Volunteers needed to help with inventory

The Sequoia National Forest is beginning the inventory of the giant sequoia groves located on the Giant Sequoia National Monument. This inventory will complete an existing inventory that began in 1998 but was never finalized. The information from this inventory will update the information we have collected over the years regarding overall the number and type of trees in giant sequoia groves, the size of these trees, the fuel-buildup of small and dead trees in giant sequoia groves, and the makeup of vegetation for wildlife habitat in these groves.

It has taken many years for the forest to be able to obtain funding to complete this inventory, originally identified as a desired goal in the 1990 Mediated Settlement Agreement that provided interim direction for the Sequoia National Forest under the 1988 Sequoia National Forest Land and Resource Management Plan. The Forest inventoried approximately half (50%) of the giant sequoia groves from 1998 to 2004 before stopping the inventory project. Funding to complete the inventory was not obtained until this year. Completing the giant sequoia inventory will provide information that will be utilized as we develop the Giant Sequoia Environmental Impact Statement and subsequent management plan. It is important the Forest accomplish the giant sequoia grove inventory for the Giant Sequoia National Monument Plan this year.

The 2000 Presidential Proclamation for the establishment of the Giant Sequoia National Monument acknowledged the occurrence of many diverse objects of interest and listed special concerns deemed critical for management within the monument. The concerns focused on the lack of sequoia regeneration and the buildup of surface fuels – both of which could threaten the longevity of giant sequoia ecosystems.

There are 33 giant sequoia groves on the Giant Sequoia National Monument totaling approximately 20,000 acres. Half the acres (13,711) of groves within the monument have had a vegetation and fuels inventory (conducted from 1998 to 2004). The groves with a current inventory include: Mountain Home, Deer Creek, Packsaddle, Long Meadow, Red Hill, Peyrone, Black Mountain, Alder Creek, Starvation, Powderhorn, Big Stump, Cherry Gap, Converse Basin, Grant, Indian Basin, Landslide, and Redwood Mountain. This inventory followed the Region 5 (California) Forest Inventory Analysis (FIA) format and collected information on all trees by size, numbers, and distribution using systematic cluster plot sampling. Regeneration plots were taken simultaneously with large tree plots at the same spacing. These plots avoided open and disturbed areas where larger trees were not expected. This meant sampling was often inadequate to fully assess the distribution and quantity of smaller giant sequoia regeneration. Photo series were used to estimate fuels conditions. This data is currently not in the National Resource Information

Interested Public System (NRIS) Field Sampled Vegetation (FSVeg) format (a database and modeling system used in California) and will need to be entered remotely and by hand by the forest in order for processing to occur using the current information system programs.

An additional 14,204 acres of groves have no current useable inventory since the original inventory was stopped in 2004. This means the Sequoia National Forest has no complete and accurate estimate of the amount of sequoia regeneration, fuels buildup, and identification of large trees in half the groves in the monument.

Over the past year, there has been a strong and urgent need from both external and internal interests to learn, at a minimum, how much surface and ladder fuels exist in giant sequoia groves, how much giant sequoia regeneration is occurring, or how many large giant sequoias exist within the groves. The forest and the public have seen a need to finish the original inventory.

Other information that could be collected in a field examination will also help satisfy the need for information about ecosystem processes and other objects of interest. This information will be used to support the planning process and better manage the monument.

The Sequoia National Forest will be initiating a new inventory contract this year to obtain on-the-ground field inventory data for 19 groves encompassing 14,204 acres. The inventory will be done in the NRIS FSVeg Common Stand Exam (CSE) format, which will enable data calculation and modeled Forest Vegetation Simulation (FVS). These plots will be spread evenly across each grove, but stratified by sequoia forest type. Randomly selected plots will be made permanent for photo points and future monitoring.

Field inventory will accomplish an estimate of the amounts and location of sequoia regeneration, large trees, and fuels buildup – all of which are major concerns expressed in the 2000 Presidential Proclamation.

There are 548 sampling points in the current comprehensive inventory. Point or plot locations were pre-established across each grove in a manner that will assure good coverage. These plots will estimate trees by species, size, and condition; dead standing and down trees by size; and ground vegetation. Surface fuels will be estimated using photo series designed to quantify forest residues. Approximately 30% of the plots within each grove will be established for permanent monitoring. The following briefly lists some of the data to be recorded and how it will be collected at each sampling point:

1) Live trees larger than 29 inches in diameter will be recorded in _ acre plots.
2) Dead trees, standing and down, larger than 9 inches in diameter will be recorded in _ acre plots.
3) Live trees less than 5 inches in diameter will be recorded on a 1/50 acre plot.
4) Non-tree vegetation percent cover and height will be recorded on a 1/50 acre plot.
5) Live trees between 5 and 29 inches will be recorded using a variable radius plot.

An additional 690 points will be sampled across all groves in the monument, except Bearskin

Grove, in order to obtain a more confident and current estimate of tree regeneration. Numbers and sizes of seedlings (trees less than 4.5 feet in height) of giant sequoia, other conifers, and oaks will be recorded on each 1/10 acre plot. Two smaller groves, Abbot Creek and Cunningham, will have a 100% survey of all sequoia trees over 6 inches in diameter. All sequoia trees over 36 inches in diameter in these two groves will be located by latitude and longitude using the Global Positioning System (GPS). To improve analyses and prediction of sequoia regeneration and other ecological responses, a line transact sampling method will be used to verify existing soils mapping and soil samples will be collected in some locations.

The giant sequoia grove inventory started on June 1, 2009. The Common Stand Exam contract is estimated to cost $90,000. Administration costs for the contract is expected to be an additional $29,000 which includes preparation, inspectors, vehicles, and other incidentals. The cost for entering about 2,100 pages of data from previous inventories is $3,000 dollars. An additional amount of $58,000 is needed for more comprehensive regeneration surveys, refined soil typing, and for processing data from all inventories for wildlife, fuels, and other resources. The total cost of the project will be approximately $180,000 dollars.

A couple of organizations have expressed an interest in participating in this inventory. Since the inventory is under contract, the Forest must ensure we do not impede the contractor from his obligation to fulfill the terms and conditions of the contract. Thus, the Forest is limited in providing opportunities for the public to be collecting inventory data while the contractor is operating. But, the Forest has made available one grove which we have not included in the contract where the public is invited to participate with Forest personnel in conducting an inventory. This grove, the Bearskin Grove has been excluded from the contract for the public (as volunteers) to be involved in collecting inventory information as it pertains to fuels and vegetation growth (buildup), including giant sequoia regeneration. This is where you come in.

If you are interested in being involved in the giant sequoia grove inventory you must sign a volunteer agreement to work on national forest system lands. I request that all potential volunteers contact Steve Hanna (Forest Silviculturist) at (559) 784-1500, the Contracting Officers Representative who is overseeing the giant sequoia grove inventory contract. All volunteers will be taken through a safety and field training to ensure the information collected utilized the right protocol and field tests. The Bearskin Grove was picked due to its close proximity to a road and the gradual terrain that can be accessible by all.

Finishing the giant sequoia grove contract will provide good data to the monument interdisciplinary team and help in completing our current inventory information. The information we collect will be shared with those interested in giant sequoia groves; and we will also share the inventory information with Sequoia and Kings Canyon National Parks. It is extremely difficult to accomplish a good survey of widely dispersed sequoias since large giant sequoia trees grow in many different ways. The sampling and subsampling we have designed for the giant sequoia groves is an estimate of populations in forest research and management. The design is developed to investigate both change and presence. While we are establishing a certain amount of permanent plots in the design which will enhance the forest's ability to interpret change, it will be critical to subsample using a different randomized grid approach each time (for future exams) as an estimate of the population present within the grove. The latter

part of the design intentionally results in different plot locations each time a survey is done. Thus, we will monitor a particular tree or group of trees, vegetation, and fuels; and interpret change with permanent plots. The forest will also monitor the entire grove as a whole without costly and tedious surveys in the future and independent of the covariates of factors that result in change.

Thank you for your interest in the Giant Sequoia National Monument planning process and the giant sequoia grove inventory. When the inventory and analysis is completed I hope to post the inventory results on the internet. Again, if you are interested in participating in the giant sequoia grove inventory, please contact Steve Hanna, at (559) 784-1500, extension 1161, so we can get you signed up as a volunteer.