

# CNPS Botanical Survey Guidelines

CALIFORNIA NATIVE PLANT SOCIETY

December 9, 1983

Revised June 2, 2001

The following recommendations are intended to help those who prepare and review environmental documents determine when a botanical survey is needed, who should be considered qualified to conduct such surveys, how surveys should be conducted, and what information should be contained in the survey report. The California Native Plant Society recommends that lead agencies not accept the results of surveys unless they are conducted and reported according to these guidelines.

1. Botanical surveys are conducted in order to determine the environmental effects of proposed projects on all botanical resources, including special status plants (rare, threatened, and endangered plants) and plant (vegetation) communities. Special status plants are not limited to those that have been listed by state and federal agencies but include any plants that, based on all available data, can be shown to be rare, threatened, or endangered under the following definitions:

A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.<sup>1</sup>

Rare plant (vegetation) communities are those communities that are of highly limited distribution. These communities may or may not contain special status plants. The most current version of the California Natural Diversity Database's *List of California Terrestrial Natural Communities*<sup>2</sup> should be used as a guide to the names and status of communities.

Consistent with the California Native Plant Society's goal of preserving plant biodiversity on a regional and local scale, and with California Environmental Quality Act environmental impact assessment criteria<sup>3</sup>, surveys should also assess impacts to locally significant plants. Both plants and plant communities can be considered significant if their local occurrence is on the outer limits of known distribution, a range extension, a rediscovery, or rare or uncommon in a local context (such as within a county or region). Lead agencies should address impacts to these locally unique botanical resources regardless of their status elsewhere in the state.

2. Botanical surveys must be conducted to determine if, or to the extent that, special status or locally significant plants and plant communities will be affected by a proposed project when any natural vegetation occurs on the site and the project has the potential for direct or indirect effects on vegetation.
3. Those conducting botanical surveys must possess the following qualifications:
  - a. Experience conducting floristic field surveys;
  - b. Knowledge of plant taxonomy and plant community ecology and classification;
  - c. Familiarity with the plants of the area, including special status and locally significant plants;

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<sup>1</sup> California Environmental Quality Act Guidelines, §15065 and §15380.

<sup>2</sup> List of California Terrestrial Natural Communities. California Department of Fish and Game Natural Diversity Database. Sacramento, CA.

<sup>3</sup> California Environmental Quality Act Guidelines, Appendix G (Initial Study Environmental Checklist).

- d. Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
  - e. Experience with analyzing impacts of a project on native plants and communities.
4. Botanical surveys should be conducted in a manner that will locate any special status or locally significant plants or plant communities that may be present. Specifically, botanical surveys should be:
- a. Conducted in the field at the proper times of year when special status and locally significant plants are both evident and identifiable. When special status plants are known to occur in the type(s) of habitat present in the project area, nearby accessible occurrences of the plants (reference sites) should be observed to determine that the plants are identifiable at the time of survey.
  - b. Floristic in nature. A floristic survey requires that every plant observed be identified to species, subspecies, or variety as applicable. In order to properly characterize the site, a complete list of plants observed on the site shall be included in every botanical survey report. In addition, a sufficient number of visits spaced throughout the growing season is necessary to prepare an accurate inventory of all plants that exist on the site. The number of visits and the timing between visits must be determined by geographic location, the plant communities present, and the weather patterns of the year(s) in which the surveys are conducted.
  - c. Conducted in a manner that is consistent with conservation ethics and accepted plant collection and documentation techniques<sup>4,5</sup>. Collections (voucher specimens) of special status and locally significant plants should be made, unless such actions would jeopardize the continued existence of the population. A single sheet should be collected and deposited at a recognized public herbarium for future reference. All collections shall be made in accordance with applicable state and federal permit requirements. Photography may be used to document plant identification only when the population cannot withstand collection of voucher specimens.
  - d. Conducted using systematic field techniques in all habitats of the site to ensure a thorough coverage of potential impact areas. All habitats within the project site must be surveyed thoroughly in order to properly inventory and document the plants present. The level of effort required per given area and habitat is dependent upon the vegetation and its overall diversity and structural complexity.
  - e. Well documented. When a special status plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form, accompanied by a copy of the appropriate portion of a 7.5-minute topographic map with the occurrence mapped, shall be completed, included within the survey report, and separately submitted to the California Natural Diversity Database. Population boundaries should be mapped as accurately as possible. The number of individuals in each population should be counted or estimated, as appropriate.
5. Complete reports of botanical surveys shall be included with all environmental assessment documents, including Negative Declarations and Mitigated Negative Declarations, Timber Harvesting Plans, Environmental Impact Reports, and Environmental Impact Statements. Survey reports shall contain the following information:
- a. Project location and description, including:

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<sup>4</sup> Collecting Guidelines and Documentation Techniques. California Native Plant Society Policy (adopted March 4, 1995).

<sup>5</sup> Ferren, W.R., Jr., D.L. Magney, and T.A. Sholars. 1995. The Future of California Floristics and Systematics: Collecting Guidelines and Documentation Techniques. *Madroño* 42(2):197-210.

- 1) A detailed map of the location and footprint of the proposed project.
  - 2) A detailed description of the proposed project, including one-time activities and ongoing activities that may affect botanical resources.
  - 3) A description of the general biological setting of the project area.
- b. Methods, including:
- 1) Survey methods for each of the habitats present, and rationale for the methods used.
  - 2) Description of reference site(s) visited and phenological development of the target special status plants, with an assessment of any conditions differing from the project site that may affect their identification.
  - 3) Dates of surveys and rationale for timing and intervals; names of personnel conducting the surveys; and total hours spent in the field for each surveyor on each date.
  - 4) Location of deposited voucher specimens and herbaria visited.
- c. Results, including:
- 1) A description and map of the vegetation communities on the project site. The current standard for vegetation classification, *A Manual of California Vegetation*<sup>6</sup>, should be used as a basis for the habitat descriptions and the vegetation map. If another vegetation classification system is used, the report must reference the system and provide the reason for its use.
  - 2) A description of the phenology of each of the plant communities at the time of each survey date.
  - 3) A list of all plants observed on the project site using accepted scientific nomenclature, along with any special status designation. The reference(s) used for scientific nomenclature shall be cited.
  - 4) Written description and detailed map(s) showing the location of each special status or locally significant plant found, the size of each population, and method used to estimate or census the population.
  - 5) Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms and accompanying maps.
- d. Discussion, including:
- 1) Any factors that may have affected the results of the surveys (*e.g.*, drought, human disturbance, recent fire).
  - 2) Discussion of any special local or range-wide significance of any plant population or community on the site.
  - 3) An assessment of potential impacts. This shall include a map showing the distribution of special status and locally significant plants and communities on the site in relation to the proposed activities. Direct, indirect, and cumulative impacts to the plants and communities shall be discussed.
  - 4) Recommended measures to avoid and/or minimize direct, indirect, and cumulative impacts.
- e. References cited and persons contacted.
- f. Qualifications of field personnel including any special experience with the habitats and special status plants present on the site.

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<sup>6</sup> Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society. Sacramento, CA. 471 pp.