



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Region 1 – Northern
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Redding, CA 96001
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



March 24, 2016

Mr. Kent Hector
Shasta County Department of Resource Management
1855 Placer Street, Suite 103
Redding, CA 96001

**Subject: Review of the Notice of Preparation for the Zone Amendment 10-002,
Tract Map 1996-Tierra Robles Planned Development Draft
Environmental Impact Report, Shasta County, California**

Dear Mr. Hector:

The California Department of Fish and Wildlife (Department) has reviewed the Notice of Preparation (NOP) dated February 18, 2016, for the above-referenced project (Project). The Department commented on this Project during early consultation via email on August 26, 2011. The Department offers the following comments and recommendations on this Project in our role as a trustee and responsible agency pursuant to the California Environmental Quality Act (CEQA), California Public Resource Code section 21000 et seq.

As a trustee for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants and their habitat necessary for biologically sustainable populations of those species (Fish and Game Code (FGC) sections 1801 and 1802). As the Trustee Agency for fish and wildlife resources, the Department provides requisite biological expertise to review and comment upon CEQA documents, and makes recommendations regarding those resources held in trust for the people of California.

The Department may also assume the role of Responsible Agency. A Responsible Agency is an agency other than the Lead Agency that has a legal responsibility for carrying out or approving a project. A Responsible Agency actively participates in the Lead Agency's CEQA process, reviews the Lead Agency's CEQA document and uses that document when making a decision on a project. The Responsible Agency must rely on the Lead Agency's CEQA document to prepare and issue its own findings regarding a project (CEQA Guidelines, sections 15096 and 15381). The Department most often becomes a Responsible Agency when a Lake or Streambed Alteration Agreement (FGC section 1600 et. seq.) or a California

Endangered Species Act (CESA) Incidental Take Permit (FGC section 2081(b)) is needed for a project. The Department relies on the CEQA document prepared by

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the Lead Agency to make a finding and decide whether or not to issue the permit or agreement. It is important that the Lead Agency's Environmental Impact Report (EIR) considers the Department's Responsible Agency requirements. For example, CEQA requires the Department to include additional feasible alternatives or feasible mitigation measures within its powers that would substantially lessen or avoid any significant effect a project would have on the environment (CEQA Guidelines, section 15096 (g) (2)).

Project Description and Location

"The revised project consists of a residential Planned Development requiring a Zone Amendment (Z10-002) to change the current zoning from Rural Residential 5-acre min (RR-BA-5), Rural Residential 3-acre min, and Unclassified to a Planned Development zone district establishing a conceptual development plan covering the entire site; and a Tract Map to divide the 715.4-acre property into 166 residential parcels ranging from 1.38 acres to 6.81 acres in size. The project proposes the formation of the Tierra Robles Community Services District as a means to provide operation and maintenance of the wastewater treatment system, maintenance of improved streets within the subdivision, management of open spaces, including preservation and fire management operations, and maintenance of drainage improvements. The ultimate approval of the TRCSD would be subject to separate application and approval from the Shasta County Local Agency Formation Commission."

The Project is located in the unincorporated communities of Bella Vista and Palo Cedro. The Project is located north of Boyle Road, between Deschutes Road and Old Alturas Road and was formerly known as the "Chatham Ranch."

Comments and Recommendations

The Department met onsite with Shasta County and Project Applicant staff on March 18, 2016. Based on the site visit and the documentation provided, the Department has the following comments and recommendations for biological resources.

To enable Department staff to adequately review and comment on the proposed Project, we recommend the following information be included in the draft EIR, as applicable.

1. A complete assessment of the flora and fauna within and adjacent to the Project area should be conducted, with particular emphasis upon identifying special status species including rare, threatened, and endangered species.

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This assessment should also address locally unique species, rare natural communities, and wetlands. The assessment area for the Project should be large enough to encompass areas potentially subject to both direct and indirect Project effects. Both the Project footprint and the assessment area (if different) should be clearly defined and mapped in the draft EIR.

- a. The Department's California Natural Diversity Data Base (CNDDDB) should be searched to obtain current information on previously reported sensitive species and habitat, including Significant Natural Areas identified under Chapter 12 of the FGC. In order to provide an adequate assessment of special-status species potentially occurring within the Project vicinity, the search area for CNDDDB occurrences should include all U.S.G.S 7.5-minute topographic quadrangles with Project activities, and all adjoining 7.5-minute topographic quadrangles. The EIR should discuss how and when the CNDDDB search was conducted, including the names of each quadrangle queried; or why any areas may have been intentionally excluded from the CNDDDB query. As a reminder, the Department cannot and does not portray the CNDDDB as an exhaustive and comprehensive inventory of all rare species and natural communities statewide. Field verification for the presence or absence of sensitive species will always be an important obligation of our customers. Likewise, your contribution of data to the CNDDDB is equally important to the maintenance of the CNDDDB. Whenever possible, we request that data be submitted using our online field survey form along with a map with the rare populations or stands indicated.
- b. A complete assessment of rare, threatened, and endangered invertebrate, fish, wildlife, reptile, and amphibian species should be presented in the draft EIR. Rare, threatened, and endangered species to be addressed shall include all those which meet the CEQA definition (see CEQA Guidelines, section 15380). Seasonal variations in use of the Project area should also be addressed. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the species are active or otherwise identifiable, are required. Acceptable species-specific survey procedures should be developed in consultation with the Department and the U.S. Fish and Wildlife Service. Links to some survey procedures are provided on the Department's website.¹
- c. Species of Special Concern status applies to animals generally not listed under the federal Endangered Species Act or the California Endangered Species Act, but which nonetheless are declining at a rate that could

¹ http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html

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result in listing, or historically occurred in low numbers and known threats to their persistence currently exist (see CEQA Guidelines, section 15380 and CEQA Guidelines Appendix G (IV)(a)). Species of Special Concern (SSC) should be considered during the environmental review process. The CEQA (California Public Resources Code sections 21000-21177) requires State agencies, local governments, and special districts to evaluate and disclose impacts from "projects" in the State. Section 15380 of the CEQA Guidelines clearly indicates that species of special concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein. More information regarding SSC's can be found in Attachment 2.

- d. Sections 15063 and 15065 of the CEQA Guidelines, which address how an impact is identified as significant, are particularly relevant to SSCs. Project-level impacts to listed (rare, threatened, or endangered species) species are generally considered significant thus requiring lead agencies to prepare an EIR to fully analyze and evaluate the impacts. In assigning "impact significance" to populations of non-listed species, analysts usually consider factors such as population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features.
- e. Fully Protected animals may not be taken or possessed at any time and the Department is not authorized to issue permits or licenses for their incidental take². Fully Protected animals should be considered during the environmental review process and all Project-related take must be avoided.
- f. A thorough assessment of rare plants and rare natural communities should be conducted, following the Department's November 2009 *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (Attachment 1).
- g. A detailed vegetation map should be prepared, preferably overlaid on an aerial photograph. The map should be of sufficient resolution to depict the locations of the Project site's major vegetation communities, and show Project impacts relative to each community type. The Department's preferred vegetation classification system should be used to name the polygons; however, the vegetation classification ultimately used should be described in detail. Additional information for vegetation mapping can be found on the Department's website³. Special Status natural communities should be specifically noted on the map.

² Scientific research, take authorized under an approved NCCP, and certain recovery actions may be allowed under some circumstances; contact the Department for more information.

³ <http://www.dfg.ca.gov/biogeodata/vegcamp/>

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- g. A discussion of impacts associated with increased lighting, noise, human activity, impacts of free-roaming domestic animals including dogs and cats, changes in drainage patterns, changes in water volume, velocity, quantity, and quality, soil erosion, and/or sedimentation in streams and water courses on or near the Project site.

The Department recognizes the effects of artificial lighting on birds and other nocturnal species. The effects are numerous and include impacts to singing and foraging behavior, reproductive behavior, navigation, and altered migration patterns. To minimize adverse effects of artificial light on wildlife, the Department recommends that lighting fixtures associated with the Project be downward facing, fully-shielded and designed and installed to minimize photo-pollution.

- h. A cumulative effects analysis shall be developed for species and habitats potentially affected by the Project. This analysis shall be conducted as described under CEQA Guidelines, section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts to species and habitats.
3. A range of Project alternatives shall be analyzed to ensure that the full spectrum of alternatives to the proposed Project are fully considered and evaluated. Alternatives which avoid or otherwise minimize impacts to sensitive biological resources shall be identified.
 - a. If the Project will result in any impacts described under the Mandatory Findings of Significance (CEQA Guidelines, section 15065) the impacts must be analyzed in depth in the draft EIR, and the Lead Agency is required to make detailed findings on the feasibility of alternatives or mitigation measures to substantially lessen or avoid the significant effects on the environment. When mitigation measures or Project changes are found to be feasible, such measures should be incorporated into the Project to lessen or avoid significant effects.
 4. Mitigation measures for adverse Project-related impacts to sensitive plants, animals, and habitats should be developed and thoroughly discussed. Mitigation measures should first emphasize avoidance and reduction of Project impacts. For unavoidable impacts, the feasibility of on-site habitat restoration or enhancement should be discussed. If on-site mitigation is not feasible, off-site mitigation through habitat creation, enhancement, acquisition and preservation in perpetuity should be addressed.

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- a. The Department generally does not support the use of relocation, salvage, and/or transplantation as mitigation for most impacts to rare, threatened, or endangered species. Studies have shown that these efforts are experimental in nature and largely unsuccessful. If considered, these types of mitigation measures must be discussed with the Department prior to release of the draft EIR.
 - b. Areas reserved as mitigation for Project impacts shall be legally protected from future direct and indirect development impacts. Potential issues to be considered include public access, conservation easements, species monitoring and management programs, water pollution, and fire management.
 - c. Plans for restoration and revegetation should be prepared by persons with expertise in northern California ecosystems and native plant revegetation techniques. Each plan should include, at a minimum: (a) the location of the mitigation site; (b) the plant species to be used, container sizes, and/or seeding rates; (c) a schematic depicting the mitigation area; (d) planting/seeding schedule; (e) a description of the irrigation methodology; (f) measures to control exotic vegetation; (g) specific success criteria; (h) a detailed monitoring program; (i) contingency measures should the success criteria not be met; and (j) identification of the party responsible for meeting the success criteria and providing for long-term conservation of the mitigation site.
5. Please include fuel modification impacts in the biological resources section of the draft EIR. All impacts, including future maintenance, should be quantified and described.
 6. Take of species of plants or animals listed as endangered or threatened under CESA is unlawful unless authorized by the Department. However, a CESA 2081(b) Incidental Take Permit may authorize incidental take during Project construction or over the life of the Project. The draft EIR must state whether the Project could result in any amount of incidental take of any CESA-listed species. Early consultation for incidental take permitting is encouraged, as significant modification to the Project's description and/or mitigation measures may be required in order to obtain a CESA Permit.

The Department's issuance of a CESA Permit for a project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. The Department as a Responsible Agency under CEQA will consider the Lead Agency's Negative Declaration or Environmental Impact Report for the Project. The Department may require additional mitigation measures for the issuance of a CESA Permit unless the Project CEQA

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document addresses all Project impacts to listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of a CESA Permit.

To expedite the CESA permitting process, the Department recommends that the draft EIR addresses the following CESA Permit requirements:

- a. The impacts of the authorized take are minimized and fully mitigated;
 - b. The measures required to minimize and fully mitigate the impacts of the authorized take and: (1) are roughly proportional in extent to the impact of the taking on the species; (2) maintain the applicant's objectives to the greatest extent possible, and (3) are capable of successful implementation;
 - c. Adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with and the effectiveness of the measures; and
 - d. Issuance of the permit will not jeopardize the continued existence of a State-listed species.
7. The Department has responsibility for wetland and riparian habitats. It is the policy of the Department to strongly discourage development in wetlands or conversion of wetlands to uplands. We oppose any development or conversion which would result in a reduction of wetland acreage or wetland habitat values, unless, at a minimum, Project mitigation assures there will be "no net loss" of either wetland habitat values or acreage. The EIR should demonstrate that the Project will not result in a net loss of wetland habitat values or acreage.
- a. The Project has the potential to support aquatic, riparian, or wetland habitat. A delineation of lakes, streams, and associated riparian habitats potentially affected by the Project should be provided for agency and public review. This report should include a preliminary jurisdictional delineation including wetlands identification pursuant to the U. S. Fish and Wildlife Service wetland definition as adopted by the Department. Please note that some wetland and riparian habitats subject to the Department's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers. The jurisdictional delineation should also include mapping of ephemeral, intermittent, and perennial stream courses potentially impacted by the Project. In addition to "federally protected wetlands" (see CEQA Appendix G), the Department considers impacts to any wetlands (as defined by the Department) as potentially

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significant.

- b. The Project may require a Lake or Streambed Alteration Agreement, pursuant to Section 1600 et seq. of the FGC, with the applicant prior to the applicant's commencement of any activity that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank (which may include associated riparian resources) of a river, stream or lake, or use material from a streambed. The Department's issuance of a Lake or Streambed Alteration Agreement for a project that is subject to CEQA will require CEQA compliance actions by the Department as a Responsible Agency. The Department as a Responsible Agency under CEQA may consider the local jurisdiction's (Lead Agency) Negative Declaration or EIR for the Project. To minimize additional requirements by the Department pursuant to Section 1600 et seq. and/or under CEQA, the document should fully identify the potential impacts to the lake, stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the agreement. The project as proposed requires notification to the Department pursuant to 1600 et seq. of the FGC. A Streambed Alteration Agreement notification package may be obtained through the Department's website at <https://www.wildlife.ca.gov/Conservation/LSA>.
8. If the Project proposes trails into the open space areas, this should be discussed in terms of direct and indirect impacts to both plant and wildlife species in the draft EIR.
9. Fencing for property owners should be wildlife friendly and not prohibit wildlife movement corridors.
10. CEQA requires that information developed in EIRs and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations. (Pub. Resources Code, section 21003, subd. (e)). Please report any special status species and natural communities detected during Project surveys to the CNDDDB. The CNDDDB field survey form can be found at the following link:
http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/CNDDDB_FieldSurveyForm.pdf
The completed form can be mailed electronically to CNDDDB at the following email address: CNDDDB@wildlife.ca.gov. The types of information reported to CNDDDB can be found at the following link:
http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp.

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Specific Comments

The Department realizes that a number of biological studies have been conducted for this Project and as discussed in the field, the Department anticipates the biological study results and impacts to be compiled into one concise document. This includes impacts to plants, wildlife, and habitats from the build-out of the Project (direct, indirect and cumulative impacts), fuel modification requirements, and on-going maintenance. The Department looks forward to reviewing the analysis for using a Community Services District for managing the open space areas in perpetuity; however, the Department is not convinced that "Private Open Space" designation will be feasible in terms of protecting the open space.

Additionally, the Department understands that a lot of forethought has gone into designing each lot around the oak woodland. The Department recommends considering different alternatives for lot placement. Alternatives could include (1) one where a large acreage of "prairie" areas are preserved and some of the oak woodland with many of the same size age class may be removed; (2) smaller house footprint to avoid unnecessary fuel modification requirements; and (3) clustering the homes to allow for more wildlife movement.

The Biological Review dated July 2015 states the following with regard to riparian vegetation:

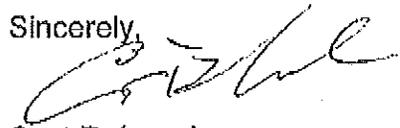
"This habitat appears in pockets of vegetation and as individual plants rather than a continuous belt of riparian vegetation. Common species found within these areas are willows (Salix spp.), black cottonwood (Populus trichocarpa), and scattered alders (Alnus sp.). California wild grape (Vitis californica), Himalayan blackberry (Rubus discolor), spike rush (Eleocharis macrostachya), and nutsedge (Cyperus eragrostis) are also present. True riparian habitat does not really exist due to the scattered occurrence of the riparian species."

The Department could not find alders (*Alnus rhombifolia*), black cottonwood (*Populus trichocarpa*), spike rush, (*Eleocharis macrostachya*), or nutsedge (*Cyperus eragrostis*) in the plant list and wanted to confirm that these species actually exist onsite. If they are present, please provide the acreage present onsite and/or the amount impacted in the impact table. If impacted, please include appropriate mitigation measures.

If you have any questions, please contact Amy Henderson, Environmental Scientist, at (530) 225-2779, or by email at Amy.Henderson@wildlife.ca.gov.

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Sincerely,



Curt Babcock
Habitat Conservation Program Manager

Attachment 1
Attachment 2

cc: Kent Hector
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State Clearinghouse
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CHRON

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

State of California
CALIFORNIA NATURAL RESOURCES AGENCY
Department of Fish and Game
November 24, 2009¹

INTRODUCTION AND PURPOSE

The conservation of special status native plants and their habitats, as well as natural communities, is integral to maintaining biological diversity. The purpose of these protocols is to facilitate a consistent and systematic approach to the survey and assessment of special status native plants and natural communities so that reliable information is produced and the potential of locating a special status plant species or natural community is maximized. They may also help those who prepare and review environmental documents determine when a botanical survey is needed, how field surveys may be conducted, what information to include in a survey report, and what qualifications to consider for surveyors. The protocols may help avoid delays caused when inadequate biological information is provided during the environmental review process; assist lead, trustee and responsible reviewing agencies to make an informed decision regarding the direct, indirect, and cumulative effects of a proposed development, activity, or action on special status native plants and natural communities; meet California Environmental Quality Act (CEQA)² requirements for adequate disclosure of potential impacts; and conserve public trust resources.

DEPARTMENT OF FISH AND GAME TRUSTEE AND RESPONSIBLE AGENCY MISSION

The mission of the Department of Fish and Game (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 (Fish and Game Code §1802). DFG, as trustee agency under CEQA §15386, provides expertise in reviewing and commenting on environmental documents and makes 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) provides additional protections for such species, including take prohibitions (Fish and Game Code §2050 *et seq.*). As a responsible agency, DFG has the authority to issue permits for the take of species listed under CESA if the take is incidental to an otherwise lawful activity; DFG 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 and Game Code §2081). Surveys are one of the preliminary steps to detect a listed or special status plant species or natural community that may be impacted significantly by a project.

DEFINITIONS

Botanical surveys provide information used to determine the potential environmental effects of proposed projects on all special status plants and natural communities as required by law (i.e., CEQA, CESA, and Federal Endangered Species Act (ESA)). Some key terms in this document appear in **bold font** for assistance in use of the document.

For the purposes of this document, **special status plants** include all plant species that meet one or more of the following criteria³:

¹ This document replaces the DFG document entitled "Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened and Endangered Plants and Natural Communities."

² <http://ceres.ca.gov/ceqa/>

³ Adapted from the East Alameda County Conservation Strategy available at http://www.fws.gov/sacramento/EACCS/Documents/080228_Species_Evaluation_EACCS.pdf

- Listed or proposed for listing as threatened or endangered under ESA or candidates for possible future listing as threatened or endangered under the ESA (50 CFR §17.12).
- Listed⁴ or candidates for listing by the State of California as threatened or endangered under CESA (Fish and Game Code §2050 *et seq.*). A species, subspecies, or variety of plant is **endangered** when the prospects of its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, disease, or other factors (Fish and Game Code §2062). A plant is **threatened** when it is likely to become endangered in the foreseeable future in the absence of special protection and management measures (Fish and Game Code §2067).
- Listed as rare under the California Native Plant Protection Act (Fish and Game 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 and Game Code §1901).
- Meet the definition of rare or endangered under CEQA §15380(b) and (d). Species that may meet the definition of rare or endangered include the following:
 - ♦ Species considered by the California Native Plant Society (CNPS) to be "rare, threatened or endangered in California" (Lists 1A, 1B and 2);
 - ♦ Species that may warrant consideration on the basis of local significance or recent biological information⁵;
 - ♦ Some species included on the California Natural Diversity Database's (CNDDDB) *Special Plants, Bryophytes, and Lichens List* (California Department of Fish and Game 2008)⁶.
- Considered a **locally significant species**, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA §15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G). Examples include a species at the outer limits of its known range or a species occurring on an uncommon soil type.

Special status 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 species or their habitat. The most current version of the Department's *List of California Terrestrial Natural Communities*⁷ indicates which natural communities are of special status given the current state of the California classification.

Most types of wetlands and riparian communities are considered special status natural communities due to their limited distribution in California. These natural communities often contain special status plants such as those described above. 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 wetlands⁸ or by the U.S. Fish and Wildlife Service to survey for the presence of special status plants⁹.

⁴ Refer to current online published lists available at: <http://www.dfg.ca.gov/biogeodata>.

⁵ In general, CNPS List 3 plants (plants about which more information is needed) and List 4 plants (plants of limited distribution) may not warrant consideration under CEQA §15380. These plants may be included on special status plant lists such as those developed by counties where they would be addressed under CEQA §15380. List 3 plants may be analyzed under CEQA §15380 if sufficient information is available to assess potential impacts to such plants. Factors such as regional rarity vs. statewide rarity should be considered in determining whether cumulative impacts to a List 4 plant are significant even if individual project impacts are not. List 3 and 4 plants are also included in the California Natural Diversity Database's (CNDDDB) *Special Plants, Bryophytes, and Lichens List*. [Refer to the current online published list available at: <http://www.dfg.ca.gov/biogeodata>.] Data on Lists 3 and 4 plants should be submitted to CNDDDB. Such data aids in determining or revising priority ranking.

⁶ Refer to current online published lists available at: <http://www.dfg.ca.gov/biogeodata>.

⁷ <http://www.dfg.ca.gov/biogeodata/veccamp/pdf/natcomlist.pdf>. The rare natural communities are asterisked on this list.

⁸ <http://www.wetlands.com/rags/tpge02a.htm>

⁹ U.S. Fish and Wildlife Service Survey Guidelines available at <http://www.fws.gov/sacramento/es/protocol.htm>

BOTANICAL SURVEYS

Conduct botanical 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 on the site, and it is unknown if special status plant species or natural communities occur on the site, and the project has the potential for direct or indirect effects on vegetation; or
- Special status plants or natural communities have historically been identified on the project site; or
- Special status plants or natural communities occur on sites with similar physical and biological properties as the project site.

SURVEY OBJECTIVES

Conduct field surveys in a manner which maximizes the likelihood of locating special status plant species or special status natural communities that may be present. Surveys should be **floristic in nature**, meaning that every plant taxon that occurs on site 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 species or are restricted to lists of likely potential species are not considered floristic in nature and are not adequate to identify all plant taxa on site to the level necessary to determine rarity and listing status. Include a list of plants and natural communities detected on the site for each botanical survey conducted. More than one field visit may be necessary to adequately capture the floristic diversity of a site. An indication of the prevalence (estimated total numbers, percent cover, density, etc.) of the species and communities on the site is also useful to assess the significance of a particular population.

SURVEY PREPARATION

Before field surveys are conducted, compile relevant botanical information in the general project area to provide a regional context for the investigators. Consult the CNDDDB¹⁰ and BIOS¹¹ for known occurrences of special status plants and natural communities in the project area prior to field surveys. Generally, identify vegetation and habitat types potentially occurring in the project area based on biological and physical properties of the site and surrounding ecoregion¹², unless a larger assessment area is appropriate. Then, develop a list of special status plants with the potential to occur within these vegetation types. This list can serve as a tool for the investigators and facilitate the use of reference sites; however, special status plants on site might not be limited to those on the list. Field surveys and subsequent reporting should be comprehensive and floristic in nature and not restricted to or focused only on this list. Include in the survey report the list of potential special status species and natural communities, and the list of references used to compile the background botanical information for the site.

SURVEY EXTENT

Surveys should be comprehensive over the entire site, including areas that will be directly or indirectly impacted by the project. Adjoining properties should also be surveyed where direct or indirect project effects, such as those from fuel modification or herbicide application, could potentially extend offsite. Pre-project surveys restricted to known CNDDDB rare plant locations may not identify all special status plants and communities present and do not provide a sufficient level of information to determine potential impacts.

FIELD SURVEY METHOD

Conduct surveys using **systematic field techniques** in all habitats of the site to ensure thorough coverage of potential impact areas. 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 surveys by walking over the entire site to ensure thorough coverage, noting all plant taxa

¹⁰ Available at <http://www.dfg.ca.gov/biogeo/cnddb>

¹¹ <http://www.bios.dfg.ca.gov/>

¹² Ecological Subregions of California, available at <http://www.fs.fed.us/r5/projects/ecoregions/toc.htm>

observed. The level of effort should be sufficient to provide comprehensive reporting. For example, one person-hour per eight acres per survey date is needed for a comprehensive field survey in grassland with medium diversity and moderate terrain¹³, with additional time allocated for species identification.

TIMING AND NUMBER OF VISITS

Conduct surveys in the field at the time of year when species are both evident and identifiable. Usually this is during flowering or fruiting. Space visits throughout the growing season to accurately determine what plants exist on site. Many times this may involve multiple visits to the same site (e.g. in early, mid, and late-season for flowering plants) to capture the floristic diversity at a level necessary to determine if special status plants are present¹⁴. The timing and number of visits are determined by geographic location, the natural communities present, and the weather patterns of the year(s) in which the surveys are conducted.

REFERENCE SITES

When special status plants are known to occur in the type(s) of habitat present in the project area, observe reference sites (nearby accessible occurrences of the plants) to determine whether those species are identifiable at the time of the survey and to obtain a visual image of the target species, associated habitat, and associated natural community.

USE OF EXISTING SURVEYS

For some sites, floristic inventories or special status plant surveys may already exist. Additional surveys may be necessary for the following reasons:

- Surveys are not current¹⁵; or
- 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); or
- Surveys are not comprehensive in nature; or fire history, land use, physical conditions of the site, or climatic conditions have changed since the last survey was conducted¹⁶; or
- Surveys were conducted in natural systems where special status plants may not be observed if an annual above ground phase is not visible (e.g. flowers from a bulb); or
- Changes in vegetation or species distribution may have occurred since the last survey was conducted, due to habitat alteration, fluctuations in species abundance and/or seed bank dynamics.

NEGATIVE SURVEYS

Adverse conditions may prevent investigators from determining the presence of, or accurately identifying, some species in potential habitat of target species. Disease, drought, predation, or herbivory may preclude the presence or identification of target species in any given year. Discuss such conditions in the report.

The failure to locate a known special status plant occurrence during one field season does not constitute evidence that this plant occurrence no longer exists at this location, particularly if adverse conditions are present. For example, surveys over a number of years may be necessary if the species is an annual plant having a persistent, long-lived seed bank and is known not to germinate every year. Visits to the site in more

¹³ Adapted from U.S. Fish and Wildlife Service kit fox survey guidelines available at www.fws.gov/sacramento/es/documents/kitfox_no_protocol.pdf

¹⁴ U.S. Fish and Wildlife Service Survey Guidelines available at <http://www.fws.gov/sacramento/es/protocol.htm>

¹⁵ 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://r1.dfg.ca.gov/portal/Portals/12/THP/BotanicalGuidelinesJuly2005.pdf>

¹⁶ U.S. Fish and Wildlife Service Survey Guidelines available at http://www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/botanicalinventories.pdf

than one year increase the likelihood of detection of a special status plant especially if conditions change. To further substantiate negative findings for a known occurrence, a visit to a nearby reference site may ensure that the timing of the survey was appropriate.

REPORTING AND DATA COLLECTION

Adequate information about special status plants and natural communities present in a project area will enable reviewing agencies and the public to effectively assess potential impacts to special status plants or natural communities¹⁷ and will guide the development of minimization and mitigation measures. The next section describes necessary information to assess impacts. For comprehensive, systematic surveys where no special status species or natural communities were found, reporting and data collection responsibilities for investigators remain as described below, excluding specific occurrence information.

SPECIAL STATUS PLANT OR NATURAL COMMUNITY OBSERVATIONS

Record the following information for locations of each special status plant or natural community detected during a field survey of a project site.

- A detailed map (1:24,000 or larger) showing locations and boundaries of each special status species occurrence or natural community found as related to the proposed project. Mark occurrences and boundaries as accurately as possible. Locations documented by use of global positioning system (GPS) coordinates must include the datum¹⁸ in which they were collected;
- 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 the species 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 individuals in each life stage such as seedlings vs. reproductive individuals;
- The number of individuals of the species per unit area, identifying areas of relatively high, medium and low density of the species over the project site; and
- Digital images of the target species and representative habitats to support information and descriptions.

FIELD SURVEY FORMS

When a special status plant or natural community is located, complete and submit to the CNDDDB a California Native Species (or Community) Field Survey Form¹⁹ or equivalent written report, accompanied by a copy of the relevant portion of a 7.5 minute topographic map with the occurrence mapped. Present locations documented by use of GPS coordinates in map and digital form. Data submitted in digital form must include the datum²⁰ in which it was collected. If a potentially undescribed special status natural community is found on the site, document it with a Rapid Assessment or Relevé form²¹ and submit it with the CNDDDB form.

VOUCHER COLLECTION

Voucher specimens provide verifiable documentation of species presence and identification as well as a public record of conditions. This information is vital to all conservation efforts. Collection of voucher specimens should

¹⁷ Refer to current online published lists available at: <http://www.dfg.ca.gov/blogeodata>. For Timber Harvest Plans (THPs) please refer to the "Guidelines for Conservation of Sensitive Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations", available at <https://r1.dfg.ca.gov/portals/Portals/12/THPBotanicalGuidelinesJuly2005.pdf>

¹⁸ NAD83, NAD27 or WGS84

¹⁹ <http://www.dfg.ca.gov/blogeodata>

²⁰ NAD83, NAD27 or WGS84

²¹ http://www.dfg.ca.gov/blogeodata/vegcamp/veg_publications_protocols.asp

be conducted in a manner that is consistent with conservation ethics, and is in accordance with applicable state and federal permit requirements (e.g. incidental take permit, scientific collection permit). Voucher collections of special status species (or suspected special status species) should be made only when such actions would not jeopardize the continued existence of the population or species.

Deposit voucher specimens with an indexed regional herbarium²² no later than 60 days after the collections have been made. Digital imagery can be used to supplement plant identification and document habitat. Record all relevant permittee names and permit numbers on specimen labels. A collecting permit is required prior to the collection of State-listed plant species²³.

BOTANICAL SURVEY REPORTS

Include reports of botanical field surveys containing the following information with project environmental documents:

- **Project and site description**
 - ♦ A description of the proposed project;
 - ♦ A detailed map of the project location and study area that identifies topographic and landscape features and includes a north arrow and bar scale; and,
 - ♦ A written description of the biological setting, including vegetation²⁴ and structure of the vegetation; geological and hydrological characteristics; and land use or management history.
- **Detailed description of survey methodology and results**
 - ♦ Dates of field surveys (indicating which areas were surveyed on which dates), name of field investigator(s), and total person-hours spent on field surveys;
 - ♦ A discussion of how the timing of the surveys affects the comprehensiveness of the survey;
 - ♦ A list of potential special status species or natural communities;
 - ♦ A description of the area surveyed relative to the project area;
 - ♦ References cited, persons contacted, and herbaria visited;
 - ♦ Description of reference site(s), if visited, and phenological development of special status plant(s);
 - ♦ A list of all taxa occurring on the project site. Identify plants to the taxonomic level necessary to determine whether or not they are a special status species;
 - ♦ Any use of existing surveys and a discussion of applicability to this project;
 - ♦ A discussion of the potential for a false negative survey;
 - ♦ Provide detailed data and maps for all special plants detected. Information specified above under the headings "Special Status Plant or Natural Community Observations," and "Field Survey Forms," should be provided for locations of each special status plant detected;
 - ♦ Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms should be sent to the CNDDDB and included in the environmental document as an Appendix. It is not necessary to submit entire environmental documents to the CNDDDB; and,
 - ♦ The location of voucher specimens, if collected.

²² For a complete list of indexed herbaria, see: Holmgren, P., N. Holmgren and L. Barnett. 1990. Index Herbariorum, Part 1: Herbaria of the World. New York Botanic Garden, Bronx, New York. 693 pp. Or: <http://www.nybg.org/botlib/ih.html>

²³ Refer to current online published lists available at: <http://www.dfg.ca.gov/bio/geodata>.

²⁴ A vegetation map that uses the National Vegetation Classification System (<http://biology.usgs.gov/npsves/nvcs.html>), for example *A Manual of California Vegetation*, and highlights any special status natural communities. If another vegetation classification system is used, the report should reference the system, provide the reason for its use, and provide a crosswalk to the National Vegetation Classification System.

- **Assessment of potential Impacts**

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

QUALIFICATIONS

Botanical consultants should possess the following qualifications:

- Knowledge of plant taxonomy and natural community ecology;
- Familiarity with the plants of the area, including special status species;
- Familiarity with natural communities of the area, including special status natural communities;
- Experience conducting floristic field surveys or experience with floristic surveys conducted under the direction of an experienced surveyor;
- Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
- Experience with analyzing impacts of development on native plant species and natural communities.

SUGGESTED REFERENCES

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- Mueller-Dombois, D. and H. Ellenberg. 1974. Aims and methods of vegetation ecology. John Wiley and Sons, Inc., New York, NY.
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Species of Special Concern:
A Brief Description of an Important
California Department of Fish and Game Designation

What is a "Species of Special Concern"?

A Species of Special Concern (SSC) is a species, subspecies, or distinct population of an animal* native to California that currently satisfies one or more of the following (not necessarily mutually exclusive) criteria:

- Is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role;
- Is listed as Federally-, but not State-, threatened or endangered; meets the State definition of threatened or endangered but has not formally been listed;
- Is experiencing, or formerly experienced, serious (nonscyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- Has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

*for the purposes of this discussion, "animal" means fish, amphibian, reptile, bird and mammal

What important factors contribute to a species being designated as an SSC?

SSCs tend to have a number of factors in common, as follows:

- occur in small, isolated populations or in fragmented habitat, and are threatened by further isolation and population reduction;
- show marked population declines. Taxa that show a marked population decline, yet are still abundant, may not meet the SSC definition, whereas marked population decline in uncommon or rare species may meet the SSC definition. Note that population estimates are unavailable for the vast majority of California taxa;
- depend on a habitat that has shown substantial historical or recent declines in size and/or quality or integrity. This criterion infers the population viability of a species based on trends in the habitats in which it specializes. Coastal wetlands, particularly in the urbanized San Francisco Bay and south-coastal areas, alluvial fan sage scrub and coastal sage scrub in the southern coastal basins, vernal pools in the Central Valley, arid scrub in the San Joaquin Valley, and riparian habitat statewide, are examples of California habitats that have seen dramatic reductions in size in recent history;
- occur only or primarily in or adjacent to an area where habitat is being converted to uses incompatible with the animal's survival;

- have few California records, or which historically occurred in the State but for which there are no recent records; and
- occur largely in areas where current management practices are inconsistent with the animal's persistence.

How does the Department use the SSC designation?

"Species of Special Concern" is an administrative designation and carries no formal legal status. The intent of designating SSCs is to:

- focus attention on animals at conservation risk by the Department, other State, local and Federal governmental entities, regulators, land managers, planners, consulting biologists, and others;
- stimulate research on poorly known species;
- achieve conservation and recovery of these animals before they meet California Endangered Species Act criteria for listing as threatened or endangered.

How are SSCs addressed under the California Environmental Quality Act?

SSCs should be considered during the environmental review process. The California Environmental Quality Act (CEQA; California Public Resources Code §§ 21000-21177) requires State agencies, local governments, and special districts to evaluate and disclose impacts from "projects" in the State. Section 15380 of the CEQA Guidelines clearly indicates that species of special concern should be included in an analysis of project impacts if they can be shown to meet the criteria of sensitivity outlined therein.

Sections 15063 and 15065 of the CEQA Guidelines, which address how an impact is identified as significant, are particularly relevant to SSCs. Project-level impacts to listed (rare, threatened, or endangered species) species are generally considered significant thus requiring lead agencies to prepare an Environmental Impact Report to fully analyze and evaluate the impacts. In assigning "impact significance" to populations of non-listed species, analysts usually consider factors such as population-level effects, proportion of the taxon's range affected by a project, regional effects, and impacts to habitat features.

Who is responsible for developing and maintaining SSC documents and lists?

The Wildlife Branch's Nongame Wildlife Program is responsible for producing and updating SSC publications for mammals, birds, reptiles and amphibians. The Fisheries Branch is responsible for updates to the Fish Species of Special Concern document and list and should be contacted for further information regarding process and project details. The Biogeographic Data Branch is responsible for maintaining the most current list of SSCs via inclusion on its "Special Animals List"

(http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp). These publications are updated periodically as staff and funding allow. Publications are typically produced by a contractor knowledgeable about the taxonomic group.

The contractor's draft publication is reviewed by the Department, as well as by the contractor's peers, other agencies, and other biologists, as appropriate. Final publication of an SSC document requires approval of the Director.

What procedures are used to designate SSCs?

California Bird Species of Special Concern (Shuford and Gardali 2008; <http://www.dfg.ca.gov/wildlife/species/ssc/birds.html>) articulates the State's desired methodology, when achievable. Criteria used to develop this document were vetted Department-wide, by DFG leadership, and by the scientific community.

The process to designate SSCs will include the following:

- maintaining a consistent definition of SSC, per page 1 of this document, across taxonomic lines;
- establishing a Technical Advisory Committee (TAC), consisting of authorities on the biology and status of pertinent taxonomic group (amphibians and reptiles, bird, mammals);
- using metrics, developed in concert with the TAC, to assess the status of each taxon. Where sufficient data allow it, metrics should include population size and trend, range size and trend, population concentration, percentage of entire range or population within California (endemism), and assessment of threats;
- developing a nominee list of taxa to be considered for SSC status in concert with the TAC, using an open process, i.e., not basing consideration solely on a previous SSC list or a or other special designation that may have already been assigned;
- automatically including Federally-listed taxa as designated SSCs but not establishing rankings or preparing range maps for them. Metrics shall be applied to any Federally-listed taxon subsequently delisted to determine its new status as either a SSC or placement on a Watch List;
- automatically excluding State-listed taxa from the nominee list. Metrics shall be applied to any State-listed taxon that is subsequently delisted to determine its new status as either SSC or Watch List;
- developing priorities for conservation action using a ranking scheme;
- providing an explanation for each taxon that was designated as an SSC but that is omitted from a revised list.

What elements are found in an SSC document?

- overview, including a description of methods, results and discussion;
- recommendations and priorities for research, management and monitoring;
- species accounts for each SSC, including data on population and range trend, population size and trend, threats, ecological considerations, management recommendations, taxonomic remarks, and life history information relevant to status;
- range and/or distribution maps for each ranked SSC;

- California Responsibility List (*sensu* Shuford and Gardall 2008) indicating endemic or nearly endemic taxa, and which of those are SSCs;
- Watch List, consisting of taxa that were previously SSCs but no longer merit SSC status or which do not meet SSC criteria but for which there is concern and a need for additional information to clarify status.

How does the Department add or remove animals from the SSC lists?

A list of nominee taxa considered for SSC status is developed during the course of a major revision of an SSC document. Metrics (see above) are applied to each taxon; SSC threshold criteria are determined and a ranking scheme developed which discriminates between SSCs and taxa that do not qualify for that designation. Thus, a Nominee Species Database (NSD) is developed as part of the project. Keeping the NSD up-to-date is an important part of the SSC process.

Scores in the NSD will be updated at least annually by the Department with the assistance of the appropriate Technical Advisory Committee; results will be included on the Special Animals List, and posted to the Department website, as appropriate. Scores may change as a result of new information gained from scientific, peer-reviewed literature, expert opinion, or other reliable sources. Members of the public may present new information to the Department as part of this process. A score change may move a taxon on or off the list. In all cases, any change must be evaluated by the general SSC criteria on page 1, as well as those developed by the Department and TAC for each taxonomic group, and documented by a written record of findings.

What is the relationship between SSCs and the California Wildlife Action Plan?

A major component of the California Wildlife Action Plan (WAP) (<http://www.dfg.ca.gov/wildlife/wap/report.html>) is the identification of species of greatest conservation need in the State. The Department uses the Special Animal List (http://www.dfg.ca.gov/biogeodata/cnddb/plants_and_animals.asp), which includes SSCs, as the primary source list of these species. Species of greatest conservation need are eligible for and considered as priorities for conservation funding via State Wildlife Grant funds (these funds are linked to State WAPs). Revisions to the WAP will include threat assessments for current SSCs and their habitats, and will change conservation actions and priorities accordingly.

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