

RARE PLANT MANAGEMENT ON THE NATIONAL FORESTS AND GRASSLANDS IN CALIFORNIA

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California has a total land area of 101.5 million acres. Of this total area, 20 million acres are National Forest System (NFS) lands. These lands are divided into 18 national forests and one national grassland managed by the Pacific Southwest Region (Region 5) of the Forest Service, U.S. Department of Agriculture. Portions of the Toiyabe National Forest managed by the Intermountain Region (Region 4), and the Siskiyou and Rogue River National Forests managed by the Pacific Northwest Region (Region 6), also are within California.

The Forest Service is mandated by Federal law to manage these lands for multiple uses. Multiple-use resource management provides a sustainable supply of water, forage, wildlife, wood, recreation, and other renewable resources to benefit the American people, while ensuring the productivity of the land and protecting the quality of the environment. The Forest Service is committed to practicing the highest standards of land and resource stewardship. Management of national forests in California is intended to promote integrity of ecosystems, biological diversity, fish and wildlife habitat, and forest and rangeland health, as well as provide a sustainable supply of renewable resources. Managing for endangered, threatened, and sensitive species, the rarest of the resources under our care, is essential to meeting these objectives.

The Forest Service Sensitive Plant Program

“Sensitive” is a term used by the Forest Service to designate plant species known or highly suspected to occur on NFS lands that are considered valid candidates for Federal threatened or endangered classification under the Endangered Species Act of 1973 (as amended, 1988; see *The Endangered Species Act...*, above). The term “sensitive” is used to distinguish potential candidates for listing from plants officially listed as “rare,” “threatened,” or “endangered,” terms that have legal meanings under Federal and state laws.

Of all the national forest regions, Region 5 contains the largest assemblage of sensitive plant species in comparison to its land base. In fact, of the more than 8,000 vascular plants occurring in California, well over half are known to occur on NFS lands. This is due to the diversity of topography, geography, geology and soils, climate, and vegetation that occur on NFS lands in California, the same factors that account for the exceptionally high endemic flora of the State.

Over 360 vascular and 5 non-vascular plants known to occur on NFS lands have been identified as Forest Service sensitive and need further evaluation or require special management to ensure long-term species viability. Of these, 110 are endemic to NFS lands. The Region has the sole responsibility for the viability and long-term conservation of these species. At present, 36 plants that occur on NFS lands in Region 5 are Federally-listed as threatened or endangered, and 4 are proposed for listing.

Activities of the Sensitive Plant Program include field verification of known or reported locations of sensitive plants, preparation of individual population records, field reconnaissance of projects such as timber harvests and input to environmental documents, identifying basic research needs, monitoring key populations, and preparing individual species management

guides.

How Is the Region 5 Sensitive Plant List Developed?

The development of the sensitive species lists begins with the Nature Conservancy's Natural Heritage data rankings to ensure consistency in species included on the list across federal agencies nationally and locally, and between regions with each agency. The list is periodically validated by botanists affiliated with major scientific institutions, the California Native Plant Society (CNPS), and the Species Conservation and Recovery Program and Natural Diversity Database (CNDDDB) of the California Department of Fish and Game. The Region 5 sensitive plant list also takes into account the taxa listed under state law as endangered, threatened, or rare.

Any State-listed species which may need special management on NFS lands is considered for the list. In addition, the Region 5 sensitive plant list incorporates the professional field knowledge of Forest Service botanists and ecologists. Many of these field botanists contribute directly to the CNPS *Inventory* by participating on the Society's Rare Plant Scientific Advisory Committee.

The Region 5 sensitive plant list is subject to additions and deletions as new data are obtained, taxonomic problems clarified, or as revisions to the source documents are made. The list is expected to be dynamic, with review and possible revision occurring on a two to three year cycle to more accurately reflect the changing management situation. The Region 5 sensitive plant list is available upon request from the Forest Service Regional Office in Vallejo.

What Is the Forest Service Policy for Sensitive Plants?

Implementation of the Sensitive Plant Program is outlined in Forest Service Manual (FSM) Section 2670, "Threatened, Endangered, and Sensitive Plants and Animals." The FSM and the Forest Land Management Plans provide the working policies and framework for implementing all Forest Service activities and evaluating possible effects on endangered, threatened, proposed, or sensitive species.

Additionally, a Region 5 "Threatened and Endangered Plants Program Handbook" (R-5 FSH 2609.25), provides direction for day-to-day management of the sensitive plant program and technical procedures to implement the program at the project level. Both the FSM direction and Region 5 handbook are available for public review at any Forest Service office.

Key parts of FSM 2670.22 concerning sensitive taxa are:

- (1) Develop and implement management practices to ensure that species do not become threatened or endangered because of Forest Service actions.
- (2) Maintain viable populations of all native and desired non-native wildlife, fish, and plant species in habitats distributed throughout their geographic range on NFS lands.
- (3) Develop and implement management objectives for populations and/or habitat of sensitive species.

In addition, FSM 2670.32 states that the Forest Service will:

- (1) Assist states in achieving their goals for the conservation of endemic species.
- (2) Review programs and activities, through a biological evaluation, to determine their potential effect on sensitive species.
- (3) Avoid or minimize impacts to species whose viability has been identified as a concern.
- (4) If impacts cannot be avoided, analyze the significance of potential adverse effects on the population or its habitat within the area of concern and on the species as a whole.
- (5) Establish management objectives, in cooperation with the states, when projects on National Forest System lands may have a significant effect on sensitive species' population numbers or distributions.

Each national forest has a Forest Botanist or a Sensitive Plant Program Coordinator responsible for the implementation of the Sensitive Plant Program within that forest. Most Region 5 national forests have a professional botanist on staff and/or other highly trained biologists working on sensitive plant management issues.

Watch List Species

A number of plant species do not meet all the criteria to be included on the Regional Forester's Sensitive List, but are of sufficient concern that we need to consider them in the planning process. These include species that are locally rare (as opposed to declining throughout their range), are of public concern, occur as disjunct populations, are newly described taxa, or lack sufficient information on population size, threats, trend, or distribution. Such species make an important contribution to forest biodiversity and are addressed as appropriate through the NEPA process. To better identify these species, forests have been encouraged to develop "watch lists" of species. These watch lists are dynamic and updated as the need arises to reflect changing conditions and new information. The creation of the sensitive species and watch lists are key steps in meeting our commitment as an agency to maintain biologically diverse and healthy ecosystems.

How Are Sensitive Plants Actually Managed?

Distribution patterns, habitats, and ecological parameters differ for each of the 360+ sensitive plants in Region 5. We have learned first-hand that protecting and conserving these taxa does not necessarily entail segregating sensitive plants from other forest development or management activities.

Past management activities and practices often provide important insights for assessing ecological requirements, and management opportunities and constraints for species. Some species require frequent burning, others are early successional taxa, while others prefer a specific microenvironment for optimal population size and vigor. Timing, intensity, and frequency of a proposed action are the key factors in biological evaluations of proposed forest activities.

For example, a timber harvest could have no effect, adverse effect, or beneficial effect on a

sensitive plant occurrence depending on whether or not the proposed action is evaluated and planned in terms of the species' ecological needs. This is well illustrated by the Shirley Meadows star-tulip (*Calochortus westonii*), which is endemic to the Sequoia National Forest. The ecological requirements of this species suggested that selective thinnings of dense conifers could be accomplished when the plants were dormant in the fall, thus creating a more open, park-like environment for this species. Numbers of Shirley Meadows star-tulips have increased markedly under this prescription. Historically, tree thinning was probably accomplished by low-intensity ground fires, but with the successful fire suppression efforts of this century, a shift towards denser white fir and incense-cedar has occurred in what would otherwise be an open mixed conifer-black oak forest.

Experience in maintaining viable populations of sensitive species in dynamic forest, woodland, chaparral, and grassland ecosystems throughout their range on NFS lands has taught us that "fence them and leave them" is not always the best prescription. The key objective for long-term sensitive species management is not how much forest management the species can *tolerate*, but rather, what kind of forest management does the species *need* to assure long-term conservation. Some sensitive plants require prescribed management treatments, while others, including some sensitive plants occurring on restrictive or unique habitats such as the pebble plains on the San Bernardino National Forest or species of serpentinite substrates, simply need to be protected from ground disturbing activities. Sensitive plant stewardship in Region 5 is indeed a dynamic and challenging part of multiple-use resource conservation.

As the national forest inventories for sensitive plants are completed, long-range species and/or habitat management guides are prepared and incorporated into forest plans. These guides are not intended to be exhaustive, but are designed as work plans, providing site-specific objectives, activities, and time tables for implementation. The guides specify monitoring and periodic review to ensure that the guide is working to benefit the species. As new data become available, they are incorporated into species management guides. Effective implementation of these guides should ensure the long-term viability of sensitive species, thereby preventing the need to list the species under Federal law.

Forest Supervisors and District Rangers can best manage sensitive plants on the NFS lands they administer if they have the most current information. Therefore, forests have developed specific methodologies for collecting and maintaining sensitive plant data. In addition, Region 5 has signed a Memorandum of Understanding with CNPS and CNDDDB. All of the sensitive plant data generated by Region 5 are forwarded annually to CNDDDB and shared freely with CNPS. This provides all interested parties with the current distribution, population trends, condition, and vigor for each sensitive species that is inventoried and managed on NFS lands in California.

What Are Region 5 Forest Service Accomplishments Regarding Botanical Conservation?

Region 5 developed the first Sensitive Plant Program in the Forest Service, and has a long history of conserving rare and unique plants and plant communities. Throughout NFS lands in California there exists a great wealth of places with unusual scenic, historic, prehistoric, and biological values that merit special attention and management. Botanical areas are one of the categories of "Special Interest Areas" (SIA's) that are identified in FSM section 2462. Like other SIA's, botanical areas are established to protect sensitive resources, and where appropriate, to

foster public education and enjoyment. As of January 1, 2000, 68 botanical areas had been formally established by the Regional Forester pursuant to 36 CFR 294.1a and incorporated into final Forest Land Management Plans. Several potential botanical areas, many containing sensitive plant species, are being evaluated with CNPS's assistance. Qualifying botanical areas will be established through amendments to Forest Plans with full public review under the National Environmental Policy Act.

Other sensitive plant occurrences are within the 51 Research Natural Areas (RNA's, FSM Section 4060) established for non-manipulative research and study. Many proposed RNA's await establishment. RNA's are recommended jointly by the Station Director (of the research branch of the Forest Service) and Regional Forester and are established by the Chief of the Forest Service in Washington, DC. Botanical values and biological diversity are also provided by Congressionally designated Wilderness, and Congressionally-designated Wild and Scenic Rivers in California's NFS lands.

Helping the public discover and appreciate their natural heritage is an important conservation activity for botanists in the Forest Service. Each national forest develops a program of activities designed to serve visitors. Many botanists work actively in their local communities to bring the conservation message to schools and civic groups. Forest Service botanists provided substantial contributions to the CNPS and DFG publication celebrating the diversity of the California flora, "California's Wild Gardens."

Conclusion

Sensitive plants on the national forests and grasslands are a unique and scientifically valuable resource. I personally encourage CNPS to continue to assist the Forest Service in our sensitive plant inventory and conservation strategy efforts. CNPS members concerned with sensitive plant management need to continue to coordinate conservation efforts with Forest personnel at the local level, as they have during CNPS's participation in the development of Forest Land Management Plans. This involvement has been beneficial for sensitive resources on California's national forests, and educational for both CNPS members and Forest Service planners and biologists. Working together, we can continue to conserve and manage for viable populations of sensitive plant species occurring on the national forests and grasslands in California.

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