

# WIFIRE: A Scalable Cyberinfrastructure for Wildfires



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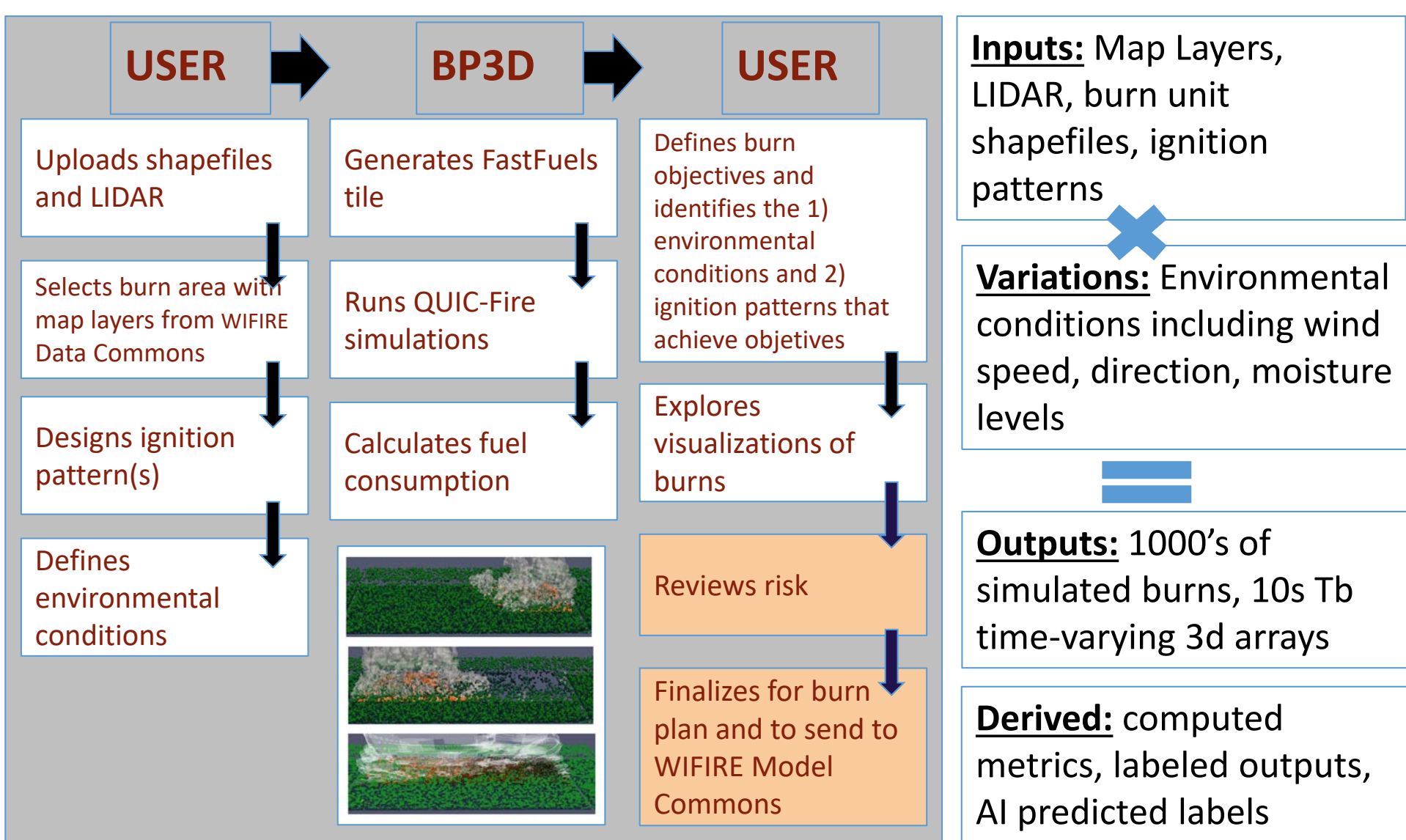


## Planning Controlled Burns Through Simulation and AI

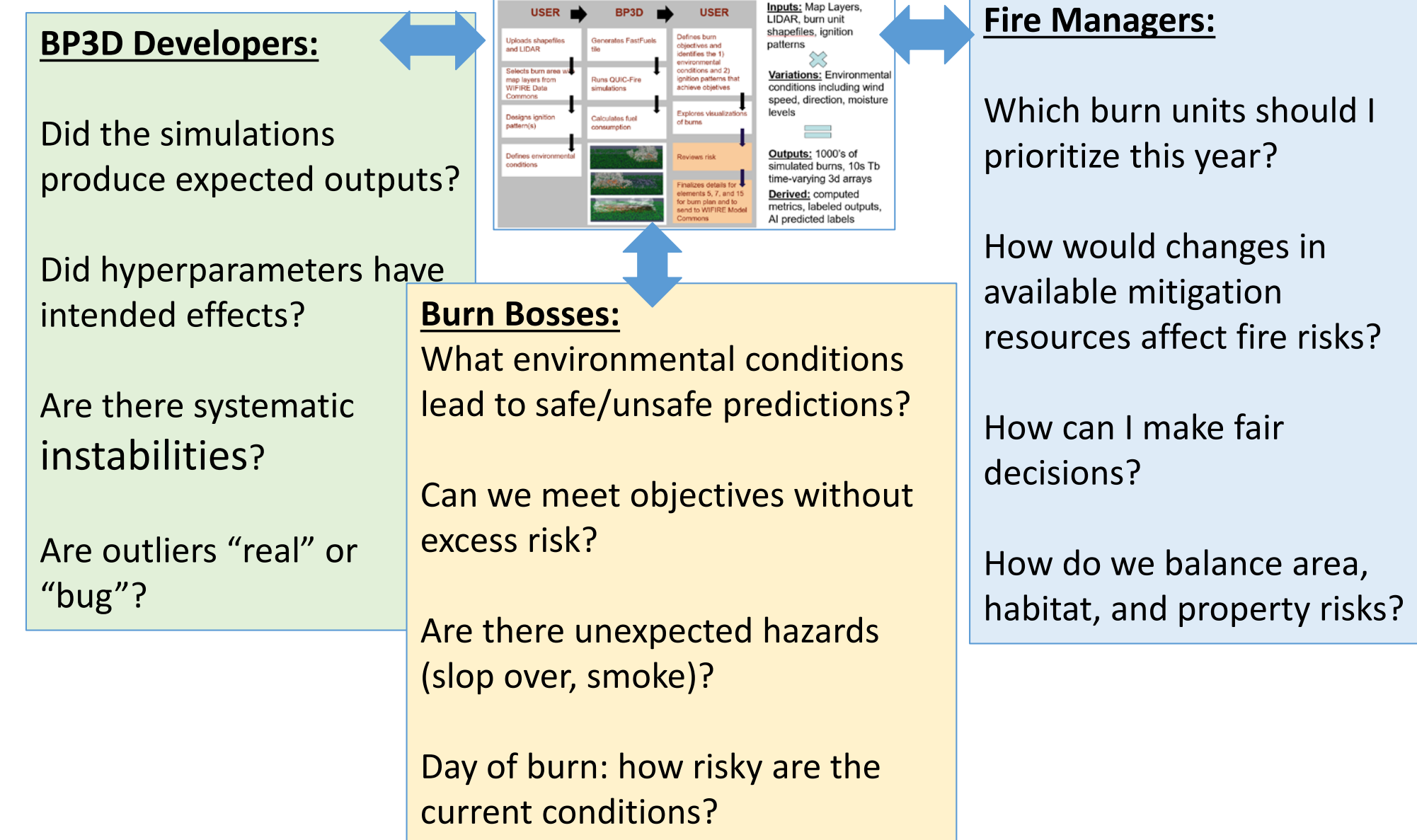
- Led by UC San Diego's WIFIRE Lab
- Develop science-driven technologies
- Deployed with the fire management community



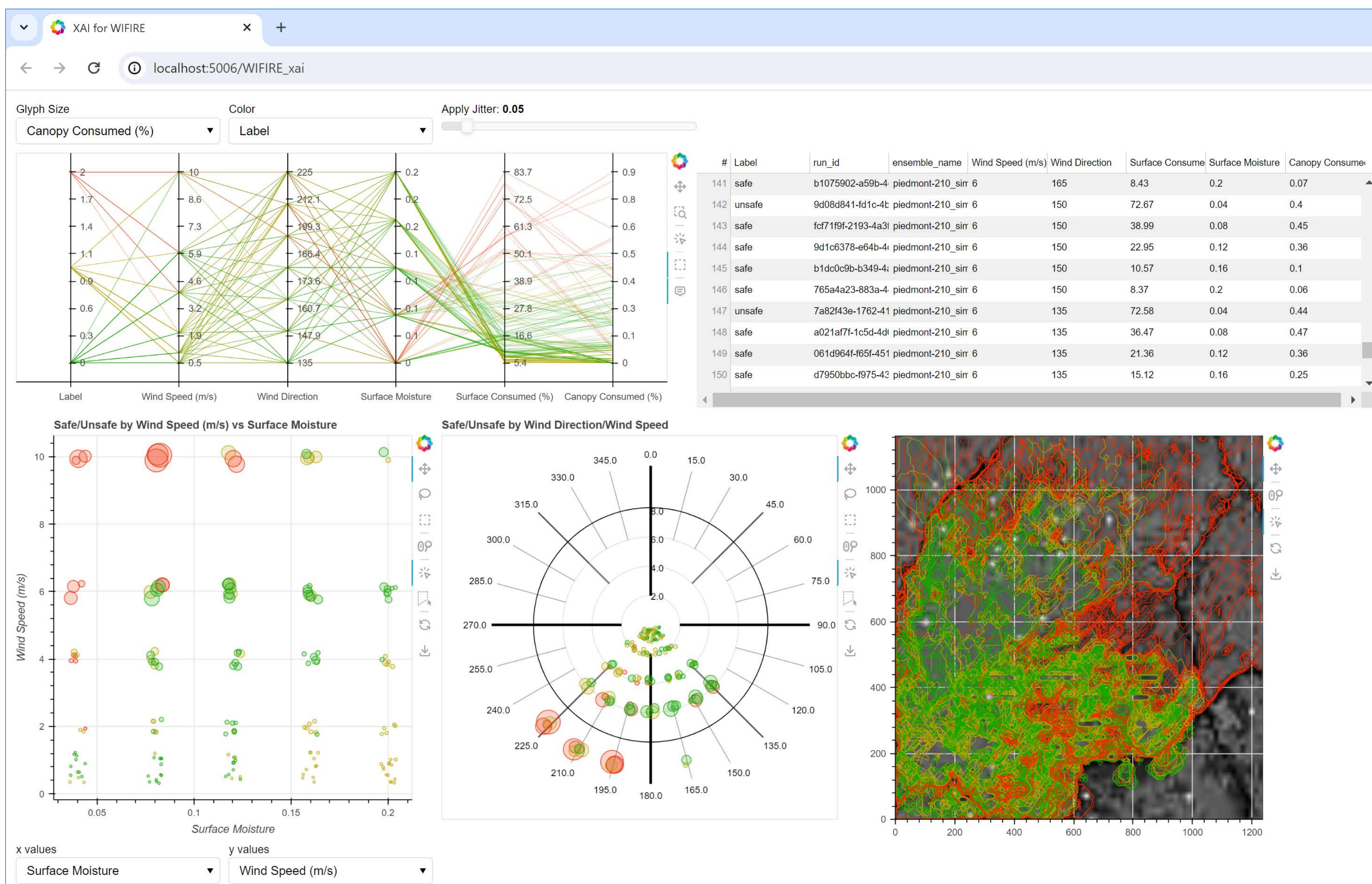
### Simulation Workflow



### Visualization for Decision-Making



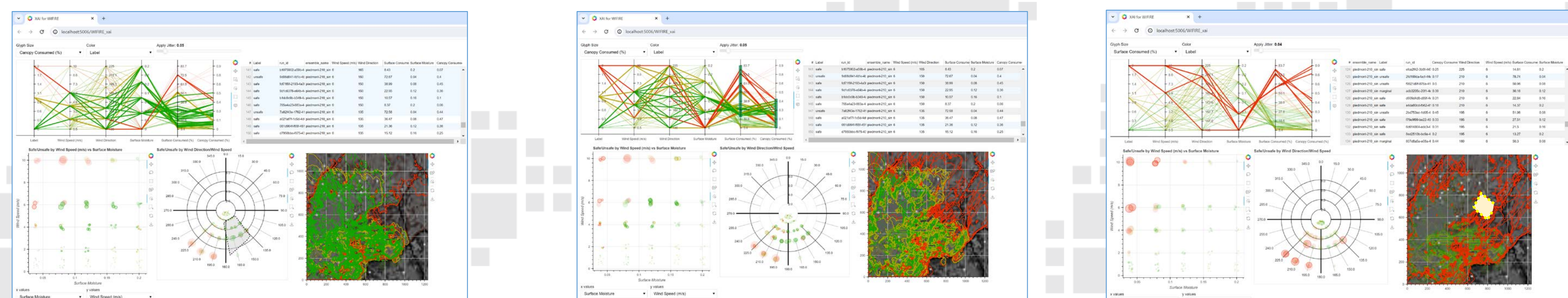
## An Explainability Dashboard For Understanding Simulation/AI Predictions



### Features:

- Web-deployed for broader use
- Explore high-dimensional output space
- Linked Views
- Interactive
- Visual metaphors for wildfires
- Multi-modal interaction
- Configurable Views
- Encode "closeness"

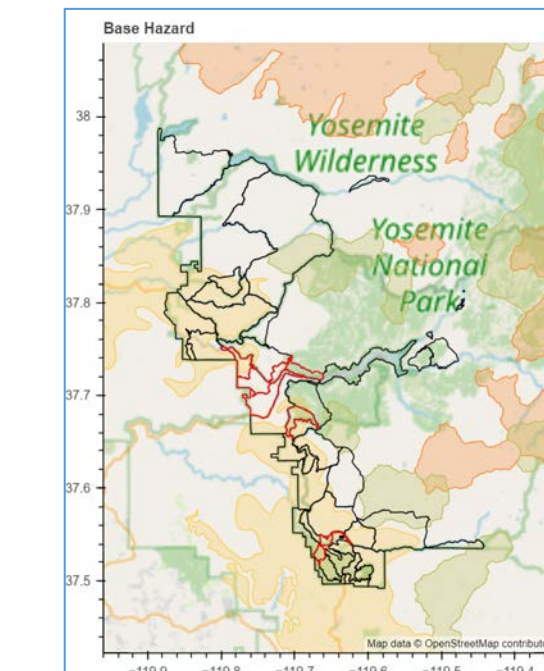
Identify Promising Conditions    Evaluate Negative Factors    Geography-based Selection



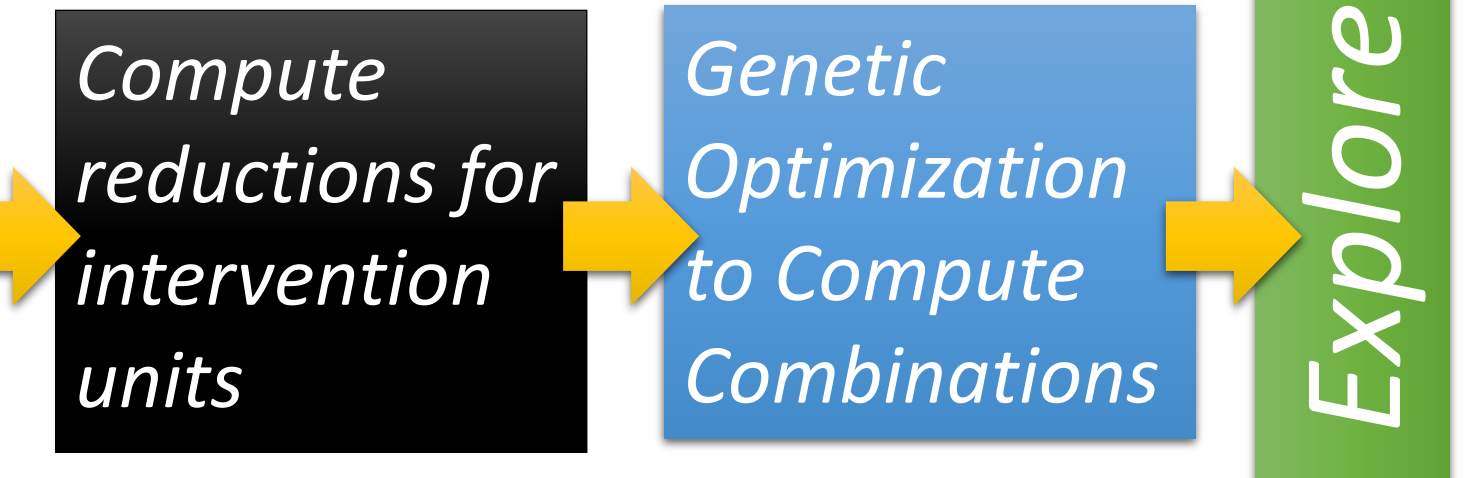
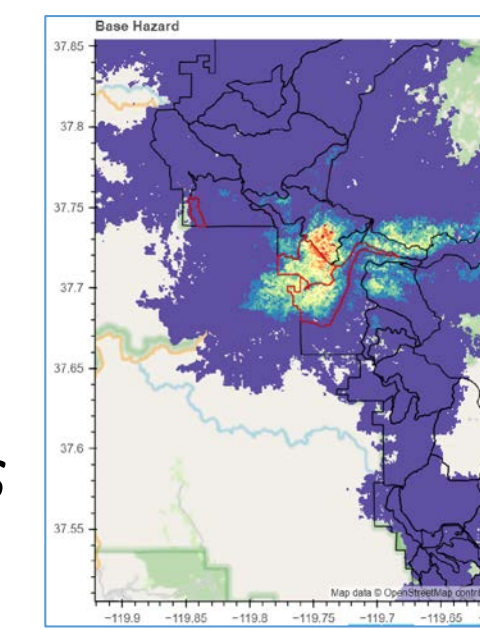
## Planning for Allocation of Landscape-level Resources

### Where should a management district apply resources?

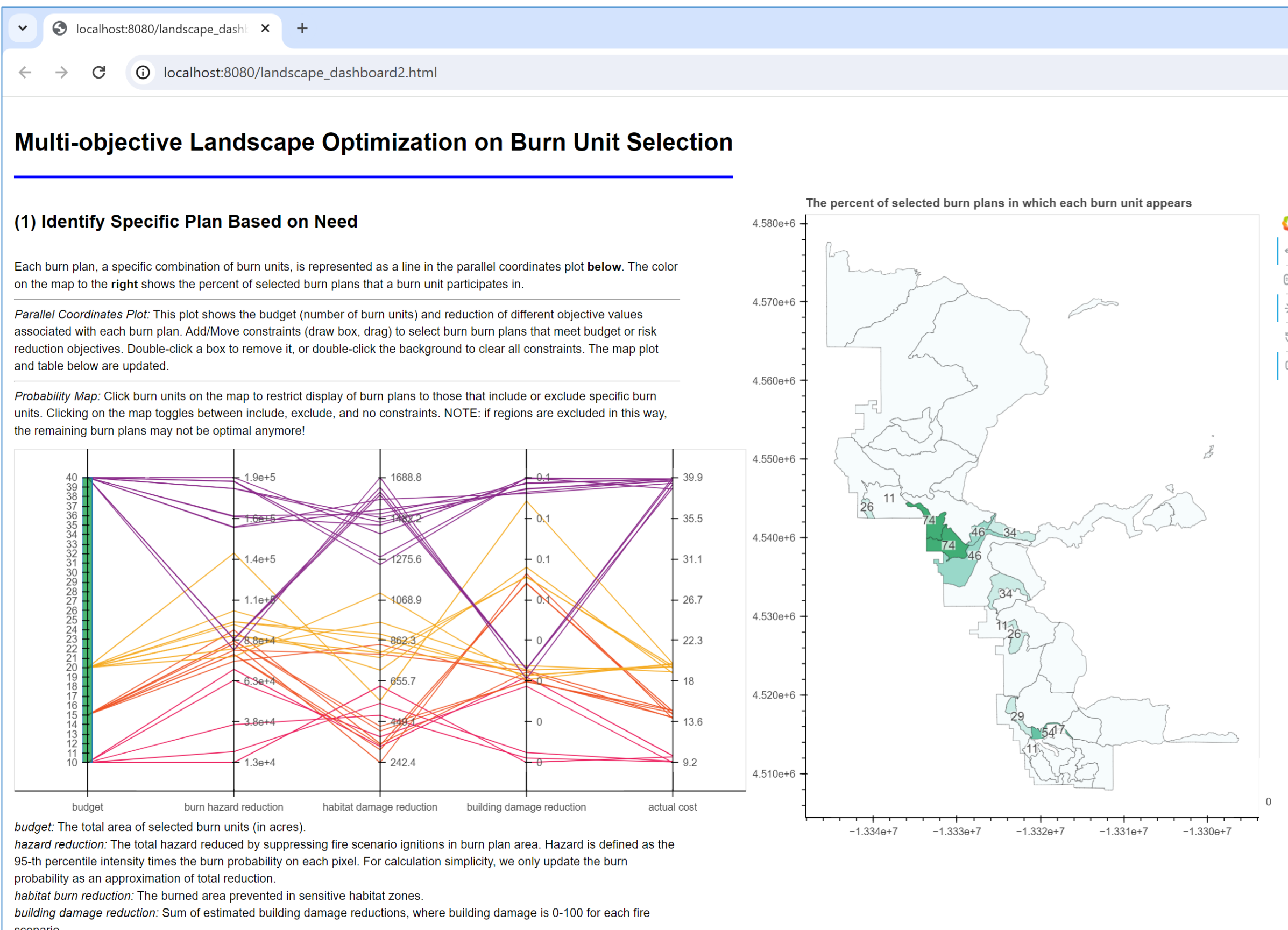
- Conflicting objectives
- Explore impact of varying resources
- Communicate impacts
- Want to reduce bias



Simulate Fire Scenarios  
Aggregate Hazards/Risks

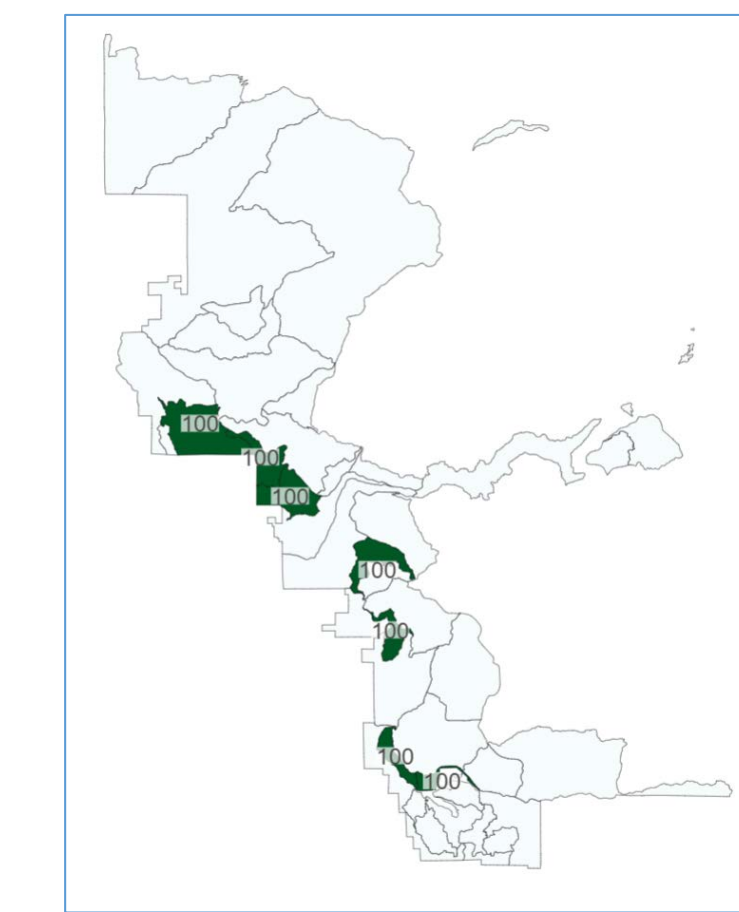


Which units should I burn if I can only afford X square km?

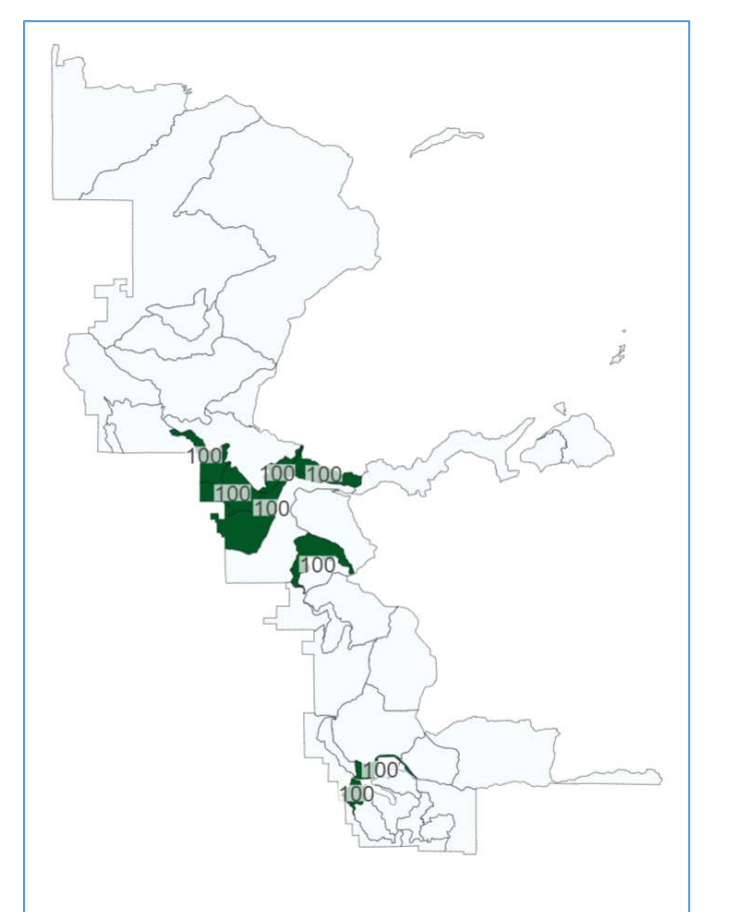


Which units should I burn if I....

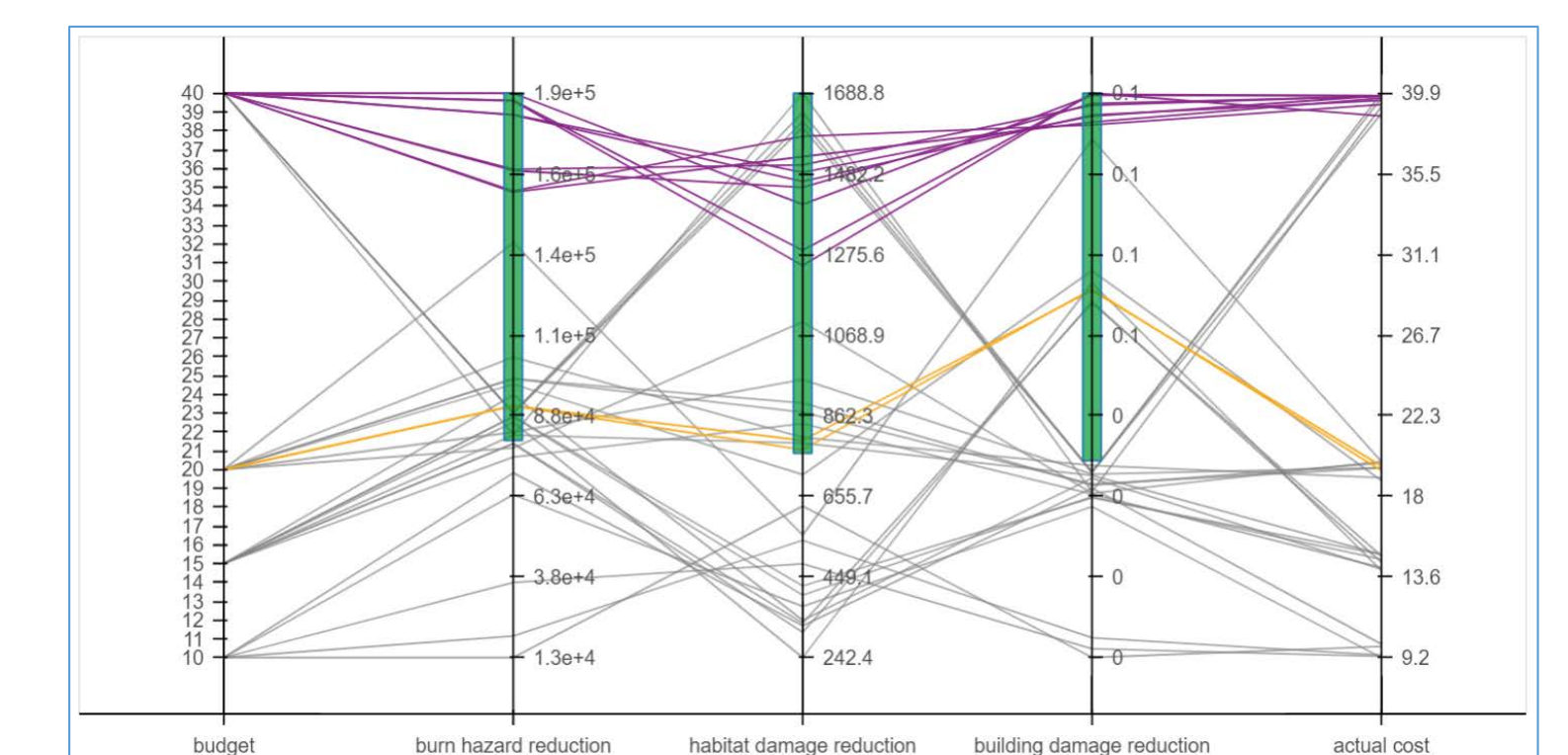
Only care about reducing harm to buildings



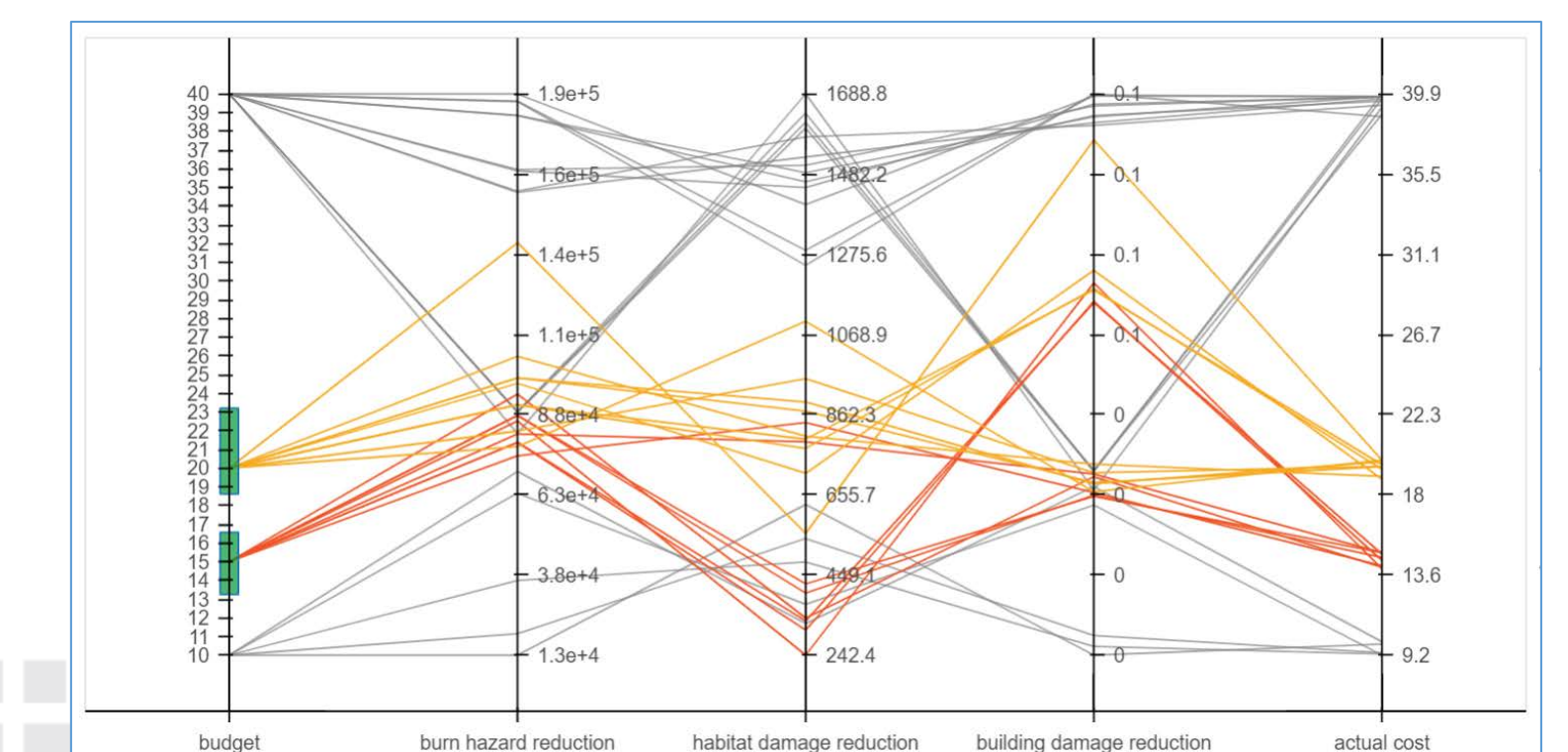
Only care about reducing harm to endangered species



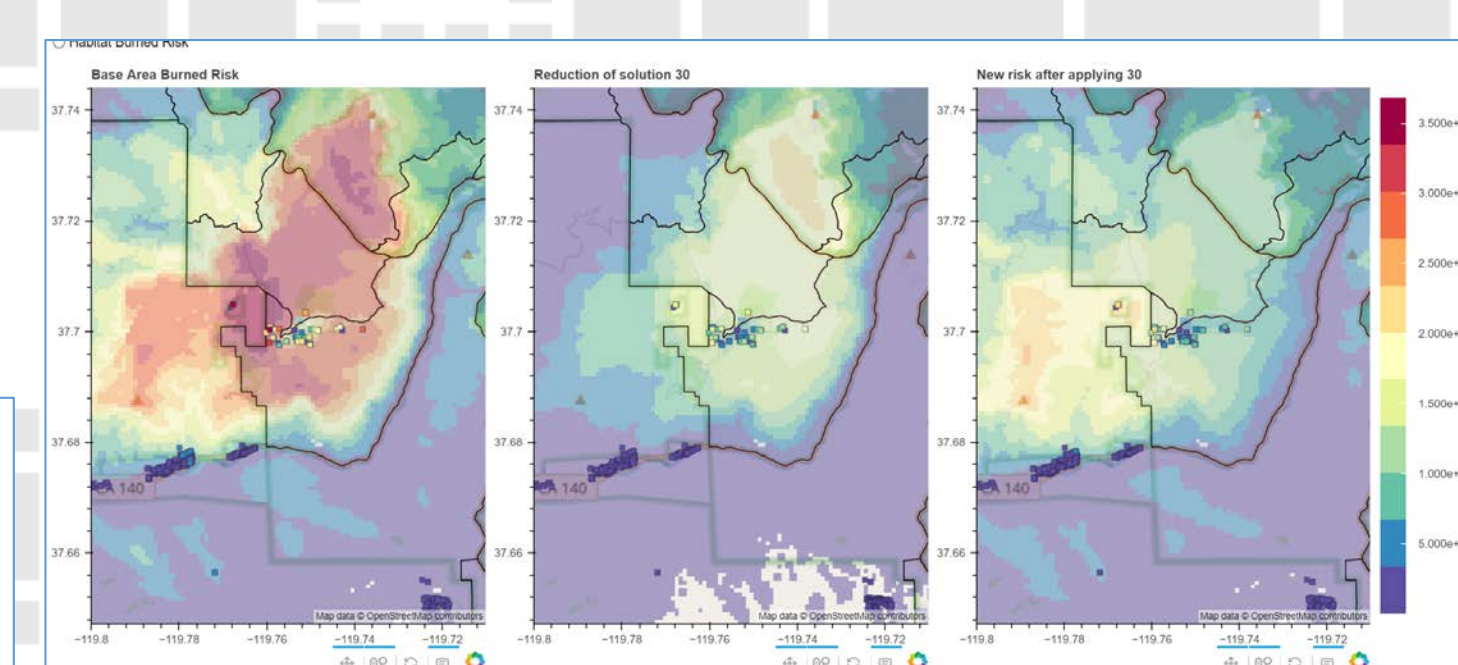
### Users Can Set Target Objectives



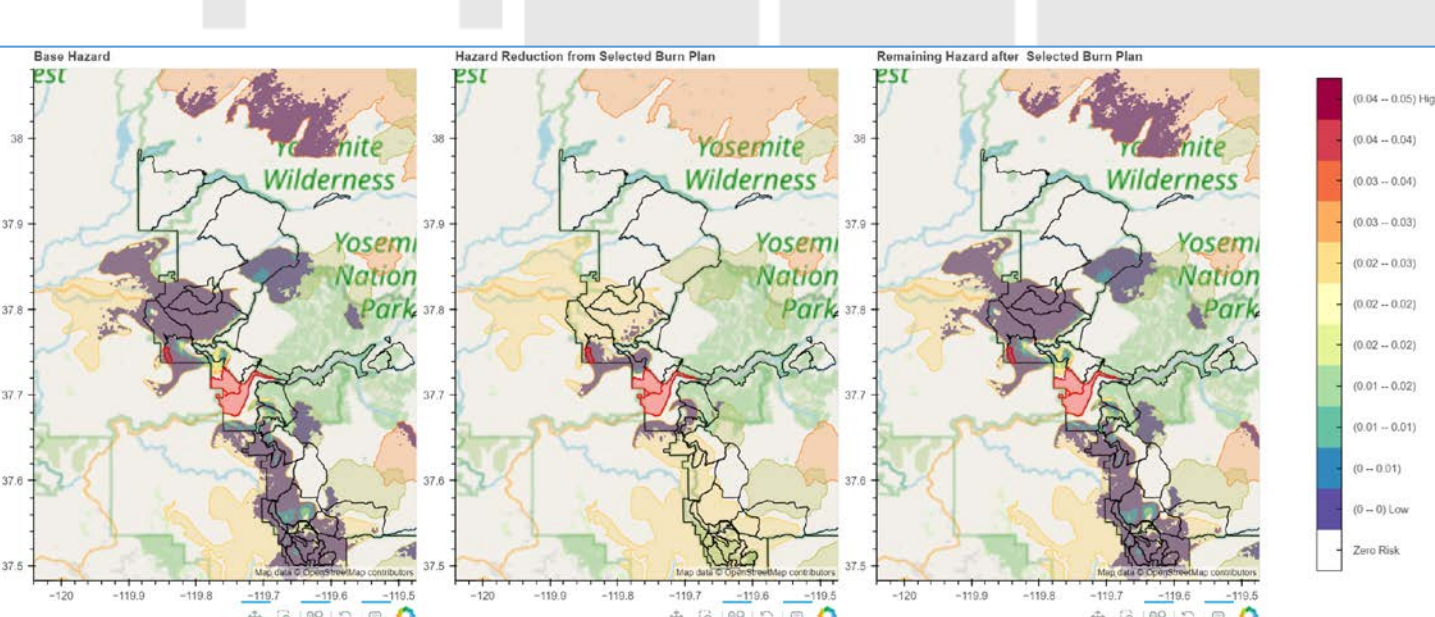
### Users Can Explore Impact of Varying Budget



### Explore Risks to Structures



### Explore Spatial Impacts of Treatment Plan



### Understand Relationships to Underlying Fire Scenarios

