Eldorado National Forest

Power Fire Fuels Maintenance Study

Project Area: The Power Fire of 2004 burned 17,005 acres along the North side of the Mokelumne River canyon approximately 17 miles east of Pioneer, California. (Amador County, California). The Power Fire Fuels Maintenance Study area encompasses approximately 4,000 acres of Eldorado National Forest land dominated by Sierran mixed conifer communities, ranging in elevation from 3,800 feet to 6,800 feet in the Mokelumne River drainage.

Goals and Objectives:

- Reintroduce fire or prescribed burning into the forest environment
- Conduct a research project focused on fuel accumulation in a large fire scar
- Protect overstory trees and reduce fuels generated by the Power Fire
- Strategically locate units to aid in wildfire management and connect/strengthen existing fuels treatments
- Protect, maintain, and improve habitat in and adjacent to California spotted owl protected activity centers (PACs)

Project Summary: Areas that experienced low to moderate severity fire effects from the Power Fire were identified for fuel reduction treatments. Multiple applications of prescribed fire will be completed over time to gradually reduce the unnaturally high fuel accumulation and increase forest resilience.

Historically, the Power Fire area experienced frequent low to mixed-severity fires that consumed fuels, killed small trees, and pruned the boles of residual trees. In contrast, the subsequent fire regime of full fire suppression and fuel conditions in the Power Fire's mixed conifer stands (and many forest stands in the Sierra Nevada) have changed from these historical patterns allowing for a buildup of fuels. These forests are at high risk of fire-related mortality due to high fuel loading.

A unique opportunity for restoration exists in forest stands that survived large wildfires. Generally, post-wildfire management has focused on conifer reforestation to rebuild forest cover and prevent vegetation type conversions. Less focus has been spent on re-introducing fire into the post-wildfire landscape (fire scar).

This study will examine how to maintain the positive effects of the Power Fire and continue beneficial fire effects within these forests. Improved knowledge is needed of different prescribed fire prescriptions and their effects in these fuel conditions to achieve the desired conditions especially in highly variable post-fire forest stands that include regenerating trees and shrubs. These resulting data and findings will be used to guide future restoration efforts utilizing prescribed fire across the Sierra Nevada in similar vegetation types.

Treatment: 4,000 acres of low intensity hand and aerial understory burning, hand and dozer lines, hand cutting, chipping and 2,000 acres of mechanical treatment.

Total Acres: 4,000 **Implementation:** 2017, multi-year

Responsible Agency/Organization: U.S. Forest Service, Eldorado National Forest

Partners: Pacific Southwest Research Station

Cooperators: Amador Calaveras Consensus Group (ACCG), Amador County Air District, Amador Fire Safe Council, Jackson Rancheria, PG&E, Point Blue Conservation Science, Sierra Forest Legacy, Sierra Pacific Industries, and the Bear River Cabin Tract Association.

Values to be Protected: Northern goshawk, and California spotted owl habitat; suitable habitat for the Sierra Nevada yellow-legged frog; extensive reforestation projects, water quality, water supply and hydroelectric power generation; recreational fishing, and cultural resources.

Highlights:

Study: Prescribed fire effects on forest regeneration, shrubs and stand development (Malcolm North)

This research will focus on improving the long-term resilience of the Power Fire landscape by identifying successional processes and patterns in mixed conifer and true fir forests that burned at low to moderate severity. The use of prescribed fire applied 12-18 years after the Power Fire could create unique, exemplary managed forests, resilient to predicted increases in wildfire and drought severity. Unlike examples in the National Park, creating these conditions in second-growth forests would provide insight into restoring managed forests that make up most of the condition on Forest Service land.

Project Design - This project would establish replicate monumented plots (10 ac in size) for repeat sampling of understory conditions and then apply three distinct fire treatments (none, prescribed burn within the next 3 years, and prescribed burn 5-6 years from now) each randomly allocated to 1/3 of the plots. A weather station will be established onsite and then compared with the longer records of local remote area weather stations (RAWS) to provide long-term data for calculating fire weather and drought information. Field sampling will largely take place within the Power Fire footprint, with some sampling directly adjacent to the Power Fire to be used as a control.

Project Strategies:

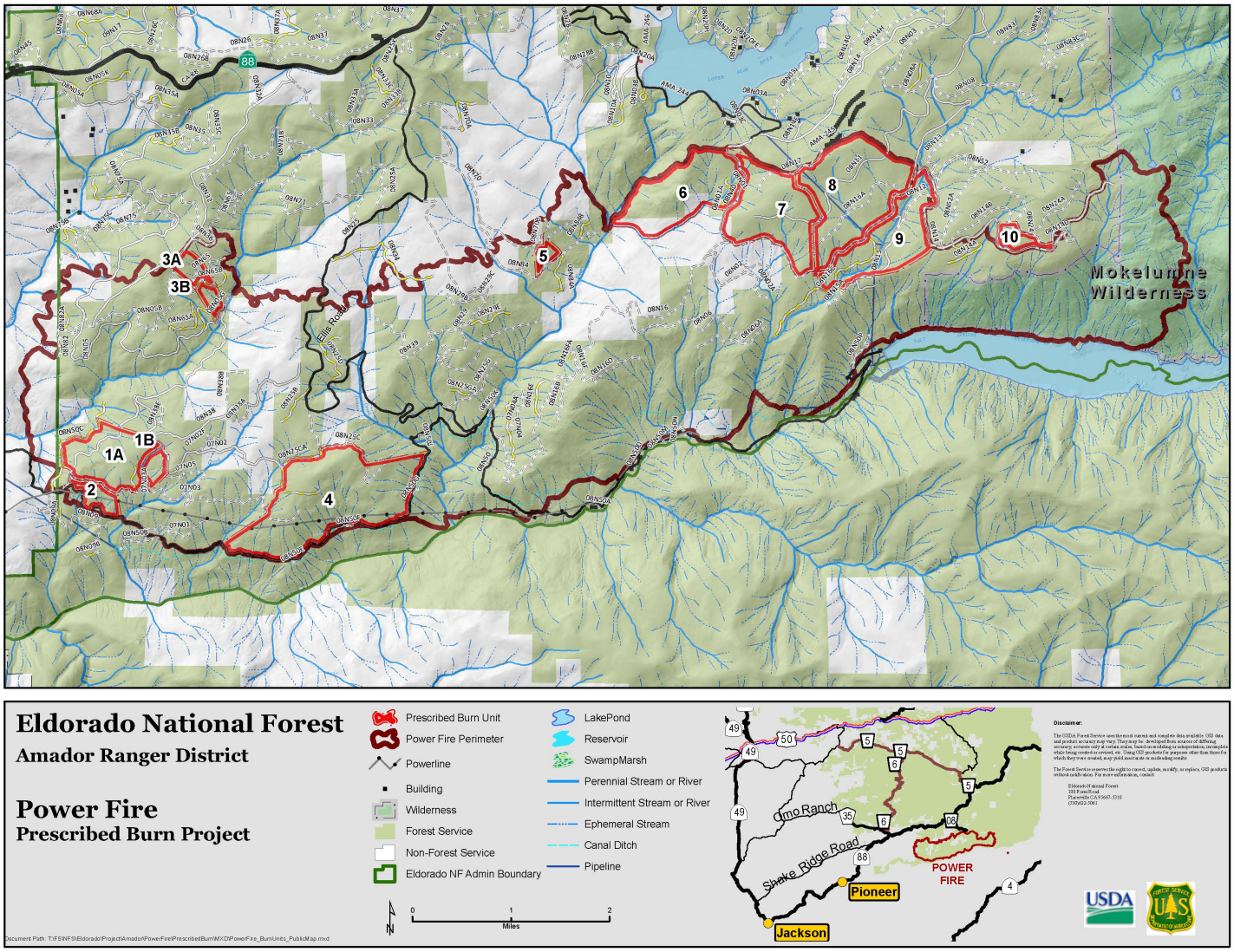
2017/18 Implementation

- **Unit 4 – 852 ac.** This unit connects PG&E, SPI, and FS Panther fuel breaks. It treats a large area in the middle of the Power fire scar dividing it in half.
- **Unit 6 – 450 ac.** Anchoring into the dam and granite escarpments of Bear River Reservoir, this unit creates a fuel break between the North Fork Mokelumne River canyon and the Bear River Cabin tract (WUI).

2018/19 Implementation

- **Unit 7 – 454 acres.** Protecting reforestation efforts and extending the fuel break created from Unit 6.
- **Unit 8 – 588 acres.** Protecting reforestation efforts, Kirkwood Meadows Public Utility District (KMPUD), and Pacific Gas and Electric (PG&E) critical infrastructure, suitable habitat for the Sierra Nevada yellow-legged frog and extending the fuel break created from Unit 7.
- **Unit 10 – 65 acres.** Treatment along the Tanglefoot road east of units7-9. Additional fuel break separating the North Fork Mokelumne River canyon from the Bear River area.

Future Implementation

- **Unit 9 – 396 acres.** Linking fuel breaks from unit 7 & 8 and 10. Protecting critical and Amador Water Agency (AWA) infrastructure and water quality.
- **Unit 1 – 354 acres.** Near Panther Creek and Salt springs road, many plantation investments and Northern goshawk, and California spotted owl habitat; suitable habitat for the Sierra Nevada yellow-legged frog.

Project Area Map: