

# 2018 EL DORADO FORESTRY CHALLENGE

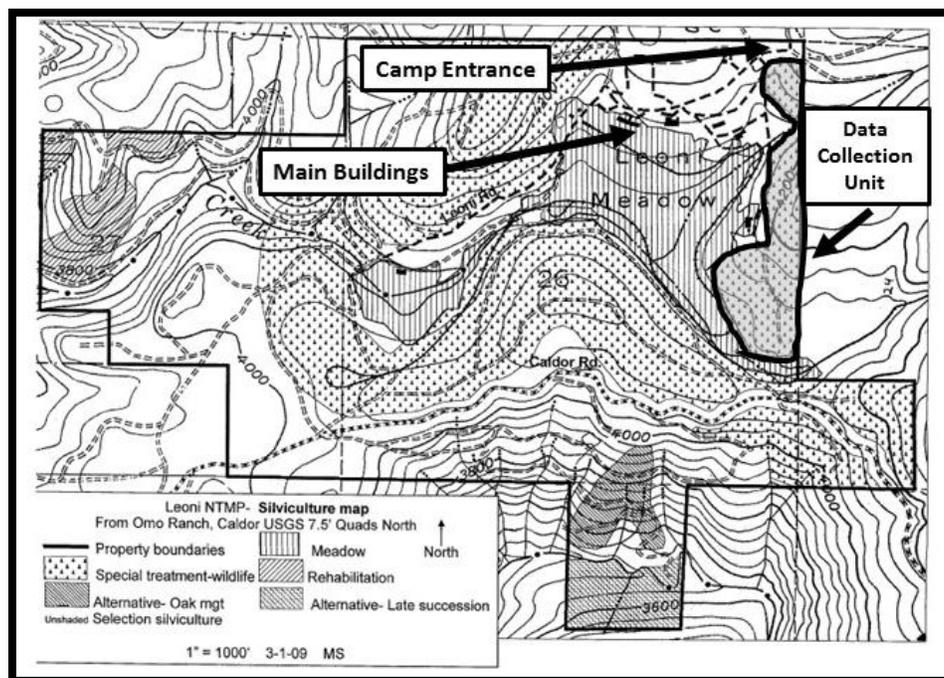
## FOCUS TOPIC QUESTION

### Introduction:

The focus topic is *Timber Harvest Economics in Today's Market*. Students will assess available timber that could be harvested at Leoni Meadows and, using current information on lumber prices and logging/hauling costs, determine whether (or not) Leoni Meadows would meet its financial goals if they harvest in today's market.

### Location:

We will be walking to a unit on the eastern edge of the 960-acre Leoni property, an area designated as “special treatment – wildlife area” in their Nonindustrial Timber Management Plan (NTMP). Students will determine which trees they recommend harvesting and calculate the volume and value of a harvest in that and similar units on the property.



### Background Information:

#### Leoni Meadows Camp

Leoni Meadows Camp is a 960-acre property purchased by the Northern California Conference of Seventh Day Adventists in 1974. Prior to this purchase, it was a working cattle ranch. Today, its primary use is as a recreation site, hosting conferences, retreats, and summer camp. The

general area was logged extensively during the gold rush and into the 1930's. The last commercial harvest operation at Leoni was done in 1995-1996, under a Timber Harvest Plan (THP). In 2009, Leoni Meadows hired Registered Professional Forester (RPF) Mark Stewart to prepare a Non-Industrial Timber Management Plan (NTMP). The plan was approved and is the CEQA document that guides all commercial harvest activities on the property.

### California Environmental Quality Act (CEQA)

The California Environmental Quality Act of 1973 (CEQA) is a state law that requires state and local government agencies to prepare an environmental assessment before undertaking or issuing a permit for any project with possible environmental repercussions. CEQA documents for commercial timber harvest include the Timber Harvest Plan (THP) and the Nonindustrial Timber Management Plan (NTMP). Leoni's NTMP allows for periodic harvest using single tree selection or group selection, both of which are uneven-aged silviculture methods. Additionally, Leoni's NTMP has special rules for areas with habitat favorable to the Great Gray Owl, including a higher than usual tree size and density that needs to be retained after harvest to insure favorable Great Gray Owl (GGO) habitat.

### Logging / Hauling Costs and Yield Tax

When a landowner wants to log their property, they decide which Licensed Timber Operator (LTO) to enter into a contract with based on a bid, usually in dollars per ton of wood cut, processed, and loaded onto a truck. An LTO can also clean up the logging slash for an additional cost but, in this case, Leoni has the equipment to do the cleanup themselves. The bid is based on what kind of logging will be done (tractor, cable, or helicopter), the volume per acre, and the silvicultural method, as clearcutting is less expensive than single tree selection.

Once the logs are loaded onto a truck, there are costs associated with getting the logs to the mill, including the hourly wage of the truck driver, fuel, and truck maintenance.

The landowner is also required to pay a yield tax, which varies by species. Tax rates are adjusted every six months. The tax rates, expressed in "MBF" (thousand board feet) for July through December 2018, are:

PP, SP: \$7.00/MBF	WF: \$6.00/MBF
DF: \$12.00/MBF	IC: \$13.00/MBF

## Landowner Economics

Two million dollars in revenue from Leoni's 1996 harvest was put into an endowment fund, and the approximate \$40,000 annual interest from that fund helps pay for forestry work such as thinning, burning, and removal of dead and dying trees. However, with multiple vegetation management projects and the recent wave of tree mortality, more is spent each year than is earned in interest, resulting in a current endowment fund balance of about \$1,400,000. There have been no commercial harvests since the NTMP was approved because the timber market has not been good enough to justify a harvest. Prices have come up in recent years, and the landowner wants to know if a revenue goal of \$300,000 can be met with a harvest today.

## Logging and Hauling Cost Breakdown

Current logging costs for this area are approximately \$30 per ton. A log truck can hold 26 tons, for a total of \$780 of logging costs per truck load.

Hauling costs are based on the time it takes a log truck to make a round trip to the nearest lumber mill, which is in Lincoln. The cost of the driver and truck is \$100 per hour, so a 5 ½ hour round trip costs \$550.

There are about 4,500 board feet of lumber in a load of logs. A logging cost of \$780 per load divided by 4,500 board feet per load is \$173 per thousand board feet of lumber.

A hauling cost of \$550 per load divided by 4,500 board feet per load is \$122 per thousand board feet. Added to the logging cost of \$173 per thousand, the total cost is \$295 per thousand board feet. Lumber prices, depending on species, are between \$400 and \$650 per thousand board feet, so there is a profit potential of \$105 to \$355 per thousand board feet.

## Forest Inventory Procedure

Pin flags have been placed in a grid pattern in the unit to mark the center of 31 one-tenth acre circular plots, which have a radius of 37.2 feet. A map of the data collection unit, with the plot centers, as well as a data collection sheet, will be given to you at the beginning of the fieldtrip. The pin flags are numbered to match the numbers on the map.

Once your team locates its plot center, you will collect data using the worksheet provided. The data sheets will be collected, and the information will be entered into a master spreadsheet and returned to you on the flash drive you will receive at 7:00 on Thursday evening.

## **Fieldtrip:**

On the afternoon of Thursday, October 25, your team will be assigned a 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
- The diameter at breast height and basal area for each tree
- The current basal area for the plot, expressed in square feet per acre
- Which trees should be harvested based on the following criteria: defect, suppressed, spacing, and species
- The volume and value of each tree to be removed

## **Items to be Addressed in Your Presentation:**

Your presentation should address the following topics:

1. The property and logging history of Leoni Meadows
2. Summary of the laws that govern commercial timber harvest in CA
3. Data collection procedure and a summary of the data
4. Calculation of the current value of timber available to harvest and a recommendation on whether a harvest makes sense at this time

## **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 fieldtrip 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 value of the timber available for harvest and your recommendation of whether a harvest makes sense at this time. 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.