Free Online Decision Support for Forest Management Planning

How might different management practices yield different results over time? How would alternative styles of management affect your long-term costs and revenues? Is it worth planning or reducing timber harvests to access carbon markets? The ability to quickly answer these types of questions has depended on complex management systems and detailed data available only to the largest forest products companies.

In March 2014, Ecotrust launched Forest Planner, a free online resource for land managers in the Pacific Northwest to begin this type of planning from their own home computers. The Forest Planner enables users to visualize alternative management scenarios on their own lands with immediate feedback on how decisions may affect timber yields, financial returns, and public concerns for carbon storage, fire or pest hazards, etc.

How Forest Planner Works

- 20-25 silvicultural prescriptions are available for each ecoregion in Oregon and Washington. These were defined in consultation with Extension and consulting foresters, landowners, and state and federal forestry agents. These are intended to provide users with a spectrum of relevant and realistic management choices.
- Basic inventory data provided for each stand type by the user (i.e., a stand table with stocking by tree species and diameter class) is combined with geographic attributes for each stand (e.g., slope, aspect, elevation) to select a representative plot from the PNW-FIA Integrated Database.
- All plots in PNW-FIA Integrated Database are pre-run with each silvicultural prescription using the Forest Vegetation Simulator (FVS) growth-and-yield model, including “offsets” in the timing of entries.
- Outputs are summarized and mapped to stands, enabling quick visualization of management scenarios.

Potential Extensions and Applications

- Outputs for wildlife suitability for several priority species.
- Incorporating Climate-FVS extension for potential climate change impacts.
- Set property-level management goals and have an optimization model choose and schedule options to achieve multiple competing objectives.
- Cooperative planning, marketing, and grouped certification for sustainably produced wood, carbon credits, or other forest products and services.
- Forest Planner is scalable to other regions and land types where supporting data and forest growth models are available.
- Custom simulations directly using a user’s own inventory data and forest productivity (not matched to PNW-FIA plots).
Step 1: Find, map, and describe your forest

- Find your property, including ability to search for place names.
- Map property and stand boundaries by uploading GIS data or easily draw them with aid from aerial photos, tax lots, stream and watershed boundaries, topographic and terrain maps.
- Group stands by type and define basic forest inventory details.

Step 2: Choose your management scenarios

- Define spatial constraints on management activities such as riparian buffers or steep slopes, incorporating minimum Oregon and Washington forest practices regulations.
- Choose from a spectrum of regionally-defined silvicultural prescriptions and apply them to stands, including a range of even-age rotations, several repeated thinning strategies, or no active management.

Step 3: Visualize outcomes and compare scenarios

- Graphs with property-level timber yields, carbon storage, and harvest costs and revenues enabling quick comparison of several management scenarios.
- Side-by-side maps of scenarios showing standing timber, harvest volume, or carbon storage for each stand, with slider bar to move forward in time.