precision the outcome of management decisions within a given ecosystem. Proper use of adaptive management, including proven silvicultural practices, will help to limit risk. In addition, a coordinated program of research and monitoring, which builds on existing knowledge, is necessary to develop sound adaptive management strategies.

IMPLEMENTING ECOSYSTEM MANAGEMENT

If we can agree on the above definition and principles, then how will EM be implemented? Here the federal agencies must rely on their land management planning processes. The Forest Service, for example, must work within the goals, objectives, and other decisions in their current forest plans or they must amend the plans to incorporate any necessary changes. I believe, for the most part, the plans should accommodate this new approach since EM is a tool, or a method, not a new and different goal. However, I view the forest plans as inconsistent with ecosystem management in three significant respects.

Ecosystems Include the Whole Landbase

First, ecosystems include the whole national forest land base. By contrast, each national forest plan is based on designation of the land base into discrete management areas based on the planned land use. These management areas have little or no relationship to where or how they lie in the landscape. In addition, the plans incorporate standards and guidelines for management that apply to the management area or to specific types of activities.

To implement ecosystem management, foresters should re-evaluate these land management categories. Ecosystem management must be applied across the entire national forest landscape, consistent with the legislative authority for agency lands. I do not mean to promote putting the next timber sale in the wilderness, but EM must not be limited to those lands designated as “suitable timberlands” in the current forest plans, for there are ecosystem concerns that must be addressed on these and adjacent lands. If management activities are to maintain, enhance and, where necessary, restore the health and productivity of our national forests, then we need to look at the entire land base to determine the management needs.

Standards and Guidelines Must Be Flexible

Similarly, inflexible land allocations and enviable standards and guidelines are not compatible with the ecosystem management concept. Land managers must have the experience and flexibility to explore all reasonable options and design site-specific management practices that most efficiently achieve a forest's "desired condition." EM cannot be merely another layer of standards and guidelines overlaid onto the existing forest plans.

On-the-Ground Management Should Achieve Desired Conditions

Finally, on-the-ground management should focus on practices designed to achieve and maintain a "Desired Forest Condition." Some of these practices will produce predictable levels of resource outputs. While output "targets" would not drive the management process, forest managers must be accountable for achieving the desired conditions and resulting predicted outputs.

This is a significant and essential change, since currently there is absolutely no predictability or assurance that planned goals will be achieved. But if the Forest Service and other land management agencies are to garner public (and congressional) support for ecosystem management, the agencies must demonstrate that they can and will achieve their predicted results.

EXAMPLES OF ECOSYSTEM MANAGEMENT

Although ecosystem management is still a new concept, there are already some good examples under development in the West. I will describe just two of them here.

Boise Cascade Corporation's Teanaway Forest

In one ecosystem demonstration project in Central Washington, Boise Cascade Corporation is working to develop feasible approaches and methods of ecosystem management across landscapes that include private forest lands, and to show where silvicultural practices can be used to achieve desired future conditions in their forests. On the company's Teanaway Forest, they have set a goal to refine the forest management practices the company uses to further enhance the biological diversity and health of its working forests.

Beginning this spring (1994), the company is working with independent researchers to document wildlife and analyze its habitat on company-owned and managed lands. Then, based on this data, wildlife biologists, foresters and other scientists will make recommendations to further improve habitat quality for a range of species including, but not limited to, those that are threatened or endangered. This effort will be expanded over the next five years with additional experiments on wildlife and fish habitats, watershed functions, and special areas such as wetlands.

One of Boise's goals is to encourage discussions involving the public, federal land management agencies, and others in industry.

With clearly defined ecological objectives and a forest management plan to meet those objectives, the company hopes to demonstrate how private landowners and public agencies can develop practical ecosystem management plans to enhance forest biodiversity while providing wood fiber to meet society's needs.

Potlatch Corporation's East Fork of Meadow Creek Landscape Management Cooperative

Last summer (1993), Potlatch Corporation entered into a cooperative pilot planning effort for a 6,000 acre watershed on the Palouse Ranger District of the Clearwater National Forest. In this effort, where Potlatch and national forest lands are intermingled, the company proposed a process to define common management goals that respect the differences in specific management objectives.

To accomplish this with a common base of information, the land managers worked with a data base that identified key forest structures and their function on the landscape. This approach protected the confidentiality of company and agency inventories while facilitating cooperative planning.

The cooperators conducted an assessment of current conditions and defined resource management objectives based on the current conditions and the desired end results. For example, in the case of the Forest Service, any activities on the Clearwater National Forest must be consistent with the adopted forest plan and must be designed to improve watershed conditions based on a settlement agreement resulting from a legal challenge of the plan. In contrast, Potlatch's watershed objectives are designed to meet or exceed water quality standards for the State of Idaho.

Throughout the project, hydrologists, wildlife biologists, foresters and GIS specialists worked together to assess the conditions and evaluate management options to achieve each landowner's goals. I should underscore that the GIS technology has provided a new and essential tool which enabled the partners to evaluate the effects of planned or possible activities on future landscape conditions. Alternatives were generated and tested prior to plan adoption. Based on the results, Potlatch identified where harvesting should occur on its ownership and determined the appropriate practices needed to achieve the overall management goals. The Forest Service, on the other hand, was able to identify potential actions that may be proposed to implement its forest plan. Any such projects would first be proposed and analyzed through the NEPA process before a decision could be made and implemented.

Several important tools were identified as a result of the Potlatch cooperative effort. First, the ecosystem should be divided into landscape size units, or, using the Potlatch definition:

"That portion of geography the mind can comprehend in a single view."

Like an ecosystem, the landscape may change in size depending on your viewpoint: are you on a mountain top, in an airplane, or are you looking back from the Hubble Telescope?

To integrate data at the landscape level, it will be essential to have GIS capabilities so that timber inventories can be integrated with information about understory vegetation, wildlife and fisheries data, soils and slope, even precipitation and other biological and physical factors.

Second, while information can be integrated at the landscape level, Potlatch found that data should be collected at the stand level for efficient analysis and to aid subsequent implementation. This provides information that can later be disaggregated back to the site for implementation purposes.

Using stand level data and analyzing the effects at the landscape level enables the land manager to identify past disturbances and make predictions for future changes at a scale that is manageable on the ground.

THE LAST INGREDIENT: A COMMITMENT TO RESULTS

In conclusion, for ecosystem management to be successful, federal land managers must fulfill their commitment to making decisions in an open process, utilizing public input, and addressing public concerns.

Both society and our level of knowledge about ecosystems are undergoing continuous change. These conditions require flexibility to respond to evolving issues and new information on a timely basis. Therefore, forest planning must be viewed as a fluid, ongoing process rather than a problem to be "solved", a set of procedures to be complied with, or a task to be "completed" every ten years.

New regulations or policy directions developed to implement ecosystem management on federal lands should lead to a simplified and flexible planning process. But in doing so, the Forest Service must be careful not to short circuit its plan revision process. The process should provide improved opportunities for the Forest Service (or other agencies) and the public to work together to define concepts, test alternative strategies, monitor the outcome and make refinements based on the results.

Goals must still be defined through national forest planning and, consistent with plan requirements, ecosystem management must be broadly applied across the land base to achieve those desired goals. Such an approach will still require a range of forestry practices, identification of projected outputs, monitoring to assure success and improve our knowledge, and a commitment from everyone involved to accomplish results. Only then can ecosystem management lead to decisions which may be implemented on the ground, provide positive benefits to the land and society, and promote greater certainty for communities dependent upon the federal lands for their economic and social well-being. And perhaps most importantly, with ecosystem management we can then work effectively to sustain our public forests in a healthy condition for the long-term.

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