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SHARING PUBLIC LAND DECISION MAKING
THE QUINCY LIBRARY GROUP EXPERIENCE

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CHALLENGING FEDERAL OWNERSHIP AND MANAGEMENT:
PUBLIC LANDS AND PUBLIC BENEFITS

Natural Resources Law Center
University of Colorado
School of Law
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Sharing Public Land Decision-Making The Quincy Library Group Experience

by Michael B. Jackson

I. Summary

The Quincy Library Group is composed of environmentalists, timber workers, government employees, business people, educators, and retired citizens who inhabit rural California. The Northern Sierra Nevada range consists of extensively timbered, relatively low elevation land that has been used for mining, logging and grazing for the last 140 years. Quincy is the second largest town in the area with a population of 5,000 people. Susanville, the largest town in the area, has approximately 7,500 people. Quincy is more like Coleville, Washington; Hamilton, Montana; or Montrose, Colorado, than it is like the booming bedroom communities of the central and southern Sierra. The traditional work is in a process of change which has resulted in a two-tier economy with wages falling for longtime residents at the same time trophy developments are springing up bringing people with different needs and interests. In this way Quincy is typical of what is happening throughout the Great Basin and the Intermountain West.

In 1982 the local environmental group, Friends of Plumas Wilderness, decided to take advantage of the National Forest Management Act (NFMA) planning cycle which was taking place on the Plumas National Forest in California. The original idea was to convince the Forest Service and the majority of the logging community in Quincy, California, that if the appropriate lands were set aside from development, if stream courses were protected, if even-age logging was eliminated, and if appropriate standards and guidelines were adopted, logging in the Plumas National Forest could continue for the next 100 years.

It was a hypothesis; and as we understood it, it would be

analyzed by everyone's experts in the forest planning process and through that National Environmental Policy Act (NEPA) review, we would know if our hypothesis was correct.

It took four years of walking up and down the streams of our forests looking at water quality, water temperature, and bank erosion to convince us that it was possible to restore the degraded conditions we found.

It became clear very fast that even after the questions relating to old growth and spotted owls were answered that our forests would remain dependent upon watershed restoration to enable us to continue our traditional logging activity. We also flew over every acre in the Plumas National Forest and conducted interviews with local forest workers, biologists, hydrologists, herpetologists, and soil scientists who had taken part in the extensive roading and logging that had gone on in the forest for the last 40 years. These people taught us a lot about local conditions.

Next, we convinced the national environmental groups to support our alternative and convinced the Forest Service to study our alternative in the Plumas Forest Plan.

We hired experts in economics, forestry, and soil science from the finest universities in the country to support our alternative and provided thousands of pages of analyses and research in the planning process. The Forest Service considered our alternative in their record of decision on the Plumas Forest Plan and found it to be "the environmentally superior alternative".

The Forest Service found, however, they did not have the technical ability to do this alternative and picked an alternative that relied extensively on clear-cutting old trees. In case they ran out of old trees, they released a substantial amount of the Rare II land and thus started a war.

When the Forest Service released the sales, the Friends of Plumas Wilderness went after their environmental documentation and when it became apparent that the Forest Service could not prove that the California spotted owl was viable, Friends of Plumas Wilderness allied itself with other environmental organizations and

sued the Regional Office of the Forest Service for not "ensuring viability" of the California spotted owl.

The Forest Service resolved the lawsuit by agreeing to do a review of the viability of the California spotted owl. The Forest Service met its obligation by releasing the California Spotted Owl Technical Report (CASPO).

This document started an internal war in the Forest Service which continues to this day resulting in a reduction of the timber cut on the Plumas National Forest from 200 mbf per annum to today's level of 50 mbf per annum. This reduction resulted in large layoffs in the timber industry, declining revenues to our schools, and reassignments of many of our neighbors employed by the Forest Service. There were indirect job losses, most of which were to small business people who were already operating on small margins.

The community was tense, angry, and frustrated. The logging community believed that Friends of Plumas Wilderness was cold, callous, heartless, cruel, and an occupying force from outside. The members of Friends of Plumas Wilderness, who contained in their ranks some of the leading members of the community, believed that the loggers were whiners living in the past who controlled the Forest Service through their money, their ideology, and their long established "old boy" social relationships. Neither side liked the other, and each side had approximately equal political power.

In the late fall of 1992, County Supervisor Bill Coates took the initiative and suggested a meeting between Tom Nelson, Sierra Pacific Industries, and myself to determine whether or not a mutual Forest Plan could be created using the Friends of Plumas Wilderness landbase suggested for the Plumas Forest Plan. For those who know the participants, it is fair to say that the conversation was frank, personal, and to the point. Most of what was said by each side was true. It was clear, however, that each side had misconceptions about the motives, intelligence, and flexibility of the other. We agreed to meet and opened the meetings to the public. The meetings have continued to this day.

The people attending the meetings reached a substantive

agreement within 90 days as to the Quincy Library Group method of managing the land. We invited the Forest Service to attend, but resisted any official or unofficial link, much less a partnership. Forest Service employees were invited to come to the meeting because they were local citizens. We realized that they could not be our partners, no matter how much they wanted to be, because we did not want to become just another "old boy" social relationship.

We are not supporters of the county supremacy movement, we do not believe in local control, and we acknowledge the legal rights and responsibilities that the federal government has on its land. We realized that all regulations and laws are binding upon the Forest Service and upon us as citizens. We believe that we can operate under all existing laws and regulations to accomplish our goals. That does not mean that we are satisfied with the Forest Service's implementation of their laws, nor are we satisfied with the bureaucratic mentality that blames the laws for the Forest Service's inability to produce its service to the American public.

We have always expected that the Forest Service bureaucracy would be our main impediment. We have been proved stunningly prescient. Our proposal has recently received the President's award from the National Association of Counties for 1995's best accomplishment in balancing the environment and the economy. That scares us to death, because we have seen no production on the ground. In fact, to this day, the Forest Service has refused to file a notice of preparation for an environmental impact statement (EIS) for a forest plan amendment to implement the Quincy Library Group alternative to present Forest management.

This has come at a time when we are learning the "Washington shuffle" since we have been informed by the President of the United States, the Secretary of Agriculture, the Under Secretary of Agriculture for Natural Resources, the Chief of the Forest Service, the last two Regional Foresters for Region 5, and the last two Plumas National Forest Supervisors that they support our alternative and that they will order it to be examined in the NEPA process. These federal officials have been amazingly accessible,

quite complimentary, and unanimous in their support of us, but nothing has happened on the ground.

The Forest Service points to budget and staffing problems and that is true. They point to Congress and they are even more accessible than usual at crucial times in the Congressional budget cycle.

We have had essentially the same experience with Congress. We have had hard won support from Senators Boxer and Feinstein; Congressmen Fazio, Dellums, and Waxman; and equally hard won support from Congressman Herger, Governor Wilson, and Senator Hatfield. When Congressional folks ask us who supports us, they end up dazzled.

I cannot count the times that we have been told that we have the best non-partisan support that experienced politicians have ever seen, but Congress is cutting the budget. There is no money. The Forest Service cannot carry out the environmental paperwork necessary to begin our program. We know that it is financially self-sustaining. Yet, there is no money to start the process of laying out the initial timber sales.

We believe that we are being used in this process for the benefit of the bureaucracy. We believe that the reasons that the Forest Service will not do this program on existing money is that they see us as a potential cash cow, able to liberate excess money from a Congress intent upon ignoring the plight of the forest communities and the degraded state of the Sierra environment. They may be right.

The Republicans see the Forest Service as simply unable to deliver any of its services to any of its constituencies because of ineptness. They do not want to throw good money after bad. They may be right.

The Democrats read the polls and understand that protecting the environment is a wedge issue for the next election. They have no need for a non-partisan solution that helps areas containing people who are not going to vote for them anyway. They may be right.

So we wait. We talk to groups like this, and we talk to each other. Things are better for us because we better understand why this is happening to us. We understand that we are our only hope and that if we want to get an opportunity to try out our hypothesis on the ground, we must not quit. We must continue to operate as a bridge between the three sides in the hopes that there will be a political moment in which it is in the self-interest of everyone to give us some support other than lip-service.

This process is a success for us in a very unexpected way as a community. We care for each other more; we understand each other better; and we no longer expect the experts and the powerful to solve our problems for us. We understand that it is not meanness or cruelty or greed that has put us in this state.

We understand that we are not to blame either for the appeals or the lawsuits or the clear-cut blocks or the depleted old growth. The government is to blame, and we are the government. It makes it much harder, but at least we know who is responsible. We intend to move the government out of its gridlock and do so in a civilly responsible way.

Thank you very much for the opportunity to come and represent the thousands of people at the local level who are trying to take responsibility for their own lives and are trying to create a sense of community in their own areas. We have learned encouraging things about each other from each other. If that is happening in the rest of the West, as we believe it is, the country will be better for it.

APPENDICES

APPENDIX A

**QLG Community Stability Proposal
Silviculture, Timber Management, and the Desired Future Condition
Fuels Management for Fire Prevention
Federal Wildfire Policy Review
Economic Dependency Statement**

APPENDIX B

Owl Habitat Percentage Tables

APPENDIX C

Economics

APPENDIX D

Agency Fuels Reports

APPENDIX A

Quincy Library Group - Community Stability Proposal

Recent discussions between some members of the timber industry, the county governments of Lassen, Plumas and Sierra, fisheries and environmental groups indicate a common desire to implement a short-term strategy of forest management on the Plumas, Lassen, and portions of the Tahoe National Forests. This effort was undertaken to promote forest health, ecological integrity, adequate timber supply and local economic stability. This may allow local communities to survive while long-term plans are developed, yet afford adequate environmental protection during this interim period.

These discussions were initiated by Bill Coates (Plumas County Supervisor) in seeking to find some "common ground" between local environmental groups and the timber industry. Preliminary meetings with Mr. Coates, Michael Jackson (Friends of Plumas Wilderness), and Tom Nelson (Sierra Pacific Industries) led to continuing, expanded discussions with a much broader and diverse group.

Sharing a common belief that present USFS management is inadequate to meet the objectives of any of the members, this group (collectively known as the "Quincy Library Group") has reached agreement on several crucial issues for Federal land management on these National Forests-- issues that have previously been the basis for ongoing disputes. They include the following:

1) Communities within Lassen, Plumas and Sierra Counties rely upon the forest products industry for education, roads and basic infrastructure. Specifically, the communities of Susanville, Chester, Quincy, Loyalton, Bieber, and Greenville are highly dependent upon the forest products industry and may not survive the current reductions in Federal timber harvests.

2) To promote forest health we believe that three ecosystem management strategies must be implemented simultaneously:

- i. in order to provide an adequate timber supply for community stability and to maintain a relatively continuous forest cover, a management system using group selection (similar to that proposed by the Friends of Plumas Wilderness in the Plumas NF Land Management Plan or that used at UC's Blodgett Forest) and/or individual tree selection (similar to that employed by Collins Pine) must be implemented immediately.
- ii. in order to achieve stability in the system the Fire and Fuels management objectives recommended in CASPO must be carried out over the entire landbase.
- iii. in order to protect fisheries and watershed health a network of riparian habitats and a watershed restoration program must be established throughout those areas managed for unevenage structure. The initial emphasis should include increases in Forest Service appropriations for improvements in range management and road maintenance to restore and protect riparian areas.

The landbase on which to develop these strategies would include the broadest landscape possible. Certain "sensitive" areas such as roadless areas, Scenic River corridors, and riparian areas would not be scheduled for harvest.

3) In general, we believe that the implementation of these strategies will expand the existing landbase available for timber production beyond that currently "zoned" for timber production but that environmental effects upon this expanded landbase will be greatly reduced. The intent of these Strategies is to create a forest that will more closely mimic the historic natural landscapes of the Sierra, while protecting and enhancing recreational opportunities.

4) In order to adequately assure community stability, protective mechanisms such as SBA/SSTS set-asides should be continued, stewardship contracts should be expanded, and a "sustained yield unit" as authorized by Congress must be established.

These four concepts were then examined in more detail, to arrive at more definite recommendations. After analyzing many different technical methods to achieve the Group's common objectives, the following specific agreements were reached:

a) Forest land base:

- i. Plumas NF - as set forth in the Friends of Plumas Wilderness alternative to the Forest Plan.
- ii. Lassen NF - as set forth in the Amenities alternative of the Draft Forest Plan.
- iii. Tahoe NF (Sierraville Ranger District) - as set forth in the Uneven-Age Alternative of the Tahoe LMP.
- iv. All CASPO identified PACs will be deferred from logging during the life of this interim management plan.

b) All silvicultural prescriptions will be uneven-aged management. The Desired Future Condition is an all-age, multi-story, fire-resistant forest approximating pre-settlement conditions. This will be achieved by utilizing individual tree selection such as the system used by Collins Pine and/or group selection (area control to reach regulation).

c) Riparian systems protection during timber harvest activities will be provided by implementation of the Scientific Analysis Team's (SAT) guidelines. Grazing allotment renewal plans will include financing and provisions for restoration and protection of these riparian networks. In addition, the USFS shall seek every opportunity to work with the Federal Energy Regulatory Commission (FERC) to restore adequate flows for fisheries and recreation.

d) Administrative approval for a northern Sierra working circle is requested that encompasses the counties of Lassen, Plumas, and the Sierraville Ranger District of the Tahoe NF and includes the SBA set-asides as in "4" above.

e) Fire/Fuels management: CASPO recommendations are endorsed to integrate present fire management programs of the USFS with harvest of smaller material earmarked for local sawmills. CASPO recommendations to inventory dead and down material, and replenish as needed, are also endorsed.

f) Old Growth: It is our opinion that (as long as the above practices and policies are successfully implemented) the remainder of the forest landbase should remain available for timber management. On Dunning Sites 3-5, the equivalent of a 200 year rotation (using uneven-age systems would be employed and a shorter rotation equivalent would be used on

Dunning Sites 1 & 2.

We realize that our opinion is simply an educated opinion and may not be appropriate in the eyes of others. All other opinions have a reasonable possibility of being right. We also believe that we represent a very diverse group of local interests, each with a shared stake in the outcome of these actions. We recommend this method of management for these forests be implemented for five years while the Regional EIS for CASPO is being prepared, decided, appealed, and litigated. We would further propose that any working circle established as a result of our plan sunset five years after installation of that plan.

Representatives from the following organizations and viewpoints voluntarily met to develop these proposals and unanimously approve submittal of this action plan to the United States Forest Service:

<u>Name</u>	<u>Affiliation</u>
Michael Jackson	Friends of Plumas Wilderness
John Preschutti	Friends of Plumas Wilderness
Bob Baiocchi	Calif. Sportfishing Protect. Alliance
Tom Gregory	Calif. Sportfishing Protect. Alliance
Steve Evans	Friends of the River
Mike Yost	Friends of Plumas Wilderness
Bill Coates	Plumas County Supervisor
Len Gallegos	Sierra County Supervisor
Frank Stewart	Collins Pine Co.
Tom Nelson	Sierra Pacific Industries
Fred Duchi	Siskiyou-Plumas Lbr. Co.
Steve Self	Sierra Pacific Industries
Carl Pew	Pew Logging & Lbr. Co.
Ed Murphy	Sierra Pacific Industries
Bill Banka	Sierra Pacific Industries
Don Houston	Collins Pine Co.
Bill Howe	Collins Pine Co.
Mike Kossow	Feather River Fly Fishermen
Mike De Lasaux	UC Cooperative Extension

Sierra
Count
Conser
Club

FPW

(continued)

Name

Affiliation

John Sheehan
John Redd
~~John Sheehan~~
Gary Schaffer
Donna McElroy
Susan Baremore

Plumas Corporation
Indian Valley Recreation & Parks Dist.
~~Plumas Corporation~~
Almanor Forest Products
Yellow Ribbon Coalition
Feather River Alliance for Resources
and the Environment

Rose Comstock

California Women in Timber, Quincy
Chapter

Pat Terhune

Plumas Community Coalition

Claude Neily

Lassen County Supervisor

Gary Lempke

Lassen County Supervisor

Jerry McCaffery

Sierra County Supervisor

Brooks Mitchell

Associated California Loggers, Quincy
Chapter

Philip E. Nemi
(PHILIP E. NEMIK)

Lassen Land & Trails Trust

Jane E. Reed
(JANE E. REED)

Paul C. Davis

WCIW Local 3074

Harry G. Reeves

Quincy resident, environmentalist

Linda L. Plum *see August 10 Addendum

Quincy resident & independent thinker

F.C. Honey

Luteson Range Ass.

John E. Davis

Plumas Audubon Society

Teretta Stringfellow

California Women In Timber
Quincy Chapter

Ernest A. Carter Ch.

North Cal/Nevada Resource Com & Dev. Com

James R. Hamler

Colusa Community Services Dist

QUINCY LIBRARY GROUP - COMMUNITY STABILITY PROPOSAL

SILVICULTURE, TIMBER MANAGEMENT and THE DESIRED FUTURE CONDITION

DESIRED FUTURE CONDITION

The Quincy Library Group has described the desired future condition as: "all age, multi-story, fire-resistant forest approximating pre-settlement conditions."

The best data available on pre-settlement conditions relative to stand structure come from Sudworth's plots as reported in CASPO. (McKelvey, K., and James D. Johnston, 1992, *The California Spotted Owl: A Technical Assessment of its Current Status*, P.S.W. U.S.F.S.) (See Attachment B.)

The Desired Future Condition should also include a description of functions as well as structure. I would suggest adding the following statement from the CASPO Report: "We wish to create a forest in which natural processes are fully functional and stable." (McKelvey, K., and C. P., Weatherspoon, 1992, *The California Spotted Owl: A technical Assessment of Its Current Status*, P.S.W. USFS.)

The silvicultural strategies recommended by the Library Group to achieve this condition are intermediate thinning and regeneration harvest using group selection and single tree selection.

It has been recommended that the Quincy Library Group develop a Desired Future Condition and appropriate silvicultural strategy for each major forest type within the three Forests; i.e., true fir, mixed conifer, and eastside pine.

INTERMEDIATE THINNING

Intermediate cuts will mostly be thinnings from below. Forest health is the primary objective.

Fire hazard, risk of insect and disease, over-stocking and overstory suppression are some characteristics considered when selecting trees to cut. Trees removed during thinning operations will generally be in the smaller diameter classes.

Thinning should be structured to achieve stocking levels with the desired species composition and individual phenotypes to grow these areas into future groups.

Where feasible, slash should be chipped or burned following thinning operations and a prescribed fire underburn should be considered.

Planning watersheds are the appropriate landscape element for intermediate thinnings. Third order watersheds would be the most common size.

REGENERATION HARVEST

All Regeneration or harvest cuts should be preceded by a long range plan for the watershed which would include some type of thinning operation as described under the above section on Intermediate Cuts.

The desired future condition, stand structure objectives, wildlife needs, and other resource objectives must also be considered.

Silvicultural strategies include group selection and single tree selection.

GROUP SELECTION:

Group selection is the primary silvicultural method recommended by the Quincy Library Group.

Group selection cuts will be regulated by area control, with third order watersheds as the recommended planning units.

A 150-year rotation is recommended for Dunning Sites 1 and 2 and a 200 year rotation is recommended for Dunning Sites 3-5.

This means that in a planning unit where the average site is 1 or 2, 1/150 of the acres could be harvested in any one year. However, because of the impracticality of harvesting in each unit annually, group selection normally employs the cutting cycle concept where no harvesting is done for a period of years and then the accumulated harvest acres are all cut in one year at the end of the cycle.

For example, a 20 year cutting cycle would allow 13 percent of the area unit within a Site 1 or 2 planning unit to be harvested every 20 years, or 10 percent of the unit if the site were 3-5.

Cutting cycles may vary to allow for flexibility with harvest schedules, and planning units where both site class categories are represented would be broken down into sub-planning units for timber harvest.

SINGLE TREE SELECTION:

In those situations where single tree selection is determined to be the appropriate silviculture method, the allowable cut in any planning unit must be based on annual growth within the unit. Again, cutting cycles may vary. A 20-year cutting cycle would allow the harvest of 20 years of net annual growth within a planning unit.

SELECTING TREES TO BE HARVESTED

The CASPO team has suggested to the Library Group that diameter frequency distribution curves be utilized to determine appropriate distribution of diameters in uneven-aged stands. Dr. Verner commented that "if the bumps on the curve were targeted for harvest you would not be violating CASPO."

It was suggested that this strategy could be applied to either group selection or single tree selection cuts. With group selection, naturally occurring "clumps" of trees would be marked for harvest.

Alternative strategies based on tree health rather than diameter may be more appropriate to the Quincy Library Group goals.

Listed below are several risk-rating systems, all based on crown characteristics, which could be used to select the less vigorous, higher risk trees for harvest:

1. Keen Tree Class System (See attachment A)
2. Collins Pine Crown Classification System.
3. California Pine Risk-rating System.
4. Risk-rating System for Mature Red Fir and White Fir in Northern California. (Ferrell)

SNAG RETENTION

Regardless of silvicultural system, any regeneration-harvest operation must consider snag retention.

One reasonable approach to snag retention has been suggested by Malcolm Hunter. "Within the United States, biologists studying forest types from nearly every region of the country have arrived at recommendations for snag densities that are remarkably consistent (e. g., Scott 1978, Evans and Conner 1979, Thomas et al. 1979c, Harlow and Guynn 1983, Raphael and White 1984, Zarnowitz and Manuwal 1985, McComb et al. 1986a). Furthermore, in a least one context, U.S. National Forests in the Pacific Northwest, forest managers are following the biologists' advice (Bull et al. 1986). It is not certain to what extent this concordance represents independent arrivals at an ecological "truth," especially since it is all based on North American data, but until better models are derived, 5-10 large snags per hectare* seems like a reasonable target. Using this quota as a rule of thumb may be rather simple and unsophisticated, but it is preferable to deciding that the model is too complex and ending up with no snags at all."

Hunter, M.L. 1990. *Wildlife Forests, and Forestry: Principles of Managing Forests for Biological Diversity*. Regents/Prentice Hall.

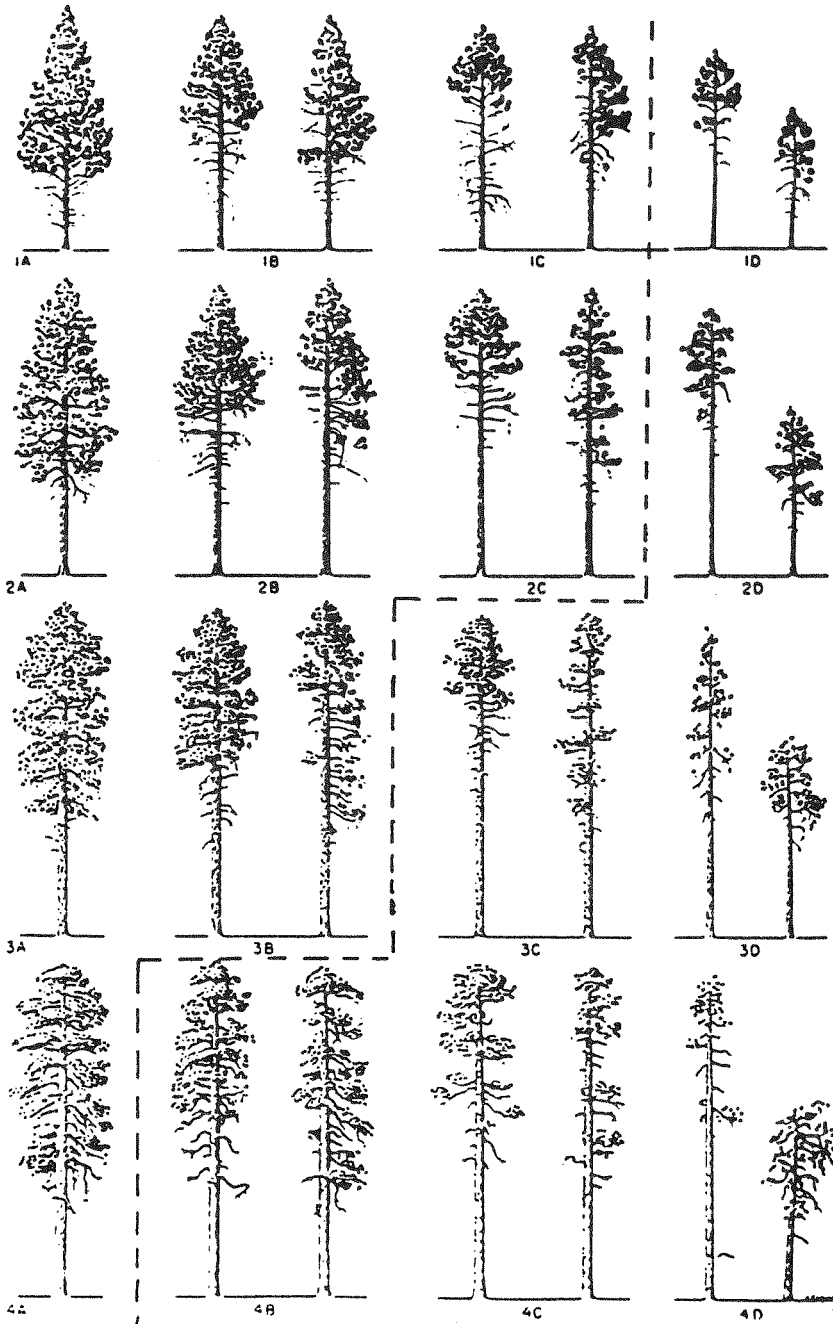
*Note: 5-10 snags per hectare equals 2-4 snags per acre.

ECOSYSTEM MANAGEMENT

See Attachment C for a description of Ecosystem Management

ATTACHMENT A

Keen's ponderosa pine tree classification, based on age and vigor. Trees to the right of the dashed line are considered to be susceptible to bark beetle attack.



ATTACHMENT B

CHANGES IN STAND STRUCTURE

The graphs below are from CASPO (McKelvey, K., and James D. Johnston, 1992, The California Spotted Owl: A Technical Assessment of its Current Status, P.S.W. U.S.F.S.)

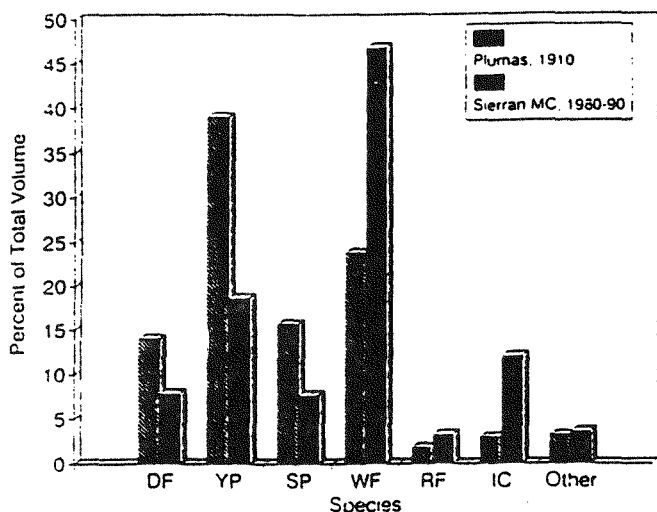


Figure 11O—Volume estimates, by species, in the Plumas National Forest in 1910 (Moore 1913) and from current inventory data. Mixed-conifer (MC) strata M3G, M4P, and M4G were combined for this analysis. See figure 11N for species codes and a description of the timber strata classifications.

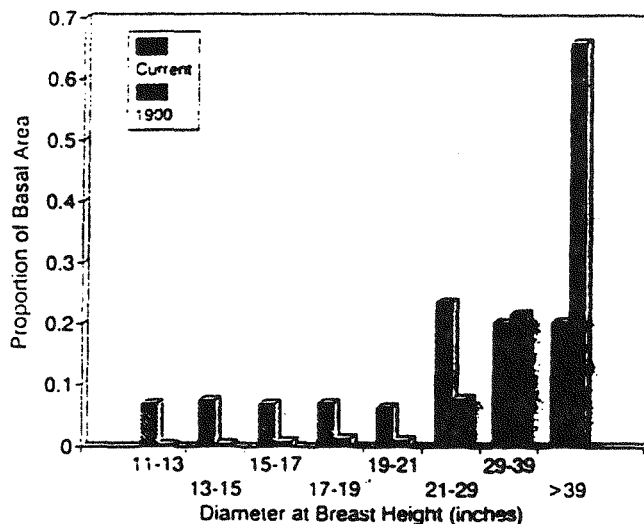


Figure 11L—Basal-area distributions of trees in forests of the Sierra Nevada for 1900 and current stands. The 1900 distribution was based on information presented in figure 11J; the current distribution was based on Forest Service Region 5 inventory data from timber strata for the largest size-classes (4, 5, and 6).

Generally, these data indicate that species composition and diameter distribution have changed significantly since the turn of the century. White fir has become much more prevalent and large diameter trees are much less common.

Any description of the desired future condition should include this information.

WHAT IS ECOSYSTEM MANAGEMENT?

An ecosystem approach to management focuses on the restoration and maintenance of natural processes, such as water cycling, nutrient cycling, soil formation, and vegetative succession, and the conservation of natural diversity in plant and animal life. Management decisions are based on sustaining ecosystem functions rather than on any single element or species in isolation.

An ecosystem-based management approach is not a tool, rule, or recipe for land management. Instead, it attempts to consider whole natural systems and how they function and to understand how human activities affect and are affected by them. It recognizes that we often don't fully understand how natural systems really work.

*From Hart Mountain National Antelope Refuge Planning Update,
August 1993.*

FUELS MANAGEMENT FOR FIRE PROTECTION

QUINCY LIBRARY GROUP POSITION PAPER

"The fire regime has changed from frequent, low intensity fires to infrequent, high intensity stand replacement fires" (CASPO Interim Guidelines, U. S. Forest Service, 1993)

"Extreme fire behavior and resistance to control will be the norm, rather than the exception." (Regional Forester, U. S. Forest Service R-5, July 1992)

BACKGROUND

Decades of aggressive fire suppression and other recent activities have changed fire regimes of the forests in the northern Sierras. Fire history studies in the Sierras show that the frequency of relatively low intensity fires ranged from 5 to 30 years in the mixed conifer and eastside pine forests.

For example, consider the effect on approximately 935,000 acres in the Plumas National Forest. If you assume an average pre-European settlement fire frequency of 20 years, it implies that 47,000 acres would have burned each year. In contrast, during a recent 20-year period 4,100 acres per year were actually burned on the Plumas.

Until recently this 90% reduction of acreage burned per year was considered a measure of great success for the fire suppression policy. Unfortunately, we are now being awakened to some hard facts:

- The pre-European settlement fires were of low average intensity, while recent fires burn at very much higher and increasing average intensity.
- High intensity translates to high costs for initial attack, higher costs for sustained attack on more numerous and larger escaped fires, and very high costs for loss of tangible and intangible assets in the forest and communities.
- The long-term effect of fire suppression is an accumulation of fuels and the growth of too many understory trees of a species that is not fire adapted for long-term health in that location given climatic variability. These fuels and fire ladders are certain to support increasing numbers of large fires and certain to result in catastrophe unless the fuel is reduced and the understory is thinned.

FIRE COSTS

The Forest Service fire suppression program is paid for in two main categories: Fire Protection (FP) and Fire Fighting (FF). FP funds are for the basic costs of equipment and personnel, while FF funds support the emergency expenses of actually fighting a fire. Recent FF expenditures on the Plumas Forest have ranged from \$ 0.5 to \$ 9 million per year (Figure 1).

WILDFIRE SUPPRESSION PROGRAM COSTS PLUMAS NATIONAL FOREST

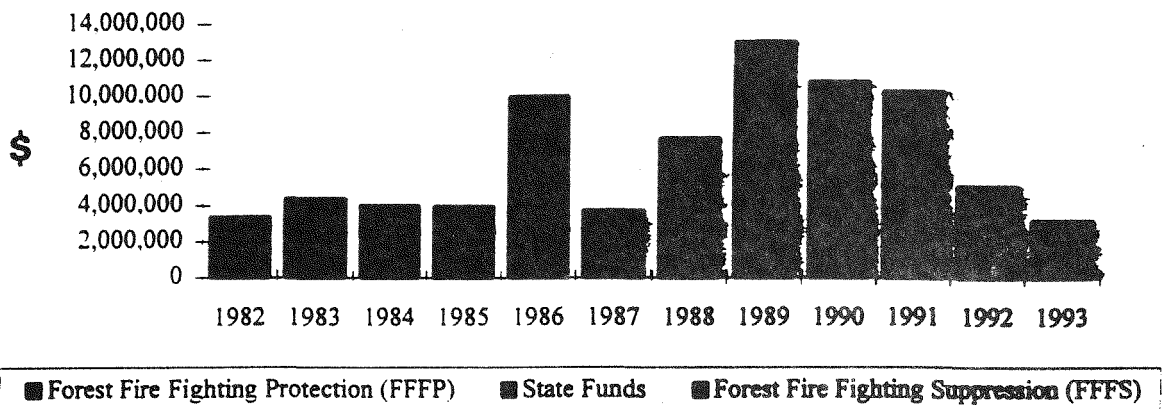


Figure 1. Plumas National Forest wildfire suppression program costs.

The occasional spike in the graph caused by one or two large fires that occur every few years is even more significant than average yearly costs on a single Forest like the Plumas. (Table 1) These spikes in the cost line are the equivalent in FF terms to the Regional Forester's statement, "Extreme fire behavior and resistance to control will be the norm rather than the exception."

Table 1. Summary of costs associated with recent Plumas National Forest wildfires.

Fire	Year	Size (acres)	Suppression Costs	Rehabilitation/ Reforestation Costs	Total Costs	Cost/acre
Layman	1989	4,800	4,599,520	\$3,453,597	\$8,053,117	\$1,678
Rack	1989	580	915,754	\$2,000,000	\$2,915,74	\$5,027
Greenhorn	1990	386	739,459	\$125,000	\$864,459	\$2,239
Walker	1990	1,100	831,404	\$150,000	\$981,404	\$892
					Average	\$2,459

Another factor that contributes to the rising trend in total fire costs is the movement of more and more people into the Sierras. Inevitably more people mean more sources of ignition, greater loss of assets and risk to life when a fire escapes control, and the necessity for diversion of fire-fighting resources from the forest to the urban interface when catastrophe threatens. The actual cost of wildfire goes well above and rises steeper than the Forest Service shows in its FP and FF accounts.

Unless the trend toward larger and more intense fires is turned around, it is inevitable that a conflagration of multiple out-of-control fires will overwhelm any fire fighting capability that we can afford or are likely to provide. Damage in that fire will be on a scale such that neither

the forest ecosystem nor the communities that depend on it will be likely to recover during a single lifetime.

FUELS MANAGEMENT

The Forest Service now acknowledges that its focus on fire suppression has led to three specific hazards:

1. The accumulation of a large fuel overload on the ground.
2. Crowding of small trees in the understory, creating a fire ladder that carries ground fire into the crowns of large trees, thus converting ordinary fires into stand-destroying fires.
3. Invasion of the understory by excessive numbers of shade-tolerant trees (principally white fir), which dominate the competition for nutrients and soil moisture, thereby adding the mortality of large trees to the fuel load and making the overstory trees even less able to survive crown fires.

These hazards can be reduced only by reducing the load of dead and dying fuel and by thinning the understory. Unfortunately, to date the Forest Service program for fuels reduction in these forests has been only a token effort at best. For example, since 1982 the Plumas National Forest has treated about 600 to 900 acres per year under its "natural fuels" program as part of fire protection, and another 4,500 acres per year under the "brush disposal" program associated with timber harvest. At that rate it would take about 180 years to work through the whole forest.

But given that fact, how can the fuel load ever be reduced and the understory thinned at a rate which will significantly change our current inevitable course toward catastrophe?

The simple answer is that we have no other choice. It isn't a question of whether, but of how, where, and when to begin the fuel treatments. Do we start to work on this pre-catastrophe or post-catastrophe?

A more realistic answer is we know the job can be done because in many previous years the amount of material that needs to be removed actually has been removed. The main difference is this: In previous years most of the material removed was in logs from the largest trees, leaving behind most of the logging slash to add to the fuel load, while in future years, say for the next 30 or so, most of the material must be removed as small logs from understory trees, and biomass, thus reducing the fuel load, not adding to it.

A thirty-year fuels program is not a very attractive proposition; it is not adequate given the "catastrophic" threat and it is not realistic to count on sustaining public or political interest in a "crash" program of that length. Fortunately, Quincy Library Group (QLG) can offer a considerable improvement on the bare-bones 30-year program.

The QLG proposes that all sales should be laid out in patterns that are fully integrated with natural fuels treatments in a strategic fire protection plan.

STRATEGY

The QLG strategic fire protection plan has three requirements:

1. Four years of very high priority.
2. During those four years, natural fuels treatments and sales of thinnings, salvage, and biomass should be done in strips of approximately quarter-mile width according to a prescription that makes these strips defensible fire lines, meets the intent of CASPO (California Spotted Owl) guidelines, and does the least possible damage to other ecosystem values.
3. The acreage treated each year should be at least 1/32 of the total forest.

In practice the strips (similar in concept to shaded fuel breaks) should follow ridge lines, valley bottoms, and convenient roads in a pattern that would isolate all major watersheds (average size of 10 to 12 thousand acres) within the four years.

The intent of the CASPO guidelines would be met because they are based on the concept that intense wildfire is a major short-term threat to owls (and by implication to other wildlife and ecosystem values). Under the QLG strategy there is maximum protection with minimum disturbance to owls or other ecosystem components because: (1) almost all of the treated strips would be along existing roadways, (2) lower density of snags and large down woody debris within the strips could be compensated for by leaving more of those materials farther off roads during subsequent treatments in those areas, and (3) the included roadways would permit efficient removal of the materials with minimal disturbance.

After four years, with a network of fundamental protection in place, a somewhat different long-term strategy would be phased in: you could continue to use strips to divide large areas or areas with high value and/or great fire risk, but most of the remaining forest would be treated more efficiently in areas, not strips. In either case, fuels treatment should continue at the rate of at least 1/32 of the forest area each year.

CONCLUSIONS

What we have laid out are three possible courses:

1. Do nothing different, just wait for "the big one".
2. Increase fuels work, but follow conventional practice that limits strategic placement of fuel breaks to what you can accomplish under the "natural fuels" budget, and confines other fuel removal to sales areas designated in the conventional manner. This would

eventually get the job done, but in scattered units that for many years would protect very little area except the actual acres treated.

3. Increase fuels work, and do both "natural fuels" treatment and timber sales in patterns and under prescriptions that support the QLG Strategic Fire Protection Plan. That is, the sales would be based on understory thinning and biomass removal in a network of strips. This will more quickly reduce the risk of catastrophic wildfire, and at the same time make suppression efforts against the remaining fires more effective and less costly.

The differences among these three cases can be illustrated by three lines on a graph of cost trends over time (Figure 2).

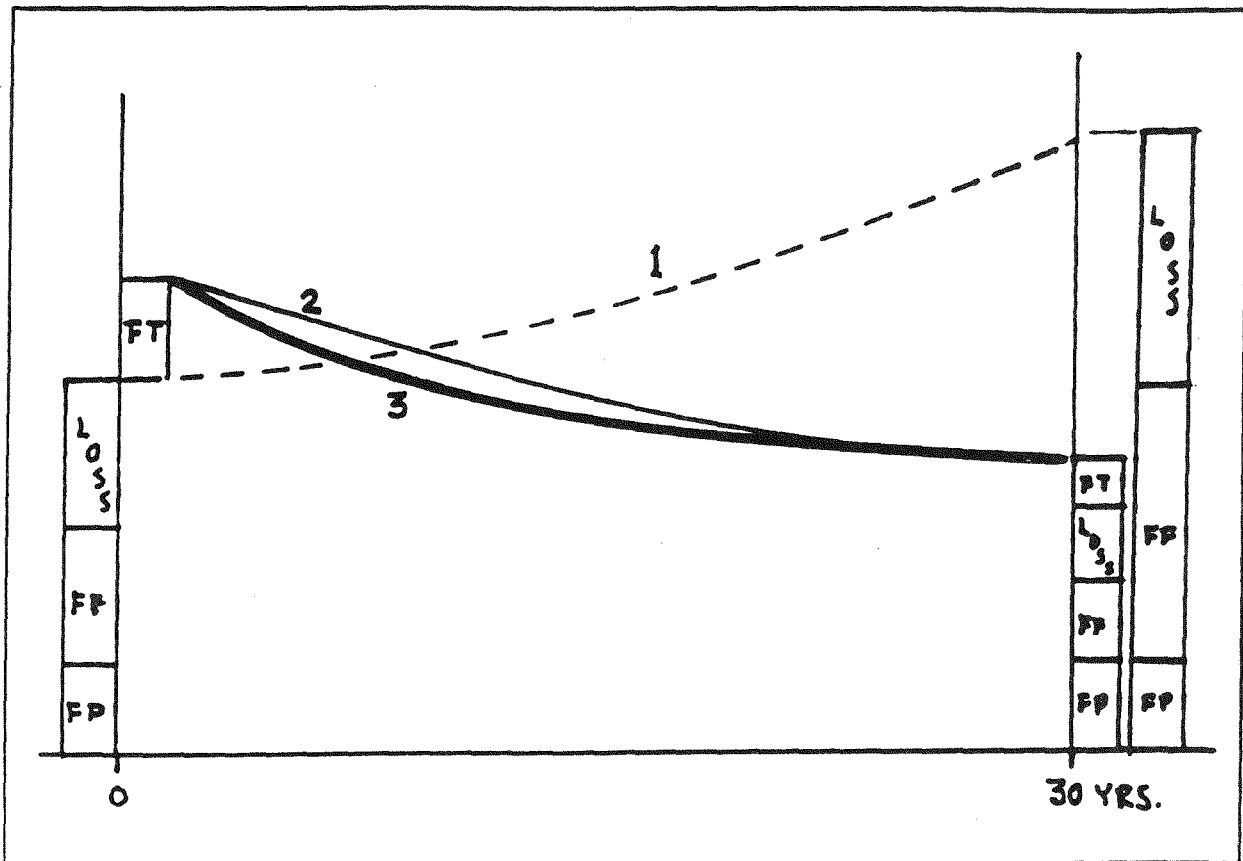


Figure 2 Relative cost for three fuels treatment strategies.

In Figure 2, relative costs are scaled to reflect an assumption that the FP cost remains constant for the whole period.

Curve #1 shows no change of strategy. Fire suppression costs, and the loss of forest and non-forest resources continues to rise. The only likely break would be a huge

spike when "the big one" occurs, followed perhaps by subsidence to a level that would support fire protection for a moonscape forest.

Curve #2 represents the shape to be expected if Fuel Treatment (FT) work is done in a way that follows historic precedent. It would initially cost money that cannot be saved by immediate reduction of other fire protection costs and fire losses. Eventually, however, these costs and losses would be reduced far enough that total cost would fall below the "no treatment" projection, and from then on a continuing return on investment would be achieved. Until most of the forest had been treated, there would not necessarily be many connections among treated areas, so for at least the first half of the period any reduction in FF or Loss costs would be gradual, and there would be only gradual reduction in the risk of catastrophe.

Curve #3 is the shape we believe the QLG strategy would produce. Again you have to add Fuel Treatment (FT) costs at first, but a network of treated strips would reduce the average size of large fires and facilitate the fighting of smaller fires, so the reduction of fire costs and fire losses would be earlier and steeper, with a quicker crossover to profit on the investment, and much earlier and more significant reduction in the risk of catastrophe.

BOTTOM LINE

There is a strong temptation to avoid the initial cost of fuels reduction and understory thinning, because it is not easy to show that a particular catastrophic fire could actually be avoided. On the other hand, we can't escape the certainty that our current course leads inevitably to catastrophic fire.

It's a classic case of "Penny Wise, Pound Foolish". We can easily look thrifty in the short run by avoiding the "penny" of immediate cost to implement the QLG strategy. But that won't look so wise when a catastrophe hits that could otherwise have been avoided or made smaller by spending those early pennies on fuel reduction. At that point it will look foolish indeed to be spending many "pounds" on futile efforts to suppress the conflagration.