BOARD OF FORESTRY AND FIRE PROTECTION
THE NATURAL RESOURCES AGENCY
STATE OF CALIFORNIA

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Draft Problem Statement on Botanical Resources Assessment in Timber Harvest Documents

Board staff have developed the following draft problem statements based upon the comments received both in writing and verbally at the July and August Joint Committee meetings. The commentary relied upon is summarized in Appendix A of this document. Appendix B contains the existing guidance documents relied upon during consideration of this item. For more detailed background information on any of the topics discussed below, please review the Botanical Resources Staff Report (available in the August, 2020 meeting materials for the Joint Committee Workshop).

The problems are that:

1) The scoping process for botanical resources in preparation of Plans, the minimum information required within the Plan, and what protection measures are appropriate in a given situation are unclear and can lead to delays in Plan review.
    a. The contents of current guidance in the Shintaku memo and the two guidance documents by CDFW (2005, 2018) should be reviewed for accuracy, applicability, and to determine whether guidance is sufficiently clear for stakeholders and Review Teams.
    b. The application of 14 CCR § 15380 to plant species in scoping requirements is unclear.
    c. Which documents, lists, or other sources are appropriate for the scoping process should be more clear.
    d. Sensitive Natural Communities and Global Rankings are at times requested to be included within scoping and survey efforts, which may not be appropriate for the preparation of a Plan.
2) Findings associated with survey efforts, both positive and negative detections of occurrences, are not consistently submitted to CNDDB. These data are valuable as it relates to review of listing status or ranking.
3) Cost thresholds are potentially a barrier to forest management activities for small landowners, particularly the costs of scoping and surveying, the cost of access to scoping tools such as CNDDB and BIOS, and the 5-year requirement for additional surveying on NTMPs.
4) Monitoring is needed to assist in determining the effectiveness of protection and conservation of botanical resources during and after forest management activities. ** While this item does not reside well within this discussion as it does not relate directly to the Forest Practice Rules or a Rule change, it is considered important by the Committee Members and can potentially be discussed in the

future as part of the Research Plan under development by Board Staff or within the scope of the Effectiveness Monitoring Committee.

5) There currently no minimum qualifications as they relate to the persons able to perform scoping, habitat assessment and surveys for botanical resources during Plan preparation and implementation.

APPENDIX A: Commentary Relied Upon in Problem Statement Development

August Joint Committee Meeting

- Hopes to achieve consistency in expectations for plan submitters and reviewers while protecting botanical resources. This will include addressing expectations for scoping, who is qualified to perform surveys, the timing and extent of surveys, and the timeframe for the submittal of survey results.
- We need to leave the door open for a variety of ways to conduct botanical surveys to develop innovative processes amongst industry and private landowners and not lock them into one type of survey protocol. This issue may be a good candidate for a Technical Rule Addendum. The rules should be the basis for the minimum information necessary for the review team to make a decision. Private landowners have done a good job of surveying their properties and have engaged with botanists. There is some confusion about the process and what's expected and what guiding statutes and regulations need to be enforced when CAL FIRE conducts inspections.
- Consistency between the three review team offices and ensuring that all regions of the State are treated the same is the highest concern. There is interest in the differences between how smaller landowners are treated vs. larger industrial owners. This may be a good opportunity to revise Technical Rule Addendum #2 to add additional clarity on this matter.
- It would be beneficial for CDFW to better frame what the problem is.
- Don't discount the route of formal regulations too early; regulatory uncertainty is an important issue here and resolving that issue will yield a faster plan review process. The CNPS CRPR list is not a central issue, it is simply a scientific list that helps inform decisions by CDFW. It would be helpful for CNPS to come talk about their ranking process to the Joint Committee.
- An outline of where there's documented adverse environmental effects requiring mitigation on timberlands related to botanical resources would be helpful. A more rigid, formalized, and public process for the CNPS rankings would be better so that anyone looking at a ranking can determine what evidence supported the decisions for the ranking. The Board should carefully consider whether the CNPS process as a third party process warrants being elevated to regulation.
- CDFW is asking for a 5-year review of botanical resource survey data and additional surveys for NTMPs which is potentially overly burdensome for small landowners as the THP process is for 7 years.

July Joint Committee Meeting

- There are historical differences in how botanical resources are handled in the interior vs. on the coast including additional restrictions and data requests on the coast. Sometimes these requirements are close to becoming underground regulations. Additionally, a CNPS identification of a plant as "rare" is not the same as identification under CESA and ESA and the protections are different, but the two often get conflated during the Plan process, particularly on the coast. Long-time botanists and their products are sometimes being questioned on the coast. The overall goal is consistency between the regions and policy that is science-based.
- The current requirements for small landowners may be excessive and in opposition to increasing the pace and scale of fuel treatments. The frequency of surveys for

small landowners is important because they may only be harvesting once every 15-20 years, but are required to conduct surveys much more frequently to satisfy the guidelines.

- The use of the CNPS ranking process without a public state process is problematic.
- Being able to plan and predict what is going to be expected of foresters is important.
- Scoping for botanical resources should be a repeatable process. However, requests for additional information outside the scope of available guidance have been made on several Plans. CEQA Guidelines section 15380 forms the basis for the determination of what constitutes a “sensitive” plant species. Specifically, 15380(d) states that species that “can be shown to meet the criteria in subdivision (b)” shall be considered to be rare, threatened, or endangered. There is a lack of transparency in the process that DFW uses to determine that a plant species can be shown to meet the criteria. Rather, DFW appears to rely on designations by the California Native Plant Society (CNPS) to fulfill the requirements of subsection (d). Our concern is that DFW relies on CNPS to implement subsection (d) ¬–which effectively means that forest landowners become regulated by a process which does not have public input both at the initial sensitive determination stage as well as potential determinations that plants are no longer sensitive.
- Plant surveys should focus on unique habitats with less focus on the broader landscape so resources are more available to conserve habitats.
- There should be acknowledgement that some habitats such as wet areas, watercourse and lake protection zones, and rock outcrops are inherently protected and surveys for plants that rely on these habitats are generally not necessary unless disturbance activities beyond tree falling and removal are proposed in these habitats.
- It would be worthwhile for the BOF to look at the interactions between CEQA and the Native Plant Protection Act.
- Any BOF actions should be based on the reality that timber harvest poses a relatively de minim us impact to botanical resources especially relative to other land uses such as development.
- It would be worthwhile to explore ways to use previous botanical surveys in current harvest proposals. For example, surveys for species which have general habitat requirements such as mixed conifer forest could be determined to not be necessary if the species has been surveyed for in the vicinity with negative results.
- Any BOF action with regard to ministerial permits should be based on evidence showing actual significant adverse impacts associated with such permits rather than speculation that the permits are resulting in impacts.

APPENDIX B: Guidance Documents Relied Upon in Problem Statement Development

1) CAL Fire Botanical Resources Memo, 2009

2) CDFW Botanical Resource Guidelines for Timber Harvest, 2005

3) CDFW Protocols for Surveying and Evaluating Impacts to special Status Native Plant Populations and Sensitive Natural Communities, 2018

State of California **Natural Resources Agency**

Memorandum

To: Sacramento and Region Forest Practice Managers and Unit Foresters **Date:** August 6, 2009

Telephone: (530) 224-2461

Website: www.fire.ca.gov

From: Duane Shintaku
Assistant Deputy Director, Forest Practice
Department of Forestry and Fire Protection

Subject: Environmental Review of Plans, Reports, and Permits Regarding Potential Adverse Impacts to Botanical Resources from Timber Operations

An important part of the California Department of Forestry and Fire Protection's (CAL FIRE) Lead Agency role in the environmental review and approval of timber harvesting operations[1] is the consideration of potential significant adverse impacts to botanical resources. The Department of Fish and Game (DFG) provides comments to CAL FIRE in its role as a Review Team Member or as a Responsible Agency regarding "special plants"[2], including formally listed rare, threatened or endangered species[3] and non-listed species which meet the criteria of California Environmental Quality Act (CEQA) guidelines 14 CCR § 15380(d)[4]. The guidance below and attached flowchart is directed toward review team staff and forest practice inspectors in their consideration of potential impacts to botanical resources arising from timber operations.

REVIEW TEAM CONSIDERATIONS FOR BOTANICAL RESOURCES

- Registered Professional Foresters (RPFs) are encouraged to follow the scoping disclosure and mitigation guidance described in the 1999 memo entitled: *CDF Guidelines for Species Surveys, Avoidance of Significant Impacts and Identified Mitigations.* RPFs need to conduct adequate scoping prior to plan submittal and provide sufficient disclosure of the presence of individuals or habitat of state or federally listed plants or California Native Plant Society listed species in categories 1a, 1b, or 2 that might be significantly impacted by the proposed operations.

- CAL FIRE will evaluate the sufficiency of information and the proposed protection measures specified in the plan. As necessary, CAL FIRE will require the RPF to provide available site specific information related to the species abundance, distribution, reproductive cycle, quality and quantity of habitat, and present/historic range, including any site specific observations and data collected by the landowner that may not be available to the review team.

- If CAL FIRE records, review team agency reports or public letters raise a fair argument supported by substantial evidence[5] that a significant adverse impact or cumulative impact may occur from proposed timber operations, CAL FIRE will evaluate the issues raised in the fair argument and will ensure that those issues have been addressed, as appropriate based upon the listing status of the plant species in question.

- For those species which <u>are listed</u> as threatened, endangered (under the California Endangered Species Act (CESA) or the Endangered Species Act (ESA)) or rare under the Native Plant Protection Act (NPPA)[6], CAL FIRE will limit its consideration of the species' population status to within California in its evaluation of significant adverse impacts and/or cumulative impacts. The frequency and distribution of a <u>listed</u> plant species beyond the California border will <u>not</u> be a factor when determining the significance of impacts or in the development of take avoidance strategies as consistent with ESA and CESA. Evaluation and application of ESA and CESA take prohibitions will only be applied to lands within the State[7]. Removal of plants listed as rare under NPPA may occur in accordance with Fish and Game Code §1913 where a significant effect will not occur.

- For those plant species which <u>are not listed</u> under ESA, CESA or NPPA their distribution throughout all or a significant portion of its range may be considered when determining whether or not potentially significant impacts will arise under CEQA Guidelines §15380 (d) (i.e. a plant is "considered" rare, threatened or endangered). Mitigation for unlisted plants shall be designed to prevent a significant reduction of the known distribution and range and should be directed at preventing extirpation of a plant population from a known location. This is particularly applicable in those instances where a plant is found to exist in very small numbers or in isolated groupings within California, but also known to exist outside of California.

- The requirement for botanical survey(s) should be based upon the lack of sufficient information and knowledge regarding the plant's location or habitat requirements, to allow the review team to make an informed decision on the potential for significant or cumulative impacts. If timber operations are planned in a manner which clearly avoids potential impacts (e.g. via altering the timing and location of operations), then it is likely that surveys will not be needed. The Plan record should include: specific information on plant biology and habitat requirements (soils, aspect, elevation, moisture, micro-climate, shade tolerance, sensitivity to site disturbance), the results of previous plant surveys, pertinent bibliographic citations, and descriptions of all individuals, organizations and plant records used in Plan preparation.

- CAL FIRE shall review all requests by DFG for surveys for the purpose of determining the presence or absence of sensitive botanical resources. CAL FIRE, as lead agency, may conclude that surveys are unnecessary to avoid/mitigate significant adverse impacts. In lieu of surveys, CAL FIRE may require other measures that ensure avoidance, subject to constraints of plant phenology including, but not limited to: (1) on-site training for the Licensed Timber Operator (LTO) and inclusion of photographs and plant habitat description(s) in the approved Plan; (2) "walk-through survey(s)" by the RPF or qualified botanist prior to commencement of operations; (3) project specific mitigation to avoid unnecessary damage if the plant is discovered in the area during timber operations; and (4) effectiveness monitoring.

- In making a decision to approve or disapprove timber operations CAL FIRE should examine the whole record (e.g. Timber Harvest Plan (THP) and supporting literature, agency reports, and public comment) in determining the sufficiency of disclosure and the effectiveness of the proposed protection measures to avoid significant impacts or take to comply with CEQA, NPPA, CESA and ESA.

- Where a THP implements, in part, a project approved by another lead agency (typically conversions to alternate or non-timber growing use), the THP should reference and rely upon the mitigation measures identified for reducing impacts to botanical resources found in the CEQA document adopted or certified by the lead agency (CCR §15096 (f)). If the CEQA document does not contain mitigations for botanical resources, or the mitigations are not sufficient in reducing impacts to a level of less than significant, CAL FIRE should: 1) request the submitter to provide additional information and require mitigation, as above (CCR §15096 (g)(2)); or, 2) where mitigations and/or avoidance measures required in the THP would result in changes to the project approved by the lead agency, request that the lead agency prepare a subsequent or supplemental CEQA document that addresses impacts that are new or not recognized, or mitigations that were found to be infeasible at the time of the lead agency's approval of the project (CCR §§ 15162 and 15163).

- Where the Director has certified a Program Timberland Environmental Impact Report (PTEIR) in conformance with CCR §1092.02, all Program Timber Harvesting Plan(s) (PTHP(s)) shall rely upon the measures found in the PTEIR for protecting botanical resources as referenced in the checklist that accompanies each PTHP (CCR §1092.01(c)). DFG shall review PTHPs in accordance with CCR §1092.18 and ensure its consistency with the PTEIR's provisions to mitigated impacts to botanical resources. Where the PTHP is found by the Director to be within the scope of the analysis in the certified PTEIR, the PTHP shall be approved. Where the PTHP is outside the scope of analysis in

- the PTEIR for protection of botanical resources the submitter may alternatively rely upon the guidance in CCR §1092.01(d).

- In addition to the CDF Guidelines for species surveys, RPFs are also encouraged to be familiar with the following information sources:

  California Department of Fish and Game, Natural Diversity Database. July 2009. Special Vascular Plants, Bryophytes, and Lichens List. Quarterly publication. 71 pp.

  California Department of Fish and Game. 2005. Guidelines for conservation of sensitive native plant resources within the timber harvest review process and during timber harvest operations. http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/THP_BotanicalGuidelines_July2005.pdf

Attachment: "Evaluation Process for Botanical Resources" (8-6-2009 Flowchart)

Footnotes:

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[1] CAL FIRE reviews and approves timber harvesting operations proposed in Timber Harvesting Plans (THPs), Nonindustrial Timber Management Plans (NTMPs), Program THPs (PTHPs) tiering to certified Program Timberland Environmental Impact Reports (PTEIRs) and Timberland Conversion Permit applications.

[2] "Special Plants" refers to all plant taxa inventoried by DFG's Natural Diversity Database (CNDDB), regardless of their legal or protection status, including: federally or state listed rare, threatened or endangered species or candidates for listing; those that fall under CEQA § 15380 (d); California Native Plant Society listed species, 1a, 1b, 2 and some 3; populations threatened with extirpation in California but present elsewhere; and, plants associated with habitats that are declining in California at a significant rate (e.g. wetlands, riparian, vernal pools, old growth forests, desert aquatic systems, native grasslands, valley shrub land habitats, etc.).

[3] Scientific and common names for State-listed plants are listed in Title 14, § 670.2. A federal listing of endangered and threatened animal and plant species is provided in the Code of Federal Regulations (see 50 C.F.R. §§ 17.11–.12).

[4] CEQA Guidelines § 15380 (d) defines Endangered, Rare or Threatened Species to include "*A species not included in any listing identified in subdivision (c)* [state or federally listed] *shall nevertheless be considered to be endangered, rare or threatened, if the species can be shown to meet the criteria in subdivision (b)* [criteria for rare and endangered]. The Department must evaluate potential significant impacts to plants meeting § 15380 (d) criteria.

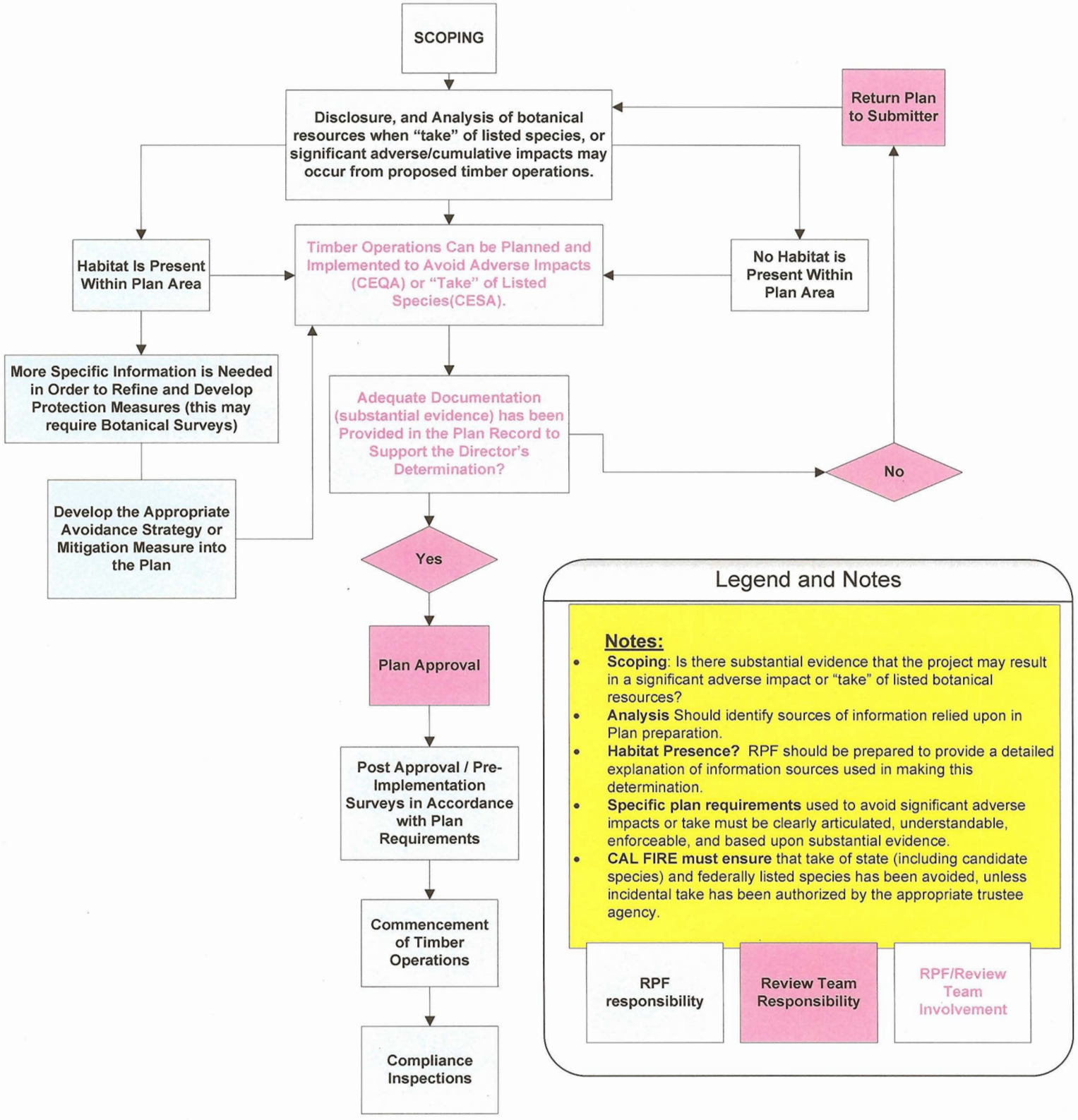
[5] "Substantial evidence" shall include facts, reasonable assumptions predicated upon facts, and expert opinion supported by facts (CEQA Guidelines § 15184 (b)).

[6] In 1984 the Legislature uplisted all plants identified as endangered under the Native Plant Protection Act (NPPA) (Fish and Game Code §§1900 – 1913) to endangered under the CESA. Only those plants listed as "rare" under NPPA are still subject to those code sections.

[7] Under the provisions of the ESA, plants uncommon in one state but common in other states are not eligible for federal listing consideration. Until 1979, a similar policy was followed in California; however, after the passage of the Native Plant Protection Act, plants were considered for protection without regard to their distribution outside the State.

Evaluation Process for Botanical Resources

Thursday, August 06, 2009



JOINT 5(a)

California Department of Fish and Game Guidelines for Conservation of Sensitive Native Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations

INTRODUCTION

The following information is provided by the California Department of Fish and Game (DFG) to inform timber harvesting plan[1] (THP) applicants, Registered Professional Foresters (RPFs), review agency staff, and the public of DFG's botanical review objectives for projects proposing timber harvesting activities. These guidelines are specific to potential impacts to sensitive native plant species[2]. Although these guidelines are not mandatory (outside of specific requirements of law), they are designed to avoid delays caused by inadequate biological information in the THP review process. Their use is anticipated to maximize the limited resources of the review agencies, to meet the California Environmental Quality Act (CEQA) requirements for adequate disclosure of potential impacts, and to conserve public trust resources.

DFG TRUSTEE AGENCY MISSION

The mission of DFG is to manage California's diverse wildlife and native plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. DFG has jurisdiction over the conservation, protection, and management of wildlife, native plants, and habitat necessary to maintain biologically sustainable populations (Section 1802, Fish and Game Code). DFG, as trustee agency under CEQA (Section 14 CCR 15386, CEQA Guidelines), provides expertise to review and comment upon environmental documents and makes recommendations regarding potential negative impacts to those resources held in trust for the people of California. As a member of the Review Teams established pursuant to the California Forest Practice Rules (Section 1037.5), DFG reviews THPs and makes recommendations designed to avoid or mitigate potential project impacts to biological resources.

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[1] As used in this document, the terms "timber harvesting plan", "THP", and "plan" refer to Timber Harvesting Plans, Nonindustrial Timber Management Plans (NTMP), Program Timber Harvesting Plans, and Modified Timber Harvesting Plans as defined in the California Forest Practice Rules.

[2] Sensitive plants include those plants listed as endangered, threatened or rare (Section 670.2, Title 14, California Code of Regulations; Section 1900, Fish and Game Code; ESA Section 17.11, Title 50, Code of Federal Regulations) or those meeting the definitions of rare or endangered provided in Section 15380 of the CEQA Guidelines.

SENSITIVE PLANT RESOURCE GUIDELINES

PRE-CONSULTATION

Pre-consultation identifies potential botanical resource concerns early in plan development and fosters the collaborative development of management strategies that meet both project goals and resource needs. Registered Professional Foresters (RPFs) are encouraged to contact DFG's Timberland Planning Program staff during development of THPs when proposed operations may adversely impact sensitive plant species.

OWNERSHIP-WIDE RESOURCE INFORMATION

DFG encourages landowners to acquire adequate information on sensitive native plants and plant communities within their ownership, and to develop and implement effective ownership-wide conservation and management efforts for these plants. Pre-consultation with DFG timber planning staff can facilitate this process. DFG is interested in working with landowners to develop strategies that conserve and manage sensitive botanical resources while meeting timber management goals. Effective management of sensitive plants and adequate information at the ownership and/or landscape scale will enhance management options and flexibility for these plants within individual THP areas. This information will also provide a framework to assess potential direct, indirect, and cumulative impacts to sensitive native plants as required by CEQA and the Forest Practice Rules.

ASSESSMENT OF SENSITIVE PLANTS

Timber operations that have the potential to impact sensitive plants include but are not limited to harvesting, road and landing construction, watercourse crossings, and site preparation. DFG is also concerned about the potential effects of herbicide treatment on sensitive plants. Adequate information about the vegetation types present within the THP area, any sensitive plants that are known to or are likely to occupy those vegetation types, and the potential impacts to any such plants is necessary to properly assess potential impacts to sensitive plant resources. Where potential significant adverse impacts are identified, protection measures designed to avoid or mitigate the impacts should be included in the THP. Forest Practice Rules § 1034(w).

Scoping

The success of conserving native plants that could be adversely affected by timber harvesting operations begins with adequate scoping by the project proponent. Scoping entails the compilation of relevant botanical information in the general project area. Scoping includes, but is not limited to, full and complete disclosure of all native plants at risk from the proposed timber harvesting operations. Proper

scoping provides sufficient biological information on the presence and absence of these plants and their habitats to make informed decisions. DFG cannot over-emphasize the importance of proper and thorough scoping. Adequate scoping will:

- Facilitate timely review by identifying relevant sensitive native plant issues;
- Focus information-gathering efforts on site-specific botanical resources;
- Focus plant surveys to key locations and important habitats where sensitive native plants could occur; and
- Clearly demonstrate whether sensitive native plant resources are at risk.

Adequate scoping begins with identification of vegetation and habitat types on a regional scale using the USGS 7.5' quadrangle on which the project is located and the adjacent quadrangles. A list of sensitive plant species that have the potential to occur within identified vegetation types is then developed. Analysis is improved, and omissions largely avoided, when the assessment area is comprehensive and ecologically relevant.

At the project level, scoping identifies types of vegetation and habitat within the THP area, as well as sensitive plants that may be impacted by the project. The identification of habitat and vegetation types should utilize a recognized classification system (i.e., Sawyer and Keeler-Wolf (1995), Holland (1986), Cheatham and Haller (1975), Munz and Keck (1970), and Mayer and Laudenslayer (1988)). The most recent detailed list of vegetation types known from California is available from http://www.dfg.ca.gov/whdab/pdfs/natcomlist.pdf. Habitat features within the forest landscape (e.g., forest openings, rock outcrops, wetlands, vernal pools, and serpentine substrates), occurring within the project area should also be discussed or mapped.

Preliminary information about sensitive plants within a project area can be derived from DFG's Wildlife and Habitat Data Analysis Branch (WHDAB). The WHDAB maintains the California Natural Diversity Database (CNDDB), which tracks California's sensitive animals, plants, and habitats. The WHDAB also produces the *Special Vascular Plants, Bryophytes, and Lichens List* (Special Plants List) consisting of approximately 2,000 species, subspecies, or varieties of plants that are state and/or federally listed, proposed for listing, candidate species, and of concern due to rarity, threats, or close association with declining habitats, or species for which more information is needed. Status and threat rankings are assigned to plant taxa on the Special Plants List. To guide disclosure and assessment of potential impacts to plants, DFG has developed guidelines that may be used to assess the effects of proposed projects on rare and endangered plants and natural communities. These guidelines and Special Plants List can be found on WHDAB's web page: www.dfg.ca.gov/whdab/html/plants.html

Additional sources of information about sensitive plants potentially occurring within the project area are also available. These sources may include, but are not limited to, state and federal resource agency lists, *the California Native Plant Society*

(CNPS) Inventory of Rare and Endangered Plants of California, the CNPS Online *Inventory* (http://www.northcoast.com/~cnps/cgi-bin/cnps/sensinv.cgi), taxonomic references, agency contacts, environmental documents for other projects in the vicinity, the project proponent's knowledge of occurrences on the ownership, academics, and professional or scientific organizations.

List of Sensitive Plants

Proper scoping will result in the compilation of a comprehensive list of sensitive plants known to occur within the appropriate assessment area, as well as plants that are not known to occur within the assessment area, but for which the project area includes appropriate habitat and is within the species known range.

The THP should contain information about each sensitive plant with the potential to occur within the project area. This information may typically include:

- An informative discussion of the habitat characteristics and life history requirements of the species;
- An assessment of the quality, quantity, and location of potential habitat within the project area; and
- The current conservation status (i.e., Federal Endangered Species Act (ESA) and/or California Endangered Species Act (CESA) listing status, NDDB Rank, U.S. Forest Service and/or Bureau of Land Management status, CNPS status, or if the species meets the criteria of Section 15380 CEQA Guidelines).

When potential habitat exists, the document should include a discussion of the efforts made to determine the presence or absence of the species within and immediately adjacent to the project area. If potential habitat for sensitive plants occurs within the project area and the proposed project activities have potential to impact the habitat, a botanical survey is usually appropriate. Alternately, the applicant may discuss and explain why no survey was conducted when suitable sensitive plant habitat occurs within the project area (e.g., the suitable habitat will be completely avoided).

Surveys

If potential habitat for sensitive plants occurs within the project area and the proposed project activities have the potential to impact the habitat, a botanical survey should usually be conducted. Information obtained through botanical surveys is used to assess potential impacts and to develop appropriate protection and/or mitigation measures during THP preparation and review. Surveys may not be necessary if suitable protection measures are implemented (e.g., the plan identifies potential habitat and excludes it from timber operations). Surveys are best conducted during THP development and included in the plan when it is initially submitted. These surveys provide site-specific information that enables DFG and

the California Department of Forestry and Fire Protection (CDF) to better evaluate the project's potential impacts and, when necessary, to better develop recommendations to mitigate potential impacts. If a THP indicates surveys will be conducted prior to operations but after plan approval, the plan shall provide specific protection measures that will be implemented if the species is located during the subsequent surveys (CEQA Guidelines Section 15126.4(a)(1)(B)). Mitigation measures are discussed in a following section.

Sensitive plant surveys should be scientifically rigorous and sufficient to ensure that the presence or absence of the target species can be determined with confidence. Surveys should be conducted in a manner consistent with the methodology presented in the DFG's *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities.* These guidelines are available at www.dfg.ca.gov/whdab/html/plants.html. It is recommended that survey reports include a discussion of the survey methods, dates and duration, personnel involved and their qualifications, maps (habitat and survey route), reference sites and materials, and survey results including an overall species list of plants encountered in the field. Depending on the phenology (flowering period) of sensitive plants potentially occurring in the project area, it may be necessary to survey a plan area at more than one time of the year.

If sensitive plants occur within the project area, the following information should be included in the THP. This information will enable reviewing agencies and the public to effectively evaluate the plan and will guide the development of protection measures:

The locations and distribution of occurrences clearly marked on a topographic map. Global Positioning System (GPS) data (if taken) are also useful.

- A discussion of the significance of occurrence(s), which should include, but not be limited to, any important or unusual characteristics of the occurrence (e.g., unique morphology or habitat requirements), information about any other nearby occurrences including population sizes, and the geographic range of the species.
- Population size (a complete census for small occurrences or an estimate determined by sampling for large occurrences) and if applicable, information about the percentage of individuals in each life stage such as seedlings vs. reproductive individuals;

The specific site characteristics of occurrences, such as vegetation or habitat type, overstory canopy closure, shrub and herbaceous layer characteristics, associated species, topographic position, aspect, hydrological characteristics, soil type and texture, soil parent material, and land use/management history.

In addition, the plan should include completed CNDDB field forms with locations mapped on a portion of a USGS 7.5' topographic map. The CNDDB field form is available on DFG's web page (http://www.dfg.ca.gov/whdab/html/plants.html).

Copies should be sent to the CNDDB and the appropriate DFG Regional office. This information is important for future management decisions including the appropriate conservation status of the species.

When operations are proposed at a site within a long-term project area (e.g., NTMPs), surveys should normally be re-conducted if the site has not been surveyed within the past five years. Reliance upon dated surveys may not be effective because of fluctuations in species abundance and/or localized occurrence; colonization resulting from seed dispersal, seed bank exposure, habitat alteration, or vegetation maturation; and changes in the conservation status of individual taxa.

The occurrences of any sensitive plant should be brought to the attention of all personnel conducting timber operations, road maintenance activities, vegetation management (herbicides and mechanical means) and stand-tending operations (such as precommercial thinning). Field visits to sensitive plant locations should occur at the appropriate times of years so field personnel are aware of the appearance of the sensitive plants as well as the habitats and specific locations in which the plants occur. Specific ecological requirements of sensitive plants should be discussed while in the field.

IMPACT ANALYSIS

An assessment of all potential project-related impacts to the sensitive plant(s) should be presented. As stated above, of interest to DFG are all timber operations that will or may impact sensitive plants, including timber falling and yarding, road and landing construction, watercourse crossings, site preparation, and herbicide treatments. Cumulative impacts as a result of multiple projects within the range of the species should also be addressed, as required by CEQA and the Forest Practice Rules.

Development of Mitigation Measures

CEQA and the Forest Practice Rules require that if there is a potential to significantly impact sensitive plants, then measures to avoid or mitigate these impacts must be proposed. When developing plant protection measures, plan preparers should consider both the specific mechanisms by which the proposed operations could impact each plant species, and the best available information about its habitat needs and life requisites. Impacts to sensitive plants can often be avoided by careful planning and implementation of the project activities, by avoiding the habitat, or by protecting the population and associated habitat. Impacts may be reduced by partial avoidance of the population and associated habitat. DFG will recommend appropriate mitigation measures during THP review. Examples of such measures may include, but are not limited to:

- Modification of timber operations to better suit the habitat requirements and to ecologically benefit the plant in question.

Establishment of a large enough area around the population to clearly delineate the location of the occurrence area (a buffer zone) to protect the population from potential impacts. The buffer should be of adequate size to preserve connectivity between populations, pollinator ecology, and provide for natural expansion and contraction of the occurrence area due to natural perturbations at the site.

- Directional falling of timber away from the area.
- Designation of an equipment exclusion zone or equipment limitation zone around the occurrence, as appropriate.
- Retention of the overstory canopy in the buffer area (for shade and/or mesic dependent species).
- Maintenance of site hydrology.
- Exclude site preparation or herbicide application in or in close proximity to the occurrence area.
- Establishment of off-site mitigation for permanent protection.

Additional or alternative measures[3] may be needed depending on the species, the site, and the specific operations proposed.

Monitoring

Pursuant to CEQA Section 21081.6 and Guidelines Section 15097, when a lead agency adopts a mitigation for significant effects, the agency is required to adopt either a monitoring or reporting program for the mitigation measures in order to ensure compliance during project implementation. CEQA requires that the mitigation or avoidance measures be fully enforceable. Therefore, compliance monitoring and/or reporting is usually needed to ensure timber operations are carried out consistent with the protection measures specified in a THP.

DFG encourages landowners to conduct or otherwise participate in effectiveness monitoring to determine the adequacy of the implemented protection measures. DFG is interested in working with landowners to help design and conduct effectiveness monitoring whenever time and resources permit. Such monitoring will enable both landowners and reviewing agencies to learn from their actions, to increase the often limited ecological knowledge about sensitive plants, and to improve future management strategies and recommendations. DFG recommends the following be considered and/or included when designing monitoring projects:

- Consult with DFG regarding the study design before implementation.
- Determine the roles of the landowner, the forester, consultants, DFG, and CDF in the monitoring effort.

[3] DFG generally does not support mitigation strategies for sensitive plants that use transplantation, relocation, or reintroduction. A review of these strategies indicated a success rate of less than 15% (Fiedler 1991). Transplantation of populations (especially the seed bank) should be conducted only as a last resort or in conjunction with other mitigation strategies.

Involve an individual familiar with the species, associated plant species, vegetation and habitat types, and measuring and monitoring methods when designing data collection.

- Implement a field monitoring scheme to enable an assessment of the impacts and effectiveness of the protection/mitigation measures. This may include treatment and control plots.
  Monitor before and for at least three to five years after timber operations and/or vegetation management.
  Utilize a data sheet for the collection of standardized data, and establish repeatable photo points that depict both the habitat and the species.
  Apprise DFG of the monitoring program's progress and findings through interim and final reports.

SUMMARY

DFG, as a trustee agency, is responsible for conserving, protecting, and managing sensitive plants, and the habitats necessary to maintain biologically sustainable populations. This responsibility requires the review of CEQA documents and documents prepared for certified regulatory programs such as the timber harvest review process. DFG also makes recommendations to ensure the protection of sensitive botanical resources during project implementation. Providing the information necessary for DFG and CDF to assess the potential for timber operations to adversely affect plant resources usually requires the inclusion of adequate scoping information, vegetation and plant descriptions, surveys, and protection measures within a THP. Monitoring during and after a project can provide all involved parties additional information about the response of sensitive plants to specific timber operations and the effectiveness of specific protection measures.

07/25/05
Date

Approved

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Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities

STATE OF CALIFORNIA
CALIFORNIA NATURAL RESOURCES AGENCY
DEPARTMENT OF FISH AND WILDLIFE

DATE: March 20, 2018

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1. INTRODUCTION AND PURPOSE

The conservation of special status native plants and their habitats, as well as sensitive natural communities, is integral to maintaining biological diversity. The purpose of these protocols is to facilitate a consistent and systematic approach to botanical field surveys and assessments of special status plants and sensitive natural communities so that reliable information is produced and the potential for locating special status plants and sensitive natural communities is maximized. These protocols may also help those who prepare and review environmental documents determine when botanical field surveys are needed, how botanical field surveys may be conducted, what information to include in a botanical survey report, and what qualifications to consider for botanical field surveyors. These protocols are meant to help people meet California Environmental Quality Act (CEQA)[1] requirements for adequate disclosure of potential impacts to plants and sensitive natural communities. These protocols may be used in conjunction with protocols formulated by other agencies, for example, those developed by the U.S. Army Corps of Engineers to delineate jurisdictional wetlands[2] or by the U.S. Fish and Wildlife Service to survey for the presence of special status plants[3].

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1 Available at: http://resources.ca.gov/ceqa
2 Available at: http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits/techbio.aspx
3 U.S. Fish and Wildlife Service Survey Guidelines: https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/

Department of Fish and Wildlife Trustee and Responsible Agency Mission

The mission of the California Department of Fish and Wildlife (CDFW) is to manage California's diverse wildlife and native plant resources, and the habitats upon which they depend, for their ecological values and for their use and enjoyment by the public. CDFW has jurisdiction over the conservation, protection, and management of wildlife, native plants, and habitat necessary to maintain biologically sustainable populations (Fish & G. Code, § 1802). CDFW, as trustee agency under CEQA Guidelines section 15386, provides expertise in reviewing and commenting on environmental documents and provides protocols regarding potential negative impacts to those resources held in trust for the people of California.

Certain species are in danger of extinction because their habitats have been severely reduced in acreage, are threatened with destruction or adverse modification, or because of a combination of these and other factors. The California Endangered Species Act (CESA) and Native Plant Protection Act (NPPA) provide additional protections for such species, including take prohibitions (Fish & G. Code, § 2050 *et seq.*; Fish & G. Code, § 1908). As a responsible agency, CDFW has the authority to issue permits for the take of species listed under CESA and NPPA if the take is incidental to an otherwise lawful activity; CDFW has determined that the impacts of the take have been minimized and fully mitigated; and the take would not jeopardize the continued existence of the species (Fish & G. Code, § 2081, subd. (b); Cal. Code Regs., tit. 14 § 786.9, subd. (b)). Botanical field surveys are one of the preliminary steps to detect special status plant species and sensitive natural communities that may be impacted by a project.

Definitions

Botanical field surveys provide information used to determine the potential environmental effects of proposed projects on special status plants and sensitive natural communities as required by law (e.g., CEQA, CESA, and federal Endangered Species Act (ESA)).

Special status plants, for the purposes of this document, include all plants that meet one or more of the following criteria:

- Listed or proposed for listing as threatened or endangered under the ESA or candidates for possible future listing as threatened or endangered under the ESA (50 C.F.R., § 17.12).
- Listed or candidates for listing by the State of California as threatened or endangered under CESA (Fish & G. Code, § 2050 et seq.)[4]. In CESA, “endangered species” means a native species or subspecies of plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease (Fish & G. Code, § 2062). “Threatened species” means a native species or subspecies of plant that,

[4] Refer to current online published lists available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109390&inline

although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by CESA (Fish & G. Code, § 2067). "Candidate species" means a native species or subspecies of plant that the California Fish and Game Commission has formally noticed as being under review by CDFW for addition to either the list of endangered species or the list of threatened species, or a species for which the California Fish and Game Commission has published a notice of proposed regulation to add the species to either list (Fish & G. Code, § 2068).

- Listed as rare under the California Native Plant Protection Act (Fish & G. Code, § 1900 et seq.). 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 (Fish & G. Code, § 1901).
- Meet the definition of rare or endangered under CEQA Guidelines section 15380, subdivisions (b) and (d), including:
    - Plants considered by CDFW to be "rare, threatened or endangered in California." This includes plants tracked by the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) 1 or 2[5];
    - Plants that may warrant consideration on the basis of declining trends, recent taxonomic information, or other factors. This may include plants tracked by the CNDDB and CNPS as CRPR 3 or 4[6].
- Considered locally significant plants, that is, plants that are not rare from a statewide perspective but are rare or uncommon in a local context such as within a county or region (CEQA Guidelines, § 15125, subd. (c)), or as designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include plants that are at the outer limits of their known geographic range or plants occurring on an atypical soil type.

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. These communities may or may not contain special status plants or their

[5] See CNDDB's Special Vascular Plants, Bryophytes, and Lichens List for plant taxa with a CRPR of 1 or 2: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline

[6] CRPR 3 plants (plants about which more information is needed) and CRPR 4 plants (plants of limited distribution) may warrant consideration under CEQA Guidelines section 15380. Impacts to CRPR 3 plants may warrant consideration under CEQA if sufficient information is available to assess potential impacts to such plants. Impacts to CRPR 4 plants may warrant consideration under CEQA if cumulative impacts to such plants are significant enough to affect their overall rarity. Data on CRPR 3 and 4 plants should be submitted to CNDDB. Such data aids in determining and revising the CRPR of plants. See CNDDB's Special Vascular Plants, Bryophytes, and Lichens List for plant taxa with a CRPR of 3 or 4: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109383&inline

habitat. CDFW's *List of California Terrestrial Natural Communities*[7] is based on the best available information, and indicates which natural communities are considered sensitive at the current stage of the California vegetation classification effort. See the Vegetation Classification and Mapping Program (VegCAMP) website for additional information on natural communities and vegetation classification[8].

2. BOTANICAL FIELD SURVEYS

Evaluate the need for botanical field surveys prior to the commencement of any activities that may modify vegetation, such as clearing, mowing, or ground-breaking activities. It is appropriate to conduct a botanical field survey when:

- Natural (or naturalized) vegetation occurs in an area that may be directly or indirectly affected by a project (project area), and it is unknown whether or not special status plants or sensitive natural communities occur in the project area;
- Special status plants or sensitive natural communities have historically been identified in a project area; or
- Special status plants or sensitive natural communities occur in areas with similar physical and biological properties as a project area.

Survey Objectives

Conduct botanical field surveys in a manner which maximizes the likelihood of locating special status plants and sensitive natural communities that may be present. Botanical field surveys should be floristic in nature, meaning that every plant taxon that occurs in the project area is identified to the taxonomic level necessary to determine rarity and listing status. "Focused surveys" that are limited to habitats known to support special status plants or that are restricted to lists of likely potential special status plants are not considered floristic in nature and are not adequate to identify all plants in a project area to the level necessary to determine if they are special status plants.

For each botanical field survey conducted, include a list of all plants and natural communities detected in the project area. More than one field visit is usually necessary to adequately capture the floristic diversity of a project area. An indication of the prevalence (estimated total numbers, percent cover, density, etc.) of the special status plants and sensitive natural communities in the project area is also useful to assess the significance of a particular plant population or natural community.

Survey Preparation

Before botanical field surveys are conducted, the botanical field surveyors should compile relevant botanical information in the general project area to provide a regional

[7] Available at: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities#natural%20communities%20lists

[8] Available at: https://www.wildlife.ca.gov/Data/VegCAMP

context. Consult the CNDDB[9] and BIOS[10] for known occurrences of special status plants and sensitive natural communities in the project area prior to botanical field surveys. Generally, identify vegetation and habitat types potentially occurring in the project area based on biological and physical properties (e.g. soils) of the project area and surrounding ecoregion[11]. Then, develop a list of special status plants and sensitive natural communities with the potential to occur within the vegetation and habitat types identified. The list of special status plants with the potential to occur in the project area can be created with the help of the CNDDB QuickView Tool[12] which allows the user to generate lists of CNDDB-tracked elements that occur within a particular U.S. Geological Survey 7.5' topographic quad, surrounding quads, and counties within California. Resulting lists should only be used as a tool to facilitate the use of reference sites, with the understanding that special status plants and sensitive natural communities in a project area may not be limited to those on the list. Botanical field surveys and subsequent reporting should be comprehensive and floristic in nature and not restricted to or focused only on a list. Include in the botanical survey report the list of potential special status plants and sensitive natural communities that was created, and the list of references used to compile the background botanical information for the project area.

Survey Extent

Botanical field surveys should be comprehensive over the entire project area, including areas that will be directly or indirectly impacted by the project. Adjoining properties should also be surveyed where direct or indirect project effects could occur, such as those from fuel modification, herbicide application, invasive species, and altered hydrology. Surveys restricted to known locations of special status plants may not identify all special status plants and sensitive natural communities present, and therefore do not provide a sufficient level of information to determine potential impacts.

Field Survey Method

Conduct botanical field surveys using systematic field techniques in all habitats of the project area to ensure thorough coverage. The level of effort required per given area and habitat is dependent upon the vegetation and its overall diversity and structural complexity, which determines the distance at which plants can be identified. Conduct botanical field surveys by traversing the entire project area to ensure thorough coverage, documenting all plant taxa observed. Parallel survey transects may be necessary to ensure thorough survey coverage in some habitats. The level of effort should be sufficient to provide comprehensive reporting. Additional time should be allocated for plant identification in the field.

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9 Available at: https://www.wildlife.ca.gov/Data/CNDDB

10 Available at: https://www.wildlife.ca.gov/Data/BIOS

11 Ecological Subregions of the United States, available at: http://www.fs.fed.us/land/pubs/ecoregions/toc.html

12 Available at: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data. When creating a list of special status plants with the potential to occur in a project area, special care should be taken to search all quads with similar geology, habitats, and vegetation to those found in the project area.

Timing and Number of Visits

Conduct botanical field surveys in the field at the times of year when plants will be both evident and identifiable. Usually this is during flowering or fruiting. Space botanical field survey visits throughout the growing season to accurately determine what plants exist in the project area. This usually involves multiple visits to the project area (e.g. in early, mid, and late-season) to capture the floristic diversity at a level necessary to determine if special status plants are present[13]. The timing and number of visits necessary to determine if special status plants are present is determined by geographic location, the natural communities present, and the weather patterns of the year(s) in which botanical field surveys are conducted.

Reference Sites

When special status plants are known to occur in the type(s) of habitat present in a project area, observe reference sites (nearby accessible occurrences of the plants) to determine whether those special status plants are identifiable at the times of year the botanical field surveys take place and to obtain a visual image of the special status plants, associated habitat, and associated natural communities.

Use of Existing Surveys

For some project areas, floristic inventories or botanical survey reports may already exist. Additional botanical field surveys may be necessary for one or more of the following reasons:

- Botanical field surveys are not current[14];
- Botanical field surveys were conducted in natural systems that commonly experience year to year fluctuations such as periods of drought or flooding (e.g. vernal pool habitats or riverine systems);
- Botanical field surveys did not cover the entire project area;
- Botanical field surveys did not occur at the appropriate times of year;
- Botanical field surveys were not conducted for a sufficient number of years to detect plants that are not evident and identifiable every year (e.g. geophytes, annuals and some short-lived plants);

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13 U.S. Fish and Wildlife Service Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants available at: https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/

14 Habitats, such as grasslands or desert plant communities that have annual and short-lived perennial plants as major floristic components may require yearly surveys to accurately document baseline conditions for purposes of impact assessment. In forested areas, however, surveys at intervals of five years may adequately represent current conditions. For forested areas, refer to “Guidelines for Conservation of Sensitive Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations”, available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=116396&inline

- Botanical field surveys did not identify all plants in the project area to the taxonomic level necessary to determine rarity and listing status;
- Fire history, land use, or the physical or climatic conditions of the project area have changed since the last botanical field survey was conducted;
- Changes in vegetation or plant distribution have occurred since the last botanical field surveys were conducted, such as those related to habitat alteration, fluctuations in abundance, invasive species, seed bank dynamics, or other factors; or
- Recent taxonomic studies, status reviews or other scientific information has resulted in a revised understanding of the special status plants with potential to occur in the project area.

Negative Surveys

Adverse conditions from yearly weather patterns may prevent botanical field surveyor from determining the presence of, or accurately identifying, some special status plants in the project area. Disease, drought, predation, fire, herbivory or other disturbance may also preclude the presence or identification of special status plants in any given year. Discuss all adverse conditions in the botanical survey report[15].

The failure to locate a known special status plant occurrence during one field season does not constitute evidence that the plant occurrence no longer exists at a location, particularly if adverse conditions are present. For example, botanical field surveys over a number of years may be necessary if the special status plant is an annual or short-lived plant having a persistent, long-lived seed bank and populations of the plant are known to not germinate every year. Visiting the project area in more than one year increases the likelihood of detecting special status plants, particularly if conditions change. To further substantiate negative findings for a known occurrence, a visit to a nearby reference site may help ensure that the timing of botanical field surveys was appropriate.

3. REPORTING AND DATA COLLECTION

Adequate information about special status plants and sensitive natural communities present in a project area will enable reviewing agencies and the public to effectively assess potential impacts to special status plants and sensitive natural communities and will guide the development of avoidance, minimization, and mitigation measures. The information necessary to assess impacts to special status plants and sensitive natural communities is described below. For comprehensive, systematic botanical field surveys where no special status plants or sensitive natural communities were found, reporting

and data collection responsibilities for botanical field surveyor remain as described

[15] U.S. Fish and Wildlife Service Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants available at: https://www.fws.gov/sacramento/es/Survey-Protocols-Guidelines/

below, excluding specific occurrence information.

Special Status Plant and Sensitive Natural Community Observations

Record the following information for locations of each special status plant and sensitive natural community detected during a botanical field survey of a project area.

- The specific geographic locations where the special status plants and sensitive natural communities were found. Preferably this will be done by use of global positioning system (GPS) and include the datum[16] in which the spatial data was collected and any uncertainty or error associated with the data. If GPS is not available, a detailed map (1:24,000 or larger) showing locations and boundaries of each special status plant population and sensitive natural community in relation to the project area is acceptable. Mark occurrences and boundaries as accurately as possible;
- The site-specific characteristics of occurrences, such as associated species, habitat and microhabitat, structure of vegetation, topographic features, soil type, texture, and soil parent material. If a special status plant is associated with a wetland, provide a description of the direction of flow and integrity of surface or subsurface hydrology and adjacent off-site hydrological influences as appropriate;
- The number of individuals in each special status plant population as counted (if population is small) or estimated (if population is large);
- If applicable, information about the percentage of each special status plant in each life stage such as seedling, vegetative, flowering and fruiting;
- The density of special status plants, identifying areas of relatively high, medium and low density of each special status plant in the project area; and
- Digital images of special status plants and sensitive natural communities in the project area, with diagnostic features.

Special Status Plant and Sensitive Natural Community Documentation

When a special status plant is located, data must be submitted to the CNDDB. Data may be submitted in a variety of formats depending on the amount and type of data that is collected[17]. The most common way to submit data is the Online CNDDB Field Survey Form[18], or equivalent written report, accompanied by geographic locality information (GPS coordinates, GIS shapefiles, KML files, topographic map, etc.). Data submitted in digital form must include the datum[19] in which it was collected.

If a sensitive natural community is found in a project area, document it with a Combined

16 NAD83, NAD27 or WGS84

17 See https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data for information on acceptable data submission formats.

18 Available at: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data

19 NAD83, NAD27 or WGS84

Vegetation Rapid Assessment and Relevé Field Form[20] and submit the form to VegCAMP[21].

Voucher Collection

Voucher specimens provide verifiable documentation of special status plant presence and identification and a scientific record. This information is vital to conservation efforts and valuable for scientific research. Collection of voucher specimens should be conducted in a manner that is consistent with conservation ethics, and in accordance with applicable state and federal permit requirements (e.g. scientific, educational, or management permits pursuant to Fish & G. Code, § 2081, subd. (a)). Voucher collections of special status plants (or possible special status plants) should only be made when such actions would not jeopardize the continued existence of the population. A plant voucher collecting permit[22] is required from CDFW prior to the take or possession of a state-listed plant for voucher collection purposes, and the permittee must comply with all permit conditions.

Voucher specimens should be deposited in herbaria that are members of the Consortium of California Herbaria[23] no later than 120 days after the collections have been made. Digital imagery can be used to supplement plant identification and document habitat. Record all relevant collector names and permit numbers on specimen labels (if applicable).

Botanical Survey Reports

Botanical survey reports provide an important record of botanical field survey results and project area conditions. Botanical survey reports containing the following information should be prepared whenever botanical field surveys take place, and should also be submitted with project environmental documents:

Project and location description

- A description of the proposed project;
- A detailed map of the project area that identifies topographic and landscape features and includes a north arrow and bar scale;
- A vegetation map of the project area using Survey of California Vegetation Classification and Mapping Standards[24] at a thematic and spatial scale that allows the display of all sensitive natural communities;
- A soil map of the project area; and

[20] Available at: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Submit

[21] Combined Vegetation Rapid Assessment and Releve Field Forms can be emailed to VegCAMP staff. Contact information available at: https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities/Other-Info

[22] Applications available at: https://www.wildlife.ca.gov/Conservation/Plants/Permits

[23] A list of Consortium of California Herbaria participants is available at: http://ucjeps.berkeley.edu/consortium/participants.html

[24] Available at: https://www.wildlife.ca.gov/data/vegcamp/publications-and-protocols

- A written description of the biological setting, including all natural communities; geological and hydrological characteristics; and land use or management history.

Detailed description of survey methodology and results

- Names and qualifications of botanical field surveyor(s);
- Dates of botanical field surveys (indicating the botanical field surveyor(s) that surveyed each area on each survey date), and total person-hours spent;
- A discussion of the survey preparation methodology;
- A list of special status plants and sensitive natural communities with potential to occur in the region;
- Description(s) of reference site(s), if visited, and the phenological development of special status plant(s) at those reference sites;
- A description and map of the area surveyed relative to the project area;
- A list of all plant taxa occurring in the project area, with all taxa identified to the taxonomic level necessary to determine whether or not they are a special status plant;
- Detailed data and maps for all special status plants and sensitive natural communities detected. Information specified above under the headings “Special Status Plant and Sensitive Natural Community Observations,” and “Special Status Plant and Sensitive Natural Community Documentation,” should be provided for the locations of each special status plant and sensitive natural community detected. Copies of all California Native Species Field Survey Forms and Combined Vegetation Rapid Assessment and Relevé Field Forms should be sent to the CNDDB and VegCAMP, respectively, and included in the project environmental document as an Appendix[25];
- A discussion of the potential for a false negative botanical field survey;
- A discussion of how climatic conditions may have affected the botanical field survey results;
- A discussion of how the timing of botanical field surveys may affect the comprehensiveness of botanical field surveys;
- Any use of existing botanical field surveys and a discussion of their applicability to the project;
- The deposition locations of voucher specimens, if collected; and
- A list of references used, including persons contacted and herbaria visited.

[25] It is not necessary to submit entire environmental documents to the CNDDB

Assessment of potential project impacts

- A discussion of the significance of special status plant populations in the project area considering nearby populations and total range and distribution;
- A discussion of the significance of sensitive natural communities in the project area considering nearby occurrences and natural community distribution;
- A discussion of project related direct, indirect, and cumulative impacts to special status plants and sensitive natural communities;
- A discussion of the degree and immediacy of all threats to special status plants and sensitive natural communities, including those from invasive species;
- A discussion of the degree of impact, if any, of the project on unoccupied, potential habitat for special status plants; and
- Recommended measures to avoid, minimize, or mitigate impacts to special status plants and sensitive natural communities.

4. BOTANICAL FIELD SURVEYOR QUALIFICATIONS

Botanical field surveyors should possess the following qualifications:

- Knowledge of plant taxonomy and natural community ecology;
- Familiarity with plants of the region, including special status plants;
- Familiarity with natural communities of the region, including sensitive natural communities;
- Experience with the CNDDB, BIOS, and Survey of California Vegetation Classification and Mapping Standards;
- Experience conducting floristic botanical field surveys as described in this document, or experience conducting such botanical field surveys under the direction of an experienced botanical field surveyor;
- Familiarity with federal, state, and local statutes and regulations related to plants and plant collecting; and
- Experience analyzing the impacts of projects on native plant species and sensitive natural communities.

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