

Washington Forest Futures: Timber Supply and Forest Structure Study

This study will update projections developed in prior timber supply studies (1990 Westside; 1992 eastside). We will provide potential ranges of future harvests, log supplies, and representative ecological measures, including selected habitat indices, for five timbersheds on the Westside and two on the Eastside, highlighting owner group differences. We will subcategorize upland and riparian zone data where treatments differ, but the data samples will not be sufficient to provide spatial insights within the zones and regions. We will analyze and show how harvest-level declines below prior projections have affected the forest inventory and forest sector economics. The study will provide insight on past and prospective forest management changes impacting regional economics, forest health, and forest structure important to at-risk habitat and other public values.

Methodology:

Initial forest inventory data will be based on the Forest Inventory and Analysis survey of state, federal and private plots, and supplementary inventory data available for tribes and some other owners. We will update inventory data based on remote sensing information and historical forest practice applications and scale them to represent each owner and timbershed, including relative impacts of land use change trends. Riparian buffer impacts will be developed for required stream protection based on GIS hydrological information. Timber growth and yield analysis will be calibrated to updated UW Stand Management Cooperative growth and yield information. UW's Landscape Management System (LMS) will provide tree-by-tree stand data projections that will link to habitat and biodiversity, carbon, and economic measures. Projections from each treatment will be scaled to represent owner-specific intentions. LMS simulations will link direct and indirect employment as well as Eastside fire and insect risk.

Primary and secondary processing economic impacts will be based on diameter- and treatment-sensitive harvest costs and optimal bucking of harvested trees into various log grades. An overlay of biomass for potential biofuel conversion will be developed as an incentive to cover costs. In addition to developing a baseline scenario and a range of alternative futures, we will use sensitivity analyses to demonstrate cause and effect relationships and economic tradeoffs associated with increased carbon, reduced fire risk, or other ecological attributes. We will use case studies to supplement the regional information and characterize variations in impacts, particularly among small owners.

Anticipated Outputs per Decade: We will show, by East, West, and statewide regions; by upland and riparian land classes; by ownership (state, federal, industry, other private, and tribal); and by economic and ecological region aggregations:

- Harvest by diameter class.
- Harvest cost, harvest revenue and management cost.
- Acres treated over time.
- SEV, Total Forest Value, and cash flow for disparate owners.
- Rural jobs, direct and indirect.
- Estimated state, local, and federal tax receipts,
- Stand structure differentiation driving habitat suitability measures.
- Carbon in forest, products, biofuel and displaced fossil energy from products and biofuel.
- Stand visualizations for aesthetics of landscape and stand level treatments.
- Costs of alternative levels of improved habitat and other ecological functions.

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