

NATURAL RESOURCE YEAR

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DEALING WITH DILEMMAS

Many issues regarding the preservation of natural resources in parks do not have easy answers. Meeting air quality mandates, for example, involves multiple parties, each with an interest that may need to be considered. Other issues, such as the overabundance of white-tailed deer, are so emotional that despite the application of scientific information, public opinion may have a stronger bearing on the outcome. In each case, resource specialists play a critical role in sharing their expertise with managers to guide the National Park Service through the complex process of resolution. Often, the law must be interpreted or applied. Interests of other affected parties need to be evaluated. International negotiations may be needed. Stakeholders, including the public, may need to participate. At times, expertise or precedent may not exist within the Park Service, making the process of resolving an issue particularly uncertain. Resolution may take years and the outcome may not be the most desired for natural resource preservation in parks. In 1997, park managers had to deal with these realities of natural resource management on several fronts.

Clean air versus prescribed fire: A burning dilemma

by Jeff Manley

Public land managers in the Sierra Nevada (California), including those at Sequoia and Kings Canyon National Parks, are increasingly being squeezed between the need to increase prescribed burn programs to meet ecosystem health and hazard fuel objectives, and the need to maintain healthy air quality. The giant sequoia (*Sequoiadendron gigantea*) is dependent on fire for reproduction, and much of the park vegetation consists of fire-adapted species that have steadily degraded due to fire exclusion for the past 90 years. However, the parks are designated Class I areas under the Clean Air Act, affording them greater legal protection for air quality. They are also situated at the southern end of the San Joaquin Valley, a heavily

polluted area that exceeds the National Ambient Air Quality Standard (a human health standard) for fine airborne particles.

In 1994, the parks began to significantly increase the size and scope of their joint fire management program to address the critical backlog of hazard fuel and ecosystem health burning projects. At the same time, adjacent federal land managers, particularly the USDA Forest Service, also began to take serious measures to increase their burn programs to meet resource objectives. Altogether, the federal agencies were proposing to increase burn activity up to five times recent levels, which could seriously hamper the efforts of the local air quality district to meet its responsibility to the public and the Environmental Protection Agency to reduce fine particulate levels.

During 1997, Sequoia and Kings Canyon took several steps to address the conflict, including beginning to develop a comprehensive smoke management plan. The

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Where there's smoke, there's fire—and the potential for air quality standards violations in Sequoia and Kings Canyon National Parks (California). Legal requirements for the maintenance of healthy air and the ecological need for fire in maintaining a healthy forest present a problem with no simple solution. During 1997, managers from the park began developing a smoke management plan that addresses the dilemma.



(Bob) Sequoia and Kings Canyon National Parks

plan minimizes smoke through careful timing of burns during favorable wind and fuel moisture conditions. It also provides for smoke monitoring in sensitive areas to document impacts and provides a basis for health advisories if needed. A public information program is designed to give early warning to sensitive individuals and to explain to local communities the need for the burn programs.

The parks also joined with the San Joaquin Unified Air Pollution Control District and representatives from other federal and state land management agencies to

form the Interagency Smoke Advisory Council, whose purpose is to define the common issues and to work together to find solutions. The group drafted a memorandum of understanding that provides a framework for cooperation in meeting the dilemma head-on. The agreement recognizes the need for increased burning, and incorporates the five-fold increase in burning. It also includes a work plan (under development) that will ultimately become the best available control method required by the fine particulate standard.

The group has also coordinated other actions to manage the smoke-air issues. These include the development of software to track all burns within the area and the development of air quality monitoring standards and protocols. Based on fuels to be burned, an emissions database allows evaluation of the effects of a prescribed burn or alternatives, such as suppression (which can lead to larger, uncontrolled fires), on air quality.

While these cooperative activities have yet to provide a perfect solution to the conflict between the fire programs and preservation of air quality, they have moved all participants forward in understanding the issues, identifying strategies, and taking steps to manage the issues creatively and cooperatively.

A prescribed burn research plot at Sequoia known as Upper Tharp's shows some of the effects of fire on the forest. Before the burn (above), fuel loads are high and little tree regeneration is evident. Four years after the burn (right), fuels are reduced and trees are resprouting.

