

**BIOLOGICAL RESOURCES
BACKGROUND DOCUMENT
CALAVERAS COUNTY
GENERAL PLAN UPDATE**

July 25, 2013

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Prepared for

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1. INTRODUCTION

This Biological Resources background document presents an overview of the regulations that are in place to protect native vegetation, wildlife, and water resources of the Calaveras County General Plan Area (GPA) (Figures 1-3). It also presents the vegetation and wildlife resources of the GPA and special-status species (that is, threatened, endangered, rare) that have potential to occur within the GPA in suitable habitats.

2. REGULATORY FRAMEWORK FOR NATIVE WILDLIFE, FISH, AND PLANTS

This section provides a discussion of those laws and regulations that are in place to protect native wildlife, fish, and plants. Under each law we discuss its pertinence to the GPA and how it is the purview of Calaveras County to see that these laws and regulations are followed when authorizing projects within the GPA.

2.1 Applicable CEQA Regulations

Section 15380 of CEQA defines “endangered” species as those whose survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. “Rare” species are defined by CEQA as those who are in such low numbers that they could become endangered if their environment worsens; or the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range and may be considered “threatened” as that term is used in the FESA. The CEQA Guidelines also state that a project will normally have a significant effect on the environment if it will “substantially affect a rare or endangered species of animal or plant or the habitat of the species.” The significance of impacts to a species under CEQA, therefore, must be based on analyzing actual rarity and threat to that species despite its legal status or lack thereof.

2.1.1 APPLICABILITY TO THE GPA

In environmental documents prepared by Calaveras County Planning Department for proposed projects within the GPA (for example, Mitigated Negative Declarations, Environmental Impact Reports) the County must determine if the project would have potential and/or significant effects on the environment. Regarding biological resources, Calaveras County Planning Department must ascertain if a proposed project could result in potential impacts to CEQA defined rare, threatened, and endangered species, and/or to sensitive habitats that include rare plant or animal communities and/or waters of the U.S. and/or State (which include wetlands, lakes, streams, etc.). The Calaveras County Planning Department will endeavor to ensure that proposed projects avoid significant impacts to biological resources where practicable, and/or that proposed projects include mitigation measures that reduce the significance of impacts to biological resources to levels regarded as less than significant pursuant to the CEQA. Finally, if significant adverse impacts cannot be avoided and mitigation is unavailable that would reduce the impact to less than significant, Calaveras County Planning Department must determine if the benefits of the proposed project warrant adoption of overriding considerations.

2.2 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) forms the basis for the federal protection of threatened or endangered plants, insects, fish and wildlife. FESA contains four main elements, they are as follows:

Section 4 (16 USCA §1533): Species listing, Critical Habitat Designation, and Recovery Planning: outlines the procedure for listing endangered plants and wildlife.

Section 7 (§1536): Federal Consultation Requirement: imposes limits on the actions of federal agencies that might impact listed species.

Section 9 (§1538): Prohibition on Take: prohibits the "taking" of a listed species by anyone, including private individuals, and State and local agencies.

Section 10: Exceptions to the Take Prohibition: non-federal agencies can obtain an incidental take permit through approval of a Habitat Conservation Plan.

In the case of salt water fish and other marine organisms, the requirements of FESA are enforced by the National Marine Fisheries Service (NMFS). The U.S. Fish and Wildlife Service (the Service) enforces all other cases. Below, Sections 9, 7, and 10 of FESA are discussed since they are the sections most relevant to the proposed project.

Section 9 of FESA as amended, prohibits the "take" of any fish or wildlife species listed under FESA as endangered. Under Federal regulation, "take" of fish or wildlife species listed as threatened is also prohibited unless otherwise specifically authorized by regulation. "Take," as defined by FESA, means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harm" includes not only the direct taking of a species itself, but the destruction or modification of the species' habitat resulting in the potential injury of the species. As such, "harm" is further defined to mean "an act which actually kills or injures wildlife; such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering" (50 CFR 17.3). A December 2001 decision by the 9th Circuit Court of Appeals (Arizona Cattle Growers' Association, Jeff Menges, vs. the U.S. Fish and Wildlife Service and Bureau of Land Management, and the Southwest Center for Biological Diversity) ruled that the Service must show that a threatened or endangered species is present on a project site and that it would be taken by the project activities. According to this ruling, the Service can no longer require mitigation based on the probability that the species could use the site. Rather they must show that it is actually present.

Section 9 applies to any person, corporation, federal agency, or any local or State agency. If "take" of a listed species is necessary to complete an otherwise lawful activity, this triggers the need to obtain an incidental take permit either through a Section 7 Consultation as discussed further below (for federal actions or private actions that are permitted or funded by a federal agency), or requires preparation of a Habitat Conservation Plan (HCP) pursuant to Section 10 of FESA (for state and local agencies, or individuals, and projects without a federal "nexus").

Section 7(a)(2) of the Act requires that each federal agency consult with the Service to ensure that any action authorized, funded or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of critical habitat for listed species. Critical habitat designations mean: (1) specific areas within a geographic region currently occupied by a listed species, on which are found those physical or biological features that are essential to the conservation of a listed species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a listed species that are determined essential for the conservation of the species.

The Section 7 consultation process only applies to actions taken by federal agencies that are considering authorizing discretionary projects. Section 7 is by and between the NMFS and/or the Service and the federal agency contemplating a discretionary approval (that is, the “federal nexus agency,” for example, the Corps or the Federal Highway Administration). Private parties, cities, counties, etc. (i.e., applicants) may participate in the Section 7 consultation *at the discretion of the federal agencies conducting the Section 7 consultation*. The Section 7 consultation process is triggered by a determination of the “action agency” – that is, the federal agency that is carrying out, funding, or approving a project - that the project “may affect” a listed species or critical habitat. If an action is likely to adversely affect a listed species or designated critical habitat, formal consultation between the nexus agency and the Service/NMFS is required. As part of the formal consultation, the Service/NMFS may resolve any issues informally with the nexus agency or may prepare a formal Biological Opinion assessing whether the proposed action would be likely to result in “jeopardy” to a listed species or if it could adversely modify designated critical habitat. If the Service/NMFS prepares a Biological Opinion it will contain either a “jeopardy” or “non-jeopardy” decision. If the Service/NMFS concludes that a proposed project would result in adverse modification of critical habitat or would jeopardize the continued existence of a federal listed species (that is, it will issue a jeopardy decision), the nexus federal agency would be most unlikely to authorize its discretionary permit. If the Service/NMFS prepares a “non-jeopardy” Biological Opinion, the nexus federal agency may authorize the discretionary permit making all conditions of the Biological Opinion conditions of its discretionary permit. A non-jeopardy Biological Opinion constitutes an “incidental take” permit that allows applicants to “take” federally listed species while otherwise carrying out legally sanctioned projects.

For non-federal entities, for example private parties, cities, counties that are considering a discretionary permit, Section 10 provides the mechanism for obtaining take authorization. Under Section 10 of FESA, the applicant for an "incidental take permit" is required to submit a "conservation plan" to the Service or NMFS that specifies, among other things, the impacts that are likely to result from the taking, and the measures the permit applicant will undertake to minimize and mitigate such impacts, and the funding that will be available to implement those steps. Conservation plans under FESA have come to be known as "habitat conservation plans" or "HCPs" for short. The terms incidental take permit, Section 10 permit, and Section 10(a)(1)(B) permit are used interchangeably by the Service. Section 10(a)(2)(B) of FESA provides statutory criteria that must be satisfied before an incidental take permit can be issued.

2.2.1 RESPONSIBLE AGENCY

FESA gives regulatory authority over listed terrestrial species and non-anadromous fish to the Service. The NMFS has authority over listed marine mammals and anadromous fish.

2.2.2 APPLICABILITY TO THE GPA

The County cannot authorize a project pursuant to CEQA that would result in violation of the FESA. Thus, when the County approves projects within the GPA it is their responsibility to ensure that the approved project is in compliance with the FESA. In order to determine if a project would adversely impact (take) a federally listed plant or animal species, project applicants should hire a qualified biological consultant to prepare a “biological constraints analysis” of the proposed development property. The biologist prepared constraints analysis should list all special-status (that is, threatened, endangered, or rare) plant and animal species known from the project vicinity and discuss which habitats on the proposed development property are suitable to support special-status species. If the biological constraints analysis identifies potential project impacts to federally listed plants or animals from the proposed project, the applicant may need to apply for an “incidental take” permit from the Service (either through Section 7 or Section 10 of FESA). The County will not issue a grading permit or other discretionary permit for a project without evidence that the proposed project is in compliance with the FESA.

2.3 Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1918 (16 U.S.C. §§ 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989) makes it unlawful to “take” (kill, harm, harass, shoot, etc.) any migratory bird listed in Title 50 of the Code of Federal Regulations, Section 10.13, including their nests, eggs, or young. Migratory birds include geese, ducks, shorebirds, raptors, songbirds, wading birds, seabirds, and passerine birds (such as warblers, flycatchers, swallows, etc.).

Executive Order 13186 for conservation of migratory birds (January 11, 2001) requires that any project with federal involvement address impacts of federal actions on migratory birds. The order is designed to assist federal agencies in their efforts to comply with the MBTA and does not constitute any legal authorization to take migratory birds. The order also requires federal agencies to work with the Service to develop a memorandum of understanding (MOU). Protocols developed under the MOU must promote the conservation of migratory bird populations through the following means:

- avoid and minimize, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions;
- restore and enhance habitat of migratory birds, as practicable; and prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

2.3.1 APPLICABILITY TO THE GPA

When the County approves projects within the GPA it is the applicant's responsibility to ensure that an approved project does not result in "take" of migratory birds. While other forms of take would include "shooting" and other means of direct harm, such take is unlikely from implementation of proposed projects. Rather it is more likely that projects could impact nesting birds. In order to remain in compliance with the Migratory Bird Treaty Act, projects may not harm birds, their eggs, or young. Take of migratory birds is typically avoided by establishing non-disturbance buffers around the birds' nests during the nesting season. In order to determine if a proposed project site provides habitat for nesting migratory birds, project applicants should hire a qualified biologist to survey the project site and determine if it provides bird nesting habitat. If the biologist determines that the project site provides bird nesting habitat then any construction activity or vegetation removal during the nesting season (February 1 through August 31) could not commence until a suitable sized, non-disturbance nesting buffer is established around any identified active nest. No disturbance of any kind including pedestrian travel, parking, equipment laydown, any form of vegetation disturbance, should be allowed within the buffer until the birds complete their nesting cycle as confirmed by a qualified biologist or until September 1st. The exact size of the nesting buffer should be determined by a qualified biologist and can be based on several factors including site topography and the birds' acclimation to disturbance. This buffer would need to remain in place until the young have fledged (left the nest) and are flying well enough to avoid proposed project activities. Some migratory birds also have a special-status designations such as being federal or state listed, or are designated by the Department as California species of special concern. Such special-status birds may have additional protection requirements that should be determined in consultation with the Department and/or the Service. These requirements would be discussed/determined with/by the County at the time a CEQA document is prepared for any proposed project.

2.4 State Endangered Species Act

2.4.1 SECTION 2081 OF THE STATE ENDANGERED SPECIES ACT

In 1984, the state legislated the California Endangered Species Act (CESA) (Fish and Game Code §2050). The basic policy of CESA is to conserve and enhance endangered species and their habitats. State agencies will not approve private or public projects under their jurisdiction that would impact threatened or endangered species if reasonable and prudent alternatives are available. Because CESA does not have a provision for "harm" (see discussion of FESA, above), the Department considerations pursuant to CESA are limited to those actions that would result in the direct take of a listed species.

If the Department determines that a proposed project could impact a State listed threatened or endangered species, the Department will provide recommendations for "reasonable and prudent" project alternatives. The CEQA lead agency can only approve a project if these alternatives are implemented, unless it finds that the project's benefits clearly outweigh the costs, reasonable mitigation measures are adopted, there has been no "irreversible or irretrievable" commitment of resources made in the interim, and the resulting project would not result in the extinction of the species. In addition, if there would be impacts to threatened or endangered species, the lead agency typically requires project applicants to demonstrate that they have acquired "incidental

take" permits from the Department and/or the Service (if it is a Federal listed species) prior to allowing/permitting impacts to such species.

If proposed projects would result in impacts to a State listed species, an "incidental take" permit pursuant to §2081 of the Fish and Game Code would be necessary (versus a Federal incidental take permit for Federal listed species). The Department will issue an incidental take permit only if:

- 1) The authorized take is incidental to an otherwise lawful activity;
- 2) the impacts of the authorized take are minimized and fully mitigated;
- 3) measures required to minimize and fully mitigate the impacts of the authorized take:
 - a) are roughly proportional in extent to the impact of the taking on the species;
 - b) maintain the project applicant's objectives to the greatest extent possible; and,
 - c) capable of successful implementation; and,
- 4) adequate funding is provided to implement the required minimization and mitigation measures and to monitor compliance with, and the effectiveness of, the measures.

If an applicant is preparing a habitat conservation plan (HCP) as part of the federal 10(a) permit process, the HCP might be incorporated into the §2081 permit if it meets the substantive criteria of §2081(b). To ensure that an HCP meets the mitigation and monitoring standards in Section 2081(b), an applicant should involve the Department staff in development of the HCP. If a final Biological Opinion (federal action) has been issued for the project pursuant to Section 7 of the federal Endangered Species Act, it might also be incorporated into the §2081 permit if it meets the standards of §2081(b).

No §2081 permit may authorize the take of a species for which the Legislature has imposed strict prohibitions on all forms of "take." These species are listed in several statutes that identify "fully protected" species and "specified birds." *See* Fish and Game Code §§ 3505, 3511, 4700, 5050, 5515, and 5517. If a project is planned in an area where a "fully protected" species or a "specified bird" occurs, an applicant must design the project to avoid all take.

In September 1997, Assembly Bill 21 (Fish and Game Code §2080.1) was passed. This bill allows an applicant who has obtained a "non-jeopardy" federal Biological Opinion pursuant to Section 7, or who has received a federal 10(a) permit (federal incidental take permit), to submit the federal opinion or permit to the Department for a determination as to whether the federal document is "consistent" with CESA. If after 30 days the Department determines that the federal incidental take permit is consistent with state law, and that all state listed species under consideration have been considered in the federal Biological Opinion, then no further permit or consultation is required under CESA for the project. However, if the Department determines that the federal opinion or permit is not consistent with CESA, or that there are state listed species that were not considered in the federal Biological Opinion, then the applicant must apply for a state permit under Section 2081(b). The process provided in Fish and Game Code §2080.1 (Assembly Bill 21) may be of use when the incidental take would occur to species that are listed under both the federal and state endangered species acts. Assembly Bill 21 is of no use if an affected species is state-listed, but not federally listed.

State and federal incidental take permits are issued on a discretionary basis, and are typically only authorized if applicants are able to demonstrate that impacts to the listed species in question are unavoidable, and can be mitigated to an extent that the reviewing agency can conclude that the proposed impacts would not jeopardize the continued existence of the listed species under review. Typically, if there would be impacts to a listed species, mitigation that includes habitat avoidance, preservation, and creation of endangered species habitat is necessary to demonstrate that projects would not threaten the continued existence of a species. In addition, management endowment fees are usually collected as part of the agreement for the incidental take permit(s). The endowment is used to manage any lands set-aside to protect listed species, and for biological mitigation monitoring of these lands over (typically) a five-year period.

2.4.2 APPLICABILITY TO THE GPA

The County cannot authorize a project pursuant to CEQA that would otherwise not be in compliance with the CESA. Thus, when the County approves projects within the GPA evidence should be provided to the County that the project is in compliance with the CESA. In order to determine if a project would adversely impact (take) a state listed plant or animal species, the project applicant should hire a qualified biological consultant to prepare a “biological constraints analysis” of the proposed development property. This biological constraints analysis should list all special-status (that is, threatened, endangered, or rare) plant and animal species known from the project vicinity and discuss which habitats on the proposed development property are suitable to support special-status species. If the biological constraints analysis identifies potential project impacts to state listed plants or animals from the proposed project, the applicant may need to apply for an “incidental take” permit (Section 2081 permit) from the Department (pursuant to Section 2080 of California Fish and Game Code). The County will not issue a grading permit or other discretionary permit for a project without evidence that the proposed project is in compliance with the CESA.

2.5 California Fish and Game Code § 3503, 3503.5, 3511, and 3513

California Fish and Game Code §3503, 3503.5, 3511, and 3513 prohibit the “take, possession, or destruction of birds, their nests or eggs.” Disturbance that causes nest abandonment and/or loss of reproductive effort (killing or abandonment of eggs or young) is considered “take.” Such a take would also violate federal law protecting migratory birds (Migratory Bird Treaty Act).

All raptors (that is, hawks, eagles, owls) their nests, eggs, and young are protected under California Fish and Game Code (§3503.5). Additionally, “fully protected” birds, such as the white-tailed kite (*Elanus leucurus*) and golden eagle (*Aquila chrysaetos*), are protected under California Fish and Game Code (§3511). “Fully protected” birds may not be taken or possessed (that is, kept in captivity) at any time.

2.5.1 APPLICABILITY TO THE GPA

When the County approves projects within the GPA it is their responsibility to ensure that the approved project does not result in “take” of nesting birds. If a proposed project would impact shrubs, trees or other vegetation, a nesting bird survey should be conducted between the dates of February 1 and August 31 (“nesting season”). Take of nesting birds is typically avoided by establishing non-disturbance buffers around any active bird nests discovered on project sites

during the nesting season. Some species such as barn owls (*Tyto alba*) may nest outside these dates. In order to determine if a proposed project site provides habitat for nesting birds, the project applicant should hire a qualified biologist to survey the project site and determine if it provides bird nesting habitat. If the biologist determines that the project site supports active bird nest(s) then the proposed project should take steps to protect that bird nest until the young fledge the nest and/or the nest is no longer in use. Proposed ground disturbance or vegetation clearing must not commence within a biologist designated protection buffer that is sufficiently large to protect the nesting birds. No disturbance of any kind including pedestrian travel, parking, equipment laydown, any form of vegetation disturbance should be allowed within the buffer until the birds complete their nesting cycle as confirmed by a qualified biologist or until September 1st. The exact size of the nesting buffer would be determined by a qualified biologist based on several factors including site topography and the birds' acclimation to disturbance.

2.6 Protected Amphibians

Under Title 14 of the California Code of Regulations (CCR 14, Division 1, Subdivision 1, Chapter 5, §41. Protected Amphibians), protected amphibians, such as the California tiger salamander may only be taken under special permit from California Department of Fish and Wildlife issued pursuant to Sections 650 and 670.7 of these regulations.

2.6.1 APPLICABILITY TO THE GPA

Title 14 protected Amphibians should not be impacted in anyway without the express authorization of the Department.

2.7 California Species of Special Concern

These are species in which their California breeding populations are seriously declining and extirpation from all or a portion of their range is possible. This designation affords no legally mandated protection; however, pursuant to the CEQA Guidelines (14 CCR §15380), some species of special concern could be considered "rare." Pursuant to its rarity status, any unmitigated impacts to rare species could be considered a "significant effect on the environment" (§15382). Thus, species of special concern must be considered in any project that will, or is currently, undergoing CEQA review, and/or that must obtain an environmental permit(s) from a public agency.

2.7.1 APPLICABILITY TO THE GPA

CEQA must analyze a project to determine if there could be significant adverse impacts to special-status species. California Species of Special Concern are afforded protections pursuant to the CEQA. If a project is identified as having a potential impact on a California species of special concern, the environmental document prepared by the County must identify the significance of the impact and if mitigation could be implemented to offset the project's impact on that species to a level regarded as less than significant pursuant to the CEQA.

2.8 California Native Plant Society (CNPS)

CNPS Rank Species. The CNPS maintains an inventory of special status plant species. This inventory has four lists of plants with varying rarity. These lists are: Rank 1, Rank 2, Rank 3, and

Rank 4. Although plants on these lists have no formal legal protection (unless they are also state or federal listed species), the California Department of Fish and Wildlife (the Department) recognizes that Ranks 1A, 1B, and 2 of the CNPS inventory contain plants that, in the majority of cases, would qualify for State listing, and the Department requests their inclusion in EIRs. In addition, other state and local agencies may request the inclusion of species on other lists as well. Rank 1 species have the highest priority: Rank 1A species are thought to be extinct, and Rank 1B species are known to still exist but are considered “rare, threatened, and endangered in California and elsewhere.” All of the plants constituting Rank 1B meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the California Fish and Game Code, and are eligible for state listing (CNPS 2001).

Rank 2 species are rare in California, but more common elsewhere. Ranks 3 and 4 contain species about which there is some concern, and are review and watch lists, respectively. Additionally, in 2006 CNPS updated their lists to include “threat code extensions” for each list. For example, Rank 1B species would now be categorized as Rank 1B.1, Rank 1B.2, or Rank 1B.3. These threat codes are defined as follows: “.1” is considered “seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)”; “.2” is “fairly endangered in California (20-80% of occurrences threatened)”; “.3” is “not very endangered in California (less than 20% of occurrences threatened or no current threats known).”

Plants occurring on CNPS Ranks 3 and 4 are “plants about which more information is necessary,” and “plants of limited distribution,” respectively (CNPS 2001). Such plants may be included as special-status species on a case by case basis due to local significance or recent biological information. However, they may not meet CEQA’s rarity definition.

2.8.1 APPLICABILITY TO THE GPA

Under the CEQA review process only CNPS Ranked 1 and 2 species meet CEQA’s definition of “rare” or “endangered.” Impacts to species so designated would be regarded as significant pursuant to the CEQA and mitigation measures should be implemented to reduce these impacts to less than significant, if possible. Impacts to Rank 3 and 4 species are not regarded as significant pursuant to CEQA.

3. REGULATORY REQUIREMENTS PERTAINING TO WATERS OF THE UNITED STATES AND STATE

This section presents an overview of the criteria used by the U.S. Army Corps of Engineers, the California Regional Water Quality Control Board, the State Water Resources Control Board, and the Department to determine those areas within a project area that would be subject to their regulation.

3.1 U.S. Army Corps of Engineers Jurisdiction and General Permitting

3.1.1 SECTION 404 OF THE CLEAN WATER ACT

Congress enacted the Clean Water Act “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” (33 U.S.C. §1251(a)). Pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), the U.S. Army Corps of Engineers (Corps) regulates the

disposal of dredged or fill material into "waters of the United States" (33 CFR Parts 328 through 330). This requires project applicants to obtain authorization from the Corps prior to discharging dredged or fill materials into any water of the United States.

In the Federal Register "waters of the United States" are defined as, "...all interstate waters including interstate wetlands...intrastate lakes, rivers, streams (including intermittent streams), wetlands, [and] natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce..." (33 CFR Section 328.3).

Limits of Corps' jurisdiction:

(a) Territorial Seas. The limit of jurisdiction in the territorial seas is measured from the baseline in a seaward direction a distance of three nautical miles. (See 33 CFR 329.12)

(b) Tidal Waters of the United States. The landward limits of jurisdiction in tidal waters:

- (1) Extends to the high tide line, or
- (2) When adjacent non-tidal waters of the United States are present, the jurisdiction extends to the limits identified in paragraph (c) of this section.

(c) Non-Tidal Waters of the United States. The limits of jurisdiction in non-tidal waters:

- (1) In the absence of adjacent wetlands, the jurisdiction extends to the ordinary high water mark, or
- (2) When adjacent wetlands are present, the jurisdiction extends beyond the ordinary high water mark to the limit of the adjacent wetlands.
- (3) When the water of the United States consists only of wetlands the jurisdiction extends to the limit of the wetland.

Section 404 jurisdiction in "other waters" such as lakes, ponds, and streams, extends to the upward limit of the ordinary high water mark (OHWM) or the upward extent of any adjacent wetland. The OHWM on a non-tidal water is:

- the "line on shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter or debris; or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR Section 328.3[e]).

Wetlands are defined as: "...those areas that are inundated or saturated by surface or ground water at a frequency and duration to support a prevalence of vegetation adapted for life in saturated soil conditions" (33 CFR Section 328.8 [b]). Wetlands usually must possess hydrophytic vegetation (i.e., plants adapted to inundated or saturated conditions), wetland hydrology (e.g., topographic low areas, exposed water tables, stream channels), and hydric soils (i.e., soils that are periodically or permanently saturated, inundated or flooded) to be regulated by the Corps pursuant to Section 404 of the Clean Water Act.

3.1.1.1 Significant Nexus of Tributaries

On December 2, 2008, the Corps and the Environmental Protection Agency (EPA) issued joint guidance on implementing the U.S. Supreme Court decision in the consolidated cases *Rapanos v. United States* and *Carabell v. United States* (herein referred to simply as “Rapanos”) (Corps 2008b) which address the jurisdiction over waters of the United States under the Clean Water Act. In this joint guidance these agencies provide guidance on where they will assert jurisdiction over waters of the U.S.

The EPA and Corps will assert jurisdiction over the following waters:

- Traditional navigable waters
- Wetlands adjacent to traditional navigable waters
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (for example, typically three months).
- Wetlands that directly abut such tributaries.

The agencies generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

The agencies will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters; and
- Significant nexus includes consideration of hydrologic and ecologic factors.

3.1.1.2 Isolated Areas Excluded from Section 404 Jurisdiction

In addition to areas that may be exempt from Section 404 jurisdiction, some isolated wetlands and waters may also be considered outside of Corps jurisdiction as a result of the Supreme Court’s decision in *Solid Waste Agency of Northern Cook County (SWANCC) v. United States Army Corps of Engineers* (531 U.S. 159 [2001]). Isolated wetlands and waters are those areas that do not have a surface or groundwater connection to, and are not adjacent to a navigable “Waters of the U.S.,” and do not otherwise exhibit an interstate commerce connection.

3.1.1.3 Permitting Corps Jurisdictional Areas

To remain in compliance with Section 404 of the Clean Water Act, project proponents and property owners (applicants) are required to be permitted by the Corps prior to discharging or otherwise impacting waters of the United States. In many cases, the Corps must visit a proposed project area (to conduct a “jurisdictional determination”) to confirm the extent of area falling

under their jurisdiction prior to authorizing any permit for that project area. Typically, at the time the jurisdictional determination is conducted, applicants (or their representative) will discuss the appropriate permit application that would be filed with the Corps for permitting the proposed impact(s) to “waters of the United States.”

Pursuant to Section 404 of the Clean Water Act, the Corps normally provides two alternatives for permitting impacts to the type of “waters of the United States” found in the project area. The first alternative would be to use Nationwide Permit(s) (NWP). The second alternative is to apply to the Corps for an Individual Permit (33 CFR Section 235.5(2)(b)). The application process for Individual Permits is extensive and includes public interest review procedures (i.e., public notice and receipt of public comments) and must contain an “alternatives analysis” that is prepared pursuant to Section 404(b) of the Clean Water Act (33 U.S.C. 1344(b)). The alternatives analysis is also typically reviewed by the federal EPA and thus brings another resource agency into the permitting framework. Both the Corps and EPA take the initial viewpoint that there are practical alternatives to the proposed project if there would be impacts to waters of the U.S., and the proposed permitted action is not a water dependent project (e.g. a pier or a dredging project). Alternative analyses therefore must provide convincing reasons that the proposed permitted impacts are unavoidable. Individual Permits may be available for use in the event that discharges into regulated waters fail to meet conditions of NWP(s).

NWPs are a type of general permit administered by the Corps and issued on a nationwide basis that authorize minor activities that affect Corps regulated waters. Under NWP, if certain conditions are met, the specified activities can take place without the need for an individual or regional permit from the Corps (33 CFR, Section 235.5[c][2]). In order to use NWP(s), a project must meet 27 general nationwide permit conditions, and all specific conditions pertaining to the NWP being used (as presented at 33 CFR Section 330, Appendices A and C). It is also important to note that pursuant to 33 CFR Section 330.4(e), there may be special regional conditions or modifications to NWPs that could have relevance to individual proposed projects. Finally, pursuant to 33 CFR Section 330.6(a), Nationwide permittees may, and in some cases must, request from the Corps confirmation that an activity complies with the terms and conditions of the NWP intended for use (i.e., must receive “verification” from the Corps).

Prior to finalizing design plans, the applicant needs to be aware that the Corps maintains a policy of “no net loss” of wetlands (waters of the United States) from project area development. Therefore, it is incumbent upon applicants that propose to impact Corps regulated areas to submit a mitigation plan that demonstrates that impacted regulated areas would be recreated (i.e., impacts would be mitigated). Typically, the Corps requires mitigation to be “in-kind” (i.e., if a stream channel would be filled, mitigation would include replacing it with a new stream channel), and at a minimum of a 1:1 replacement ratio (i.e., one acre or fraction thereof of recreated for each acre or fraction thereof lost). Often a 2:1 replacement ratio is required. Usually the 2:1 ratio is met by recreation or enhancement of an equivalent amount of wetland as is impacted, in addition to a requirement to preserve an equivalent amount of wetland as is impacted by the project. In some cases, the Corps allows “out-of-kind” mitigation if the compensation site has greater value than the impacted site. For example, if project designs call for filling an intermittent drainage, mitigation should include recreating the same approximate jurisdictional area (same drainage widths) at an offsite location or on a set-aside portion of the

project area. Finally, there are many Corps approved wetland mitigation banks where wetland mitigation credits can be purchased by applicants to meet mitigation compensation requirements. Mitigation banks have defined service areas and the Corps may only allow their use when a project would have minimal impacts to wetlands.

3.1.2 APPLICABILITY TO GPA

Any project within the GPA that would require work in a “water of the United States” would require prior authorization from the Corps. Examples of activities that may require prior authorization from the Corps include, but are not limited to, installation of culverted crossings of a stream or creek, construction of stormwater outfall structures in a tributary (in drainages, creeks, streams, lakes), constructing a bridge with its footings in a tributary or in a wetland, filling a seasonal wetlands or vernal pools to construct a road or structure, construction of piers, docks, and the installation of bank stabilization revetments, etc. (and other projects that might fill a water of the U.S.). A wetland consultant can be hired by applicants to ascertain when a project would impact a water of the U.S. that would require prior authorization by the Corps.

If there is any reason for the County Planning Department to believe that a proposed project within the GPA could support waters of the U.S., the County Planning Department should require the project applicant to hire a qualified wetlands consultant to conduct a “preliminary wetland delineation” on the proposed project site. This preliminary wetland delineation would provide the County with an assessment of whether a project site may support waters of the U.S., and if a proposed project could impact waters of the U.S. If a project would impact waters of the U.S. it is incumbent on applicants to secure necessary permits/authorizations from the Corps prior to the time such features could be impacted.

Please be advised that a preliminary wetland delineation map prepared by a wetlands consultant needs to be “confirmed” by the Corps in order for the project applicant and the County to know the true extent of waters of the U.S. on a proposed project site. Note that the Corps will not authorize a permit for a proposed project without a Corps’ confirmed delineation map. Only the Corps can determine the extent of its jurisdiction so the Corps must determine when aquatic features, seasonal wetlands, tributaries, drainages, etc. fall within their jurisdiction pursuant to Section 404 of the Clean Water Act. For projects that might affect waters of the U.S., it is important for applicants to provide the County with a confirmed Corps jurisdictional map prior to authorizing a project pursuant to County regulations. Impacting waters of the U.S. is regarded as a significant adverse impact pursuant to CEQA.

3.2 State Water Resources Control Board (SWRCB) / California Regional Water Quality Control Board (RWQCB)

3.2.1 SECTION 401 OF THE CLEAN WATER ACT

The SWRCB and RWQCB regulate activities in "waters of the State" (which includes wetlands) through Section 401 of the Clean Water Act. While the Corps administers a permitting program that authorizes impacts to waters of the United States, including wetlands and other waters, any Corps permit authorized for a proposed project would be inoperative unless it is a NWP that has been certified for use in California by the SWRCB, or if the RWQCB has issued a project specific certification or waiver of water quality. Certification of NWPs requires a finding by the SWRCB

that the activities permitted by the NWP will not violate water quality standards individually or cumulatively over the term of the permit (the term is typically for five years). Certification must be consistent with the requirements of the federal Clean Water Act, the California Environmental Quality Act, the California Endangered Species Act, and the SWRCB's mandate to protect beneficial uses of waters of the State. Any denied (i.e., not certified) NWPs, and all Individual Corps permits, would require a project specific RWQCB certification of water quality.

Additionally, if a proposed project would impact waters of the State, including wetlands, the project applicant must demonstrate that the project is unable to avoid these adverse impacts, or water quality certification will most likely be denied. Section 401 Certification may also be denied based on significant adverse impacts to waters of the United States/State, including wetlands. The RWQCB has also adopted the Corps' policy that there shall be "no net loss" of wetlands. Thus, prior to certifying water quality, the RWQCB will impose avoidance mitigation requirements on project proponents that impact waters of the State.

3.2.2 APPLICABILITY TO THE GPA

Generally Corps permits authorized pursuant to Section 404 of the Clean Water Act (see Corps applicability) are not operable without State Water Resources Control Board certification of the Nationwide Permit (which occurs at the onset of each 5-Year Nationwide Permit program), or until a project has received "certification of water quality" from the RWQCB pursuant to Section 401 of the Clean Water Act. Any project within the GPA that would require work in a water of the U.S. would also be regarded as work in a "water of the State." Accordingly, prior authorization from the RWQCB pursuant to Section 401 of the Clean Water Act is required prior to completing such work. Examples of activities that could require prior authorization from the RWQCB include installing a culvert or stormwater outfall structure in a tributary (in drainages, creeks, streams, lakes), constructing a bridge with its footings in a tributary or in a wetland, filling in a seasonal wetlands or vernal pools to construct a road or structure (and other projects that might fill a water of the U.S.).

If there is any reason for the County Planning Department to believe that a proposed development property within the GPA could support waters of the State, the County Planning Department should require the project applicant to hire a qualified biological consultant to conduct a "preliminary wetland delineation" on the proposed project site. Since the RWQCB, at this time, does not have a formal method for delineating waters of the State/wetlands, this agency now relies on the Corps' confirmed delineation maps to depict areas that also would be regulated as waters of the State. Thus, any confirmed Corps map (Preliminary Jurisdictional Determination) prepared by the Corps for a project site will likely be accepted by the RWQCB. If the Corps confirms that there are "isolated waters" (which include wetlands, vernal pools, etc.) on a project site that are outside of the Corps' jurisdiction, impacts to isolated waters are nonetheless regulated by the RWQCB. Thus, a permit from the RWQCB would still be required (see Porter-Cologne Water Quality Control Act below). Impacting waters of the State would be a significant adverse impact pursuant to CEQA.

3.2.3 PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act, Water Code § 13260, requires that "any person discharging waste, or proposing to discharge waste, that could affect the waters of the State to

file a report of discharge” with the RWQCB through an application for waste discharge (Water Code Section 13260(a)(1). The term “waters of the State” is defined as any surface water or groundwater, including saline waters, within the boundaries of the State (Water Code § 13050(e)). It should be noted that pursuant to the Porter-Cologne Water Quality Control Act, the RWQCB also regulates “isolated wetlands,” or those wetlands considered to be outside of the Corps’ jurisdiction pursuant to the SWANCC decision (see Corps Section above).

The RWQCB generally considers filling in waters of the State to constitute “pollution.” Pollution is defined as an alteration of the quality of the waters of the state by waste that unreasonably affects its beneficial uses (Water Code §13050(1)). The RWQCB litmus test for determining if a project should be regulated pursuant to the Porter-Cologne Water Quality Control Act is if the action could result in any “threat” to water quality.

The RWQCB requires complete pre- and post-development Best Management Practices Plan (BMPs) of any portion of the project site that is developed. This means that a water quality treatment plan for the pre- and post-developed project site must be prepared and implemented. Preconstruction requirements must be consistent with the requirements of the National Pollutant Discharge Elimination System (NPDES). That is, a *Stormwater Pollution Prevention Plan* (SWPPP) must be developed prior to the time that a site is graded (see NPDES section below). In addition, a post construction BMPs plan, or a Stormwater Management Plan (SWMP) must be developed and incorporated into any site development plan.

3.2.4 APPLICABILITY TO THE GPA

It is incumbent upon applicants to ensure that proposed projects comply with the Porter-Cologne Water Quality Control Act. Since any “threat” to water quality could conceivably be regulated by the RWQCB pursuant to the Porter-Cologne Water Quality Control Act, the County Planning Department shall verify that proposed projects include adequate pre- and post-construction Best Management Practices Plan (BMPs) as necessary to protect waters of the State. Please also review National Pollutant Discharge Elimination System (NPDES) requirements presented below as proposed projects in compliance with the Storm Water Management requirements of the NPDES generally will also be in compliance with the storm water management practices necessary to remain in compliance with the Porter-Cologne Water Quality Control Act.

It is incumbent upon applicants to work closely with the RWQCB to ensure that they are in compliance with laws/regulations such as the Porter-Cologne Water Quality Control Act. It is the Regional Board’s intent that applicants implement applicable water quality objectives and that they protect the “beneficial uses” of “receiving waters.” Discharges shall not cause or contribute to violations of water quality objectives nor shall they cause certain conditions to occur which create a condition of nuisance or water quality impairment in receiving waters. Accordingly, the Regional Board is requiring that these requirements be addressed through the implementation of BMPs to reduce pollutants in stormwater.

Also of significance, if the Corps determines there are “isolated waters” on proposed development property within the GPA that are outside of the Corps jurisdiction pursuant to the Clean Water Act, these “isolated waters” would still be regarded by the RWQCB as waters of the State under the regulatory authority of the Porter-Cologne Water Quality Control Act.

Accordingly, a permit is required from the RWQCB prior to the time any wetland or other water, which include wetlands, vernal pools, creeks (all tributaries), and/or isolated features including wetlands and other waters would be impacted. Prior to implementing any project that would impact waters of the state including but not limited to the construction of stormwater outfalls, bridges, piers, docks, bank stabilization revetments, culverted crossings, etc., applicants must determine if the RWQCB will require “Waste Discharge Requirements” (i.e., a permit) for such proposed activities.

Finally it should be noted that prior to issuance of any permit from the RWQCB this agency will require submittal of a Notice of Determination (NOD) indicating that the proposed project has completed a review conducted pursuant to CEQA. The pertinent sections of the CEQA document (typically the biology section) are often submitted to the RWQCB for review prior to the time this agency will issue a permit for a proposed project. It is the responsibility of the project applicant to submit the NOD to the RWQCB and to obtain any necessary permit(s) from this agency. The County Planning Department will require verification that all applicable RWQCB permits have been authorized by the RWQCB for a proposed project.

3.2.5 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

In 1972 the Clean Water Act was amended to state that the discharge of pollutants to waters of the United States from any point source is unlawful unless the discharge is in compliance with an NPDES permit. The 1987 amendments to the Clean Water Act added Section 402(p) which establishes a framework for regulating municipal and industrial stormwater discharges under the NPDES Program.

While federal regulations allow two permitting options for stormwater discharges (individual permits and General Permits), the SWRCB has elected to adopt only one statewide General Permit at this time that will apply to all stormwater discharges associated with construction activity, except from those on Tribal Lands, in the Lake Tahoe Hydrologic Unit, and those performed by the California Department of Transportation (CalTrans). The General Permit requires all dischargers where construction activity disturbs greater than one acre of land or those sites less than one acre that are part of a common plan of development or sale that disturbs more than one acre of land surface to:

1. Develop and implement a Storm Water Pollution Prevention Plan (SWPPP) which specifies Best Management Practices (BMPs) that will prevent all construction pollutants from contacting stormwater with the intent of keeping all products of erosion from moving off site into receiving waters.
2. Eliminate or reduce non-stormwater discharges to storm sewer systems and other waters of the nation.
3. Perform inspections of all BMPs.

This General Permit is implemented and enforced by the nine California RWQCBs.

Types of Construction Activity Covered by the General Permit

Construction activity subject to this General Permit includes clearing, grading, and disturbances to the ground such as stockpiling, or excavation that results in soil disturbances of at least one acre or more of total land area. Construction activity that results in soil disturbances to a smaller area would still be subject to this General Permit if the construction activity is part of a larger common plan of development that encompasses greater than one acre of soil disturbance, or if there is significant water quality impairment resulting from the activity. Construction activity does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of the facility, nor does it include emergency construction activities required to protect public health and safety. Project proponents (landowners) should confirm with the local RWQCB whether or not a particular routine maintenance activity is subject to this General Permit.

3.2.6 2009 CHANGES TO THE NPDES PROGRAM AND USE OF THE GENERAL PERMIT

[This section excerpted in part from Morrison Foerster Legal Updates and News September 2009, by Robert L. Falk and Corinne Fratini]. The California State Water Resources Control Board (“State Water Board”) has adopted a new National Pollutant Discharge Elimination System General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (“Construction General Permit”). The new Construction General Permit which was issued pursuant to the federal Clean Water Act and is enforceable through citizens’ suits, represents a dramatic shift in the State Water Board’s approach to regulating new and redevelopment sites, imposing new affirmative duties and fixed standards on builders and developers. Changes to use of the Construction General Permit became effective on July 1, 2010.

The new Construction General Permit does not completely carry forward the former qualitative and self-selected compliance approach based on preparation of a SWPPP. Instead, developers and construction contractors must implement specific BMPs, achieve quantitatively-defined (i.e., numeric) pollutant-specific discharge standards, and conduct much more rigorous monitoring based on the project’s projected risk level.

The State Water Board’s new quantitative standards take a two-tiered approach, depending on the risk level associated with the site in question. Exceedance of a benchmark Numeric Action Level (“NAL”) measured in terms of pH and turbidity (a measure related to both the amount of sediment in and the velocity of site runoff) triggers an additional obligation to implement additional BMPs and corrective action to improve SWPPP performance. For medium- and high-risk sites, failure to meet more stringent numeric standards for pH and turbidity, known as Numeric Effluent Limitations (“NELs”), will also automatically result in a permit violation and be directly enforceable in administrative or, in the case of a citizens’ group taking up the cause, judicial forums. New minimum BMPs include Active Treatment Systems, which may be necessary where traditional erosion and sediment controls do not effectively control accelerated erosion; where site constraints inhibit the ability to construct a correctly-sized sediment basin; where clay and/or highly erosive soils are present; or where the site has very steep or long slope lengths.

In addition, the new Construction General Permit includes several “post-construction” requirements. These requirements entail that site designs provide no net increase in overall site

runoff and match pre-project hydrology by maintaining runoff volume and drainage concentrations. To achieve the required results where impervious surfaces such as roofs and paved surfaces are being increased, developers must implement non-structural off-setting BMPs, such as landform grading, site design BMPs, and distributed structural BMPs (bioretention cells, rain gardens, and rain cisterns). This “runoff reduction” approach is essentially a State Water Board-imposed regulatory requirement to implement Low Impact Development (“LID”) design features. Volume that cannot be addressed using non-structural BMPs must be captured in structural BMPs that are approved by the Regional Water Board.

Finally, the new Construction General Permit requires electronic filing of all Permit Registration Documents, NOIs, SWPPPs, annual reports, Notices of Termination, and NAL/NEL Exceedance Reports. This information will be readily available to the Water Boards and citizen enforcers who can then determine whether to initiate enforcement actions that can result in significant penalties and legal fees.

It should be noted that the State Water Board’s Storm Water Management regulations, which are typically enforced by the RWQCB, change year to year. Accordingly, up to date information should always be researched by applicants starting with the RWQCB’s web page found at: <http://www.waterboards.ca.gov/>.

3.2.7 APPLICABILITY TO GPA

Project applicants are required to implement appropriate source control and site design measures, and to design and implement stormwater treatment measures in order to reduce the discharge of stormwater pollutants to the *maximum extent practicable*. Applicants must provide a detailed and realistic site design *and impervious surface area calculations*. This site design *and calculations* will be used by the County to determine/*verify* the amount of impervious surface area that is being created or replaced. Dischargers are individually responsible for implementing BMPs to prevent or reduce pollutants in stormwater, and shall provide funds for capital, operation, and maintenance expenditures necessary to implement such BMPs.

The County should require evidence from applicants that coverage under the Construction General Permit has been obtained from the RWQCB/SWRCB prior to the time any grading permits are authorized that would result in impacts that exceed one acre.

3.3 California Department of Fish and Wildlife Protections

3.3.1 SECTION 1602 OF CALIFORNIA FISH AND GAME CODE

Pursuant to Section 1602 of the California Fish and Game Code, California Department of Fish and Wildlife (the Department) regulates activities that divert, obstruct, or alter stream flow, or substantially modify the bed, channel, or bank of a stream which the Department typically considers to include the outward boundary of any associated riparian vegetation. Any proposed activity in a natural stream channel that would substantially adversely affect an existing fish and/or wildlife resource, would require entering into a Streambed Alteration Agreement (SBAA) with the Department prior to commencing with work in the stream. However, prior to authorizing such permits, the Department typically reviews an analysis of the expected biological impacts, any

proposed mitigation plans that would be implemented to offset biological impacts and engineering and erosion control plans.

3.3.2 APPLICABILITY TO THE GPA

If a proposed project within the GPA would affect a stream, drainage, river, or lake or its riparian vegetation, a SBAA may be necessary. Examples of projects that would trigger a requirement for a SBAA include stormwater outfalls, bridges, piers, docks, bank stabilization revetments, culverted crossings, vegetation removal from within 1602 jurisdictional limits, etc. Prior to issuing a grading permit or other discretionary permit for a project that may affect 1602 protected tributaries, the County should advise the project applicant to hire a biological consultant to assist with potential Section 1602 issues. The County should confirm prior to permitting grading or other actions that would affect a tributary that a SBAA is or is not required by the Department. If a SBAA is required, a copy should be provided to the County prior to the time applicants exercise any permit authorized by the County where the permitted actions could affect a 1602 regulated stream channel (tributary) or lake.

4. VEGETATION AND WILDLIFE

M&A biologists did not have the opportunity to visit the vast and various plant communities/habitats present within the County GPA in order to prepare this Biological Resources Setting section. Instead, M&A biologists relied on several comprehensive vegetation manuals and our experience in the County to characterize the general vegetation types present. Some of the vegetation manuals consulted included:

A Manual of California Vegetation, Second Edition by John O. Sawyer, Todd Keeler-Wolf, and Julie M. Evens. 2009;

Terrestrial Vegetation of California, Third Edition by Michael Barbour, Todd Keeler-Wolf, and A.A. Schoenherr, eds. 2007;
and,

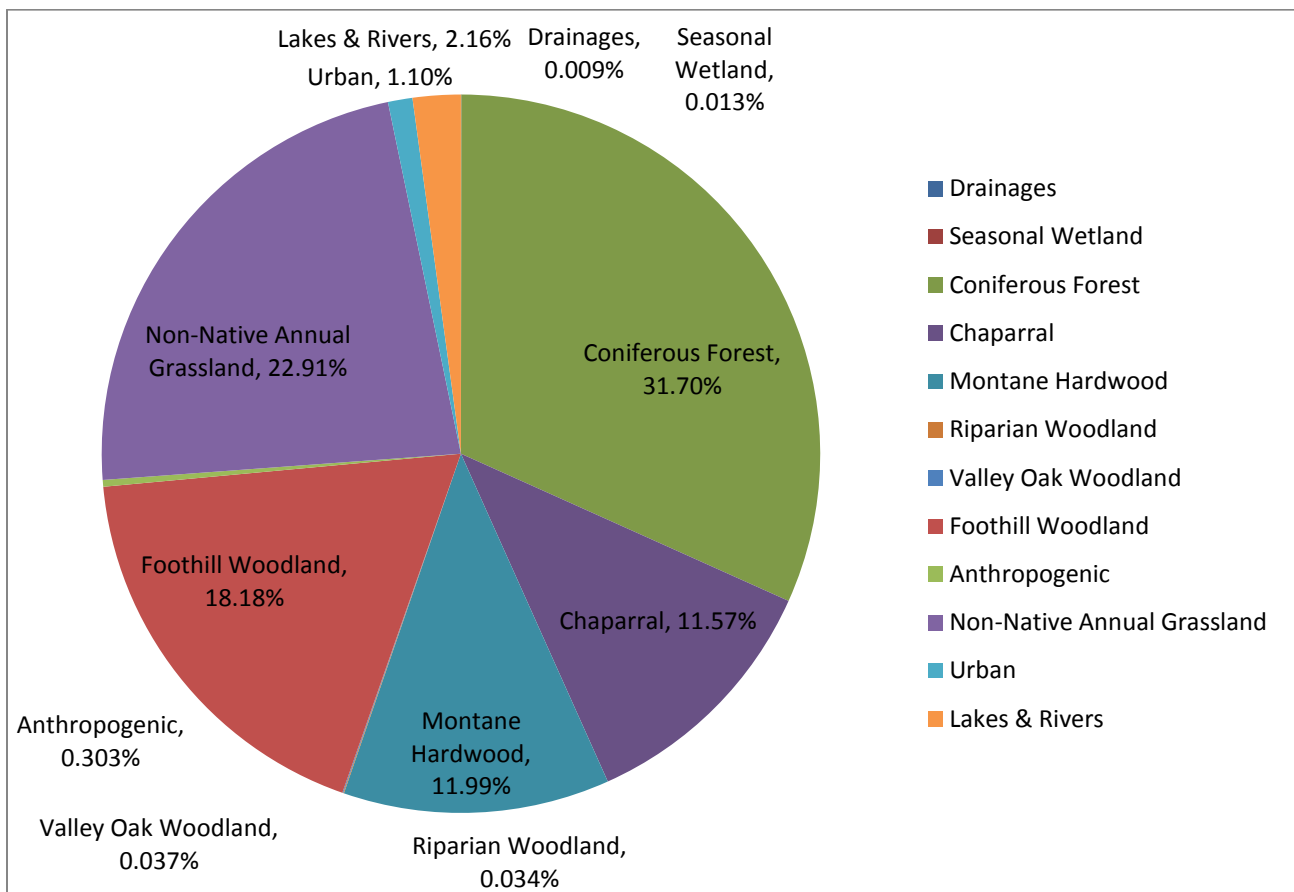
Preliminary Descriptions of the Terrestrial Natural Communities of California by Robert F. Holland. 1986.

M&A also consulted the U.S. Department of Agriculture's Forest Service vegetation communities map provided by the Calaveras County Planning Department's Geographic Information Systems (GIS) staff. This vegetation communities map is included as Figure 4.

Nomenclature used for plant names follows *The Jepson Manual* Second Edition (Baldwin 2012) and changes made to this manual as published on the Jepson Interchange Project website (<http://ucjeps.berkeley.edu/interchange/index.html>). Nomenclature for wildlife follows the California Department of Fish and Wildlife's (the Department) *Complete list of amphibian, reptile, bird, and mammal species in California* (2011) and any changes made to species nomenclature as published in scientific journals since the publication of the Department's list. Below we present Table 1 which shows the acreage of each vegetation type within the GPA.

Table 1. Plant Communities/Land Use Types Within the GPA

	Area (Acres)	% of County
Calaveras County	663,452.7	
Drainages	57.0	0.009%
Seasonal Wetland	87.1	0.013%
Coniferous Forest	210,307.7	31.70%
Chaparral	76,782.5	11.57%
Montane Hardwood	79,539.0	11.99%
Riparian Woodland	226.0	0.034%
Valley Oak Woodland	246.0	0.037%
Foothill Woodland	120,607.6	18.18%
Anthropogenic	2,008.1	0.303%
Ruderal Non-Native Annual Grassland	151,975.3	22.91%
Urban	7,313.2	1.10%
Lakes & Rivers	14,303.2	2.16%



4.1 Anthropogenic Communities

Communities dominated by plants that are introduced by humans and established or maintained by human disturbance are “anthropogenic communities.” Primarily, there are three such communities in the GPA: agrestal (crops), plantation (vineyard and orchard), and ruderal. While small gardens and both residential and commercially landscaped areas are also anthropogenic communities, they are highly variable in composition, are typically intensively managed and maintained, and as such are not discussed further herein. The three primary anthropogenic communities listed above make up approximately 2,008 acres or 0.30% of the GPA (U.S. Forest Service GIS data/shape files). These three communities are discussed further in the sections below.

4.1.1 AGRESTAL COMMUNITIES (CROPLANDS)

An “agrestal” community is a weed dominated community of rural, agricultural areas (Holland & Keil 1995). Agrestal communities form in areas that have been disturbed by cultivation. Plants introduced by man, generally for agricultural commodity crops (op. cit.), dominate these communities. Many species of weeds thrive in the same environments as crop plants. The weed species are able to grow to maturity and to reproduce side by side with crop plants. Most agrestal areas in the GPA are in the western half of the County (Figure 4).

In general, agrestal areas do not provide habitat for many wildlife species. Most farms are “clean farmed” meaning that few or little naturalized habitats remain within the farmed areas. The intense cultivation and manipulation of the soil, including the application of pesticides, herbicides, and fertilizers tend to limit the number of species that occupy or use cropland habitats. Nevertheless, hay fields can provide habitat for a number of resident species, particularly small mammal populations, including California meadow vole (*Microtus californicus*), western harvest mice (*Reithrodontomys megalotis*), deer mice (*Peromyscus maniculatus*), and California ground squirrels (*Spermophilus beechyi*). These rodents in turn serve as prey for various raptors, including red-tailed hawk (*Buteo jamaicensis*), white-tailed kite (*Elanus leucurus*), and red-shouldered hawk (*Buteo lineatus*), among others.

Migratory bird species also use agrestal communities, particularly in the winter months after crops are harvested. Waterfowl and shorebirds often alight in agricultural fields in the winter months en route to and from nesting grounds. Flooded conditions provide foraging opportunities for shore birds that probe for invertebrates in the substrate. Common waterfowl species such as mallards (*Anas platyrhynchos*), snow geese (*Chen caerulescens*), and Canada geese (*Branta canadensis*) often feed on leftover crops that are incidentally discarded during and after harvesting. Other birds also take advantage of cut over hay fields to forage for invertebrates in these fields while migrating through the area.

4.1.2 PLANTATION

In many areas of California plantations of trees have been established for various purposes. Some trees were planted in rows as windbreaks; some were planted over large areas for agricultural purposes. Christmas tree farms, such as those found within the GPA, are a type of plantation community. Another type of plantation is an orchard. Nut and fruit crops such as walnuts (*Juglans* spp.), almonds (*Prunus dulcis*), pistachios, and peaches (*Prunus* spp.) are

planted primarily in the western portion of the GPA. Management of land on which these trees are growing ranges from regular cultivation of the soil or mowing of the herbaceous understory to little or no secondary disturbance. Depending upon the nature and intensity of the disturbance associated with management of the plantation, variable assemblages of exotic or native species may grow under and between the trees. The overall vegetation may have the appearance and species composition of a cultivated field, a pasture, or a foothill woodland community.

Wildlife found in orchards is dependent upon the amount of control used. Rodenticides are often applied to control ground squirrels and other agricultural “pests.” Herbicides and pesticides are often applied to the trees to control the insect damage which in turn limits the number of birds that will be found foraging for insects among and on the trees. Orchards, with few chemical controls, will attract birds such as the western scrub jay, the American robin, the northern mockingbird, and rodents and rabbits such as the California ground squirrel, Botta’s pocket gopher, and the black-tailed hare (*Lepus californicus*).

Vineyards are another type of plantation community because a vineyard is comprised of grape vines typically planted in rows. Vineyards are also present within the GPA. Vineyards, unless organically grown, apply a high amount of pesticides and herbicides and rodenticides. The use of these chemicals limits the diversity of animals that are found in the vineyards. Typically, vineyards do not constitute good native plant or wildlife habitats.

4.1.3 RUDERAL

Roadsides, small vacant or abandoned lots (that is, previously paved or graveled), and other disturbed, open areas within the GPA are dominated by ruderal plant species. Ruderal communities are assemblages of plants that thrive in waste areas and similar disturbed sites in towns and cities (Holland and Keil 1995). Ruderal habitats are dominated by introduced grasses and forbs (broad-leaved plants) that eventually out-compete and replace the original native grassland species. Examples of ruderal plant species found within the GPA are yellow star thistle (*Centaurea solstitialis*), filarees (*Erodium botrys*, *E. brachycarpum*, *E. cicutarium*, *E. moschatum*), bind weed (*Convolvulus arvensis*), sow’s ear (*Sonchus oleraceus*, *S. asper*), four-leaved allseed (*Polycarpon tetraphyllum tetraphyllum*), prickly lettuce (*Lactuca serriola*), sweet fennel (*Foeniculum vulgare*), and poison hemlock (*Conium maculatum*).

Animals found in ruderal habitats are typically those species adapted to man and man-induced disturbance such as house sparrow (*Passer domesticus*), house finch (*Carpodacus mexicana*), European starling (*Sturnus vulgaris*), northern mockingbird, rock pigeon (*Columba livia*), mourning dove (*Zenaida macroura*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), and feral cat (*Felis catus*).

4.2 Upland Plant Communities and Associated Wildlife Habitats

4.2.1 NON-NATIVE ANNUAL GRASSLAND

Prior to the settlement of Europeans in California, California grasslands and savannahs were dominated by native, perennial bunchgrasses. When the Europeans settled California, woodland vegetation was cleared for settlement, to allow grazing opportunities and for commercial purposes. At the same time a variety of Mediterranean grasses and forbs (broad-leaved plants) were brought to California and introduced as crops or ornamental species, or inadvertently were transported to California grassland communities in the fur and digestive systems of livestock. Land use changes including land clearing, planting to livestock friendly grasses, and heavy domestic animal grazing changed the landscape and the oak savannah/ grassland communities. The highly palatable native grassland plants and forbs were out-competed by the introduced exotic species. Today, introduced species tolerant of grazing pressure, particularly annual grasses of Eurasian ancestry, such as bromes (*Bromus* spp.), oats (*Avena* spp.), and barley (*Hordeum* spp.) have mostly displaced the native grasses, creating a non-native annual grassland community. Grasslands within the General Plan area are an example of how livestock grazing and other man-induced activities can greatly change the vegetative composition of the landscape. Calaveras County contains approximately 151,975 acres of non-native grassland vegetation.

Grasslands in the GPA have been grazed by livestock over the past two centuries. Such grasslands provide habitat for common, granivorous (seed-eating) birds such as mourning dove (*Zenaida macroura*), house finch (*Carpodacus mexicanus*), savannah sparrow (*Passerculus sandwichensis*), and lesser goldfinch (*Carduelis psaltria*). These grasslands also provide habitat for common insectivorous birds such as western meadowlark (*Sturnella neglecta*), western bluebird (*Sialia mexicana*), Say's phoebe (*Sayornis saya*), American pipit (*Anthus rubescens*), and northern mockingbird (*Mimus polyglottos*), among others. Other common animals that occur in grassland habitats include California ground squirrel (*Spermophilus beecheyi*), black-tailed hare (*Lepus californicus*), brush rabbit (*Sylvilagus bachmani*), Botta's pocket gopher (*Thomomys bottae*), California meadow vole (*Microtus californicus*), western harvest mouse (*Reithrodontomys megalotis*), and raptors such as American kestrel (*Falco sparverius*) and red-tailed hawk (*Buteo jamaicensis*), which prey on the smaller birds and mammals. Oak trees scattered in the grassland community provide perching opportunities and vantage points for raptors in search of their prey. Larger mammals such as coyote (*Canis latrans*), European red fox (*Vulpes vulpes*), striped skunk, and Virginia opossum, are common or can be expected to be in grasslands within the General Plan Area.

4.2.2 CHAPARRAL

There are many different chaparral communities within Calaveras County (Sawyer et al 2009) totalling approximately 76,783 acres. For purposes of streamlining this document, chaparral is discussed in a general nature and specific variations of this community are not discussed. Chaparral is a one to two layer community characterized by a dominance of drought-adapted sclerophyllous (having thick, leathery leaves), evergreen shrubs approximately six to thirteen feet tall (Holland 1986). Common dominant shrub species for this community type include chamise (*Adenostoma fasciculatum*), toyon (*Heteromeles arbutifolia*), black sage (*Salvia mellifera*), different species of manzanita (e.g., *Arctostaphylos patula* and *Arctostaphylos*

viscida), and ceanothus (e.g., *Ceanothus cuneatus* and *Ceanothus integerrimus*). Scrub oaks (e.g., *Quercus dumosa* and *Quercus garryana*) and California huckleberry (*Vaccinium ovatum*) are also likely in this community within the GPA. These shrubs often form a dense, impenetrable thicket with their overlapping canopies that can shade out herbaceous species. The herbaceous understory, if present, varies both seasonally and annually. This community is adapted to fire and many of its species are capable of stump sprouting and the mix of annual grasses and forbs change from year to year especially after a fire event. This plant community is well distributed from northwestern Baja to southern Oregon on shallow, rocky soils.

Common types of chaparral that occur within the GPA include chamise chaparral which is dominated by chamise (*Adenostoma fasciculatum*); buckbrush chaparral which is dominated by buckbrush (*Ceanothus cuneatus*); and, northern mixed chaparral which is dominated by a mix of manzanita (*Arctostaphylos* spp.) and ceanothus species. Ione chaparral, while narrowly restricted in the County GPA, provides habitat for several federal and state listed plant species.

Ione chaparral is a plant community restricted to the coarse, very acidic, nutrient-poor soils of the Ione Formation. This geologic formation occurs in central portions of Butte and Yuba Counties, the western portions of Nevada, Placer, El Dorado, Amador and Calaveras Counties. It extends as far south as Madera County (Sawyer et al 2009). These acidic, nutrient-poor soils are incompatible with most vegetation, not only because of their low macronutrients such as calcium, nitrogen, and magnesium but also because of their high amounts of other elements that most plants find toxic, such as aluminum (Holzman & Meyer 2004). A number of plant species uniquely adapted to Ione Formation soils occur in this plant community, and are classified as special-status plants. Ione manzanita (*Arctostaphylos myrtifolia*), a federally listed threatened species, is the dominant species of Ione chaparral, where it occurs in dense stands. Four other special-status plant species are associated with Ione chaparral: Parry horkelia (*Horkelia parryi*) (CNPS Rank 1B), Ione buckwheat (*Eriogonum apricum* var. *apricum*) (federal and state listed endangered; CNPS Rank 1B), Irish Hill buckwheat (*Eriogonum apricum* var. *prostratum*) (federal and state listed endangered; CNPS Rank 1B), and Bisbee Peak rush-rose (*Helianthemum suffrutescens*; known as *H. scoparium* in The Jepson Manual 1993 and 2012) (CNPS Rank 3). Other species associated with this plant community include white-leaf manzanita (*Arctostaphylos viscida*), interior live oak (*Quercus wislizenii*), scrub oak (*Quercus berberidifolia*), chamise, coyote brush (*Baccharis pilularis*), California yerba santa (*Eriodictyon californicum*), toyon (*Heteromeles arbutifolia*) and hoary coffeeberry (*Frangula californica tomentella*).

Many wildlife species travel over and through the chaparral on their way to other habitats. Only a few call it home year-round. Those birds, mammals, and reptiles that are resident in chaparral (that is, den, nest, and forage in the chaparral) include California thrasher (*Toxostoma redivivum*), wrentit (*Chamaea fasciata*), spotted towhee (*Pipilo maculatus*), California quail (*Callipepla californica*), Bewick's wren (*Thryomanes bewickii*), brush rabbit, Botta's pocket gopher, California mouse (*Peromyscus californicus*), striped racer (*Masticophis lateralis*), western fence lizard (*Sceloporus occidentalis*), and western rattlesnake (*Crotalus viridis*).

4.2.3 CONIFER FOREST COMMUNITIES

Several different coniferous trees (that is, needle-leaved or scale-leaved trees that bear cones) are present within the GPA. For purposes of this document they are being discussed together and are

only being broken down into two separate communities based on elevation. These two communities are: (1) upper montane mixed coniferous forest, and (2) lower montane mixed coniferous forest. These coniferous forests cover approximately 210,307 acres of Calaveras County's 663,452 acres or 32% of the GPA area. These two classifications include the Holland (1986) community types: Westside ponderosa pine forest, Sierran mixed conifer forest, Sierran white fir forest, and big tree forest in the lower montane zone; and, in the upper montane zone includes Jeffery pine forest, Jeffery pine-fir forest, and red fir forest. Mixed conifer forest, upper and lower montane, forms the dominant vegetation type for the GPA at elevations above 2,500 feet; this covers the eastern half of the county (see Figure 4).

4.2.3.1 Lower Montane Mixed Conifer Forest

Lower montane vegetation is dominated by forests. These forests are often classified in varied ways but most broadly referred to as Sierra mixed-conifer forests (Barbour et al 2007). The dominant tree species, including ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), and white fir (*Abies concolor*), have broadly overlapping distributions. In the GPA all three of these dominant tree species are present. Ponderosa pine and other mixed conifer trees dominate much of the lower montane zone. At the lowest margins ponderosa pine forest intermingles with chaparral. Stands of black oak or individuals of ponderosa pine and incense cedar may occur well down into chaparral or foothill woodlands on favorable sites, often deeper soils or drainages. Ponderosa pine or Douglas fir often occur interspersed with canyon live oak as individual or small stands where soils are deeper.

The giant sequoia (*Sequoia giganteum*) groves of the central and southern Sierra Nevada (also commonly referred to as "big tree forests") present a special case of mixed-conifer forests. These groves are typically dominated by white fir, or at higher elevations by red fir, with sugar pine (*Pinus lambertiana*) as an important component (Barbour et al 2007). Giant sequoias are commonly third in abundance in these groves, although their basal area often exceeds that of other species (op. cit.). There is one occurrence of giant sequoia grove/big tree forest in Calaveras County, the North Calaveras Grove in the Calaveras Big Trees State Park.

4.2.3.2 Upper Montane Mixed Conifer Forest

Upper montane vegetation types grow at elevations above white fir and mixed-conifer series of the Sierra Nevada. The elevation of this transition from lower montane forests occurs at about 1,800 meters (5,905 feet) above sea level in the central and northern Sierra Nevada. In addition to coniferous forests, montane meadows, aspen, montane chaparral, and non-forested rock outcrops are prevalent in this zone. There are three major community types of distinctive conifer composition that form the upper montane forests. These are red fir forests, lodgepole pine forests, and Jeffrey pine forests.

Red fir forests, composed of a stand of red fir (*Abies magnifica*) trees, lie in a belt immediately above montane white fir and mixed-conifer forests. The dense canopy cover in red fir forests reduces light penetration and wind. Red fir is a large and long-lived conifer. Stands of red fir forest are often virtual monocultures of this species. At its lower margin, red fir often mixes with white fir and sugar pine, and less commonly with giant sequoia. At higher elevations red fir can

be found with lodgepole pine (*Pinus contorta murrayana*), Jeffrey pine (*Pinus jeffreyi*), and mountain hemlock (*Tsuga mertensiana*).

Lodgepole pine forests are in open stands that make up a widespread upper montane forest over much of the Sierra Nevada. These forests generally occur at elevations of about 1,830 to 2,400 meters in the northern Sierra Nevada. The generally low stature and open stand structure of lodgepole pine forests is a function of severe climate conditions where it grows at the upper elevations and the thin, nutrient-poor soils that characterize this zone. Commonly there are few understory shrubs and little soil litter accumulations in these stands (Barbour et al 2007).

Jeffery pine replaces the ponderosa pine in the upper montane zone of the Sierra Nevada. Its belt of primary occurrence lies at 1,600 to 2,600 meters (5,249 to 8,530 feet) above sea level in the southern Sierra Nevada and 1,520 to 1,830 meters (4,986 to 6003 feet) above sea level in the northern Sierra Nevada (Barbour et al 2007). On the western slopes of the range, Jeffrey pine most commonly occurs in mixed stands with white fir and incense cedar at lower elevations and with red fir and lodgepole pine at higher elevations. The understory is composed of shrub species typically found in montane chaparral such as *Ceanothus* spp. and manzanitas (*Arctostaphylos* spp.).

Coniferous forests are densely wooded habitats that provide wildlife with nesting opportunities, denning opportunities, cones and seeds for foraging, and bark, leaf duff, and fallen logs to support and recruit insect populations which in turn provide food for reptiles, amphibians, birds, and mammals. Examples of wildlife expected in the GPA's coniferous forest habitats are Northern goshawk (*Accipiter gentilis*), common raven (*Corvus corax*), Steller's jay (*Cyanocitta stelleri*), northern flicker (*Colaptes auratus*), pileated woodpecker (*Dryocopus pileatus*), white-headed woodpecker (*Picoides albolarvatus*), downy woodpecker (*Picoides pubescens*), Clark's nutcracker (*Nucifraga columbiana*), varied thrush (*Ixoreus naevius*), American robin (*Turdus migratorius*), purple finch (*Carpodacus purpureus*), mountain chickadee (*Poecile gambeli*), brown creeper (*Certhia americana*), black bear (*Ursus americanus*), mule deer (*Odocoileus hemionus*), and mountain lion (*Felis concolor*). Examples of Neotropical migrant birds likely to be found in coniferous forests include olive-sided flycatcher (*Contopus cooperi*), Pacific-slope flycatcher (*Empidonax difficilis*), and western wood-pewee (*Contopus sordidulus*).

4.2.4 HARDWOOD FOREST AND WOODLAND COMMUNITIES

Hardwood forests and woodlands are dominated by evergreen tree species (such as evergreen oaks (*Quercus* spp.) and madrone (*Arbutus menziesii*)) and broad-leaved deciduous trees (such as some species of oaks, maples (*Acer macrophyllum*) and alders (*Alnus* spp.). Coniferous trees (such as firs and pines) may also be present.

Hardwood forests in the GPA include montane hardwood and montane hardwood-conifer forests along the drainages of major rivers and aspen (*Populus tremuloides*) forests at high elevations. Examples of montane hardwood and hardwood-conifer forests found within the GPA are madrone forest and McNab cypress woodland. Montane hardwood communities cover approximately 79,539 acres of the GPA.

Examples of woodland communities present in the GPA are foothill woodland (covering approximately 120,608 acres of the GPA), valley oak woodland (covering approximately 246 acres of the GPA), and riparian woodland (covering approximately 226 acres of the GPA). The plant communities are further described in the paragraphs below.

4.2.4.1 Madrone Forest

Madrone forest is a forest alliance listed in A Manual of California Vegetation (Sawyer et al 2009). Madrone is a fast-growing, evergreen hardwood tree that is dominant or co-dominant in the tree canopy. It occurs with big leaf maple, tan oak (*Lithocarpus densiflorus*), Douglas fir and various species of oak. The shrub layer is sparse to intermittent. Madrone forest is found in the western portion of the GPA along stream terraces and upland slopes with productive soils or steep slopes with shallow, rocky, infertile soils at elevations from 100-1,400 meters (op. cit). Madrone forest fits the Holland (1986) classification of “mixed evergreen forest.” It also falls under the U.S. Forest Service classification of “montane hardwood” and is included under this category on Figure 4 and Table 1 of this report.

4.2.4.2 McNab Cypress Woodland

This is the classification given to a woodland community dominated by McNab cypress trees (*Hesperocyparis macnabiana*, formerly *Callitropsis macnabiana*) (Sawyer et al 2009). This woodland occurs at elevations of 300-1,100 meters (984 to 3,608 feet) above sea level in parts of Calaveras County that also support knob cone pine, foothill pine, and manzanita (*Arctostaphylos viscida*), though the shrub layer is sparse to intermittent. McNab cypress woodland can be found on open slopes and ridges with soils derived from basalt, conglomerate, gabbro, greenstone, or serpentine. This woodland community falls under the U.S. Forest Service classification of “montane hardwood” and is included under this category on Figure 4 and Table 1 of this report.

Wildlife found in the madrone forest and McNab cypress woodland communities include red-tailed hawk, acorn woodpecker (*Melanerpes formicivorus*), western scrub jay, hairy woodpecker (*Picoides villosus*), downy woodpecker, chestnut-backed chickadee (*Poecile rufescens*), Anna’s hummingbird (*Calypte anna*), mule deer, western fence lizard, western rattle snake, deer mouse (*Peromyscus maniculatus*), Botta’s pocket gopher, raccoon, striped skunk, and Virginia opossum, among others.

4.2.4.3 Foothill Woodland

Foothill woodland fits the Holland classification of blue oak woodland. Foothill woodland within the GPA is dominated by blue oaks (*Quercus douglasii*) and interior live oaks (*Quercus wislizenii*). Blue oaks are common in drier areas and on very shallow soils. Interior live oak is more common on moist north and east-facing slopes. California buckeye is scattered throughout, but is mostly associated with the live oak phase of the woodland. Foothill pine (*Pinus sabiniana*) is also a common native associate. Grasses and other herbaceous species from the surrounding grassland typically form the understory in the blue oak phase, whereas buck brush (*Ceanothus cuneatus* var. *cuneatus*), toyon (*Heteromeles arbutifolia*), and poison oak (*Toxicodendron diversilobum*) are common understory shrubs in the interior live oak phase. Typical wildlife found in Foothill Woodland is discussed in Valley Oak Woodland below.

4.2.4.4 Valley Oak Woodland

Valley oak woodland is dominated by valley oak (*Quercus lobata*) trees. The valley oak tree is the “monarch of California oaks by virtue of its size, age, and beauty” (Pavlik et al 1991). Valley oak may be the largest North American oak (op. cit.). The valley oak is a winter-deciduous tree with a round, spreading canopy of massive limbs when mature. Smaller branches on mature trees will sometimes droop or weep, extending all the way to the ground. Valley oak woodlands commonly occur on deep alluvial soils of valley flood plains. The community varies from open savannas to dense forest-like stands along rivers and other drainages. The understory is typically herbaceous, supporting annual and perennial grasses and forbs typical of the surrounding grassland community.

Oak trees are known to provide habitat for a variety of wildlife species. Hundreds of vertebrate species and thousands of invertebrate species are associated with California’s oak habitats (Pavlik et al. 1991). Oak acorns, leaves, wood, and sap are sustenance for a myriad of insects, birds, and mammals. Wildlife species expected to occur within the GPA’s foothill and valley oak woodland communities includes amphibian species such as the arboreal salamander (*Aneides lugubris*) and California slender salamander (*Batrachoseps attenuatus*). These two salamander species are commonly found underneath rotting logs and oak leaf litter on the woodland floor. Insectivorous bird species such as American robin, varied thrush, northern flicker, Steller’s jay, western scrub jay, Nuttall’s woodpecker (*Picoides nuttalli*), brown creeper, ruby crowned kinglet (*Regulus calendula*), oak titmouse (*Parus inornatus*), chestnut-backed chickadee, and white-breasted nuthatch (*Sitta carolinensis*) thrive in oak woodlands on the various insects and other invertebrates that live on oak leaves, burrow in oak bark, and that collect in the leaf litter and rotting logs. Raptors (i.e., birds of prey) such as the red shouldered hawk, great horned owl (*Bubo virginianus*), western screech owl (*Otus kennicottii*), northern saw-whet owl (*Aegolius acadicus*), and Cooper’s hawk (*Accipiter cooperi*) nest in the oak woodland canopy. Mammal species expected to occur in the oak woodland habitat include mule deer, raccoon, Virginia opossum, striped skunk, gray squirrel (*Sciurus griseus*), broad-footed mole (*Scapanus latimanus*), and deer mouse.

Along the oak woodland edges, where the habitat transitions into grassland or chaparral, reptile species such as common king snake (*Lampropeltis getulus*), gopher snake (*Pituophis melanoleucus*), western fence lizard (*Sceloporus occidentalis*), western skink (*Eumeces skiltonianus*), and northern alligator lizard (*Gerrhonotus coeruleus*) can be found. In large areas of undeveloped land where oak or foothill woodland transitions into grassland, one could also expect to find bobcat (*Felis rufus*) and coyote (*Canis latrans*).

4.3 Aquatic Plant Communities and Associated Wildlife Habitats

4.3.1 SEASONAL WETLANDS

Seasonal wetlands are habitats that may appear dry in the summer and fall months but with fall and winter rains become saturated or inundated, often remaining inundated for a period of several weeks to months each year. These wetlands are characterized by hydric soils and confining topography such as topographic low areas or any low area that was inadvertently created through man’s activities. Hydric soils are soils that are saturated, flooded, or ponded long

enough during the growing season to develop anaerobic (absence of free oxygen) conditions within the upper part of the soil profile. After saturation/inundation and desaturation, redoximorphic features form in many soil profiles from the reduction and oxidation of iron and manganese compounds in the soil. . Hydric soils frequently have a high clay content with low permeability, or may exhibit hardpans and/or cemented durapans in subsoil layers. Such soils when contained within depressional topography may perch water near or at the surface creating wetland hydrology. Such areas eventually colonize and become dominated by seasonal wetland plants, and thus persist as seasonal wetlands. According to the USDA Forest Service vegetation map, there are approximately 87.1 acres of seasonal wetlands in the Calaveras County GPA (Figure 4 and Table 1). However, the USDA Forest Service map is very broad brush; ground surveys of individual properties within the GPA would likely reveal that this acreage figure is much higher.

Seasonal wetlands provide important functions including ground water recharge and discharge, pollutant filtration, and serve as an aquatic habitat for a variety of wildlife species ranging from invertebrates and insects to amphibians, reptiles, birds, and mammals. Seasonal wetlands in the GPA support cosmopolitan wetland species such as umbrella sedge (*Cyperus eragrostis*), hyssop loose strife (*Lythrum hyssopifolium*), curly dock (*Rumex crispus*), and rabbit's foot grass (*Polypogon monspilensis*) among many others.

Seasonal wetlands provide a seasonal water source for wildlife. Typically, seasonal wetlands remain saturated or inundated through March, or in an above normal rainfall year, may stay inundated as late as mid-May or even to June. This inundation period allows many amphibian and invertebrate species the opportunity to lay their eggs, hatch, and develop to metamorphosis. Western toads (*Bufo boreas*) and Sierran tree frogs (*Pseudacris sierra*), and at lower elevations in the GPA, the federal and state listed California tiger salamander (*Ambystoma californiense*) can occur in these habitats. Also invertebrates such as may flies (Ephemeroptera), damselflies (Odonata), backswimmers (Notonectidae and Corixidae), water striders (Gerridae), and predaceous diving beetles (Dytiscidae) are common in seasonal wetlands. Wading birds such as great egrets (*Ardea alba*), great blue herons (*Ardea herodias*), and greater yellow legs (*Tringa melanoleuca*), among others can frequently be observed foraging at seasonal wetland habitats. Mammals such as coyotes, raccoons, striped skunks can be observed at wetlands (or their tracks, scat or other sign) drinking the water and/or foraging for food.

4.3.2 STREAM CHANNELS AND DRAINAGES – RIPARIAN WOODLAND

Calaveras County is bounded by the Mokelumne River to the north and the Stanislaus River to the south. In addition to these two major rivers that flow along the edges of the county, a number of perennial to intermittent streams flow through the GPA. Some examples are Calaveras Creek, Littlejohns Creek and Cosgrove Creek among many others. Many of these rivers and streams support riparian vegetation. The word “riparian” derives from the Latin “Ripa” which means “bank or shore,” as of a stream or river. The original meaning has largely been retained through subsequent history, pertaining to the terrestrial, moist soil zone immediately landward of aquatic wetlands, other freshwater bodies, both perennial and intermittent watercourses, and many estuaries (Warner and Hendrix 1984).

Riparian woodlands are rich habitats, supporting numerous plant species that can include trees, shrubs, vines, and annual and perennial herbs. This variety of plants provides a complex vegetative structure, which in turn supports a diversity of wildlife species. Riparian woodland is associated with many of the creeks and drainages within the GPA. It is estimated that approximately 226 acres of riparian woodland habitat is present within the GPA (Figure 4 and Table 1).

Tree species found in this plant community within the GPA vary depending upon the elevation and location within the county. Riparian tree species include big leaf maple (*Acer macrophyllum*), California buckeye (*Aesculus californica*), arroyo willow (*Salix lasiolepis*), black willow (*Salix gooddingii*), Oregon ash (*Fraxinus latifolia*), white alder (*Alnus rhombifolia*), and black cottonwood (*Populus nigra*). Riparian woodlands typically have a shrubby and herbaceous understory with shrubs such as poison oak (*Toxicodendron diversilobum*), snowberry (*Symphoricarpos albus* var. *laevigatus*), non-native Himalayan blackberry (*Rubus discolor*), and native California blackberry (*Rubus ursinus*), and herbs such as California bee plant (*Scrophularia californica*) and seep monkey flower (*Mimulus guttatus*) and vines such as clematis (*Clematis ligusticifolia*) and pipevine (*Aristolochia californica*).

Drainages within the GPA provide a water source for birds, mammals, amphibians, and reptiles, as well as providing breeding habitat for common amphibian species such as Sierran tree frog, western toad, and California newt (*Taricha torosa*). Within the General Plan area, a myriad of invertebrates and insects complete their life cycle in drainages as well. Mallards (*Anas platyrhynchos*), raccoons, mule deer, and opossums all can be expected to be found using such drainages. The vegetation and sap of willow trees typically attracts numerous insects to their branches. These insects, in turn, attract common insectivorous bird species such as ruby-crowned kinglet (*Regulus calendula*), bushtit (*Psaltriparus minimus*), yellow-rumped warbler (*Dendroica coronata*), and less common species such as Neotropical migrants like the yellow warbler (*Dendroica petechia*) and yellow-breasted chat (*Icteria virens*), among others.

4.3.3 POND AND LAKES

Ponds and lakes are inland bodies of water that vary in size from small stock ponds and natural seeps/ponds to large constructed reservoirs such as New Melones Lake and New Hogan Reservoir. Emergent vegetation such as cattails (*Typha angustifolia* and *T. latifolia*) and rushes (*Bolboschoenus* spp., *Schoenoplectus* spp., and *Juncus* spp.) can be found along the margins of these aquatic habitats. Floating vegetation such as water starwort (*Callitriche* spp.), duck weed (*Lemna* spp.) and buttercup (*Ranunculus aquatilis*) can be found on the water's surface. These floating plants provide food for herbivorous waterfowl such as the mallard (*Anas platyrhynchos*) which is a common duck species in urban and rural settings. Ponds, lakes, and reservoirs provide wildlife with a permanent to near permanent source of water (depending on whether the smaller waterbody dries down in the summer months). Many amphibians depend on water, at least seasonally, to complete their life cycle. The Sierran tree frog, western toad, and the federal and state listed California tiger salamander are all amphibian species known to occur in these habitats within the GPA.

4.4 Sensitive Plant Communities

The California Department of Fish and Wildlife (the Department) maintains a list of plant communities within the state that are of special concern. These are communities that have historically had a limited distribution as well as communities that have become limited because of human activities. Within the GPA there are three plant communities that the Department considers rare enough to warrant monitoring and have included them in the California Natural Diversity Database (RareFind 3) (CNDDDB) records (CDFW 2013). These three plant communities are riparian woodland, Ione chaparral, and big tree forest and are discussed below.

4.4.1 RIPARIAN WOODLAND

Riparian woodland grows along streams, rivers, and other waterways. It is best developed along those waterways that have perennial water. Most riparian communities in California have been described by Holland (1986) as sensitive communities meriting inclusion in the CNPS' *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001). The Department also considers most riparian plant communities rare enough to warrant monitoring. Riparian vegetation is also protected under §1602 of California Fish and Game Code and authorization from the Department is required prior to altering or otherwise disturbing riparian communities.

4.4.2 IONE CHAPARRAL

Ione chaparral is a unique plant community of the Sierra foothills found in a few isolated patches north and south of the town of Ione in Amador County. This geologic formation also occurs in the central portions of Butte and Yuba Counties, the western portions of Nevada, Placer, El Dorado, and Calaveras Counties. It extends as far south as Madera County (Sawyer et al 2009). A number of plant species uniquely adapted to Ione Formation soils occur in this plant community, and are classified as special-status plants. Ione manzanita (*Arctostaphylos myrtifolia*), a federally listed threatened species, is the dominant species of Ione chaparral, where it occurs in dense stands. Four other special-status plant species are associated with Ione chaparral: Parry horkelia (*Horkelia parryi*) (CNPS Rank 1B), Ione buckwheat (*Eriogonum apricum* var. *apricum*) (federal and state listed endangered; CNPS Rank 1B), Irish Hill buckwheat (*Eriogonum apricum* var. *prostratum*) (federal and state listed endangered; CNPS Rank 1B), and Bisbee Peak rush-rose (*Helianthemum suffrutescens*; known as *H. scoparium* in The Jepson Manual 1993 and 2012) (CNPS Rank 3).

4.4.3 BIG TREE FOREST

The big tree forest consists of large stands of giant sequoias that are present in isolated groves along the west slope of the Sierra Nevada. As mentioned in the section above, there is one occurrence of giant sequoia grove/big tree forest in Calaveras County: the North Calaveras Grove in the Calaveras Big Trees State Park. The giant sequoia is among the fastest growing of all trees and is the largest tree in volume. It attains heights averaging 76 to 84 meters and ages of over 2,000 years. Giant sequoias are fire adapted species with fire-resistant bark, and serotinous cones. They are managed by prescribed burns.

5. SPECIAL-STATUS SPECIES

5.1 Definitions

For purposes of this analysis, special-status species are plants and animals that are legally protected under the California and Federal Endangered Species Acts (CESA and FESA, respectively) or other regulations, and species that are considered rare by the scientific community (for example, the California Native Plant Society). Special-status species are defined as:

- plants and animals that are listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 *et seq.*; 14 CCR §670.1 *et seq.*) or the FESA (50 CFR 17.12 for plants; 50 CFR 17.11 for animals; various notices in the Federal Register [FR] for proposed species);
- plants and animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);
- plants and animals that meet the definition of endangered, rare, or threatened under CEQA (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;
- Plants occurring on Ranks 1A, 1B, and 2 of CNPS' *Electronic Inventory* (CNPS 2001).
- migratory nongame birds of management concern listed by U.S. Fish and Wildlife Service (Migratory Nongame Birds of Management Concern in the United States: The list 1995; Office of Migratory Bird Management; Washington D.C.; Sept. 1995);
- animals that are designated as California "species of special concern" by the Department (2013);
- Animal species that are "fully protected" in California (Fish and Game Codes 3511, 4700, 5050, and 5515).

5.2 Potential Special-Status Plants Within the GPA

The Department's database (CNDDDB; RareFind 3) has records for special-status plants within the GPA. Some of these records are historic and based on museum records and some are more recent including those from the past decade. Figure 5 provides a graphical illustration of known records for special-status plant species in the County and helps readers visually understand the distribution of sensitive plants in the County. These records do not indicate an absence of special-status species in other areas within the County; rather are indicative where these species have been searched for and found within the County. Additional future surveys for special-status plants will without doubt uncover new record locations for special-status plants. Below we discuss those special-status plants that have been reported to the CNDDDB as occurring in

Calaveras County and that should be addressed prior to any future land use change or development within the GPA.

5.2.1 RED HILLS SOAPROOT

Red Hills' soaproot (*Chlorogalum grandiflorum*) is a CNPS Rank 1B.2 species. It has no federal or state status. This perennial herb is a member of the lily family and grows from a bulb. Several leaves radiate from the base of the plant. They are usually four to twelve inches long, between one fourth and one half inch in width, linear and wavy. The leaves of the common soaproot (*Chlorogalum pomeridianum*) are often longer, wider and less wavy than the Red Hills soaproot. The Red Hills soaproot occurs almost entirely on gabbro and serpentine soils in western El Dorado County, and the Red Hills in Tuolumne County, but it has been found at several locations in other soils as well. *It is typically found growing in rocky soils in open areas in the midst of chaparral.* There are several records for Red Hills' soaproot in the County from the 1990s and a couple from the 2000s. Thus, the potential presence of this plant in chaparral or grassland habitats with rocky soils within the GPA cannot be dismissed without conducting formal surveys.

5.2.2 THREE-BRACTED ONION

Three-bracted onion (*Allium tribracteatum*) is a CNPS Rank 1B.2 species. It has no federal or state status. This bulbiferous herb species is a member of the lily family (Liliaceae) The small head of white to purple flowers blooms in April through August. *This species grows in chaparral, and lower and upper montane coniferous forest in Calaveras and Tuolumne County, where it is often associated with volcanic soils.* It is currently threatened by off-road vehicle driving. The potential presence of this plant in chaparral and forest habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 TUOLUMNE BUTTON-CELERY

Tuolumne button-celery (*Eryngium pinnatisectum*) is a CNPS Rank 1B.2 species. It has no state or federal status. This biennial or perennial member of the carrot family (Apiaceae) flowers between May and August, depending on soil moisture. Tuolumne button-celery is differentiated from other similar species by having broad, very stiff flowering bracts. *It occurs in cismontane woodlands, lower montane coniferous forest, vernal pools, and stream margins.* Tuolumne button-celery occurs along the valley edge and in the foothills from Sacramento County to Tuolumne County. The potential presence of this plant in vernal pool and stream margin habitats or mesic (wet) woodland and forest habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.2 DELTA BUTTON-CELERY

Delta button-celery (*Eryngium racemosum*) is a state-listed endangered species and is a CNPS Rank 1B.1 species. This species has no special federal status. This plant is biennial to perennial member of the carrot/parsley family (Apiaceae). It occurs in *clay depressions in riparian habitats* of the San Joaquin Valley. It blooms between the months of June and August. The potential presence of this plant in clay depressions (wet areas) in riparian habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 SPINY-SEPALED BUTTON-CELERY

Spiny-sepaled button-celery (*Eryngium spinosepalum*) is a CNPS Rank 1B.2 species. It has no federal or state status. This member of the carrot family (Apiaceae) occurs *in vernal pools and grassland depressions* of the eastern San Joaquin Valley and Sierra Nevada foothills. It blooms between April and May. The potential presence of this plant in vernal pools and grassland depressions within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 STEBBIN'S LOMATIUM

Stebbin's lomatium (*Lomatium stebbinsii*) is a CNPS Rank 1B.1 plant found in Calaveras and Tuolumne Counties. It has no federal or state status. This perennial herb is a member of the carrot family (Apiaceae). It blooms between March and May in *chaparral and lower montane coniferous forests* with gravelly and volcanic clay soils. The potential presence of this plant in chaparral and coniferous forest habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.2 HOOVER'S CALYCADENIA

Hoover's calycadenia (*Calycadenia hooveri*) is a CNPS Rank 1B.3 species. It has no state or federal status. This member of the sunflower family *is found in cismontane woodland and rocky valley and foothill grasslands*. It flowers between July and September. The presence of this plant in woodland and grassland habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.3 MARIPOSA CRYPTANTHA

Mariposa cryptantha (*Cryptantha mariposae*) is a CNPS Rank 1B.3 species. It has no federal or state status. This is an annual herb belonging to the borage family (Boraginaceae). It grows to 14 inches in height with the stems having stiff, straight, rough hairs. In normal rainfall years the small white flowers appear between April and June. *This species grows on mostly barren soils in chaparral where it is often associated with serpentinite soils*. It is known from Calaveras, Mariposa, Stanislaus and Tuolumne Counties, California. The presence of this plant in chaparral habitat within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 BISBEE PEAK RUSH-ROSE

Bisbee Peak rush-rose (*Helianthemum suffrutescens*) is a CNPS Rank 1B.2 species. It has no federal or state status. This evergreen shrub is a member of the rock-rose family (Cistaceae) that grows between 15 to 30 inches tall with many straight, slender stems. The green leaves and stems are densely covered with soft, short white hairs. This species produces flowers between April and June that are bright yellow in color. Bisbee Peak rush-rose *grows in chaparral and is often associated with serpentinite, gabbroic or Ione soils in the Sierra Nevada foothills*. The potential presence of this plant in chaparral habitat within the GPA cannot be dismissed without conducting formal surveys.

5.2.2 DAVY'S SEDGE

Davy's sedge (*Carex davyi*) is a CNPS Rank 1B.3 species. It has no state or federal status. This sedge species is found *in subalpine coniferous forest and upper montane coniferous forest on dry, often sparse meadows and slopes*. It flowers between June and September. The potential

presence of this plant in forest habitat within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 IONE MANZANITA

Ione manzanita (*Arctostaphylos myrtifolia*) is an evergreen shrub. It is a federally listed threatened species and is a CNPS Rank 1B.2 species. It has no state status. This low and spreading shrub has red, smooth, waxy stems and white or pinkish urn-shaped flowers that bloom between January and February. Ione manzanita can be distinguished from other species in the same genus by its smaller stature and olive-colored leaves. *This species occurs primarily in chaparral and cismontane woodland on outcrops of the Ione Formation within an area of about 35 square miles in Amador County.* A few disjunct populations occur in Calaveras County. The potential presence of this plant in chaparral and woodland habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.2 AHART'S DWARF RUSH

Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*) is an annual rush that has a CNPS Rank 1B.2. It has no state or federal status. *This species is found along margins of vernal pools in the northeastern San Joaquin Valley and the surrounding foothills (Calaveras County, for example).* It flowers between March and May. The potential presence of this plant in vernal pool habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.3 PLEASANT VALLEY MARIPOSA LILY

Pleasant Valley mariposa lily (*Calochortus clavatus avius*) is a CNPS Rank 1B.2 species. It has no state or federal status. This lily has an upright, open yellow/orange flower that blooms between May and July. *It is found in open oak/pine forest above 900 meters (2,952 feet) elevation.* Individuals have been positively identified in Calaveras and El Dorado County and accessioned at an herbarium. The potential presence of this plant in open oak/pine forest habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.4 SMALL'S SOUTHERN CLARKIA

Small's southern clarkia (*Clarkia australis*) is a CNPS Rank 1B.2 species. It has no federal or state status. This annual herb is a member of the evening primrose family (Onagraceae). It has erect stems that are up to 3 feet tall and produces lavender-purple mottled or spotted windmill petaled flowers. The blooming period of this species is from June to July. *This species occurs in cismontane woodland and lower montane woodland habitats at elevations ranging from approximately 800 to 1,500 meters in Madera, Mariposa, Tuolumne, and Calaveras Counties.* The potential presence of this plant in woodland habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 BEAKED CLARKIA

Beaked clarkia (*Clarkia rostrata*) is a CNPS Rank 1B.3 species. It has no federal or state status. This annual herb is a member of the evening primrose family (Onagraceae). It has erect stems less than 24 inches in height. The pink to purplish-red, bowl-shaped flower blooms between April and May. The fruit has a distinctive long, thin "beak," a narrow extension at the top of the capsule that contains no seeds. This species occurs in oak-pine woodland and valley and foothill

grassland habitats at elevations ranging from approximately 60 to 500 meters (196 and 1640 feet) in eastern Stanislaus and Merced counties and western Mariposa County. Due to the known records in the immediately surrounding counties, the potential presence of this plant in woodland and grassland habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.2 PANSY MONKEYFLOWER

Pansy monkeyflower (*Mimulus pulchellus*) is a CNPS Rank 1B.2 species. It has no federal or state status. This tufted annual herb is less than ½-inch tall. It has showy flowers that bloom between April and July that are lavender to purple on the upper lip and gold on the lower lip. Pansy monkeyflower occurs in vernal wet depressions, often in disturbed areas and clay soils in meadows, seeps, and lower montane coniferous forest. It is known from Calaveras, Mariposa, and Tuolumne Counties at elevations ranging from approximately 630 to 2,160 meters (1,900 to 6,500 feet). The potential presence of this plant in meadows, seeps, and mesic forest habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 PINCUSHION NAVARRETIA

Pincushion navarretia (*Navarretia myersii* ssp. *myersii*) is a CNPS Rank 1B.1 species. It has no state or federal status. This annual herb has white flowers and blooms in May. *Pincushion navarretia* occurs in vernal pools in Lake County, the Sacramento Valley (Yolo County) and the Sierra Nevada foothills (Amador, Calaveras, Merced, and Madera Counties). It is threatened by development. The potential presence of this plant in vernal pool habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 PARRY'S HORKELIA

Parry's horkelia (*Horkelia parryi*) is a CNPS Rank 1B.2 species. It has no state or federal status. It is an aromatic, mat-forming perennial that blooms from April through September. Parry's horkelia has white flowers typical of similar species, but the pedicels are curved when in fruit. *It grows in chaparral and cismontane woodlands* from El Dorado County down through Calaveras County to Mariposa County, and is often associated with soils of the Ione Formation. The potential presence of this plant in chaparral and woodland habitats within the GPA cannot be dismissed without conducting formal surveys.

5.2.1 CHINESE CAMP BRODIAEA

Chinese Camp brodiaea (*Brodiaea pallida*) is a federally listed threatened and state endangered species. It is also a CNPS Rank 1B.1 species. Chinese Camp brodiaea differs from other brodiaeas in northern California *in its preferred habitat (vernal stream beds and wet serpentine areas)* and flower color (pale purple or lilac). This species is found only in the foothills of Calaveras and Tuolumne Counties where it blooms in May and June. The presence of this plant in vernal stream beds and wet (seepy) serpentinite habitats within the GPA cannot be dismissed without conducting formal surveys.

5.3 Potential Special-Status Animals Within the GPA

Figure 6 provides a graphical illustration of known records for special-status animal species in Calaveras County and provides a current understanding of where sensitive animals have been recorded in the County. These records do not indicate an absence of special-status species in

other areas within the County; rather are indicative where these species have been searched for and found within the County. Additional future surveys for special-status animals will without doubt uncover new record locations for special-status animals. Below we discuss those special-status animals that should be addressed prior to any future land use change or development within the County.

5.3.1 INVERTEBRATES

5.3.1.1 Valley Elderberry Longhorn Beetle

The valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) was designated by the Service as federally threatened in its entire range on August 8, 1980 (Federal Register 45: 52803-52807). Critical habitat was designated for this species at the same time. *The GPA is located outside designated Critical Habitat.* In October 2012, the Service proposed the federal delisting of this species and requested public comments on the delisting package as recently as February 2013. The proposed delisting of this species is still under review by the Service. The valley elderberry longhorn beetle has no state status.

The valley elderberry longhorn beetle is a medium-sized (about 2 cm long) beetle. The forewings of the female are dark metallic green with red margins, whereas those of the male are primarily red with dark green spots. *This beetle is associated with elderberry trees (Sambucus spp.) during its entire life cycle. Elderberry trees/shrubs are associated with riparian habitats which occur along rivers and streams.* It appears that in order to serve as habitat, the shrubs must have stems that are 1.0 inch or greater in diameter at ground level. The adults emerge from pupation inside the wood of these trees from late March through June as the tree begins to flower. The exit holes made by the emerging adults are distinctive, small, oval openings. Often these holes are the only indication that the beetles occur in an area. The adults eat the elderberry foliage until about June when they mate. The females lay eggs in crevices in the bark. Upon hatching the larvae then begin to tunnel into the tree where they will spend 1-2 years eating the interior wood which is their sole food source (Barr 1991).

The potential presence of this special-status beetle in riparian habitats or isolated elderberry shrubs within the GPA cannot be dismissed without conducting formal surveys.

5.3.1.2 Vernal Pool Fairy Shrimp

Vernal pool fairy shrimp (*Branchinecta lynchi*) is a federal listed threatened species. It has no state status. This fairy shrimp is found in vernal pool habitats of the Central Valley, central coast mountains, and south coast mountains (Eng et al. 1990). There are records for this species in vernal pools in Calaveras County. *It is typically found in seasonal wetland pools and swales with clear to tea-colored water that have a grassy substrate.*

The potential presence of this species in seasonal wetlands within the GPA should be evaluated by a federally permitted fairy shrimp biologist.

5.3.2 AMPHIBIANS AND REPTILES

5.3.2.1 Western Spadefoot Toad

The western spadefoot toad (*Spea hammondi*) is a state designated “species of special concern.” It is also a state designated “protected species” that may not be “taken or possessed” pursuant to the California Code of Regulations, Title 14, Chapter 5, Section 41. The “species of special concern” status designation does not provide any special legally mandated protection for this toad species. However, this status designation likely meets the definition of “rare” pursuant to the California Environmental Quality Act (CEQA) (14 CCR §15380(2)(A)). As such, potential impacts to this species should be considered during any CEQA review. Any unmitigated impacts to this species would likely be regarded by the Department as a significant adverse impact pursuant to CEQA (§21068).

This toad is found primarily in grassland habitats, but may occur in valley and foothill woodlands. It requires vernal pools, seasonal wetlands, or stock ponds for breeding and egg laying. Eggs are typically laid in March. They hatch in late-March through April. Larvae undergo a dramatically rapid metamorphosis to juvenile toads. This rapid metamorphosis allows this toad to use highly ephemeral bodies of water, such as vernal pools, to reproduce.

The potential presence of this special-status amphibian in vernal pool, seasonal wetlands, or stock pond habitats within the GPA cannot be dismissed without conducting formal surveys.

5.3.2.2 California Red-legged Frog

The California red-legged frog (*Rana draytonii*) was federally listed as threatened on May 23, 1996 (Federal Register 61: 25813-25833) and as such is protected pursuant to the Federal Endangered Species Act. On March 16, 2010 the Service issued the final designation for California red-legged frog Critical Habitat (USFWS 2010). The 2010 Critical Habitat maps (Federal Register dated March 17, 2010 (Volume 75, Number 51:12815-12864) show that Critical Habitat Unit 1 is located in Calaveras County just northeast of Valley Springs. The California red-legged frog is also a state “species of special concern.”

The California red-legged frog is typically found in ponds, slow-flowing portions of ephemeral, perennial, and intermittent streams that maintain water in the summer months. This frog is also found in hillside seeps that maintain pool environments or saturated soils throughout the summer months. Populations probably cannot be maintained if all surface water disappears (i.e., no available surface water for egg laying and larval development habitat). Larval California red-legged frogs require 11-20 weeks of permanent water to reach metamorphosis (i.e., to change from a tadpole into a frog) (op. cit.), in water depths of 10 to 20 inches (USFWS 2002). Riparian vegetation such as willows and emergent vegetation such as cattails are preferred red-legged frog habitats, though not necessary for this species to be present. Populations of California red-legged frog will be reduced in size or eliminated from ponds supporting non-native species such as bullfrog, Centrarchid fish species (such as sunfish, bluegill, or largemouth bass), and signal and red swamp crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*, respectively), all of which are known California red-legged frog predators. However, the presence of these non-native species does not preclude the presence of the California red-legged frog.

California red-legged frogs also use upland habitats for migration and dispersal. The Service *Recovery Plan for the California Red-Legged Frog* states that frog overland excursions via uplands can vary between 0.25 mile up to 3 miles during the course of a wet season, and that frogs “have been observed to make long-distance movements that are straight-line, point to point migrations rather than using corridors for moving in between habitats” (USFWS 2002).

The Service’s *Recovery Plan for the California Red-Legged Frog* states that populations are “most likely to persist where multiple breeding areas are embedded within a matrix of habitats used for dispersal.” “The primary constituent elements for California red-legged frogs are aquatic and upland areas where suitable breeding and non-breeding habitat is interspersed throughout the landscape and is interconnected by unfragmented dispersal habitat” (USFWS 2002).

The potential presence of this special-status amphibian in drainages, wetlands, or stock pond habitats within the GPA cannot be dismissed without conducting formal surveys.

5.3.2.3 Foothill Yellow-legged Frog

The foothill yellow-legged frog (*Rana boylei*) is a California “species of special concern.” It has no federal status. The foothill yellow-legged frog is typically found in or near rocky streams in a variety of habitats, including valley-foothill woodlands and riparian habitats, mixed conifer, coastal scrub, mixed chaparral, and wet meadows.

Adults eat invertebrates, both aquatic and terrestrial. Tadpoles are thought to eat algae and diatoms found along rocky stream bottoms. Adults often bask on exposed rocks near streams, and when disturbed, dive into the water and take refuge under submerged rocks or sediments. During periods of inactivity, such as during cold weather, individuals seek cover under rocks within the stream, or within a few meters of water. Unlike most other California Ranid frog species, the foothill yellow-legged frog is rarely encountered far from permanent water. Tadpoles require water for approximately three to four months while completing their development.

Known foothill yellow-legged frog predators include bull frog (*Rana catesbeiana*), western aquatic garter snake (*Thamnophis couchii*), and Centrarchid fishes species (such as green sunfish (*Lepomis cyanellus*), bluegill (*Lepomis macrochirus*), or large-mouth bass (*Micropterus salmoides*). Although the presence of these non-native species does not preclude the presence of the foothill yellow-legged frog, they are thought to contribute to the elimination of the foothill yellow-legged frog in streams where they are introduced.

The potential presence of this special-status amphibian in drainages within the GPA cannot be dismissed without conducting formal surveys.

5.3.2.4 California tiger salamander

5.3.2.4.1 Legal Status

Calaveras County is in part included within the area that supports the Central California Distinct Population Segment (DPS) of the California tiger salamander (CTS) (*Ambystoma californiense*). The Central California DPS of the CTS was federally listed as threatened on August 4, 2004. The Service designated critical habitat for the Central California DPS in the summer of 2004. Critical Habitat Units 5 and 6 for the Central California DPS are located within Calaveras County. On March 4, 2010, the CTS was also state listed as a threatened species under the California Endangered Species Act (CESA).

Proposed projects may not impact the CTS without incidental taking authority from both the Service and the Department. Prior to impacting habitat that supports CTS, the Service must prepare an incidental take permit pursuant to either Section 7 or Section 10 of the Federal Endangered Species Act (FESA). Similarly, projects that impact CTS also require incidental taking authority from the Department. Under Section 2081 of CESA an incidental take permit may be authorized by the Department for proposed projects that impact the CTS.

Finally, under Title 14, CCR 41 (1996), CTS is also a protected amphibian that may only be “taken or possessed” under a special permit issued by the Department pursuant to sections 650 and 670.7 of these regulations, or Section 2081 of the Fish and Game Code.

5.3.2.4.2 Natural History

CTS occur in grasslands and open oak woodlands that provide suitable aestivation and/or breeding habitats. CTS spend the majority of their lives underground. They typically only emerge from their subterranean refugia for a few nights each year during the rainy season to migrate to breeding ponds. Adult California tiger salamanders have been observed up to 2,092 m (1.3 mi) from breeding ponds (USFWS 2004). As such, unobstructed migration corridors are an important component of CTS habitat.

CTS emerge during the first heavy, warm rains of the year, typically in late November and early December. In most instances, larger movements of CTS do not occur unless it has been raining hard and continuously for several hours. Typically, for larger movements of CTS to occur nighttime temperatures also must be above 48° F. CTS are able to move over, through or around almost all obstacles. Significant obstructions that block CTS movements include freeways and other major (heavy traffic) roads, rivers, and deep, vertical or near vertical sided, concrete irrigation/flood control ditches.

During the spring, summer, and fall months, most known populations of the CTS predominately use California ground squirrel (*Spermophilus beechyi*) burrows as over-summering habitat (G. Monk personal observation). Other secondary subterranean refugia, or primary refugia where California ground squirrels are absent, likely include Botta’s pocket gopher (*Thomomys bottae*) burrows, deep fissures in desiccated clay soils, and debris piles (e.g. downed wood, rock piles).

Stock ponds, seasonal wetlands, and deep vernal pools typically provide most of the breeding habitat used by CTS. In such locations, CTS attach their eggs to rooted, emergent vegetation, and

other stable filamentous objects in the water column. Eggs are gelatinous and are laid singly or occasionally in small clusters. Eggs range in size from about $\frac{3}{4}$ the diameter of a dime to the full diameter of a dime. Occasionally CTS are found breeding in slow-moving, streams or ditches. Ditches and/or streams that are subject to rapid flows, even if only on occasion, typically will not support or sustain CTS egg attachment through hatching, and thus, are not usually used successfully by CTS for breeding (G. Monk and S. Lynch, pers. observation). Similarly, streams and/or ditches that support predators of CTS or their eggs and larvae such as fish, bullfrogs, red swamp crayfish, or signal crayfish, almost never constitute suitable breeding habitat.

Typically seasonal wetlands that are used for breeding must hold water into the month of May to allow enough time for larvae to fully metamorphose. In dry years, seasonal wetlands may dry too early to allow enough time for CTS larvae to successfully metamorphose. Under such circumstances, desiccated CTS larvae can be found in dried pools. In addition, as pools dry down to very small areas of inundation, CTS larvae become concentrated and are very susceptible to predation. However, in years exhibiting wet springs, these same pools can remain inundated long enough through continual rewetting to allow CTS larvae ample time to successfully metamorphose.

The potential presence of this special-status amphibian in vernal pools, deep seasonal wetlands, or stock ponds within the GPA cannot be dismissed without conducting formal surveys.

5.3.2.5 Western Pond Turtle

The western pond turtle (*Emys marmorata*) is a state “species of special concern.” It has no federal status. The western pond turtle is a habitat generalist, inhabiting a wide range of fresh and brackish, permanent and intermittent water bodies from sea level to about 1,371 meters (4,500 feet) above sea level (USFWS 1992). Typically, this species is found in ponds, marshes, ditches, streams, and rivers that have rocky or muddy bottoms. *This turtle is most often found in aquatic environments with plant communities dominated by watercress, cattail, and other aquatic vegetation. It is a truly aquatic turtle that usually only leaves the aquatic site to reproduce and to overwinter.* Recent field work has demonstrated that western pond turtles may overwinter on land or in water, or may remain active in water during the winter season; this pattern may vary considerably with latitude, water temperature, and habitat type and remains poorly understood.

The pond turtle also requires upland areas for burrowing habitat where it digs nests and buries its eggs. These nests can extend from 15 to 370 meters (52 feet to 1,219 feet) from watercourses (Jennings and Hayes 1992), however most pond turtles nest in uplands within 250 meters (820 feet) of water (Bury, unpublished). Upland nest sites are usually found in areas with sparse vegetation. Sunny, barren, and undisturbed (not disked) land provides optimal habitat, while shady riparian habitat and planted agricultural fields do not provide suitable habitat (op. cit.). Eggs are typically laid from March to August (Zeiner et. al. 1988), with most eggs being laid in May and June. Hatchlings will stay in the nest until the following April (Bury, unpublished). Predators of juvenile pond turtles include the non-native bullfrog (*Rana catesbeiana*) and Centrarchid fish (sunfish). This turtle is most visible between April and July when it can be observed basking in the sun. In areas where the water is very warm during these months,

however, it will bask in the warm water and will be more difficult to observe. It eats plants, insects, worms, fish and carrion (Stebbins 2003).

The potential presence of this special-status reptile in drainages or stock ponds within the GPA cannot be dismissed without conducting formal surveys.

5.3.3 BIRDS

5.3.3.1 Bald Eagle

The bald eagle (*Haliaeetus leucocephalus*) is found only on the North American continent. The bald eagle is currently a state listed species; however, the listing status is under review for possible down or delisting. This eagle was designated as federally threatened in the conterminous (lower 48) states of the United States on March 11, 1967 (Federal Register 32:4001). On July 06, 1999, the Service proposed to delist the bald eagle in the entire range (Federal Register 64: 36453 36464) because reclassification goals for recovery of this species have been met and exceeded. On July 9, 2007, the Service delisted the bald eagle effective as of August 8, 2007 (Federal Register 72: 3746 37373). The Service has drafted a post de-listing monitoring plan and proposed information collection for this species (Federal Register 72: 37373 37374). This raptor continues to be federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Critical habitat has not been designated for the bald eagle.

The bald eagle is one of North America's largest birds, weighing up to 14 pounds with a wingspan of 6½ to 8 feet. Adults obtain their well know plumage of a dark brown body with a pure white head and tail at 4 or 5 years of age. Bald eagles are distributed across North America, from Alaska, Canada, the lower 48 states, and northwest Mexico. Bald eagles in winter may be found throughout most of California at lakes, reservoirs, rivers, and some rangelands and coastal wetlands. The State's breeding habitats are mainly in mountain and foothill forests and woodlands near reservoirs, lakes, and rivers. Most breeding territories are in northern California, but the eagles also nest in scattered locations in the central and southern Sierra Nevada mountains and foothills, in several locations from the central coast range to inland southern California, and on Santa Catalina Island.

Bald eagles normally build large stick nests in the upper canopy of the tallest trees in the area. They may repair the same nest annually, which increases its size over time, or they may build a new nest in their territory or repair one they had used formerly. In many cases, the territory of a pair of eagles may include several nests in addition to the one they most recently used. In most of California, the breeding season lasts from about January through July or August. California's resident breeding pairs remain in California during winter, typically in the vicinity of their nesting areas, except when winter conditions are too severe and they must move to lower elevations. Hundreds of migratory bald eagles from nesting areas in northwestern states and provinces spend the winter in California, arriving during fall and early winter. These wintering birds may remain until February or March, or even into April.

There is at least one nesting record for the bald eagle in Calaveras County. This record is from the vicinity of New Hogan's Reservoir (CNDDDB records). This record has not been updated since the early-1990s; however it should be noted that with the elimination of DDT use in the

1970s and biodegradation of DDT and its metabolites in the environment, in general bald eagles are again expanding their nesting range in California. Thus, it is likely that new nest sites will be located in Calaveras County in the future.

The potential presence of this special-status bird within the GPA cannot be dismissed without conducting formal surveys.

5.3.3.2 Northern Goshawk

The northern goshawk (*Accipiter gentilis*) is a California species of special concern. It is also protected from direct “take” under the Federal Migratory Bird Treaty Act (50 CFR 10.13). Its nest, eggs, and young are protected under California Fish and Game Code (§3503, §3503.5, and §3800). This is a large forest hawk of 22 to 24 inches in total length; females are larger than males. This species has an average wing span of 42 inches, and the wings are long and broad. Individuals have long, rounded tails. Adults are gray-brown to gray above, and have a black cap on the head and a prominent superciliary line. They are light gray underneath have with fine dark streaking. Females are similarly colored as males but are browner above and more boldly marked underneath. Unfeathered body parts are yellow, while the iris is red.

Northern goshawk is a carnivorous species that typically preys upon forest rodents and rabbits, as well as large-bodied avifauna such as galliformes (young turkeys, for example), corvids (crows), and woodpeckers. They are almost exclusively diurnal (active in the daytime). Northern goshawk populations in the western U.S. typically nest and winter in mature to old-growth forests with high canopy closure. Nests are generally located in stands of ten to 100 hectares that lack substantial understories, but contain an abundance of Douglas fir (*Pseudotsuga menziesii*), various pines (*Pinus* sp.), and aspen (*Populus tremuloides*). Young forests with sparsely occurring mature and/or old-growth features may also be used. Throughout their range., this species known to forage in a wide variety of habitats, but California populations limit foraging almost exclusively to mature and old-growth forests. There are many known nesting occurrences of northern goshawk in Calaveras County.

The potential presence of this special-status bird within forest habitats in the GPA cannot be dismissed without conducting formal surveys.

5.3.3.3 Tricolored Blackbird

Tricolored blackbird (*Agelaius tricolor*) is a state designated “species of special concern.” A gregarious species, the tricolored blackbird is typically found near freshwater, particularly near marsh habitat. Loss of wetland habitats is regarded as the principal factor responsible for this species population decline (Beedy, 1992). Nesting colonies are typically found in stands of cattail (*Typha* spp.) and bulrush (*Scirpus* spp.), although they are also known to utilize blackberry patches (*Rubus* sp.) and thistle clumps (*Cirsium* spp. and *Cynara* spp.) adjacent to water. Flooded lands, margins of ponds, and grassy fields in summer and winter provide typical foraging habitat for this species.

The potential presence of this special-status bird within suitable freshwater marsh, drainages, and pond habitats in the GPA cannot be dismissed without conducting formal surveys.

5.3.4 MAMMALS

5.3.4.1 Pacific Fisher

Pacific fisher (*Martes pennanti pacifica*) is a state designated “species of special concern.” It is also a federal candidate for listing as endangered. It is an uncommon, permanent resident of the Sierra Nevada, Cascades, and Klamath Mountains. *The Pacific fisher occurs in coniferous forests and deciduous riparian habitats with a high percent of canopy closure. Suitable habitat consists of large areas of mature, dense forest stands with snags and greater than 50 percent canopy closure.* The Pacific fisher uses cavities in large trees, snags, logs, and rock areas for cover. There are no records for the Pacific fisher in Calaveras County. Prior to 1973, fisher tracks were observed by a forest ranger in red fir forest in the vicinity of the north fork of the Mokelumne River about 4 to 5 miles northwest of Bear Valley near the Amador-Calaveras County line (CNDDDB records). As this species is difficult to detect in its range, it is discussed in the General Plan allowing for the possibility that it occurs in Calaveras County.

The potential presence of this special-status mammal within forest and riparian habitats in the GPA cannot be dismissed without conducting formal surveys.

5.3.4.2 Townsend’s Western Big-Eared Bat

Townsend’s western big-eared bat (*Corynorhinus townsendii townsendi*) is a designated California "species of special concern." It has no special federal status. This bat is found throughout California in all but subalpine and alpine habitats. *It requires caves, mines, tunnels, buildings, or other human-made structures for roosting and for maternity sites.* It is extremely sensitive to human disturbance (CNDDDB records).

The potential presence of this special-status bat within suitable habitats in the GPA cannot be dismissed without conducting formal surveys.

5.3.4.3 Western Mastiff Bat

Western mastiff-bat (*Eumops perotis californicus*) is a California designated "species of special concern." It has no special federal status. The greater western mastiff bat is the largest bat species in the United States. *It typically uses crevices in cliffs, high buildings, large trees, and tunnels for roosting.* Roosts are generally high above ground in order to allow for a clear vertical drop of at least 10 feet for flight. This bat forages most frequently in open areas, including chaparral, open woodlands, grasslands, meadows, and agricultural areas. This species does not hibernate and is intermittently active during the winter.

The potential presence of this special-status bat within cliff crevices, abandoned buildings, large trees or tunnels within the GPA cannot be dismissed without conducting formal surveys.

5.3.4.4 Western Red Bat

The western red bat (*Lasiurus blossevillii*) is a designated California species of special concern. It has no federal status. *The western red bat, as a tree bat, is closely associated with well-developed riparian habitats that provide suitable roosting sites.* In California, most of the records are from the Central Valley, which is the breeding center for the western red bat in the

state. About 83% of the breeding records for western red bat in California are from the Sacramento and San Joaquin rivers, with other breeding records from the San Diego, Santa Ana, and Los Angeles rivers (Pierson et al. 2006). Most records are from elevations below 200 meters (656 feet) (Pierson et al. 2006); however, there are scattered records for the western Sierra Nevada foothills, and records from higher elevations (a maximum of 2,484 meters [8,150 feet]) are most likely for males (Pierson et al. 2006).

The potential presence of this special-status bat within the GPA cannot be dismissed without conducting formal surveys.

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