

# PREScribed FIRE MANAGEMENT

in

## SEQUOIA AND KINGS CANYON

### NATIONAL PARKS

November, 1983

Fire management in natural areas has many controversial and philosophical aspects. Some of the critical points of the Sequoia and Kings Canyon National Parks fire management program are:

1. NPS natural resources management policy, as stated in NPS Management Policies - 1978, "is concerned with ecological processes. . . . The concept of perpetuation of a total natural environment or ecosystem, as compared with the protection of individual features or species, is a distinguishing aspect of the Service's management of natural lands."

NPS Fire Management Policy states that "natural zones should represent the full spectrum of the parks' dynamic natural vegetative patterns. Sharply defined zones or blocks of vegetation limited to certain species locked in over time are not natural and only rarely justified."

The Leopold report is the inspiration for NPS Natural Resources Management Policies, but is not, itself, policy. Neither NPS-18 or the Management Policies define natural in terms of "vignettes," "primitive America," or "ecologic scene as viewed by the first European visitors," but rather in terms of the restoration and perpetuation of natural processes. The emphasis for natural resources management policy is on process, not historical structure, which will preserve the "natural scene." (NPS Management Policies, 1978, page iv-1, 2).

2. Bonnicksen and Stone agree with us in that, due to the effects of fire suppression, some type of restoration to more "natural" conditions is required before natural fires are allowed to burn freely in sequoia-mixed conifer forests. The essential difference is that they favor restoration of the 1890 forest structure while we favor restoration of dead and down fuel loads and, consequently, restoration of the natural fire regime; the systematic interaction of fire with the environment linked to vegetation type. The fire regime includes the timing, number, spatial distribution, size, and duration of fires and fire behavior, cycle and effects.

The Bonnicksen approach provides a more concrete target, since the 1890 forest structure can be quantified. The basic problems with this approach are:

- a. The NPS has to "play God" in determining which trees stay, which are removed to reach the 1890 proportion of age class structure.

- b. It does not necessarily follow that the recreation of forest structure means the recreation of natural ecosystem dynamics, particularly when artificial manipulation is involved.
  - c. Since no one knows what artificial factors may have influenced the 1890 forest, such as logging, settler fires, and early fire suppression, the usefulness of the 1890 forest as a baseline for "naturalness" is uncertain.
3. Our strategy for sequoia-mixed conifer forest fire management is a single, fuel reduction prescribed burn, followed by the area's inclusion into the natural fire zone. Subsequently, lightning fires in the area will be allowed to burn, consistent with concerns for public safety and threats to property and permanent monitoring plots will document the changes in fuel loads, fire behavior, and vegetation structure.

Lightning fires which are being suppressed in or near these Parks will be assessed as to their potential importance to the natural fire zone; if, for example, the plots show accumulation of fuels to preburn levels, and several natural fires have been suppressed which would have entered the area, prescribed burns mimicking these fires will be set. As allowed in the 1978 NPS policies, the process may be "abetted to maintain the closest approximation of the natural scene where a truly natural system is no longer attainable." This prescribed burning will take the place of lightning, but not Indian fires. We believe that to mimic Indian fires is to lock the ecosystem into a narrow timeframe, since the Indians were relatively recent arrivals in this area.

4. The use of these Parks as ecological reserves, living laboratories with relatively unimpeded natural processes, is not compatible with locking the ecosystem into a historic representation of "primitive America." The historic fire behavior, fire cycle, and forest structure were influenced by combinations of climate and random lightning strikes which were constantly changing, and to create "what would have been here" had fire suppression not occurred involves a great deal of guesswork. If these Parks are to be true ecologic reserves, they must be allowed to respond to changes in ecologic parameters. The selection of this strategy over the maintenance of "historic scenes" is a fundamental management decision.

In conclusion, we are not concerned with reestablishing historic scenes, except in certain "showcase" areas, e.g, the General Grant Tree's immediate environs), but rather with reestablishing and perpetuating natural systems, which may be defined as ecosystems influenced to the fullest extent possible by natural processes, fire being only one. While we may be guided by our limited knowledge of the factors influencing, and the structure of, primeval ecosystems, we cannot lock ourselves into some point in the past, nor use it for our sole definition of "natural."