

Landscape Context for Density Management: Implications of Land Ownership and Ecological Gradients

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Presentation Abstract

Density management is implemented at a local (stand) scale, but is based on conservation goals that address a broader landscape. Although regional conservation efforts such as the Northwest Forest Plan (NWFP) focus primarily on public lands, all land ownerships and allocations contribute unique benefits over the regional landscape that need to be considered as context for federal land management. In addition, whereas the NWFP emphasizes older forest and associated species, an ecosystem and multi-species management approach encompasses the full sequence of forest development. Recent results from NWFP Effectiveness Monitoring for late-successional and old-growth forest provide detailed maps of forest composition and structure over all ownerships, and for all stages of forest development, including trends over the NWFP period (1994 to present). More than two-thirds of older forest (overstory conifers >20 inches [50.8 cm]) was federally owned, whereas most early-seral forest was on nonfederal lands. However, early-seral stands have developed primarily following timber harvest and lacked the structural diversity typical of natural stands. Over the NWFP period, harvesting removed about 13 percent (491,000 acres [198,700 ha]) of older forest on nonfederal lands, whereas the loss of older forest from federal lands (about 200,000 acres [80,937 ha]) was attributed primarily to wildfire. Overall, the monitoring data suggest there was a slight net loss of older forest on federal lands since the beginning of the NWFP, so losses of older forest to wildfire apparently were roughly balanced by recruitment. However, recruitment was most likely through incremental stand growth over the 20-inch [50-cm] threshold, or from understory disturbances (including thinning) that eliminated smaller-diameter trees and increased average stand diameter, rather than from increases in stands of much larger and older trees. Land ownerships and allocations also were unevenly distributed across regional environmental gradients. Federal forests generally occupied higher elevations and lower-productivity sites, and a substantial portion of most of the mid- to high-elevation forest types were contained within reserves and managed for conservation objectives. In contrast, several forest types, such as oak woodlands, occurred predominantly at low elevations on nonfederal lands where they are managed for a variety of objectives, and are not well-represented in reserves. I will discuss potential implications of the monitoring results for stand-level management and for the conservation of older forests and associated species across the region.

Keywords: Old growth, late-successional forest, early-successional forest, forest monitoring, change detection, Pacific Northwest, Northwest Forest Plan, conservation planning.

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Photos, facing page—Top left: Leave island at Green Peak, photo by Paul Anderson. **Top right:** Regeneration at the Yachats STUDS site, Siuslaw National Forest. Photo by Paul Anderson. **Center left:** Chanterelles, *Cantharellus* sp. Photo by Paul Anderson. **Bottom left:** Dan Mikowski, USFS, at North Soup Creek, Feb. 2009. Photo by Paul Anderson. **Center right:** Patch opening at Keel Mountain, April 2005. Photo by Paul Anderson. **Bottom right:** Two Oregon Slender Salamanders (*Batrachoseps wrighti*) and a rarely-seen nest of this species in a down log. Photo by Loretta Ellenburg, USFS.

