

# Timber!®

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## **“New Forestry” & “New Perspectives” on National Forest Lands**



**U.S. Fish & Wildlife Service:**  
**Moving beyond the northern spotted owl**



# New Forestry:

Mention the term New Forestry among a group of foresters, and not only will you elicit many conflicting definitions, but as many differing responses. In fact, you may be a witness to a riot. Such is the depth of emotions stirred by the concepts embodied in New Forestry.

Some people believe New Forestry is the ultimate tool for conflict resolution among resource user groups, capable of delivering all the desired forest resource values and outputs and eliminating much of the polarization and debate over forest management practices.

Others believe it is a mechanism for 'business as usual,' or even a ploy designed to allow timber harvesting in roadless areas, parks and Wilderness areas.

Some believe New Forestry to be the ultimate failure of resource managers to be responsible and to

stand up for forestry in the face of vocal opposition.

Part of the reason for this high emotional pitch is the lack of a clear consensus on the value and the objectives of New Forestry.

Dr. Jerry Franklin, perhaps the world's best known authority on the subject, writing for the November/December 1989 issue of *American Forests*, helps define some of the principles of New Forestry.

According to Franklin, the key to understanding New Forestry resides in the recognition that forest ecosystems are complex and diverse, and that the key to maintaining the resilience and future health of forest ecosystems depends on maintaining that complexity and diversity through time, over the widest possible geographic area.

Borrowing a phrase from Presi-

dent Bush, Franklin describes New Forestry, as a 'kinder, gentler forestry,' designed to deliver the benefits of managed forests — forest products and commodities, air and water quality, wildlife habitat and recreation, — along with species diversity, 'biological legacies' and the protection of ecosystem functions.

## Birthplace of New Forestry

Franklin's work at the Andrews Experimental Forest, located on the Blue River Ranger District of the Willamette National Forest, provides some insight into how the principles of New Forestry have evolved.

According to Franklin, "Our ecological studies at the Andrews Experimental Forest began in the early 1960s with a concern on the part of hydrologists and geomorphologists about the effects of timber cutting on floods.

"This led to studies on water, energy and nutrient cycles. As we progressed, it became clear that nutrient budgets up to that time had failed to take adequate account of large organic debris and standing green trees," says Franklin.

Further research at the Andrews Experimental Forest led to the proposition that large downed woody debris and standing green and dead timber play a far more important role in nutrient cycling, habitat needs and soil stabilization than had previously been suspected.

In addition, large woody debris



A plantation of young Douglas fir (foreground) is backed by a New Forestry harvest site. Some foresters worry about the potential for windthrow, insect infestation, wildfire and lack of future production on such sites.

# An Improved Version?

was found to have important implications for aquatic habitat, according to Franklin.

Eventually, a portion of the large woody debris enters stream channels, providing velocity barriers, and slowing stream flows long enough for decaying vegetation to release nutrients.

These velocity barriers create impounds necessary for fish spawning and rearing which are also used by other water-borne wildlife.

Eventually research extended into the structure of forest stands, from below the ground level, into the forest canopy. "Our scientists climbed into tree canopies to find out what happens there and what lives in them," says Franklin.

"Out of this research came a recognition of the incredible diversity of invertebrate life in old-growth forests, especially insects that are predators or parasites on other insects. In contrast, invertebrate communities in young forests are heavily weighted toward insects such as aphids that eat plants," says Franklin.

"From this starting point, we theorized that old-growth forests may be a major source of predators and parasitic invertebrates for adjacent young forests. As a corollary, we realized the value of retaining trees of diverse ages in managed forests," says Franklin.

Observation of the mechanisms of nutrient cycling also led Andrews researchers to theorize a strong link

between mycorrhizae (subterranean fungi), rodents, whose feces spread the fungi among tree roots, and nutrient uptake in growing trees.

Together, these observations led researchers to propose an entirely different set of management prescriptions designed to preserve 'biological legacies' in areas where timber harvesting is allowed.

## A New Forestry Site

A visit to a New Forestry site shows clear differences between the current standard practices of harvesting, debris removal and reforestation, and the practices embodied in New Forestry.

In most cases, under New Forestry practices, clearcutting is not the prescribed harvesting method. Where New Forestry is practiced, units usually appear to have been harvested using the old shelterwood method — a practice that leaves relatively large patches of unharvested trees scattered over the harvest site.

Lots of large woody debris is usually retained on a New Forestry site, both as standing green timber, and as dead snags. A quantity of coarse woody debris and large logs

may also be left on the ground to provide nutrients for recycling, and habitat for insects and rodents. The retention of dead snags provides habitat for a wide variety of insects and cavity nesting birds.

Since standing green trees represent future snags, future down woody debris, and may contain populations of invertebrates and insects, many are retained to help inoculate the new stand with the 'biological legacy' of older forests.

An important distinction between New Forestry harvesting techniques and the past practice of 'highgrading,' — taking the most

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After harvesting, New Forestry sites will retain standing green timber and snags.



## New Forestry: Improved Version?

valuable trees on a site and leaving the rest — is that under New Forestry, the trees to be retained on a site are the first to be selected.

They are selected, according to New Forestry principles, because retaining them is said to be the key to retaining diversity, sustainability and resilience in the regenerated stand.

As appealing as New Forestry sounds, a large body of foresters are skeptical. They question the premise that any system can provide the panacea that New Forestry claims to offer.

Some critics hold that New Forestry is unsupported by broadly based scientific evidence, is untested in the field, and represents a theoretical gamble that society simply cannot afford.

Forest Service Associate Chief George Leonard, a proponent of New Forestry, observes "We developed the concept of multiple use to help blend a balance the demands for different resources, but we've never moved beyond the functional focus

on one resource at a time."

"Now, with far more people, growing in numbers and demands every year, and a shrinking forest land base worldwide, we must move beyond the traditional, single focus disciplines of forestry for trees, wildlife for game, and range for forage.

"We have got to build an ecosystem approach to natural resource management. We have got to build it now. And we have got to build it in

partnership between managers, scientists and people who are affected by how forests are managed.

"We do not currently have the scientific basis for such an ecosystem approach to forestry. But we have the conceptual model and the consensus among leaders in forestry research in the United States to move in that direction," says Leonard.



Plantations of vigorous young trees (right, foreground) may be a thing of the past on New Forestry sites (left).

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