

JDSF research project studying wildfire, climate and management questions.

Mitigating Wildfire Hazard in Redwood Forests

Study of the effectiveness and tradeoffs of fuels treatments.

Mitigating wildfire hazard in the redwoods involves fuels reduction treatments...but which ones? This critical question has not been answered for this unique forest whose climate is different than the rest of California.

Objectives:

- Measure the effectiveness of fuel treatments to mitigate wildfire hazard.
- Prepare our forests so that fewer emissions are produced from future wildfires.
- Identify best practices for fuel reduction work with prescribed fire.

Questions:

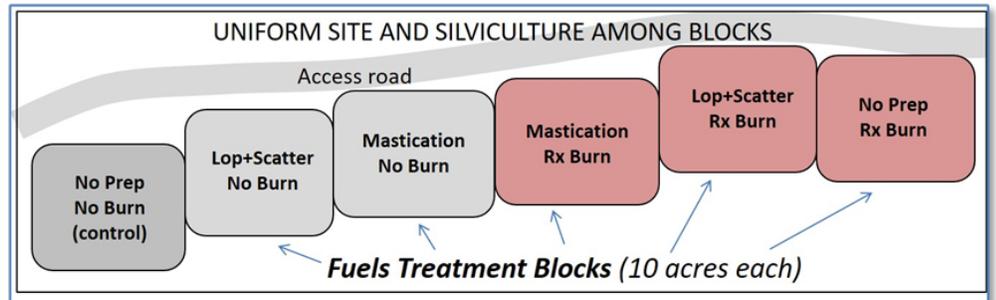
1. How will fire behavior change following combined fuel treatments?
2. How does fuel load change over time following treatment?
3. What role can understory thinning play in fuel management?
4. How will wildlife respond to the changes in forest habitat?

Collaborators

- Mike Jones, PhD, UCANR
- Rob York, PhD, UC Berkley
- P. Berrill & C. Dagley, PhDs, CP Humboldt
- JDSF & MEU Unit Staff

Design:

- Six replicates (sites) located across the Jackson Demonstration State Forest (JDSF)
- Each replicate site will have six treatments in combinations of mechanical and prescribed fire.

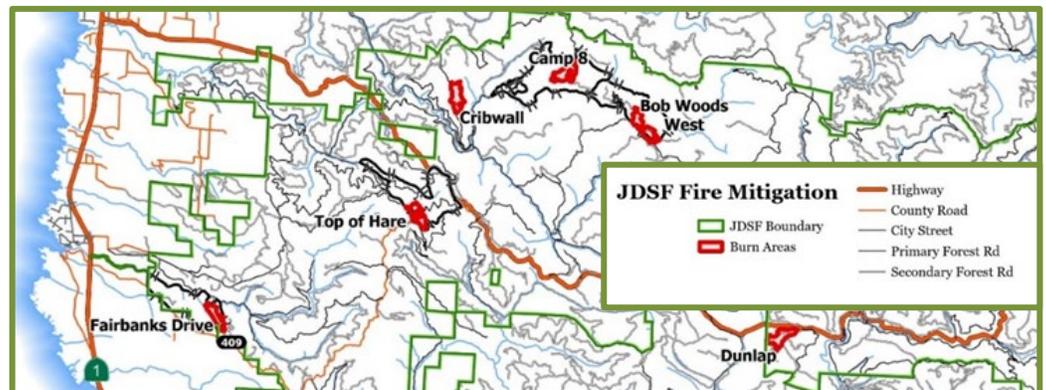


Individual treatment areas are large enough to include the variety of this forest habitat

This experimental design, BACI (before, after, control, impact) is strong enough to provide solid data for reliable study results.

Study Sites

- Partial harvest between 6 & 10 years ago.
- Gentle slopes allow for mechanical treatment and easy access.
- Range from east to west at redwood forest sites.



JACKSON
DEMONSTRATION
STATE FOREST

What are mechanical fuel treatments?

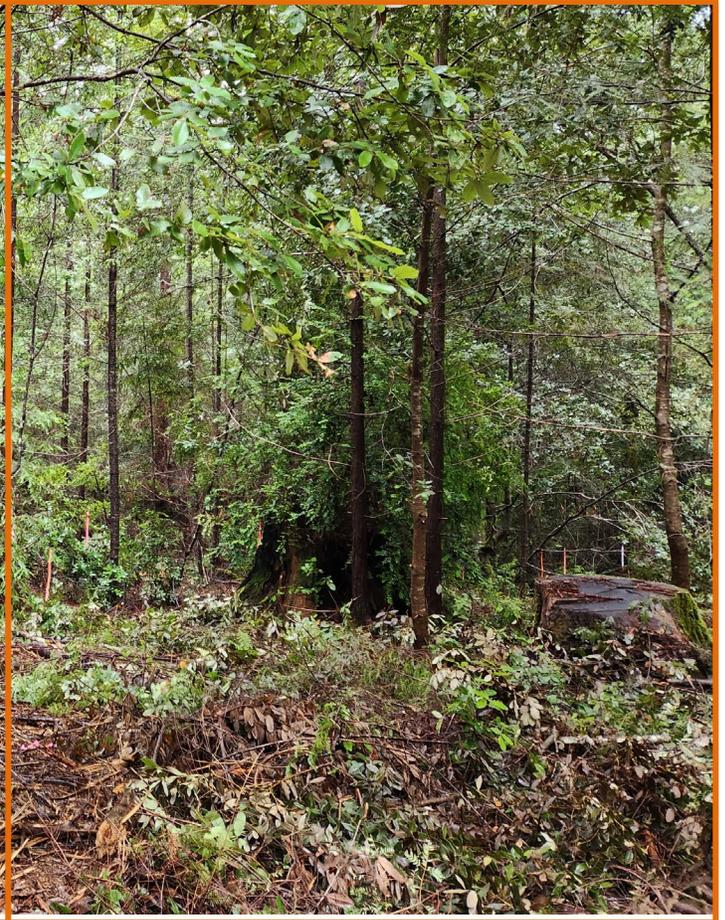
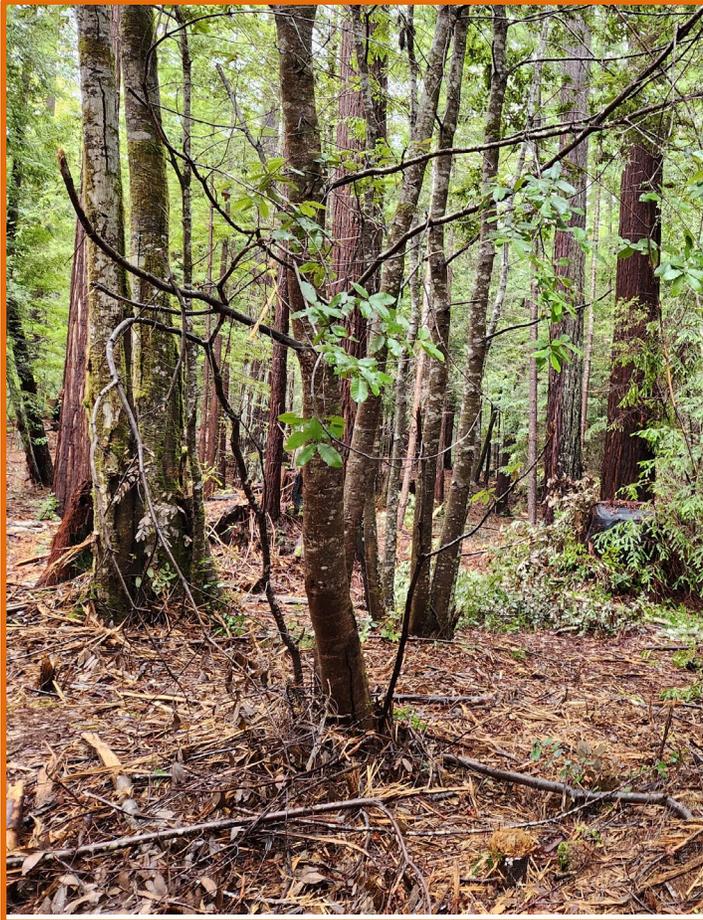


- Its cutting excess trees and shrubs using a chainsaw or heavy equipment.
- Masticators usually have a mower/shredder head mounted to an excavator or similar equipment

Initial Treatment

Mastication (mechanical)

Lop-and-scatter (chainsaw)



Details:

- Treat selected tees, shrubs and wood of less than 8 inches.
- Retain forested condition with 120-180 ft²/ac basal area.

Timeline

- 2020 - Severe Redwood Forest Fires in Sonoma County and Santa Cruz increase concern.
- 2020 -Research Proposal formulated and funded via GHG Grant
- 2022 -Funds for fuels treatments received, Environmental Analysis begins
- 2023 -Environmental Analysis – CEQA VTP completed.
- 2023 -Fuel Treatments begin in fall.
- 2024 -Fuel Treatments compete
- 2024 -Prescribed Fire burn ½ the study
- 2025 -Onward remeasuring plots
- 2025 -Initial results to share

