

Forest Health and Fuel Reduction Treatment Proposal
Burton Creek State Park - May 2005 – NTMS 6th grade
Baseline Mapping Project
(California State Park and SWEPP sponsor)

The purpose of this project is to inventory the trees in a 30 x 30 meter plot and collect and record data on the health of the existing forest in Burton Creek State Park, adjacent to North Tahoe Middle School. Each team will be responsible for a 10 x10 meter area and will decide on a fuel reduction treatment plan based on the criteria provide. You will mark the selected trees and write up a brief description justifying your selection.

Data collection will include the following:

- **Assessment of Trees and Snags**

Trees and snags are measured in two size classes:

Equal or greater than 60 cm circumference (19.5 cm diameter)

Less than 60 cm circumference (19.5 cm diameter)

- **ID Tree species ...make a key on the map**

Jeffrey Pine; Fir and Other

- **Vigor class** is broken down into 6 categories. Classes 1-3 are for live trees and 4- 6 are for dead standing trees.

Live trees:

Class 1 - Healthy tree with no visible defects

Class 2 - Healthy trees with minimal damage or defect (broken top, abnormal lean etc.)

Class 3 - Live tree that is near death or will be dead in the next 5 years.

Dead Trees:

Class 4 - Recently dead tree with little decay and retain their bark branches and top

Class 5 - Show some decay and have lost some bark, branches and have a broken top.

Class 6 - Extensive decay and missing bark and most branches and have broken top.

- **Assessment of Litter**

Use a trowel to dig down to mineral soil. Measure the depths of the litter (freshly fallen needles, leaves, bark, cones, and twigs) layers with a ruler to the nearest 0.5 cm. Each member of your team should pick a spot in your plot and average the results.

Burton Creek State Park – Forest Health – Selection criteria... Treatment Options

Forest Health involves several factors and can generate debate.

Some might argue that you need a variety of tree species and a variety of ages to have a healthy forest. Some might argue that you need some dead snags to provide habitat for different species. Some think fire is a natural part of forest health and others argue that wildfire threatens communities and animal habitat and must be suppressed.

In this project, California State Parks wants you to recommend a plan for reducing the fuel load and minimizing the risk of a catastrophic fire. Your job is to think like a forester and come up with a plan to slow down and minimize the risk of catastrophic fire. Fire suppression has created unhealthy forest with tremendous fuel load and risk of catastrophic fire. If you have over crowding and the potential for fire ladders to carry fire up into the canopy, you are advised to reduce the fuel load.

Data Sheet

Date: _____

Team members: _____

30 meter

Mark your 10 x 10 meter quadrat with an X

Part 1- Count the number of trees in your study site.

1. Tally # trees < 60cm (circumference)

_____ Lodgepole

_____ Jeffrey Pine

_____ Fir

_____ Other

2. Tally # trees \geq 60 cm (circumference)

_____ Lodgepole

_____ Jeffrey Pine

_____ Fir

_____ Other

3. Litter Assessment:

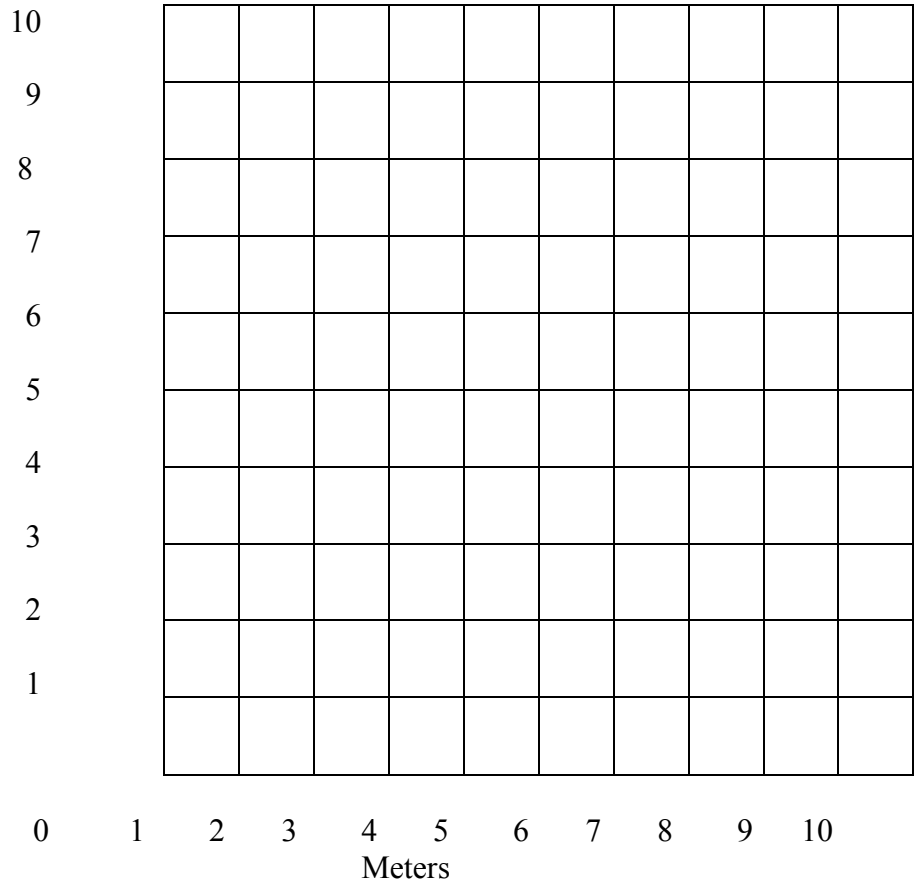
Each team member measure depth of litter down to mineral soil

Record and average results.

Average litter depth _____ cm

Part 2 - Plot all trees ≥ 60 cm (circumference) in your 10 x 10 meter grid. Circle those you choose to SAVE. (If you have trees less than 60 cm (circumference) you recommend be saved add them to your map and data sheet.

Create key to ID tree species: Lodgepole ____ Jeffrey Pine ____ Fir ____ Other ____



Part 4

Within your study plot we want you to consider all of the factors before recommending treatment. You must decide who is to live and who is to die!

Forest Health -Selection criteria...Things to consider:

- Once upon a time fires came through a forest every 7 to 10 years BUT fire management has suppressed fires for the past 100 years. The forests in the west are like kindling boxes ready to explode!
- Fuel ladders can cause fire to climb up into the canopy and spread rapidly out of control.
- To minimize crown fires canopies shouldn't overlap.
- Cut low branches and underbrush help eliminate fire ladders.
- Piles of slash (excess woody material) can be created and when conditions are right – prescribed burns can be set to reduce the fuel load.
- Other considerations:
 - Biodiversity – it's good to have a variety of species in a forest
 - Snags (standing dead trees) can provide great habitat
 - Old growth (dominant) trees are an important part of an ecosystem
 - Trees have a life cycle – variety of ages is important for sustainability
 - If trees are under the canopy of a larger tree they are competing for water and nutrients.

Decide as a team – how you would reduce the risk of FIRE and which trees will be SAVED in your plot. Identify trees to be SAVED on your data sheet. Using the selection criteria information, briefly argue the case for your recommendations.

Recommended Treatment Proposal – briefly describe your plan for reducing the risk of fire in your plot. Include which trees you recommend be saved and why.