LA 494/594 Landscape Planning and Design Studio
Department of Landscape Architecture / University of Oregon
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Envision Policy and Scenario Development Tools

We have developed a detailed suite of policies that allow agents to change land use and land management through a variety of mechanisms, and have implemented them in a total of eight alternative scenarios in a semi-modular system. The policy set includes:

- conventional fire hazard reduction treatments ranging from creation of defensible space around individual homes to large blocks of fuels reduction treatments
- conservation-oriented oak savanna and oak woodland restoration
- oak habitat restoration specifically targeted to wildfire risk reduction, responsiveness to climate change, and post-wildfire responses
- contrasting responses to climate stresses on agricultural lands
- conventional forest harvest and management treatments
- zoning changes on agricultural and forestry lands to allow single family and clustered residential development

These policies are used in various combinations and in conjunction new mechanisms such as budgets for financially incentivized fire hazard and restoration policies, the potential for new agent types to move into the landscape, and the potential for agents to change course during a model through a variety of local and landscape scale feedbacks. These include the following spatially explicit interactions and feedbacks:

Landscape-scale feedbacks to agent behavior:

- Wildfire safety metric based in number of houses exposed to hazardous wildfire alters agent propensities to adopt wildfire-risk reduction policies
- Oak habitat scarcity metric based on the amount of oak habitat desired under regional conservation plans alters agent propensities to restore oak habitat

Localized feedbacks at the scale of individual land units and their surroundings:

- Vegetation succession changes fuels, which changes potential wildfire fire behavior
- Climate change alters successional trajectories and wildfire behavior
- Fire hazard treatments, and their maintenance or abandonment, alter wildfire fire behavior
- New rural dwellings enlarge the WUI, changing the likelihood of adopting wildfire risk reduction policies
- Increasing rural population density changes landowner types, altering decision propensities
- Rural residential agents can choose to change agricultural and forest land to other uses
- Increased localized population density increases the likelihood of a wildfire ignition
- Areas w/ substantial nearby restoration more likely to qualify for incentivized restoration policies
- Agents avoid building new residences on areas recently burned by intense wildfire, pushing new housing into different locations