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VIEWPOINT

The "new forestry"

CURRENT debate over the fate of remaining old-growth forests focuses almost exclusively on deciding how many acres should be devoted to commodity production and to preservation.

Presumably, commodity land would be managed intensively for high timber yields. Preserved land would be withdrawn from timber harvest. Interested parties apparently feel their objectives can be achieved only with such an exclusive division of land. Commodity production and preservation of ecological values are assumed incompatible. Unfortunately, we foresters have not provided convincing evidence to the contrary.

Limiting the debate in this way is unfortunate. Society needs commodities from forest land. Society also wants and needs amenities and ecological values maintained. Many people also want long-term rather than short-term perspectives in resource stewardship emphasized and more options in the face of future uncertainties, such as potential global climatic change.

Are there alternatives to the stark choice between tree farms and legal preservation? I believe ecological research is providing us with the basis for such alternatives. We have begun to understand the complexity of forest ecosystems. For example, standing dead trees and down logs contribute to the long-term productivity of forests and streams and provide critical wildlife habitat.

Landscape ecology reveals relationships between forest stands and management activities within river drainages. Problems, such as fragmentation of forest areas into small, vulnerable pieces by cutting practices, have emerged from such studies. We also understand much better how forests regenerate following such catastrophies as wildfires and windstorms. These natural events typically leave behind larger legacies of energy, nutrients, physical structures, and even living organisms for the young forest ecosystem than do most cutting practices.

Such knowledge can be the basis for a kinder, gentler forestry that focuses equally on commodites and ecological values. Such a "new forestry" uses ecological principles to create managed forests superior to those created under common current forestry practices. Ironically, we have finally begun developing a sound ecological basis for the concept of multiple-use forestry.

Stands with structural diversity are essential to maintenance of many ecological values, including many wildlife species. One reason that old-growth forest ecosystems are so valuable as wildlife habitat is the varied structures of such forests—trees of all sizes, down logs, large snags, and multilayered leaf canopies that extend from crowns to ground. One objective of the new forestry is creation of managed stands that have higher levels of structural diversity than under current practices. Retaining more down wood, snags, and wildlife trees at the time a forest is cut is a demonstrated way of achieving this objective.

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Leaving some large green trees may be another valuable approach to creating structurally diverse forests on many cutover areas. In this way, new forests are created that have a mixture of tree stands, including some larger, older trees. Retaining large green trees can yield many ecological benefits in terms of ameliorating site conditions and providing habitat for animal and plant species that might otherwise be eliminated.

It is feasible to leave large trees on cutover acres. Foresters often use shelterwood cuttings to ensure regeneration: a number of trees are left to reduce climatic extremeties and provide seed. Similar densities of "leave" trees could remain through the next growth cycle rather than being removed after a few years, as with shelterwood. This is not the same as "selection" forestry, where individual or small groups of trees are removed.

New forestry is also concerned with the overall effects of practices at the level of river drainages. Most managed landscapes, to provide adequately for ecological values, must include significant and well-distributed areas reserved from logging; these would be sites that have special ecological value, such as streamside corridors and research sites. Functionally, these sites would provide islands rich in biological diversity within a forested area dominantly committed to some level of timber production. Cutting patterns would be an important consideration.

The system of dispersing small clearcuts through a forest, now used widely, can fragment the remaining forest into patches that are too small to provide habitat for some animal species and vulnerable to windthrow; dispersing cuttings also has substantial economic costs. Aggregating cuttings in large blocks may be a better alternative in some circumstances, especially if cutover areas are treated to retain more structural diversity.

Such modifications of stand- and landscape-level activities are being tried. Pilot tests of such concepts are underway at numerous locations by the U.S. Forest Service and the Washington Department of Natural Resources. Some practices, such as providing for snags and down logs, are being widely adopted, while others, such as retention of large green trees and clustering or aggregating of cutover areas, are being explored.

A shift in agenda is needed. Industrial users must recognize that society views forest land as more than agricultural land with a slow-maturing crop, and it expects more of that land. Foresters need to acknowledge further that what is good for timber production is not always best for other forest values. Conversely, environmentalists must move away from preservation as the sole solution for many social objectives. Reserved land is needed to preserve many ecological values, but most forest land, particularly highly productive, ecologically diverse sites, will be used for commodity production. Hence, management of this commodity land is critically important to us all.

Incorporating ecological knowledge into management systems for the compatible production of commodities and protection of ecological values is critical. Such a new forestry concept should occupy a central place in the current debate as the basis for sharing some of the pie, rather than dividing it.

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