



Watershed Wildfire Modeling

June 16, 2022



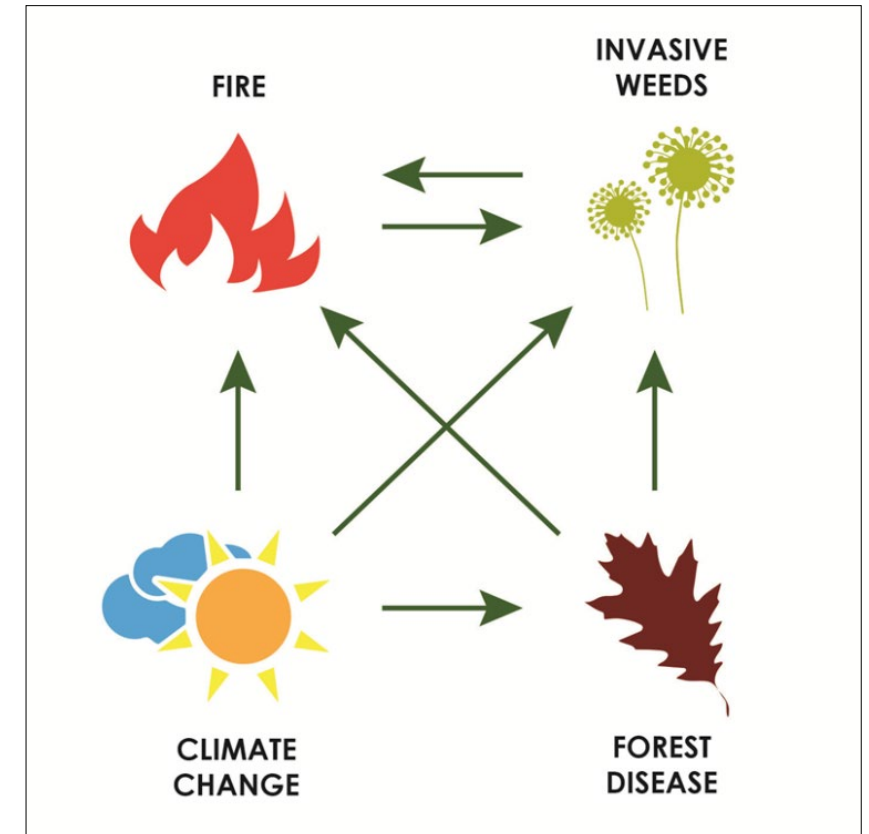
Agenda

- Biodiversity Fires and Fuels, Integrated Plan Overview
- Compliance Surveys
- Potrero Fuels Modeling
- Watershed Fuels Modeling
- Next Steps



Drivers of Change

- Fire Suppression
 - Build up of trees/brush due to suppression
 - Removal of fire from the landscape
- Expanding Wildland Urban-Interface
 - Vulnerable communities & structures
 - Increased ignition sources
- Climate and Environmental Factors
 - Drought
 - Extreme fire weather
 - Invasive plant species
 - Forest disease and pests



Biodiversity, Fire and Fuels Integrated Plan

1

Goal 1: Minimize the Risk from Wildfire

- Fuelbreak treatment
- Forestry work
- Invasive management
- Reduce ignitions
- Work with other agencies

2

Goal 2: Preserve and Enhance Existing Biological Resources

- Inventories, mapping, and monitoring
- Restore ecosystem functions

3

Goal 3: Provide an Adaptive Framework for the Periodic Review and Revision of the Plan

- Monitor, experiment
- Annual Report
- Compliance Monitoring

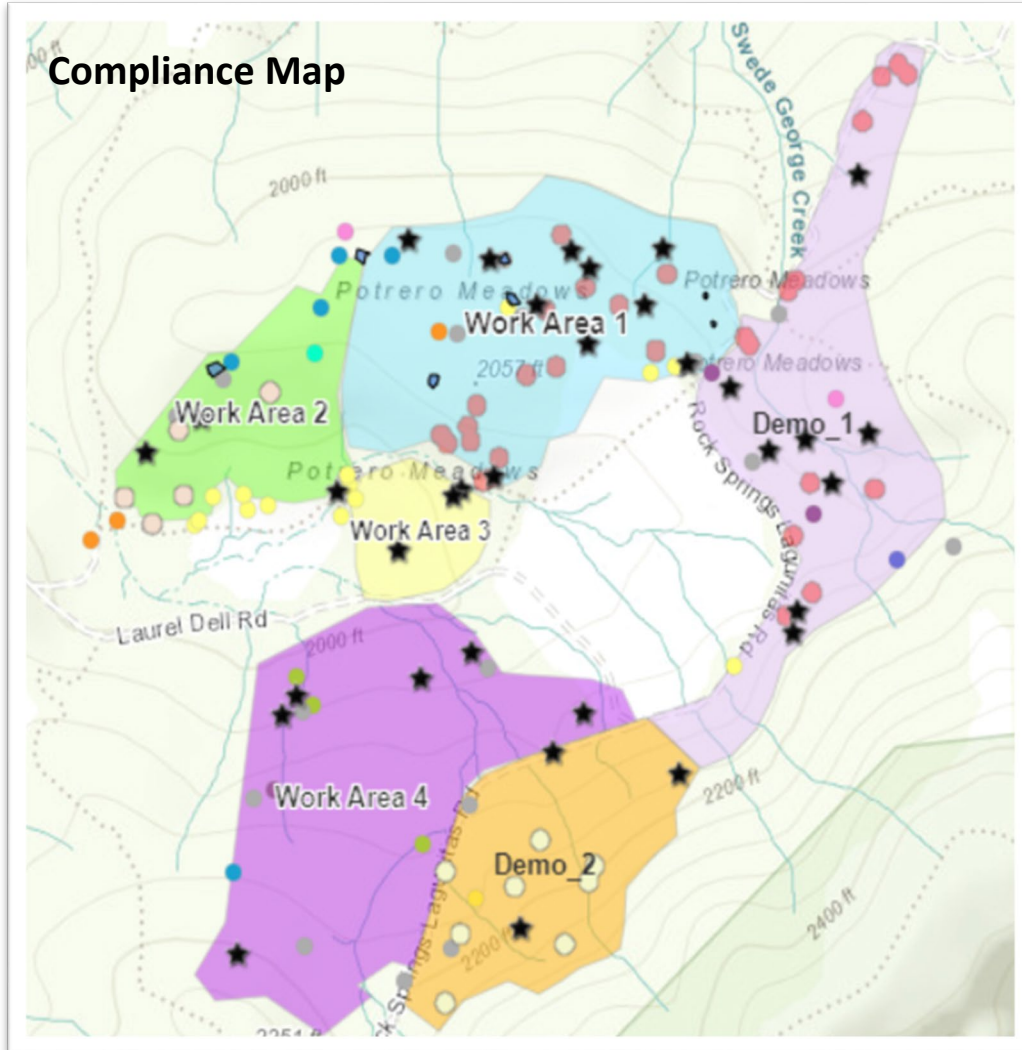
One Tam Forest Health Strategy

Coastal Conservancy Grant of \$870,000

- Develop decision making model to inform multi-benefit forest restoration work
- Use disease mapping and geospatial models to identify areas that may benefit from stewardship/management
- Identify treatment methods, compliance pathways, and resource protection best management practices
- Combine analysis and recommendations into landscape scale regional forest health strategy for public lands
- Implement Potrero Meadow Demonstration Project and model wildfire
- Community outreach and education

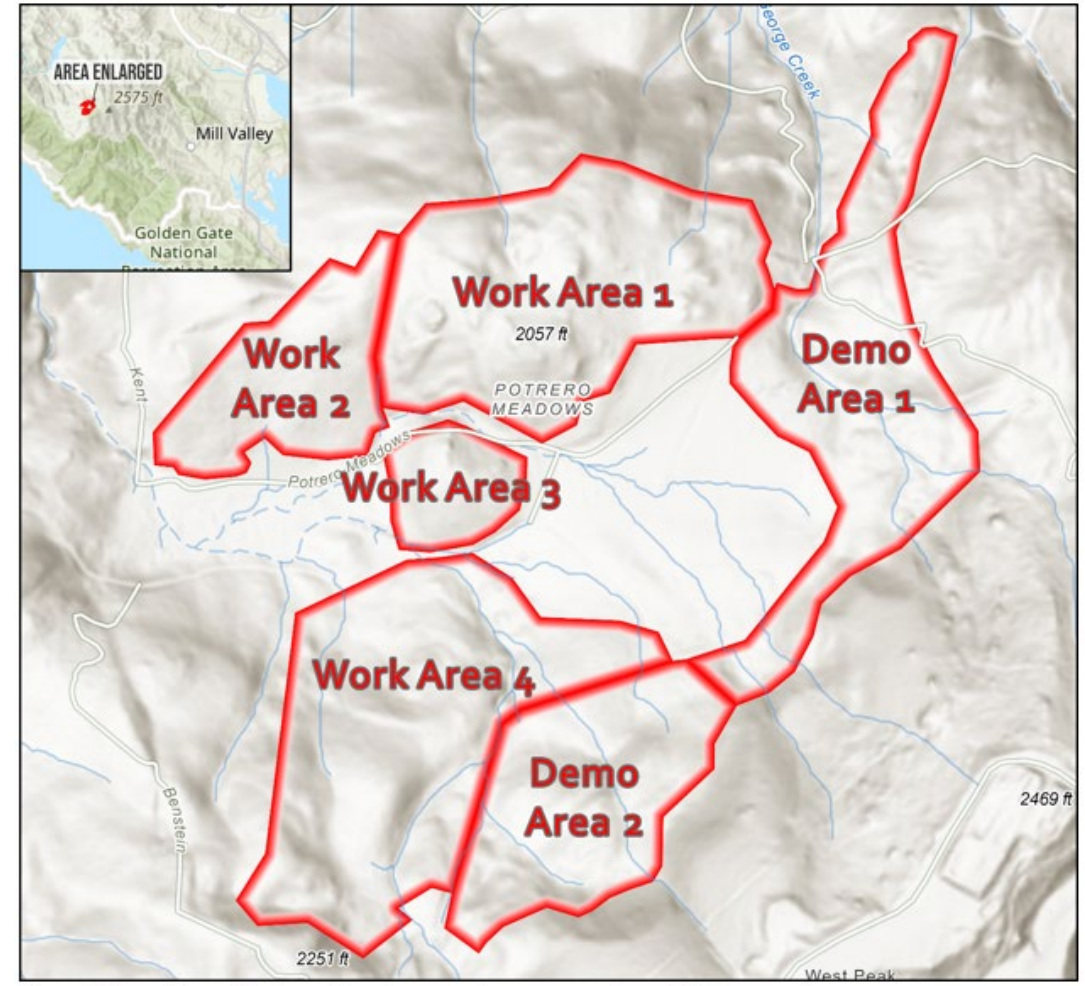


Project-Compliance



Potrero Fuels Modeling

- One Tam Forest Health Initiative
- Digital Mapping Solutions
 - Wildland Resource Management
 - Tukman Geospatial
 - Fire Modeling with FlamMap (USFS)
- 70 acre fuels treatments
 - ‘...dramatically lowered the predicted fire behavior...’
 - ‘...smaller flame lengths...lowered rates of spread’



Potrero Meadows Demonstration Project

Before



After



Potrero Meadows Demonstration Project

Before



After



Potrero Fuels Modeling – Flame Length (Pre, 4'- 20', and Post < 2')

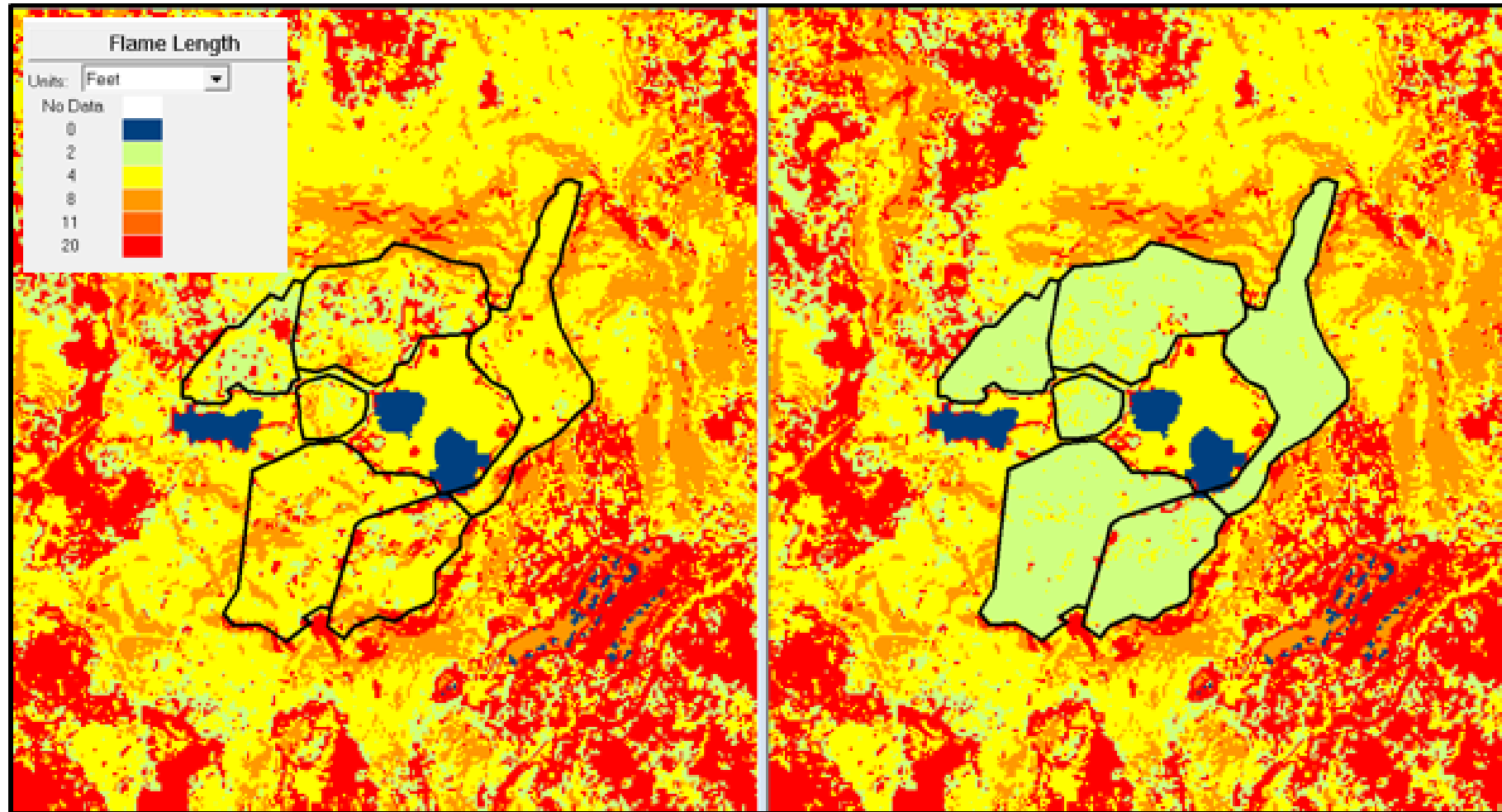


Figure 24. Pre-treatment (on left) and post-treatment (on right) flame length fire behavior prediction. Work areas shown with black outline.

Potrero Fuels Modeling – Fire Spread (Pre, 4' – 18' and Post, <4'/min.)

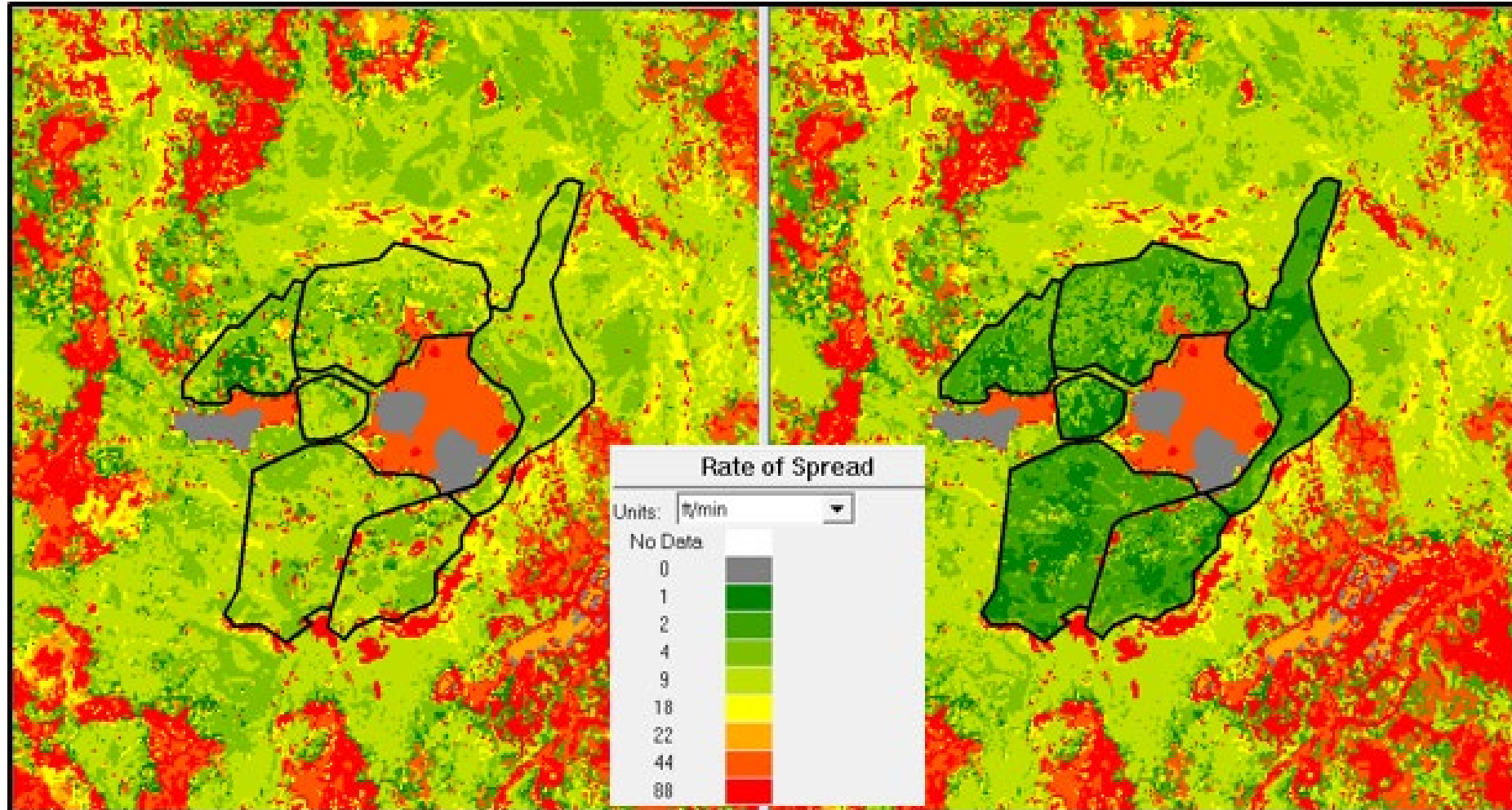


Figure 25. Pre-treatment (on left) and post-treatment (on right) rate of spread fire behavior prediction. Work areas shown with black outline.

Fuels Reduction Outcomes

Low Stand Density =

- ↓ Competition
- ↑ Tree Vigor
- ↓ Fire Behavior
- ↓ Severity
- ↑ Tactical Advantage
- ↑ Fire and Drought Resistance
- ↑ Water Quality

Watershed Wildfire Fuels Modeling

- Collect data on watershed wide existing fuel treatment locations and types.
- Conduct field assessments of fuel treatment characteristics, map and then model fire behavior using FARSITE software, with and without treatments, under varying weather scenarios.
- Develop a geodatabase of values at risk. This modeling will evaluate the efficacy of current treatments, compare the probability of loss as well as assist with providing recommendations on planned fuel treatment locations and types.
- Training on the use of FARSITE.
- Final report to include fuels geospatial data and include future treatment recommendations.

Watershed Forestry & Fuels Work

