

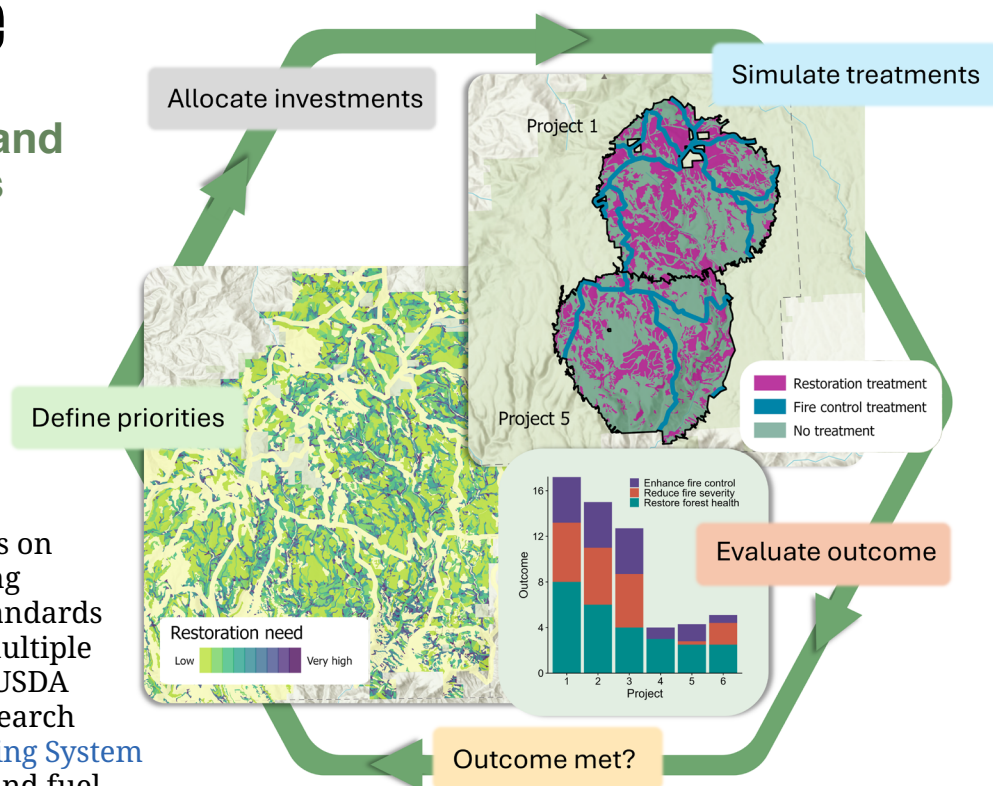
The ForSys Planning System at a glance

Optimize treatments and prioritize investments in forest and fuel management.

Planning and prioritizing forest and fuel treatment programs on vast, mixed-owner landscapes can be a wicked challenge. A typical project involves multiple management objectives, constraints on treatment location, and the resulting plans that must meet regulatory standards for analysis and consideration of multiple alternatives. Researchers with the USDA Forest Service Rocky Mountain Research Station developed the [ForSys Planning System](#) to help managers prioritize forest and fuel management investments and understand tradeoffs among alternative scenarios. The development of ForSys was motivated by the need for spatial planning tools at a range of administrative and operational scales.

What is ForSys?

ForSys is a free decision support system that simulates land management scenarios and measures outcomes and tradeoffs at a range of scales. ForSys walks through a planning problem formulation: Where are treatments needed? How much of the landscape can you treat? Which are your priorities? What are your constraints? Which outcomes do you want to measure? ForSys uses these inputs to organize stands into optimized planning areas and helps sequence projects for implementation. ForSys also exposes tradeoffs among management objectives and how treatments achieve one



or more goals. ForSys doesn't make treatment decisions, it provides information to inform decision making.

How can ForSys help me?

In general, the need for forest restoration and fuel treatments outpaces the resources available to complete the work. Therefore, given constraints on how much restoration can occur annually and wide spatial variation in management targets and outcomes, identifying when and where to treat needs to be done as efficiently and productively as possible. However, not every planning problem requires a decision support tool. ForSys excels when:

- it is important to communicate restoration investment needs and outcomes to stakeholders in collaborative planning efforts;

- multiple management objectives compete for treatment, and there is a need to understand tradeoffs and potential compromise solutions; and
- planning problems are highly dimensional with multiple conditions needing to be met to trigger treatment and scenarios that are constrained by one or more factors.

How is ForSys being applied?

- **Spatial optimization of treatments:** Explore scenarios to maximize returns from forest restoration and wildfire risk reduction activities.
- **Generating 5-year action plans:** Identify and schedule restoration treatments that are part of longer-term action plans.

Prioritizing Treatments on WCS Landscapes in the Intermountain West

The Social and Ecological Resilience Across the Landscape (SERAL) project area is centrally located on the Stanislaus National Forest in California within the [Stanislaus Wildfire Crisis Strategy](#) priority landscape. The project area spans roughly 118,800 acres of multi-jurisdictional or privately owned lands.

SERAL staff used ForSys to examine scenarios based on different action alternatives proposed and analyzed in the Draft Environmental Impact Statement. They leveraged ForSys' ability to examine many scenarios with different objectives, constraints, and thresholds. Scenarios were developed using (1) the SERAL purpose and need statement, (2) the proposed actions, (3) local knowledge, (4) collaborative input, and (5) public comments received during scoping. The SERAL team used ForSys to examine tradeoffs among the modeled scenarios and leveraged scientifically defensible input data developed by the Forest Service.

The final three scenarios prioritized stands with high departure from resilient forest conditions and negative expected loss to values from wildfire. The scenarios also incorporated an array of management constraints, including treatment type, private lands, and restrictions related to California spotted owl nesting and activity. This work was incorporated into the Final Environmental Impact Statement and has led to three signed Records of Decision.

"Landscape management has been the ideal for decades yet was very difficult to conceptualize until now. Through ForSys, we can plan and act at scales that will create resilient ecosystems for myriad species to inhabit, and for communities to remain vibrant."

— Jason Kuiken, Supervisor
Stanislaus National Forest

- **Prioritizing prescribed fire:** Schedule the backlog of areas needing prescribed fire to optimize logistics and project design parameters.
- **Strategic containment:** Prioritize fuel break networks into manageable project areas that meet constraints and maximize fire management outcomes.
- **Cross-boundary planning:** Identify cross-boundary projects consistent with the goals of individual landowners.
- **Tradeoff analysis:** Explore multiple priorities to understand whether compromise solutions exist.

How do I start using ForSys?

The ForSys model was developed for wide application by nontechnical users on multiple platforms, including Windows desktop (ForSysX) and in R (ForSysR). The ForSys model also underlies other landscape planning tools, including Planscape (Spatial Informatics Group) and Vibrant Planet. Tutorials, software downloads, and information on how to start using ForSys can be found here: <https://www.forsysplanning.org/get-started>.

For more information:

- www.forsysplanning.org
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Further reading:

- [Prioritizing restoration and risk reduction landscape projects with the ForSys planning system.](#)
- [Maximizing opportunities for co-implementing fuel break networks and restoration projects.](#)
- [Planning for future fire: Scenario analysis of an accelerated fuel reduction plan for the western United States.](#)