

2023 SHASTA FORESTRY CHALLENGE

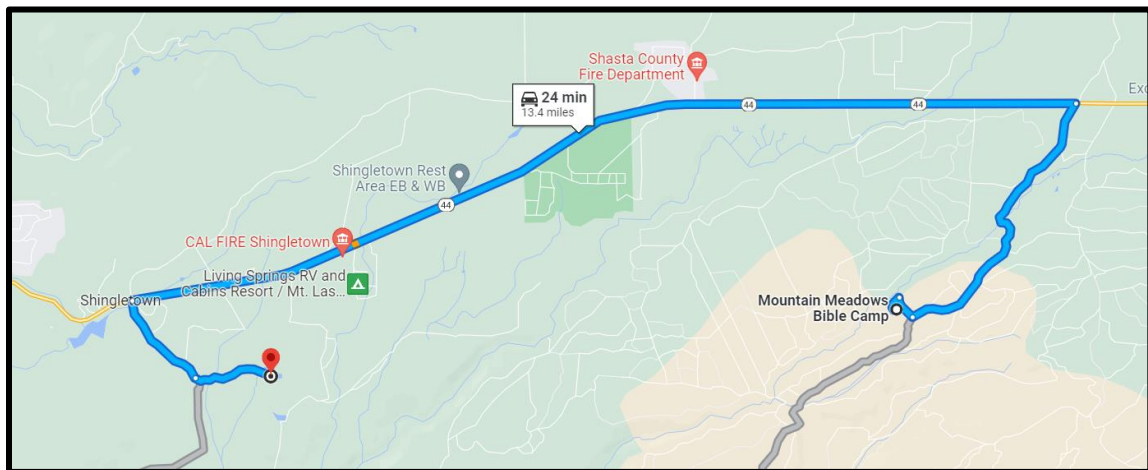
FOCUS TOPIC QUESTION

Introduction:

The focus topic is ***A New Demonstration State Forest in Shasta County.*** Students will collect data on the Noble Demonstration State Forest near Shingletown to assess the potential for a shaded fuelbreak and will recommend future forest management activities that will help protect the adjacent community.

Location:

Noble Demonstration State Forest (DSF) is in Shasta County, east of Redding and southeast of Shingletown. Access to the property is off HWY 44 at Morgan Hill Road. The 2,050 acre DSF is in the vicinity of Grace and Nora Lakes. It is approximately 13 miles and 25 minutes from Mountain Meadows Camp. A map of the route is below:



Background Information:

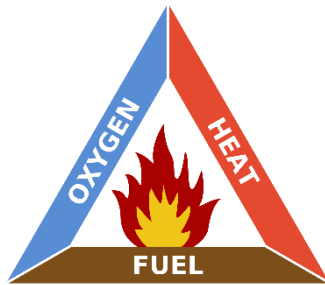
Demonstration State Forests

CAL FIRE operates 16 Demonstration State Forests (DSFs) totaling 85,135 acres. The DSFs represent the most common forest types in the state. The State Forests grow approximately 75 million board feet yearly and harvest an average of 30 million board feet of timber each year, enough to build 3,000 single-family homes. Revenues from these harvests fund the Department's Demonstration State Forest Program. In addition, the forests support research and demonstration projects, while providing public recreation opportunities, fish and wildlife habitat, and watershed protection.

Noble Demonstration State Forest (NDSF)

CAL FIRE received ownership of the NDSF property on December 7th, 2022, from Pacific Gas and Electric Company (PG&E). The forest supports numerous coniferous tree species of commercial value including ponderosa pine, incense cedar and Douglas-fir. The Shingletown area is popular with outdoor recreators. Recreational activities include hiking, biking, and horseback riding. Hunting and fishing may be enjoyed in season, and in accordance with applicable laws and regulations. The forest is normally accessible year-round, with snow being the only access limitation. There are no campgrounds or potable water on the Noble DSF.

Fire Behavior

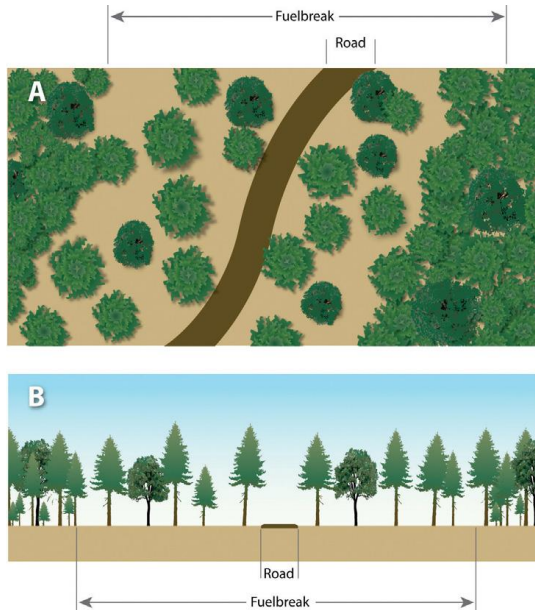


Above are diagrams of the Fire Triangle and the Fire Behavior Triangle. You will notice that the one element common to both triangles and the one we can most directly influence is Fuel.

When fuels (small trees & brush) are present and connected, such as from the ground to the treetops or crowns, a fuel ladder exists that can carry a surface fire up into the crowns, where the fire becomes far more dangerous and difficult to control. A crown fire can sustain itself when trees are too close to each other such that their crowns (branches) once ignited can spread fire crown to crown. Therefore, to reduce the chances of a crown fire, it is necessary to disconnect both vertical and horizontal fuels.



Shaded Fuelbreak



A shaded fuelbreak is a strip of land where fuel (for example, living trees and brush, and dead branches, needles, or downed logs) has been modified or reduced to limit a fire's ability to spread rapidly. Within the shaded fuelbreak, overstory trees are thinned to reduce crown-to-crown overlap (crown bulk density). In addition, within the shaded fuelbreak, understory trees and combustible shrubs (e.g., ladder fuels), heavy ground fuels, and snags are reduced or removed.

Fuelbreaks at Noble DSF

The previous landowner harvested intensively adjacent to the main public road through NDSF using a Timber Harvest Plan (THP). While a shaded fuelbreak was not part of the prescription, the areas adjacent to the main road have the characteristics of a fuelbreak. Furthermore, the NDSF is near the community of Shingletown, which has a high risk of high intensity wildfire, so managing the NDSF to provide protection for the community could be an objective written into the management plan that is now under development.

Legal Definition of a Fuelbreak

Community Fuelbreak Area means a shaded fuelbreak approved by a public fire agency as part of a fire prevention plan for fire protection, ignition management, prefire management or other fire defense improvements. Within a shaded fuelbreak, vegetation is managed to reduce the potential for wildfire damage and provides a direct benefit to defensible space as defined in 14 CCR 1271.

A Registered Professional Forester (RPF) can write a THP with a special prescription called "Fuelbreak/Defensible Space" that allows the creation of a shaded fuelbreak but requires that the area retains a specific minimum basal area after harvest. At this location, the minimum standard is 50 square feet of basal area per acre.

Fieldtrip: On the afternoon of Thursday, September 28, your team will be assigned a 1/5 acre plot for data collection, and you will determine:

- The number of trees in the plot with a diameter at breast height (DBH) of 4" or greater, their species, the height to live crown, and distance to the nearest tree
- Basal area using an angle gauge, which will be compared to the sum of the recorded basal area of each tree calculated based on the recorded diameters
- Percentage canopy cover
- The height of vegetation on the ground
- Brush cover and woody debris levels

Items to be Addressed in Your Presentation:

Your presentation should address the following topics:

1. The location, size, and history of the Noble DSF
2. An overview of data collection techniques and a summary of the data collected
3. A determination of whether the existing condition meets the definition of a shaded fuelbreak
4. A plan for future management to provide protection from wildfire to the adjacent community while maintaining recreational and aesthetic values

Resources:

You will be given resources on a flash drive to load onto your team's computer, including the data set you generated. Additionally, you can use photos you take on Thursday and statements from the Foresters you worked with and interview during Ask a Forester.

Final Product:

Your goal is to produce a 15-minute PowerPoint presentation that describes, in detail, the current forest conditions in the study area and a determination of whether or not the existing condition meets the definition of a shade fuelbreak, as well as your plan for protecting the community within the guidelines of a Demonstration State Forest. You are encouraged to use photos and information collected on the fieldtrip, interviews with resource professionals during the Challenge, and the maps, tables, and information in the resources provided. Additionally, use the presentation score sheet as a checklist to make sure you cover the items on which you will be scored.