Biodiversity in Multi-Ownership Landscapes

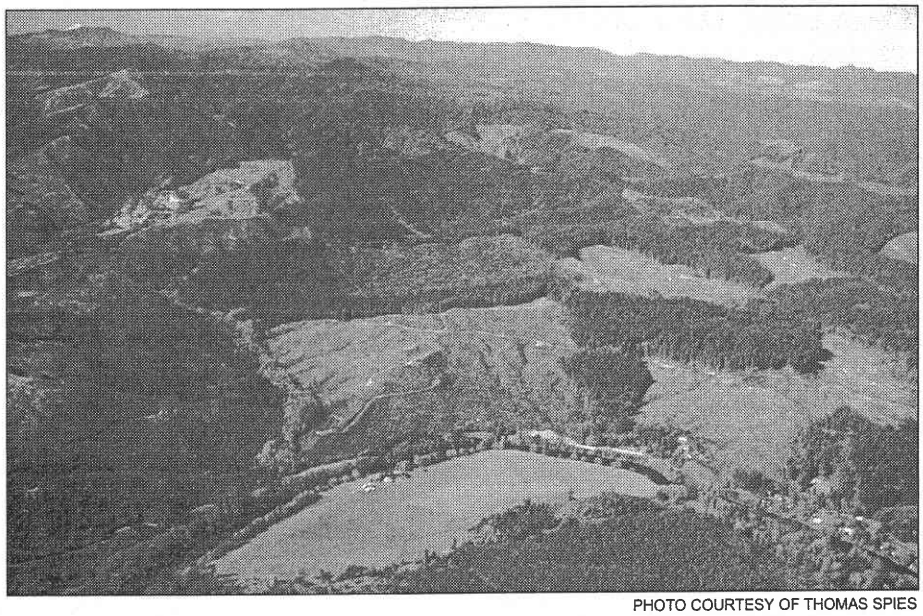
BY THOMAS A. SPIES AND
K. NORMAN JOHNSON

Many landscapes in the West are a patchwork of federal, state, forest industry and nonindustrial private forestlands. Each of these owners has a particular set of goals and practices that shapes the structure, species and dynamics of forest vegetation on their lands. Consequently, the pattern of landownership can have a major effect on the distribution of plants and animals, and their habitats. The pattern of ownership is also important because the organisms that live on those landscapes and the ecological processes that influence their habitat do not stay within ownerships. For example, salmon, owls, fire, landslides and debris flows can move across ownership boundaries.

Concerns over loss of forest biodiversity in recent years have led to changes in forest policies. For example, on federal lands the Northwest Forest Plan shifted management toward protection and restoration of late-successional forests and associated species such as the northern spotted owl and the marbled murrelet. On state lands in Oregon and Washington, policy changes have increased protection for riparian zones and changed forest management to provide for older forest structure, while still producing timber. On private forestlands, state policies have increased protection of riparian zones.

What do these recent changes all mean for biodiversity in the long run? Well, no one really knows for sure given the long time periods over which forests grow, the changes in ownership and management that can occur, and the large and diverse area represented by the mix of ownerships. However, computer models can be used to give some insights about what might happen under particular assumptions.

For example, in the Oregon Coast Range, the amount of old forest is expected to nearly triple as policies on federal and state lands promote the development of this habitat. Conversely, the area of diverse early successional habitat and area of hardwood forests is expected to decline sharply as federal lands emphasize growing of older conifer forests and private forest landowners emphasize growing conifer plantations and reducing hardwood and shrub stages. State of Oregon forests, where management plans currently strike more of a balance between timber, biodiversity and recreation, will produce a mix of early successional forests and older forests. Only the federal lands will provide the largest patches of true old-growth forests (>200 years). Only the private lands will produce large amounts of edge habitat.



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Mosaic of forest and non-forest land uses in the Coast Range of Oregon resulting from differences in ownership and management objectives.

Each ownership makes a unique contribution to the biodiversity of the region. However, given that forest policies have been developed largely in an ad hoc fashion, we cannot assume that all of the parts of native biodiversity will be provided for. Undesirable cumulative effects may occur. For example, oak woodlands and coho salmon habitat may lie outside the public lands where the strongest emphasis on biodiversity occurs. In addition, diverging management on federal and intensively managed industrial lands may leave some gaps, e.g., diverse early successional and hardwood stages might decline.

It is important that a multi-ownership view of biodiversity is taken because all owners have something important to contribute and because some habitats and species may fall through the cracks as individual owners pursue their own goals and policy makers focus only on parts of the landscape. ◆

Thomas A. Spies is a research forester and team leader with the Ecosystem Processes Program of USDA Forest Service, PNW Research Station, Corvallis, Ore. He can be reached at 541-750-7354 or tspies@fs.fed.us. K. Norman Johnson is distinguished professor of Forest Policy in the College of Forestry at Oregon State University in Corvallis. He can be reached at 541-737-2377 or norm.johnson@oregonstate.edu.