

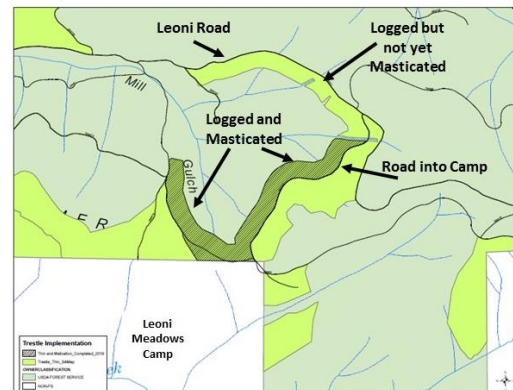
2019 EL DORADO FORESTRY CHALLENGE FOCUS TOPIC QUESTION

Introduction:

The focus topic is ***Post Treatment Assessment of the Trestle Forest Health Project***. Students will collect data on one unit of the Trestle Forest Health Project that has been commercially logged and masticated and use the data to determine if the treatment meets the project objectives.

Location:

The 19,128 acre project is located south-east of the community of Grizzly Flats, including the area surrounding Leoni Meadows. The project is in the Placerville Ranger District of the El Dorado National Forest. Part of unit 623417 has been treated according to the project specifications and will be the site of our data collection.



Background Information:

National Environmental Policy Act (NEPA)

When a project is proposed on federal land, an environmental analysis must be done to state the proposed action and its impact on the environment. The type of project and amount of public concern determines how detailed the analysis will be. There are three levels of analysis:

- ***Categorical Exclusion***. A CE, or “Cat Ex” is the most streamlined regulatory method for getting work done. Cat Ex criteria can be automatically applied to situations that are pre-defined, such as salvage logging on 250 acres or less, hazard tree removal near public roads or trails, or hazard fuel reduction within 1.5 miles of urban areas. Using a Cat Ex gets the work done quickly in situations where immediate action is necessary.

- Environmental Assessment (EA). An EA discloses one or a few action alternatives as well as a “no action” alternative. The proposed action(s), benefits, and possible negative impacts are described. The process is less time consuming than for an EIS.
- Environmental Impact Statement (EIS). An EIS is often used when there are substantial controversial issues that need to be addressed. A multidisciplinary team writes a draft that describes the potential benefits and negative impacts of several alternatives for action, including no action. The draft is released to the public for a 45 day comment period. A “Record of Decision” names the preferred alternative. The process of writing an EIS and getting it approved can take several months to years.

The Trestle Project began as an Environmental Assessment, but after considering the concerns raised during its early stages, it was determined to have controversial issues, so it became an EIS. Alternative 5 was chosen to balance fuel treatments that would effectively modify fire behavior with concerns that thinning could negatively impact California Spotted Owl populations in the project area.

Purpose and Needs of the Project

The Environmental Impact Statement explains the purpose and needs for the Trestle Forest Health Project. The first one listed, and the one we will focus on, is to “reduce fuel loading to reduce the threat of large, high-intensity wildfires and threats to Grizzly Flats, Leoni Meadows, and other landowners.” After stating purpose #1, the document lists desired conditions for different vegetative types that will help determine if that purpose was met. The conditions for conifer forests are:

- a. Reduced (ground) fuel concentrations resulting in shorter flame lengths (< 4 feet) during 90th percentile weather conditions;
- b. Canopy fuels arranged so that the fuel continuity is broken both horizontally and vertically. Probability of crown fire initiation less than 20% during 90th percentile weather conditions; and
- c. Potential fire intensity decreased to a level where tree mortality would be less than 20% of the dominant and codominant trees under 90th percentile weather conditions.

Our task will be to assess the post-treatment condition in Unit 623417 and use fire behavior modeling to predict how a fire would actually behave in extreme weather conditions.

Treatment Completed on Unit 623417

The interior of the unit will be treated mechanically to cut brush (including conifer saplings) and pile the slash. The outside strip of the unit is a 300 foot buffer that has just been commercially thinned, and part of it has been masticated.

Post-Treatment Monitoring

Post Treatment monitoring is designed to verify that the projects are implemented as designed, and that they are effective in meeting the project and Forest Plan objectives. Monitoring is also used to verify the assumptions and models used in planning. The Trestle EIS states that “each active management unit will be visited at a frequency necessary to assure compliance.”

Fire Danger Ratings System

The U.S. National Fire Danger Rating System (NFDRS) is used for fire management applications prior to a fire, such as fire preparedness, prevention, and suppression readiness. It consists of components and indices calculated from values representing topographic and vegetative conditions along with a steady stream of weather data. The steps to the process are:

- Remote Automated Weather Stations (RAWS) are placed in several locations, generally mid-slope on south or west facing aspects. There is a RAWS about 1 mile from Leoni Meadows.
- Weather observations such as wind speed, relative humidity, and rainfall amounts are recorded during the afternoon, when fire danger is normally highest.
- Indices including the Spread Component (SC), Energy Release Component (ERC), and Burning Index (BI) are determined.
- The indices are compared with a climatological breakpoint table to determine what percentile the current conditions fall under.

Fire Behavior Modeling

Fire behavior models are an important tool, allowing land managers to predict how fast, how hot, and in what direction a wildfire may move, given specific fuels conditions and seasonal weather conditions. BehavePlus is the fire modeling system we will use. It simulates rate of fire spread, spotting distance, scorch height, tree mortality, fuel moisture, wind adjustment factor, and many other fire behaviors and effects.

Fieldtrip: On the afternoon of Thursday, October 24, 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 10" or greater, and their species
- Height to the first live branch for each tree, to determine average distance from the ground to the canopy
- Basal area using an angle gauge, which will be compared to the raw data of each tree's dbh
- Canopy cover using a densitometer
- Depth of woody debris and slope, which will be an important metrics for running Behave

Items to be Addressed in Your Presentation:

Your presentation should address the following topics:

1. The location, size, and purpose of the Trestle Forest Health Project
2. Treatment completed in unit 623417
3. A summary of the data collected
4. Application of the data to Behave Plus and a comparison of those results to the Trestle Project objectives

Resources:

On Thursday evening, you will be given resources on a flash drive to load onto your team's computer. During preparation time, you will have internet access to do independent research. Additionally, you can use photos you take during the data collection and statements from foresters you work 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, post-treatment conditions in unit 623417 and a determination of whether or not the condition meets the project objectives. 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 judges' score sheet as a checklist, to make sure you cover the items on which you will be scored.