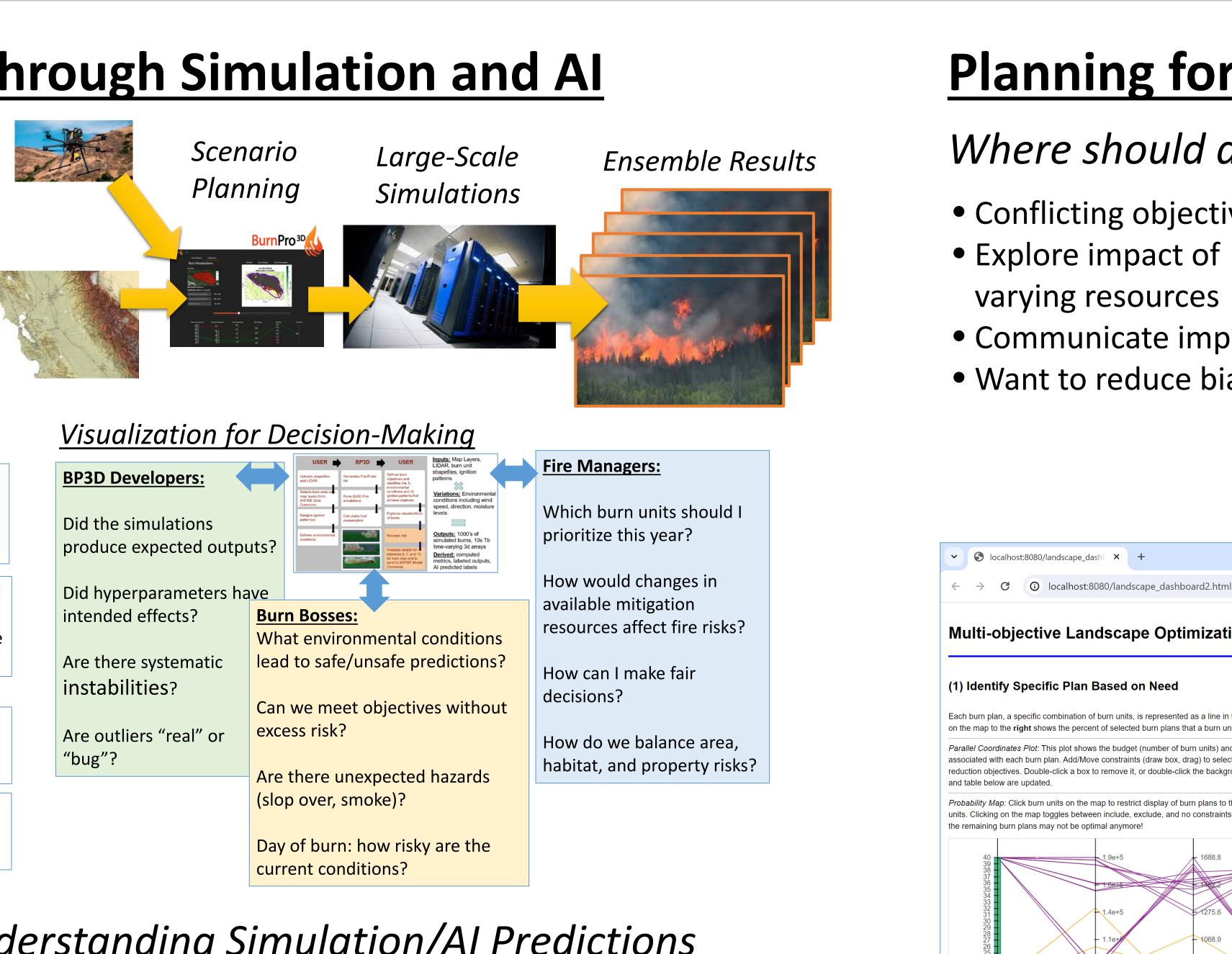
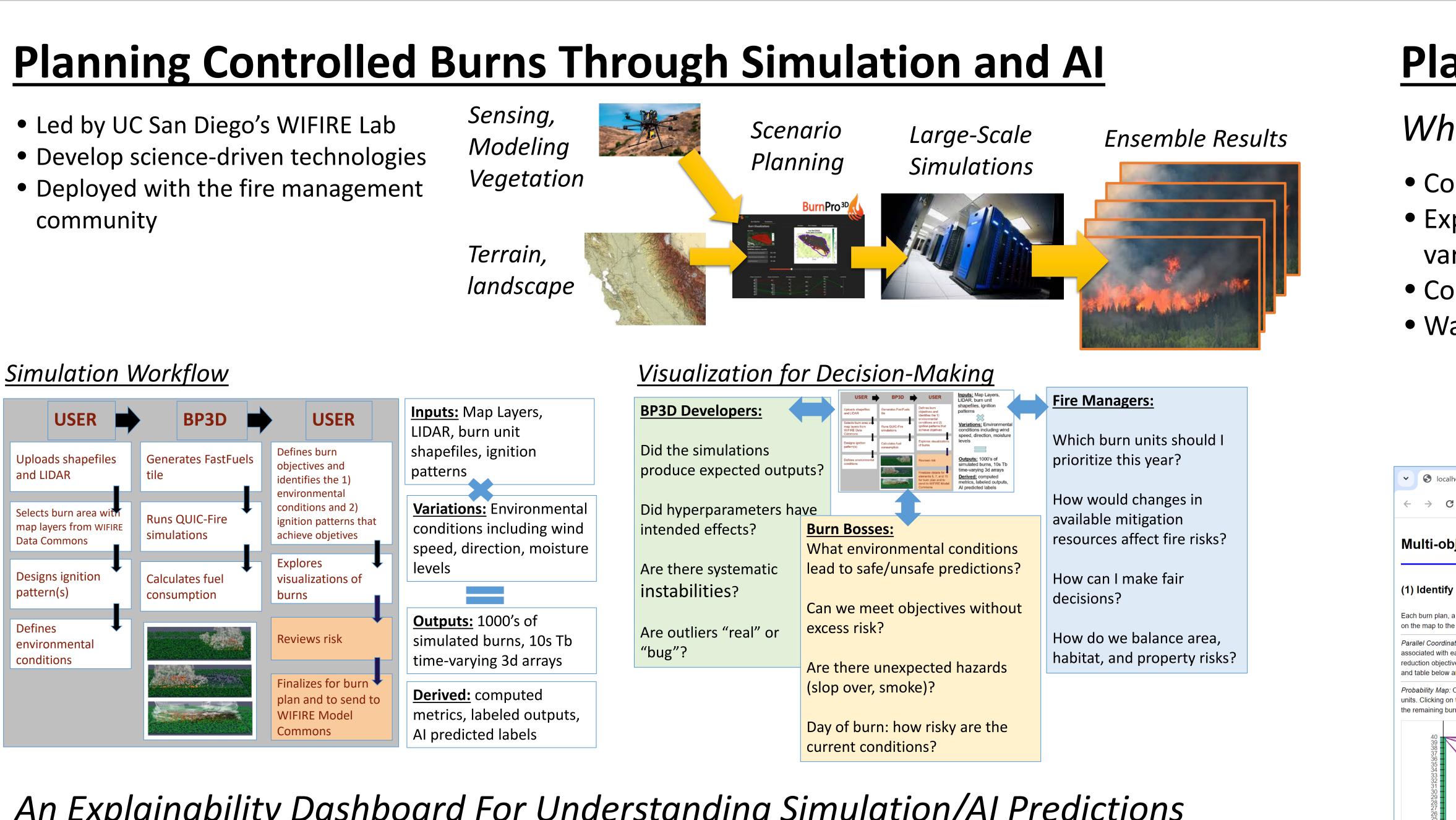
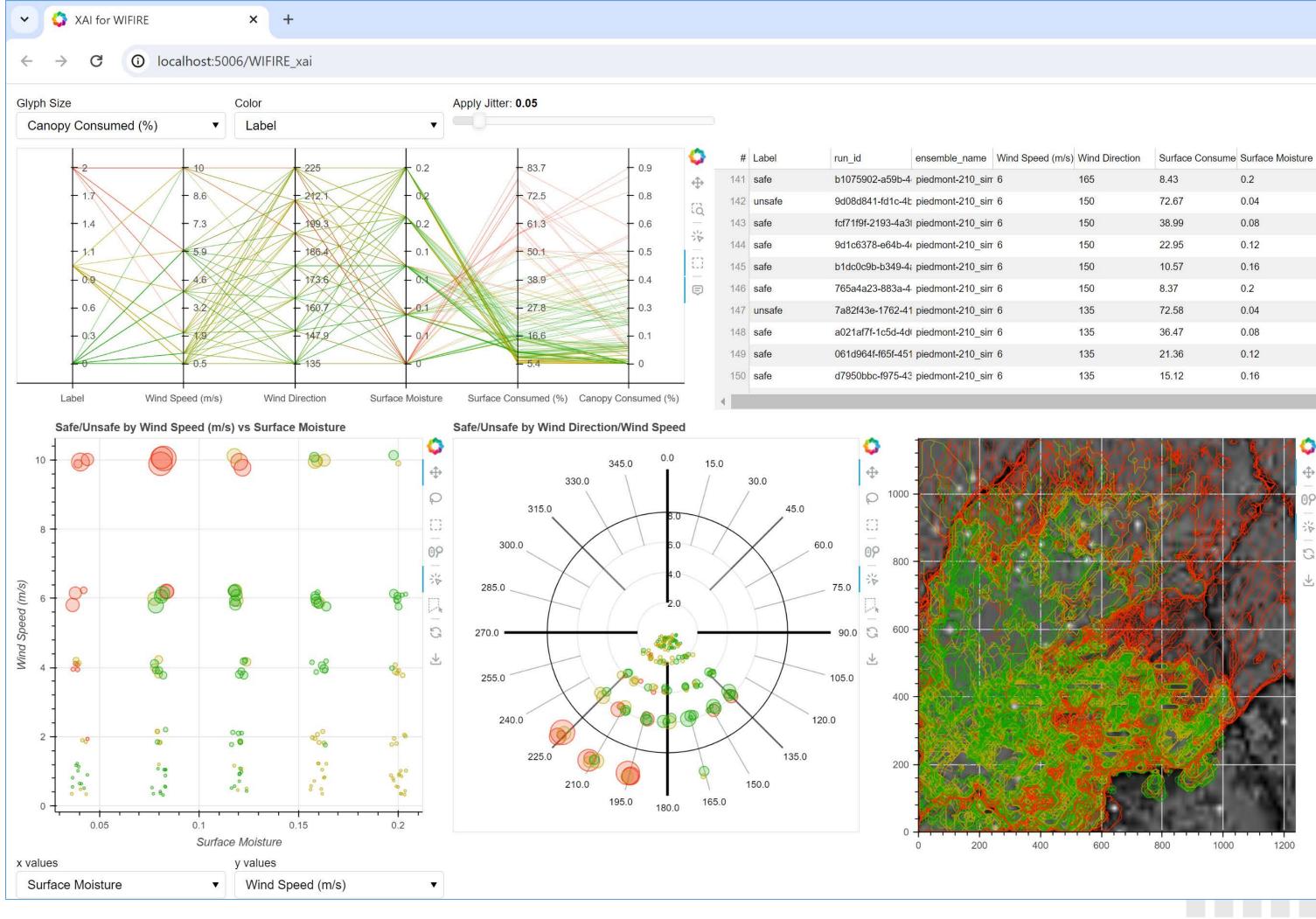
# WIFIRE: A Scalable Cyberinfrastructure for Wildfires (WIFIRE)

# Attila Gyulassy, Weizhe Chen, Bistra Dilkina, Ilkay Altintas, Valerio Pascucci

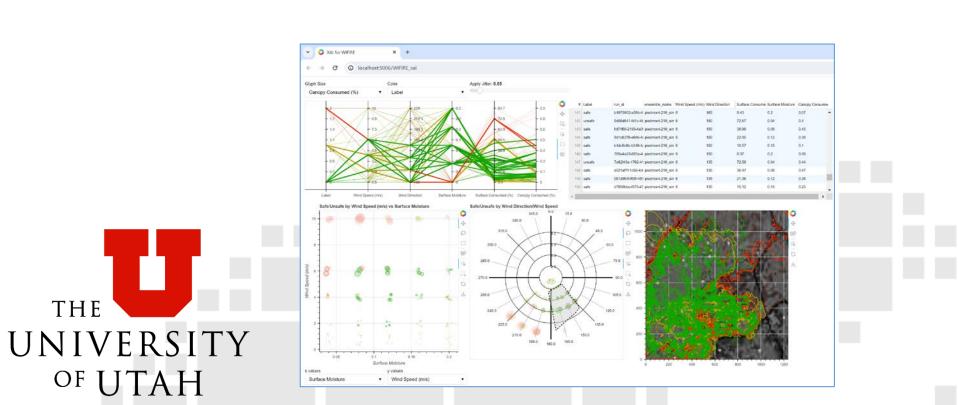


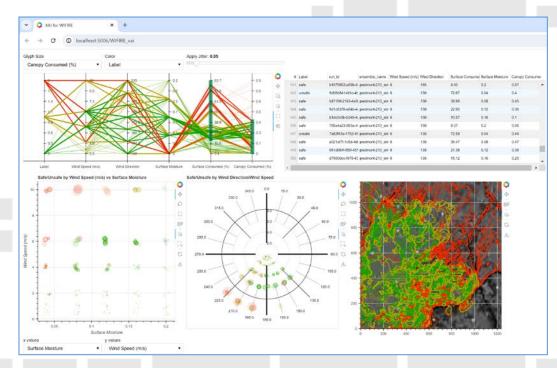


# An Explainability Dashboard For Understanding Simulation/AI Predictions



Identify Promising Conditions





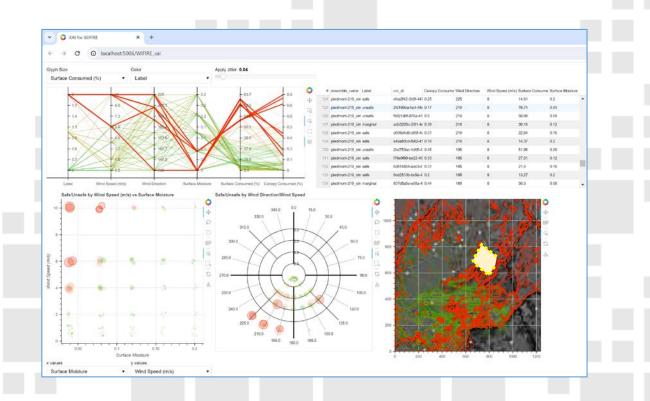
Wind Speed (m/s)	Wind Direction	Surface Consume	Surface Moisture	Canopy Consume	)
3	165	8.43	0.2	0.07	
3	150	72.67	0.04	0.4	
3	150	38.99	0.08	0.45	
3	150	22.95	0.12	0.36	
3	150	10.57	0.16	0.1	
3	150	8.37	0.2	0.06	
3	135	72.58	0.04	0.44	
3	135	36.47	0.08	0.47	
3	135	21.36	0.12	0.36	
3	135	15.12	0.16	0.25	_

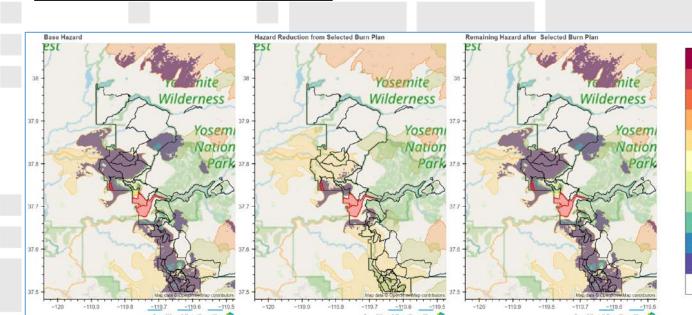
## Evaluate Negative Factors

#### 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"

Geography-based Selection



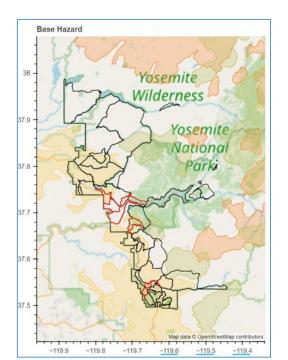




# **Planning for Allocation of Landscape-level Resources**

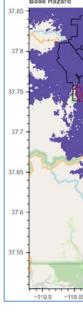
## Where should a management district apply resources?

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



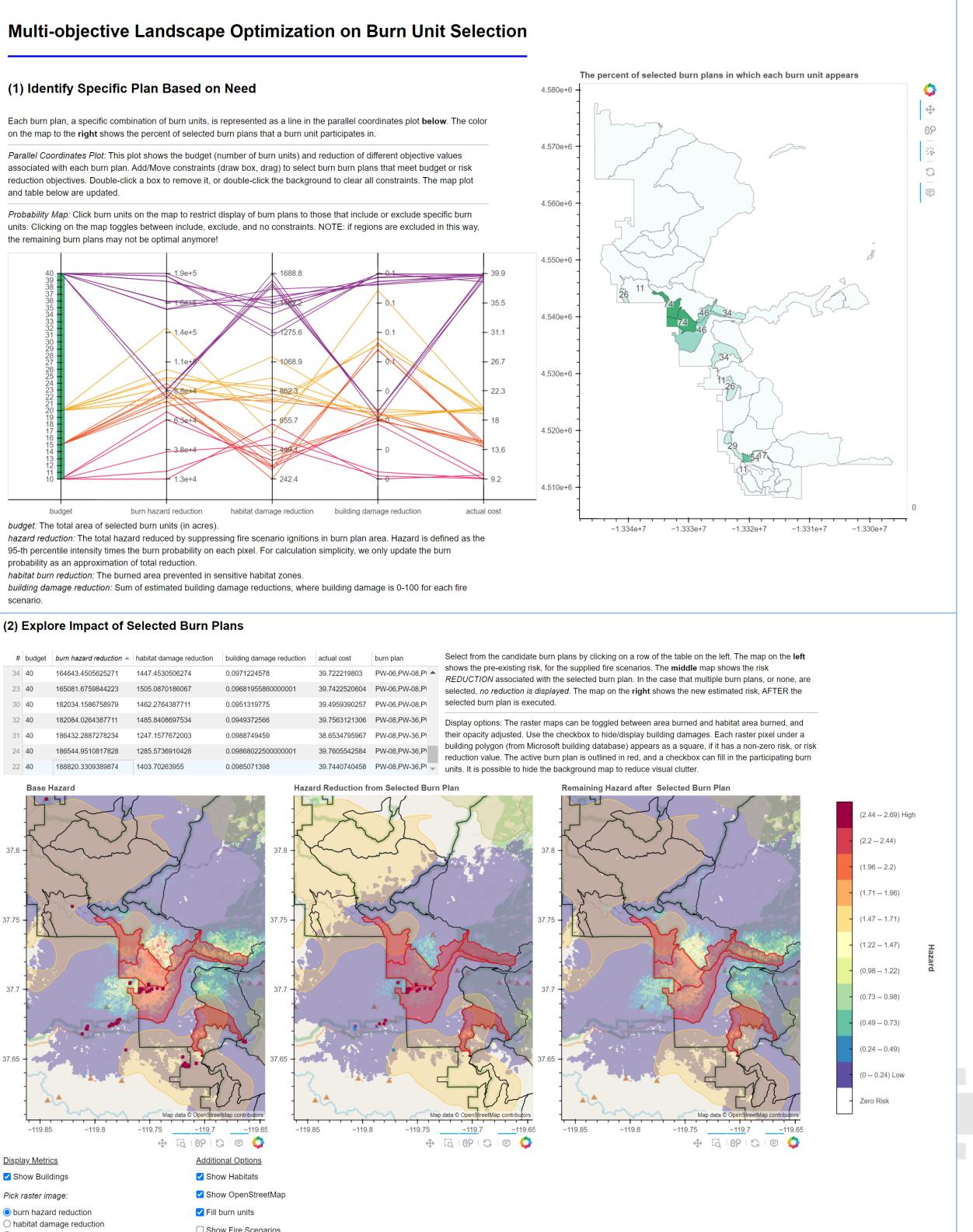
Simulate Fire Scenarios

Aggregate Hazards/Risks



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

#### ✓ Solocalhost:8080/landscape\_dasht × +

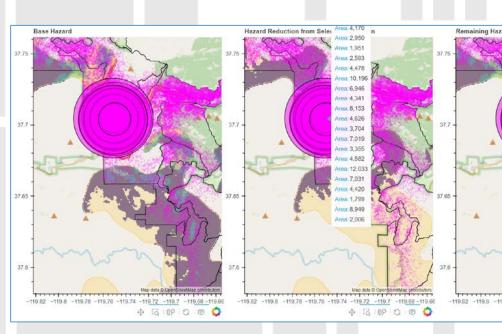


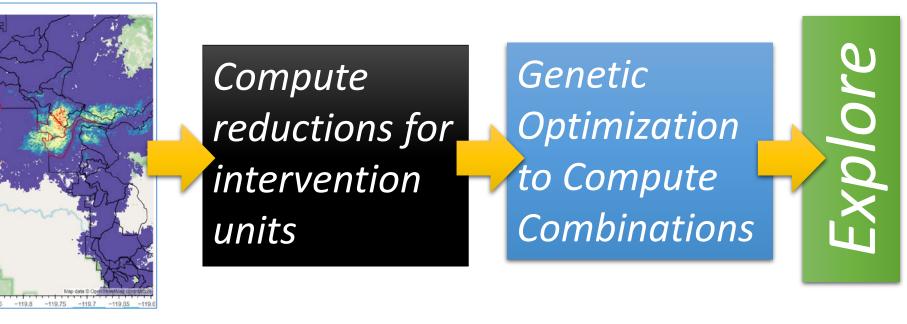
## Explore Spatial Impacts of Treatment Plan

Show Buildin

ck raster image

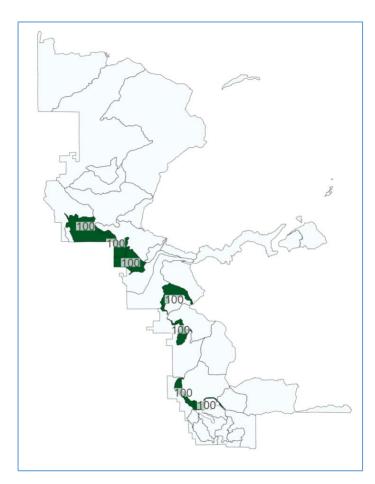
### Understand Relationships to Underlying Fire Scenarios



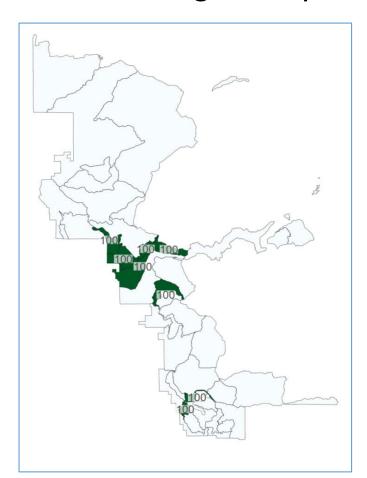


# Which units should I burn if I....

Only care about reducing harm to buildings



Only care about reducing harm to endangered species



### Users Can Set Target Objectives

$\begin{array}{c} 40 \\ 399 \\ 388 \\ 377 \\ 366 \\ 355 \\ 344 \\ 332 \\ 311 \\ 309 \\ 298 \\ 277 \\ 266 \\ 225 \\ 224 \\ 223 \\ 221 \\ 200 \\ 199 \\ 188 \\ 177 \\ 166 \\ 144 \\ 132 \\ 111 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ 10 \\ $	1.9e+5 1.6e±5 1.4e+5 1.1e+5 - 1.1e+5 - 8.8e+4 - 6.3e+4 - 3.8e+4 - 1.3e+4	1688.8 14822 1275.6 4068.9 862.3 855.7 449.1 242.4	0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1
budget	burn hazard reduction habitat	damage reduction building dama	age reduction actual cost

### Users Can Explore Impact of Varying Budget

