

3.3 Biological Resources

This section describes the regulatory and environmental settings for biological resources. Impacts that would result from implementing the proposed action and alternatives are described in Chapter 4, *Environmental Consequences*, along with mitigation measures to reduce impacts, where appropriate.

A large portion of the biological resource information presented below was adapted from the most recent version of the Plan (Appendix A).

3.3.1 Regulatory Setting

Federal

Endangered Species Act

The federal Endangered Species Act (ESA) of 1973 and subsequent amendments provide for the conservation of endangered and threatened species and the ecosystems on which they depend. The two agencies that oversee ESA are the U.S. Fish and Wildlife Service (USFWS), with jurisdiction over plants, wildlife, and resident fish, and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS), with jurisdiction over anadromous fish and marine fish and mammals.

Section 7

Section 7 of ESA mandates that all federal agencies consult with USFWS and NMFS if they determine that a proposed action may affect a listed species or its habitat. The purpose of consultation with USFWS and NMFS is to ensure that the federal agencies' actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species.

Section 9

Section 9 of ESA describes activities that are prohibited. The ESA specifically prohibits the take of any fish or wildlife species listed as endangered. *Take* is defined as the action of or attempt to hunt, harm, harass, pursue, shoot, wound, capture, kill, trap, capture, or collect a species, or attempt to engage in any such conduct. Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing. The term *harm* is further defined as:

... an act which actually kills or injures wildlife. Such 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 Code of Federal Regulations [CFR] 17.3).

The term *harass* is further defined as:

...an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3).

Under Section 9 of ESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in non-federal areas in knowing violation of any state law or in the course of criminal trespass. Candidate species and species that are proposed or under petition for listing receive no protection under Section 9.

Section 10

Section 10(a)(1)(B) of ESA involves the issuance of an incidental take permit (ITP) for any non-federal action that is reasonably certain to take an endangered or threatened species. The ESA requires that applications for ITPs are accompanied by a habitat conservation plan (HCP). The HCP describes how the take of individuals will be offset to the maximum extent practicable by providing for the conservation of the affected species through specific mitigation measures.

Critical Habitat

Critical habitat refers to areas designated by USFWS or NMFS for the conservation of species listed as threatened or endangered under ESA. When a species is proposed for listing under ESA, USFWS or NMFS considers whether there are certain areas essential to the conservation of the species.

Critical habitat is defined in Section 3 of ESA as follows.

1. The specific areas within the geographical area occupied by a species at the time it is listed in accordance with ESA, on which are found those physical or biological features that:
 - a. are essential to the conservation of the species, and
 - b. may require special management considerations or protection; and
2. Specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Any federal action (permit, license, or funding) in critical habitat requires that federal agency to consult with USFWS and/or NMFS where the action has potential to adversely modify the habitat for the species.

Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) establishes a management system for national marine and estuarine fishery resources. This legislation requires that all federal agencies consult with NMFS regarding all actions or proposed actions permitted, funded, or undertaken that may adversely affect essential fish habitat (EFH). EFH is defined as “waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The legislation states that migratory routes to and from anadromous fish spawning grounds are considered EFH. The phrase *adversely affect* refers to the creation of any effect that reduces the quality or quantity of EFH. Federal activities that occur outside EFH but may nonetheless have an effect on EFH waters and substrate must also be considered in the consultation process.

Under the Magnuson-Stevens Act, effects on habitat managed under the *Pacific Coast Salmon Fishery Management Plan* must also be considered. The Magnuson-Stevens Act states that consultation regarding EFH should be consolidated, where appropriate, with the interagency consultation,

coordination, and environmental review procedures required by other federal statutes, such as NEPA, the Fish and Wildlife Coordination Act, the Clean Water Act (CWA), and ESA. EFH consultation requirements can be satisfied through concurrent environmental compliance if the lead agency provides NMFS with timely notification of actions that may adversely affect EFH, and the notification meets requirements for EFH assessments.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) domestically implements a series of international treaties that provide for migratory bird protection. The current list of species protected by the MBTA can be found in the November 1, 2013, Federal Register (FR) (78 FR 65844–65864). This list contains several hundred species, including essentially all native birds. Permits for take of nongame migratory birds are only needed for specific activities, such as scientific collecting, rehabilitation, propagation, education, taxidermy, and protection of human health and safety and of personal property.

Executive Order 13186: Responsibilities of Federal Agencies to Protect Migratory Birds

Executive Order (EO) 13186 (signed January 10, 2001) directs each federal agency taking actions that would have or would likely have a negative impact on migratory bird populations to work with USFWS to develop a memorandum of understanding (MOU) to promote the conservation of migratory bird populations. Protocols developed under the MOU must include the following agency responsibilities.

- 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.
- Prevent or abate the pollution or detrimental alteration of the environment for the benefit of migratory birds, as practicable.

The EO is designed to assist federal agencies in their efforts to comply with the MBTA; it does not constitute any legal authorization to take migratory birds.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires consultation with USFWS, NMFS, and the state fish and wildlife agencies where the waters of any stream or other body of water are proposed, authorized, permitted, or licensed to be impounded, diverted, or otherwise controlled or modified under a federal permit or license. Consultation is undertaken for the purpose of preventing loss of and damage to wildlife resources.

Clean Water Act

The federal CWA regulates discharges of pollutants to waters of the United States and serves as the primary federal law protecting the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands.

The CWA empowers the U.S. Environmental Protection Agency (USEPA) to set national water quality standards and effluent limitations and includes programs addressing both point-source and nonpoint-source pollution. Point-source pollution is pollution that originates or enters surface waters at a single, discrete location, such as an outfall structure or an excavation or construction site. Nonpoint-source pollution originates over a broader area and includes urban contaminants in stormwater runoff and sediment loading from upstream areas. CWA operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the CWA's primary regulatory tool.

Permits for Fill Placement in Waters and Wetlands (Section 404)

Under CWA, Section 404, the U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged and fill materials into waters of the United States. Waters of the United States subject to jurisdiction under CWA Section 404 are defined in USACE 1986 regulations at 33 CFR 328.3 and in USEPA regulations at 40 CFR 230.3, unless otherwise modified.

Unless an activity is exempt under Section 404(f) of the CWA, applicants must obtain a permit from USACE for all discharges of dredged or fill material into waters of the United States, including wetlands, before proceeding with a proposed activity.

Department of the Army (DA) permits issued by USACE are issued under various forms of authorization. These include individual permits that are issued following a review of individual applications and general permits that authorize a category or categories of activities in specific geographical regions or nationwide (33 CFR 320.1[c]). General permits are DA authorizations issued on a nationwide or regional basis for a category or categories of activities when:

- (1) those activities are substantially similar in nature and cause only minimal individual and cumulative environmental impacts; or
- (2) the general permit would result in avoiding unnecessary duplication of the regulatory control exercised by another Federal, state, or local agency provided it has been determined that the environmental consequences of the action are individually and cumulatively minimal. (33 CFR 323.2(h)).

General permits issued by USACE include Regional and Programmatic General Permits issued by a division or district engineer after compliance with the procedures of 33 CFR 325, and Nationwide Permits (NWPs), issued by regulation (33 CFR 330) for certain specified activities nationwide. If certain conditions are met, the specified activities can take place without the need for an individual or regional permit (33 CFR 325.5[c][2]).

Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. USACE cannot issue an individual permit or verify the use of a general permit until the requirements of NEPA, ESA, and the National Historic Preservation Act (see Section 3.9, *Cultural and Paleontological Resources*) have been met. In addition, USACE cannot issue or verify any permit that may result in a discharge of a pollutant into waters of the United States until a water quality certification has been issued pursuant to CWA Section 401.

Permits for Stormwater Discharge (Section 402)

As described in Section 3.6, *Hydrology and Water Quality*, Section 402 of CWA regulates construction-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program, administered by USEPA. In California, the State

Water Resources Control Board (State Water Board) is authorized by USEPA to oversee the NPDES program through the Regional Water Quality Control Boards (Regional Water Boards) (see the related discussion under *Porter-Cologne Water Quality Control Act* below). The proposed action is within the jurisdiction of the Central Valley Regional Water Board (Central Valley Water Board).

NPDES permits are required for construction projects that disturb more than 1 acre of land. The NPDES permitting process requires the applicant to file a public notice of intent to discharge stormwater and to prepare and implement a stormwater pollution prevention plan (SWPPP). The SWPPP includes a site map and a description of proposed construction activities. In addition, it describes the best management practices (BMPs) that will be implemented to prevent soil erosion and discharge of other construction-related pollutants (e.g., petroleum products, solvents, paints, cement) that could contaminate nearby water resources. Permittees are required to conduct annual monitoring and reporting to ensure that BMPs are correctly implemented and effective in controlling the discharge of stormwater-related pollutants.

Water Quality Certification (Section 401)

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate, or, if appropriate, from the interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a federal component and may affect state water quality (including projects that require federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

Executive Order 11990: Protection of Wetlands

EO 11990, signed May 24, 1977, directs all federal agencies to refrain from assisting in or giving financial support to projects that encroach on publicly or privately owned wetlands. It further requires that federal agencies support a policy to minimize the destruction, loss, or degradation of wetlands. Such a project (that encroaches on wetlands) may not be undertaken unless the agency has determined that (1) there are no practicable alternatives to such construction, (2) the project includes all practicable measures to minimize harm to wetlands that would be affected by the project, and (3) the impact will be minor.

Executive Order 13112: Prevention and Control of Invasive Species

EO 13112, signed February 3, 1999, directs all federal agencies to prevent and control the introduction of invasive species in a cost-effective and environmentally sound manner. The EO established the National Invasive Species Council (NISC), which is composed of federal agencies and departments, and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. In 2008, NISC released an updated national invasive species management plan (National Invasive Species Council 2008) that recommends objectives and measures to implement the EO and prevent the introduction and spread of invasive species. The EO requires consideration of invasive species in NEPA analyses, including their identification and distribution, their potential impacts, and measures to prevent or eradicate them.

State

California Endangered Species Act

The California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050–2116) states that all native species or subspecies of a fish, amphibian, reptile, mammal, or plant and their habitats that are threatened with extinction and those experiencing a significant decline that, if not halted, would lead to a threatened or endangered designation will be protected or preserved.

Under Section 2081 of the Fish and Game Code, a permit from CDFW is required for projects that could result in the take of a species that is state-listed as threatened or endangered. *Take* is defined more narrowly under CESA than ESA. Under CESA, *take* of a species means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch capture, or kill (California Fish and Game Code, Section 86). The state definition of take does not include harm or harass, as the definition of take under ESA does. As a result, the threshold for take under CESA is higher than that under ESA. For example, habitat modification is not necessarily considered take under CESA.

Natural Communities Conservation Planning Act

California Fish and Game Code Sections 2800–2835 detail the state’s policies on the conservation, protection, restoration, and enhancement of the state’s natural resources and ecosystems. The intent of the legislation is to provide for conservation planning as an officially recognized policy that can be used as a tool to eliminate conflicts between the protection of natural resources and the need for growth and development. In addition, the legislation promotes conservation planning as a means of coordination and cooperation among private interests, agencies, and landowners, and as a mechanism for multispecies and multihabitat management and conservation. The development of natural community conservation plans (NCCPs) is an alternative to obtaining take authorization under Section 2081 of the California Fish and Game Code.

California Native Plant Protection Act

California Fish and Game Code Sections 1900–1913 codify the Native Plant Protection Act of 1977 (NPPA), which is intended to preserve, protect, and enhance endangered or rare native plants in the state. Under Section 1901, a species is *endangered* when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is *rare* when, although not threatened with immediate extinction, it exists in such small numbers throughout its range that it may become endangered if its present environment worsens. The NPPA gave the California Fish and Game Commission the power to designate native plants as endangered or rare, and the act protected endangered and rare plants from take. According to CDFW, a CESA Section 2081 permit for incidental take of listed threatened and endangered plants from all activities is required, except for activities specifically authorized by the NPPA. Because rare plants are not included under CESA, mitigation measures for impacts on rare plants are specified in a formal agreement between CDFW and the project proponent.

California Fish and Game Code Section 1600 (Lake and Streambed Alteration)

Sections 1600–1603 of the Fish and Game Code state that it is unlawful for any person or agency to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources, or to use any material from the streambeds, without first notifying CDFW. A Lake and Streambed Alteration Agreement must be

obtained if effects are expected to occur. A stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks, and that supports wildlife, fish, or other aquatic life. This definition includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. CDFW's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife.

California Fish and Game Code—Various Sections

The California Fish and Game Code provides protection from take for a variety of species. Section 5050 prohibits take of fully protected amphibians and reptiles. Section 3515 prohibits take of fully protected fish species. Eggs and nests of all birds are protected under Section 3503, nesting birds (including raptors and passerines) are protected under Sections 3503.5 and 3513, birds of prey are protected under Section 3503.5, and fully protected birds are listed under Section 3511. Migratory non-game birds are protected under Section 3800. Fully protected mammals are listed under Section 4700. The California Fish and Game Code defines *take* as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Except for take related to scientific research, all take of fully protected species is prohibited. CDFW cannot issue a take permit for fully protected species, except under narrow conditions for scientific research or the protection of livestock, or if an NCCP has been adopted.

California Food and Agriculture Code

More than 30 different sections of the California Food and Agriculture Code pertain to the state's mandate to prevent the introduction and spread of injurious animal pests, plant diseases, and noxious weeds. Most of these statutes and their associated regulations (Title 3 of the California Code of Regulations [CCR]) are contained in Food and Agriculture Code Sections 403, 461, 5004, 5021–5027, 5301–5310, 5321–5323, 5401–5404, 5421, 5430–5432, 5434, 5761–5763, 7201, 7206–7207, and 7501–7502. These codes describe procedures and regulations concerning: plant quarantines, regulation of noxious weed seed, emergency pest eradications to protect agriculture, pests as public nuisances, vectors of infestation and infection, the sale, transport and propagation of noxious weeds, and the protection of native species and forests from weeds. California Department of Food and Agriculture enforces most of these statutes and their relevant regulations. Construction and restoration activities associated with the action alternatives must meet the pest and vector control requirements of this code.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne Act definition, *waters of the state* are “any surface water or groundwater, including saline waters, within the boundaries of the state.” Although all waters of the United States that are within the borders of California are also waters of the state, the reverse is not true. Therefore, California retains authority to regulate discharges of waste into any waters of the state, regardless of whether USACE has concurrent jurisdiction under CWA Section 404, and defines *discharges to receiving waters* more broadly than the CWA does.

Waters of the state fall under the jurisdiction of the nine Regional Water Boards. The Plan Area is wholly under the jurisdiction of the Central Valley Water Board. Under this act, each Regional Water Board must prepare and periodically update water quality control basin plans. The basin plan that is in place for the Plan Area is the *Sacramento River Basin and San Joaquin River Basin Water Quality Control Plan*. Each basin plan sets forth water quality standards for surface water and groundwater,

as well as actions to control nonpoint and point sources of pollution. California Water Code Section 13260 requires any person discharging waste, or proposing to discharge waste, in any region that could affect the waters of the state to file a report of discharge (an application for waste discharge requirements) with the applicable Regional Water Board. California Water Code Section 13050 authorizes the State Water Board and the affiliated Regional Water Board to regulate biological pollutants. Aquatic invasive plants discharged to receiving waters are an example of this kind of pollutant. Construction and restoration activities associated with the action alternatives that may discharge wastes into the waters of the state must meet the discharge control requirements of the Porter-Cologne Act.

California Wetlands Conservation Policy

The goals of the California Wetlands Conservation Policy, adopted in 1993 (Executive Order W-59-93), are “to ensure no overall net loss, and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California, in a manner that fosters creativity, stewardship, and respect for private property;” to reduce procedural complexity in the administration of state and federal wetlands conservation programs; and to make restoration, landowner incentive programs, and cooperative planning efforts the primary focus of wetlands conservation.

Local

Placer County General Plan

Excerpted below are the relevant goals and policies from the *Placer County General Plan* that pertain to biological resources (Placer County 2013).

Goal

1.I. To establish and maintain interconnected greenbelts and open spaces for the protection of native vegetation and wildlife and for the community’s enjoyment.

Policies

1.I.1. The County shall require that significant natural, open space, and cultural resources be identified in advance of development and incorporated into site-specific development project design. The Planned Residential Developments (PDs) and the Commercial Planned Development (CPD) provisions of the Zoning Ordinance can be used to allow flexibility for this integration with valuable site features.

1.I.2. The County shall require that development be planned and designed to avoid areas rich in wildlife or of a fragile ecological nature (e.g., areas of rare or endangered plant species, riparian areas). Alternatively, where avoidance is infeasible or where equal or greater ecological benefits can be obtained through off-site mitigation, the County shall allow project proponents to contribute to off-site mitigation efforts in lieu of on-site mitigation.

Goal

6.A. To protect and enhance the natural qualities of Placer County’s rivers, streams, creeks and groundwater.

Policies

6.A.1. The County shall require the provision of sensitive habitat buffers which shall, at a minimum, be measured as follows: 100 feet from the centerline of perennial streams, 50 feet from centerline of intermittent streams, and 50 feet from the edge of sensitive habitats to be protected, including riparian zones, wetlands, old growth woodlands, and the habitat of special status, threatened or endangered species (see discussion of sensitive habitat buffers in Part I of this Policy Document). Based on more detailed information supplied as a part of the review for a specific project or input from state or federal regulatory agency, the County may determine that such setbacks are not applicable in a particular instance or should be modified based on the new information provided. The County may, however, allow exceptions, such as in the following cases:

1. Reasonable use of the property would otherwise be denied;
2. The location is necessary to avoid or mitigate hazards to the public;
3. The location is necessary for the repair of roads, bridges, trails, or similar infrastructure; or,
4. The location is necessary for the construction of new roads, bridges, trails, or similar infrastructure where the County determines there is no feasible alternative and the project has minimized environmental impacts through project design and infrastructure placement.

6.A.2. The County shall require all development in the 100-year floodplain to comply with the provisions of the Placer County Flood Damage Prevention Ordinance.

6.A.3. The County shall require development projects proposing to encroach into a stream zone or stream setback to do one or more of the following, in descending order of desirability:

- a. Avoid the disturbance of riparian vegetation;
- b. Replace all functions of the existing riparian vegetation (on-site, in-kind);
- c. Restore another section of stream (in-kind); and/or
- d. Pay a mitigation fee for in-kind restoration elsewhere (e.g., mitigation banks).

6.A.4. Where stream protection is required or proposed, the County should require public and private development to:

- a. Preserve stream zones and stream setback areas through easements or dedications. Parcel lines (in the case of a subdivision) or easements (in the case of a subdivision or other development) shall be located to optimize resource protection. If a stream is proposed to be included within an open space parcel or easement, allowed uses and maintenance responsibilities within that parcel or easement should be clearly defined and conditioned prior to map or project approval;
- b. Designate such easement or dedication areas (as described in a. above) as open space;
- c. Protect stream zones and their habitat value by actions such as: 1) providing an adequate stream setback, 2) maintaining creek corridors in an essentially natural state, 3) employing stream restoration techniques where restoration is needed to achieve a natural stream zone, 4) utilizing riparian vegetation within stream zones, and where possible, within stream setback areas, 5) prohibiting the planting of invasive, nonnative plants (such as *Vinca major* and eucalyptus) within stream zones or stream setbacks, and 6) avoiding tree removal within stream zones;
- d. Provide recreation and public access near streams consistent with other General Plan policies;
- e. Use design, construction, and maintenance techniques that ensure development near a creek will not cause or worsen natural hazards (such as erosion, sedimentation, flooding, or water pollution) and will include erosion and sediment control practices such as: 1) turbidity screens and other management practices, which shall be used as necessary to minimize siltation, sedimentation, and erosion, and shall be left in place until disturbed areas; and/or are stabilized with permanent vegetation that will prevent the transport of sediment off site; and 2) temporary vegetation sufficient to stabilize disturbed areas.

- f. Provide for long-term stream zone maintenance by providing a guaranteed financial commitment to the County which accounts for all anticipated maintenance activities.

6.A.5. The County shall continue to require the use of feasible and practical best management practices (BMPs) to protect streams from the adverse effects of construction activities and urban runoff and to encourage the use of BMPs for agricultural activities.

6.A.6. The County shall require development projects to comply with the municipal and construction stormwater permit requirements of the Federal Clean Water Act National Pollutant Discharge Elimination System (NPDES) Phase I and II programs and the State General Municipal and Construction permits. Municipal requirements affecting project design and construction practices are enacted through the County's Stormwater Quality Ordinance. Separate construction permits may be required by and obtained through the State Water Resources Control Board.

6.A.7. All new development and redevelopment projects shall be designed so as to minimize the introduction of pollutants into stormwater runoff, to the maximum extent practicable, as well as minimize the amount of runoff through the incorporation of appropriate Best Management Practices.

6.A.8. The County shall support implementation of Low Impact Development site design and Watershed Process Management requirements for new and redevelopment projects in accordance with the NPDES Phase I and II programs, and applicable NPDES permits.

6.A.9. The County shall require that natural watercourses be integrated into new development in such a way that they are accessible to the public and provide a positive visual element.

6.A.10. The County shall discourage grading activities during the rainy season, unless adequately mitigated, to avoid sedimentation of creeks and damage to riparian habitat.

6.A.11. Where the stream zone has previously been modified by channelization, fill, or other human activity, the County shall require project proponents to restore such areas by means of landscaping, revegetation, or similar stabilization techniques as a part of development activities.

6.A.12. The County shall require that newly-created parcels include adequate space outside of watercourses' setback areas to ensure that property owners will not place improvements (e.g., pools, patios, and appurtenant structures), within areas that require protection.

Goal

6.B. To protect wetland communities and related riparian areas throughout Placer County as valuable resources.

Policies

6.B.1. The County shall support the "no net loss" policy for wetland areas regulated by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, and the California Department of Fish and Wildlife. Coordination with these agencies at all levels of project review shall continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

6.B.2. The County shall require new development to mitigate wetland loss in both federal jurisdictional and non-jurisdictional wetlands to achieve "no net loss" through any combination of the following, in descending order of desirability: (1) avoidance; (2) where avoidance is not possible, minimization of impacts on the resource; or (3) compensation, including use of a mitigation and conservation banking program that provides the opportunity to mitigate impacts to special status, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas. Non-jurisdictional wetlands may include riparian areas that are not federal "waters of the United States" as defined by the Clean Water Act.

6.B.3. The County shall discourage direct runoff of pollutants and siltation into wetland areas from outfalls serving nearby urban development. Development shall be designed in such a manner that pollutants and siltation will not significantly adversely affect the value or function of wetlands.

6.B.4. The County shall strive to identify and conserve remaining upland habitat areas adjacent to wetlands and riparian areas that are critical to the survival and nesting of wetland and riparian species.

6.B.5. The County shall require development that may affect a wetland to employ avoidance, minimization, and/or compensatory mitigation techniques. In evaluating the level of compensation to be required with respect to any given project, (a) on-site mitigation shall be preferred to off-site, and in-kind mitigation shall be preferred to out-of-kind; (b) functional replacement ratios may vary to the extent necessary to incorporate a margin of safety reflecting the expected degree of success associated with the mitigation plan; and (c) acreage replacement ratios may vary depending on the relative functions and values of those wetlands being lost and those being supplied, including compensation for temporal losses. The County shall continue to implement and refine criteria for determining when an alteration to a wetland is considered a less-than significant impact under CEQA.

Goal

6.C. To protect, restore, and enhance habitats that support fish and wildlife species so as to maintain populations at viable levels.

Policies

6.C.1. The County shall identify and protect significant ecological resource areas and other unique wildlife habitats critical to protecting and sustaining wildlife populations. Significant ecological resource areas include the following:

- a. Wetland areas including vernal pools.
- b. Stream zones.
- c. Any habitat for special status, threatened, or endangered animals or plants.
- d. Critical deer winter ranges (winter and summer), migratory routes and fawning habitat.
- e. Large areas of non-fragmented natural habitat, including blue oak woodlands, valley foothill and montane riparian, valley oak woodlands, annual grasslands, and vernal pool/grassland complexes.
- f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.
- g. Important spawning and rearing areas for anadromous fish.

6.C.2. The County shall require development in areas known to have particular value for wildlife to be carefully planned and, where possible, located so that the reasonable value of the habitat for wildlife is maintained.

6.C.3. The County shall encourage the control of residual pesticides to prevent potential damage to water quality, vegetation, fish, and wildlife.

6.C.4. The County shall encourage private landowners to adopt sound fish and wildlife habitat management practices, as recommended by California Department of Fish and Wildlife officials, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, the U.S. Army Corps of Engineers, and the Placer County Resource Conservation District.

6.C.5. The County shall require mitigation for development projects where isolated segments of stream habitat are unavoidably altered. Such impacts should be mitigated on-site with in-kind habitat replacement or elsewhere in the stream system through stream or riparian habitat restoration work where it is clear that offsite replacement provides greater functions and values than onsite replacement.

6.C.6. The County shall support preservation of the habitats of threatened, endangered, and/or other special status species. Where County acquisition and maintenance is not practicable or feasible, federal and state agencies, as well as other resource conservation organizations, shall be encouraged to acquire and manage endangered species' habitats.

6.C.7. The County shall support the maintenance of suitable habitats for all indigenous species of wildlife, without preference to game or non-game species, through maintenance of habitat diversity.

6.C.8. The County shall support the preservation or reestablishment of fisheries in the rivers and streams within the County, whenever possible.

6.C.9. The County shall require new private or public developments to preserve and enhance existing riparian habitat unless public safety concerns require removal of habitat for flood control or other essential public purposes (See Policy 6.A.1.). In cases where new private or public development results in modification or destruction of riparian habitat the developers shall be responsible for acquiring, restoring, and enhancing at least an equivalent amount of like habitat within or near the project area.

6.C.10. The County will use the California Wildlife Habitat Relationships (WHR) system as a standard descriptive tool and guide for environmental assessment in the absence of a more detailed site-specific system.

6.C.11. Prior to approval of discretionary development permits involving parcels within a significant ecological resource area, the County shall require, as part of the environmental review process, a biotic resources evaluation of the sites by a wildlife biologist, the evaluation shall be based upon field reconnaissance performed at the appropriate time of year to determine the presence or absence of special status, threatened, or endangered species of plants or animals. Such evaluation will consider the potential for significant impact on these resources, and will identify feasible measures to mitigate such impacts or indicate why mitigation is not feasible. In approving any such discretionary development permit, the decision-making body shall determine the feasibility of the identified mitigation measures.

Significant ecological resource areas shall, at a minimum, include the following:

- a. Wetland areas including vernal pools.
- b. Stream zones.
- c. Any habitat for special status, threatened or endangered animals or plants.
- d. Critical deer winter ranges (winter and summer), migratory routes and fawning habitat.
- e. Large areas of non-fragmented natural habitat, including blue oak woodlands, valley foothill and montane riparian, valley oak woodlands, annual grasslands, vernal pool/grassland complexes habitat.
- f. Identifiable wildlife movement zones, including but not limited to, non-fragmented stream environment zones, avian and mammalian migratory routes, and known concentration areas of waterfowl within the Pacific Flyway.
- g. Important spawning and rearing areas for anadromous fish.

6.C.12. The County shall cooperate with, encourage, and support the plans of other public agencies to acquire fee title or conservation easements to privately-owned lands in order to preserve important wildlife corridors and to provide habitat protection of California Species of Concern and state or federally listed threatened, or endangered plant and animal species, or any species listed in an implementing agreement for a habitat conservation plan and natural communities conservation plan.

6.C.13. The County shall support and cooperate with efforts of other local, state, and federal agencies and private entities engaged in the preservation and protection of significant biological resources from incompatible land uses and development. Significant biological resources include endangered or threatened species and their habitats, wetland habitats, wildlife migration corridors, and locally important species/communities.

6.C.14. The County shall support the management efforts of the California Department of Fish and Wildlife to maintain and enhance the productivity of important fish and game species (such as the Blue Canyon and Loyalton Truckee deer herds) by protecting important natural communities for these species from incompatible urban/suburban, rural residential, agricultural, or recreational development.

Goal

6.D. To preserve and protect the valuable vegetation resources of Placer County.

Policies

6.D.1. The County shall encourage landowners and developers to preserve the integrity of existing terrain and natural vegetation in visually-sensitive areas such as hillsides, ridges, and along important transportation corridors.

6.D.2. The County shall require developers to use native and compatible nonnative species, especially drought-resistant species, to the extent possible in fulfilling landscaping requirements imposed as conditions of discretionary permits or for project mitigation.

6.D.3. The County shall support the preservation of outstanding areas of natural vegetation, including, but not limited to, oak woodlands, riparian areas, and vernal pools.

6.D.4. The County shall ensure that landmark trees and major groves of native trees are preserved and protected. In order to maintain these areas in perpetuity, protected areas shall also include younger vegetation with suitable space for growth and reproduction.

6.D.5. The County shall establish procedures for identifying and preserving special status, threatened, and endangered plant species that may be adversely affected by public or private development projects.

6.D.6. The County shall ensure the conservation of sufficiently large, continuous expanses of native vegetation to provide suitable habitat for maintaining abundant and diverse wildlife.

6.D.7. The County shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, nutrient catchment, and wildlife habitats. Such communities shall be restored or expanded, where possible.

6.D.8. The County shall require that new development preserve natural woodlands to the maximum extent possible.

6.D.9. The County shall require that development on hillsides be limited to maintain valuable natural vegetation, especially forests and open grasslands, and to control erosion.

6.D.10. The County shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native wildlife, and ensure that a maximum number and variety of well-adapted plants are maintained.

6.D.11. The County shall support the continued use of prescribed burning, mastication, chipping, and other methods to mimic the effects of natural fires to reduce fuel loads and associated fire hazard to human residents and to enhance the health of biotic communities.

6.D.12. The County shall support the retention of vegetated corridors, consistent with Fire Safe Practices, along circulation routes in order to preserve their rural character.

6.D.13. The County shall support the preservation of native trees and the use of native, drought-tolerant plant materials in all revegetation/landscaping projects.

6.D.14. The County shall require that new development avoid ecologically-fragile areas (e.g., areas of special status, threatened, or endangered species of plants, and riparian areas). Where feasible, these areas should be protected through public or private acquisition of fee title or conservation easements to ensure protection.

Goal

6.E. To preserve and enhance open space lands to maintain the natural resources of the County.

Policies

6.E.1. The County shall support the preservation and enhancement of natural land forms, natural vegetation, and natural resources as open space to the maximum extent feasible. The County shall permanently protect, as open space, areas of natural resource value, including wetlands, riparian corridors, unfragmented woodlands, and floodplains.

6.E.2. The County shall require that new development be designed and constructed to preserve the following types of areas and features as open space to the maximum extent feasible:

- a. High erosion hazard areas;
- b. Scenic and trail corridors;
- c. Streams, riparian vegetation;
- d. Wetlands;
- e. Significant stands of vegetation;
- f. Wildlife corridors; and
- g. Any areas of special ecological significance.

6.E.3. The County shall support the maintenance of open space and natural areas that are interconnected and of sufficient size to protect biodiversity sustain viable populations, accommodate wildlife movement, and sustain ecosystems.

6.E.4. The County shall coordinate with local, state, and federal agencies and private organizations to establish visual and physical links among open space areas. Where appropriate, these open space areas are to be connected by scenic corridors, wildlife corridors, and trails. Dedication of easements shall be encouraged, and in many cases, required as lands are developed and built.

Placer Legacy Program

Adopted in June 2000, the Placer Legacy Open Space and Agricultural Conservation Program (Placer Legacy) is a program of Placer County to protect and conserve open space and agricultural lands. The program has been developed to implement the goals, policies, and programs of the *Placer County General Plan* by meeting a number of objectives.

- Maintain a viable agricultural segment of the economy.
- Conserve natural features necessary for access to a variety of outdoor recreation opportunities.
- Retain important scenic and historic areas.
- Preserve the diversity of plant and animal communities.
- Protect endangered and other special-status plant and animal species.
- Separate urban areas into distinct communities, and ensure public safety.

Placer Legacy comprises four primary areas of program work: program startup; natural resource conservation planning activities; program implementation (acquisition, monitoring, development and maintenance); and public outreach.

Program start-up activities included preparing an implementation plan to direct program activities and assembling staff to implement the program. This phase of the program is completed.

Natural resource conservation planning activities involve realizing program objectives through long-range planning efforts, such as watershed planning and the PCCP.

Program implementation activities consist of purchasing properties and conservation easements, monitoring acquired properties and easements, making improvements to acquired properties for public access, stream and creek restoration projects, and maintaining County parks and trails. This component of the program involves working with “willing-seller” property owners to ensure that the potential land acquisition meets the goals of the Placer Legacy program as well as the needs of the property owners. Some improvements entail constructing trails and staging areas, providing restrooms and picnic facilities, and improving road access. Maintenance activities on some properties consist of the installation of field fencing, clearing plant debris, clearing brush to reduce wildfire risk, and ensuring safe use for the public.

Public outreach activities consist of educating the public about the Placer Legacy program through publications, billboards, and ongoing media stories; giving presentations to the Board of Supervisors and interested stakeholders at meetings, workshops, forums, and events.

Placer County Tree Preservation Ordinance

Placer County’s Tree Preservation Ordinance provides protection for trees in unincorporated areas within the county. The ordinance requires locating and characterizing protected trees to provide the data needed to prepare a formal protected tree report and subsequent tree removal permit. A formal protected tree report is required before a tree can be removed. This ordinance states that “no person, firm, corporation or county agency shall conduct any development activities within the protected zone of any protected tree on public or private land, or harm, destroy, kill or remove any protected tree unless authorized by a tree permit.” Under the ordinance, a protected tree is defined as the following.

- A tall woody plant native to California (excluding foothill pines and plants that are typically shrubs), with a single main stem or trunk at least 6 inches diameter at breast height (dbh), or a multiple trunk with an aggregate of at least 10 inches dbh.
- All native trees regardless of size within riparian zones. A riparian zone is defined as any area within 50 feet from the centerline of a seasonal creek or stream; any area 100 feet from the centerline of a year-round creek, stream, or river; and any area within 100 feet of the shoreline of a pond, lake, or reservoir.
- All landmark trees. A landmark tree is defined as a tree or grove of trees designated by resolution of the County Board of Supervisors to be of historical or cultural value, an outstanding specimen, an unusual species and/or of significant community benefit. Landmark trees may include non-native species.

Trees may be exempted from permitting requirements under several circumstances, including trees (1) that have been identified by an arborist, forester, or county arborist/licensed landscape architect as “dying” or “unhealthy,” (2) dead trees, or (3) trees that are in a hazardous condition presenting an immediate danger to health and property.

Under the ordinance, the County may require replacement plantings that can be based on an inch for inch replacement. Replacement plantings may be planted onsite and/or other offsite locations. Maintenance and irrigation is required for 3 years. Alternatively, if the project area is not large enough to support the replacement plantings, the County may require implementation of a revegetation plan or an in-lieu payment of the installation cost into the County’s Tree Preservation Fund. Since 2007, the County has also required project proponents to contribute to the conservation of land versus implementing an onsite compensatory replacement planting plan when conditions for onsite replacement are not favorable to woodland restoration.

Sutter County General Plan

Excerpted below are the relevant goals and policies from the *Sutter County General Plan* that pertain to biological resources (Sutter County 2011).

Goal

AG 1 Preserve and protect high-quality agricultural lands for long-term agricultural production.

Policies

AG 1.1 Agricultural Land Preservation. Preserve and maintain agriculturally designated lands for agricultural use and direct urban/suburban and other nonagricultural related development to the cities, unincorporated rural communities, and other clearly defined and comprehensively planned development areas.

AG 1.5 Agricultural Land Conversion. Discourage the conversion of agricultural land to other uses unless all of the following findings can be made:

- a. The net community benefit derived from conversion of the land outweighs the need to protect the land for long-term agricultural use
- b. There are no feasible alternative locations for the proposed use that would appreciably reduce impacts upon agricultural lands
- c. The use will not have significant adverse effects, or can mitigate such effects, upon existing and future adjacent agricultural lands and operations (AG 1-A)

AG 1.6 Interrelationship with Habitat Conservation. Permit agriculturally designated lands to be used for habitat conservation and/or mitigation with approval of a development agreement, provided such use does not interfere or adversely affect existing or planned agricultural uses or impact County flood control operations. (AG 1-A)

AG 1.11 Conservation Easements. Explore, and if determined feasible, identify agricultural mitigation bank areas in which the County will encourage private landowners to voluntarily participate in agricultural conservation easements. (AG 1-B)

AG 1.12 Land Mitigation Program. Explore, and if determined feasible, create an Agricultural Land Mitigation Program. (AG 1-B)

Goal

AG 3 Protect the natural resources needed to ensure that agriculture remains an essential and sustainable part of Sutter County’s future.

Policy

AG 3.8 Habitat Protection. Promote wildlife friendly agricultural practices. Encourage habitat protection and management that is compatible with and does not preclude or restrict onsite agricultural production.

Goal

ER 1 Support a comprehensive approach for the conservation, enhancement, and regulation of Sutter County's significant habitat and natural open space resources.

Policy

ER 1.6 Avoidance. Ensure that new development projects avoid, to the extent feasible, significant biological resources (e.g. areas of rare, threatened or endangered species of plants, riparian areas, vernal pools), except where such projects are identified as "Authorized Development" within an adopted Habitat Conservation Plan.

Goal

ER 2 Conserve, protect, and enhance Sutter County's significant natural wetland and riparian habitats.

Policies

ER 2.1 No Net Loss. Require new development to ensure no net loss of state and federally regulated wetlands, other waters of the United States (including creeks, rivers, ponds, marshes, vernal pools, and other seasonal wetlands), and associated functions and values through a combination of avoidance, restoration, and compensation.

ER 2.3 Minimize Surface Runoff. Minimize direct discharge of surface runoff into wetland areas and design new development in such a manner that pollutants and siltation will not significantly affect jurisdictional wetlands.

ER 2.4 Wetland Mitigation Banks. Encourage the creation and use of regional wetland mitigation banks to the extent that they do not conflict with Sutter County agricultural lands and flood control operations. (ER 2-A)

City of Lincoln General Plan

Excerpted below are the relevant goals and policies from the *City of Lincoln General Plan* that pertain to biological resources (City of Lincoln 2008).

Goal

OSC-1. To designate, protect, and encourage natural resources, open space, and recreation lands in the city, protect and enhance a significant system of interconnected natural habitat areas, and provide opportunities for recreation activities to meet citizen needs.

Policies

OSC-1.1 Protect Natural Resources. The City shall strive to protect natural resource areas, fish and wildlife habitat areas, scenic areas, open space areas and parks from encroachment or destruction by incompatible development.

OSC-1.2 Coordinate with Placer County for Open Space Preservation. The City shall coordinate with Placer County and their Placer Legacy program to ensure City issues are incorporated into future plans.

OSC-1.3 Creation of Buffers. In new development areas, the City shall encourage the use of open space or recreational buffers between incompatible land uses.

OSC-1.4 100-year Floodplains. The city will apply open space designations to all lands located within the 100 year floodway as shown on the FIRM panel or as determined by a project drainage plan and approved by the City Engineer/Director of Public Works; The City will also apply open space designations to all 100-year floodplain fringe areas, and/or remaining floodplain fringe areas as determined by a project drainage plan identifying floodplain fringe encroachment areas, and quantifying their impact along with other improvements to show a zero (0) net impact to the upstream, downstream and adjacent properties. Open space designations will apply to all land located within a minimum of 50 feet from the center channel of all perennial and intermittent streams and creeks providing natural drainage, and to areas consisting of riparian habitat. In designating these areas as open space, the city is preserving natural resources and protecting these areas from development.

Goal

OSC-4. To preserve and enhance local streams, creeks, and aquifers.

Policies

OSC-4.3 Protect Surface Water and Groundwater. The City shall ensure that new development projects do not degrade surface water and groundwater.

OSC-4.4 Protection and Management of Flood Plains. The City shall encourage the protection of 100 year floodplains and where appropriate, obtain public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access and recreation.

Goal

OSC-5. To preserve and protect existing biological resources including both wildlife and vegetative habitat.

Policies

OSC-5.1 Protect Significant Vegetation. The City shall support the preservation of heritage oaks and threatened or endangered vegetative habitat from destruction. A heritage oak shall be defined as a tree with a diameter of 36 inches measured at a point 4.5 feet above grade level (i.e., diameter at breast height or DBH).

OSC-5.2 Management of Wetlands. The City shall support the management of wetland and riparian plant communities for passive recreation, groundwater recharge, and wildlife habitats. Such communities shall be restored or expanded, where possible and as appropriate.

OSC-5.3 Placer Legacy Open Space and Conservation Program. The City will continue to coordinate with Placer County and the Placer Legacy Open Space and Conservation Program to protect habitat areas that support endangered species and other special-status species.

OSC-5.4 Encourage Planting of Native Vegetation. The City shall encourage the planting of native trees, shrubs, and grasslands in order to preserve the visual integrity of the landscape, provide habitat conditions suitable for native vegetation, and ensure that a maximum number and variety of well-adapted plants are maintained.

OSC-5.5 New Development in Sensitive Areas. The City shall require that new development in areas that are known to have particular value for biological resources be carefully planned and where possible avoided so that the value of existing sensitive vegetation and wildlife habitat can be maintained.

OSC-5.6 No Net Loss of Wetlands. The City will maintain a policy of no net loss of wetlands on a project-by-project basis, which may include an entire specific plan area. For the purpose of identifying such wetlands, the City will accept a map delineating wetlands which has been accepted by the U.S. Army Corps of Engineers pursuant to Section 404 of the Clean Water Act of 1972. The term “no net loss” may include mitigation implemented through participation in an off-site mitigation bank or similar mitigation mechanism acceptable to the City and permitting agencies.

OSC-5.7 404 Permit Requirements. The City may require project proponents to obtain 404 Permits, and prepare mitigation plans for, or provide for the avoidance, preservation, and maintenance of identified wetlands prior to submitting applications for land use entitlements.

OSC-5.8 Corps of Engineers Disclaimers. The City may, but need not, accept a Corps of Engineers disclaimer of any jurisdiction over the project of a Corps of Engineers 404 permit as the City's own plan for the achievement of a project's no net loss of wetlands.

OSC-5.9 Wetlands Dedication. All preserved wetlands shall be dedicated to the City or a non-profit organization acceptable to the City and preserved through perpetual covenants enforceable by the City or other appropriate agencies, to ensure their maintenance and survival. With respect to areas dedicated to the City, acceptance shall be conditioned upon establishment of a lighting and landscaping district or other public or private funding mechanisms acceptable to the City.

OSC-5.10 Native Vegetation for Landscaping. The City shall develop a list of native vegetation to be used as a landscape pallet for use within open space / preserve areas. Native plants should also be incorporated into plant palettes used in developed areas by citizens and developers.

OSC-5.11 Requirement for Biological Studies. Prior to project (i.e., specific plan or individual project) approval, the City shall require a biological study to be prepared by a qualified biologist for any proposed development within areas that contain a moderate to high potential for sensitive habitat. As appropriate, the study shall include the following activities: (1) inventory species listed in the California Native Plant Society Manual of California Vegetation, (2) inventory species identified by the USFWS and CDFG, (3) inventory special status species listed in the California NDDB, and (4) field survey of the project site by a qualified biologist.

OSC-5.12 Appropriate Mitigation Measures. The City shall consider using appropriate mitigation measures for future projects (i.e., specific plans or individual projects) based on mitigation standards or protocols adopted by the applicable statute or agency (e.g., USFWS, CDFG, etc.) with jurisdiction over any affected sensitive habitats or special status species.

OSC-5.13 Minimize Lighting Impacts. The City shall ensure that lighting in residential areas and along roadways shall be designed to prevent artificial lighting from reflecting into adjacent natural or open space areas.

Other

California Native Plant Society

The California Native Plant Society has developed and maintains lists of plants of special concern in California, as described above under Special-Status Species. These species have no formal legal protection, but the values and importance of these lists are widely recognized. Plants listed as California Rare Plant Rank (CRPR) 1A, 1B, 2A, and 2B meet the definitions of endangered under California Fish and Game Code Section 1901 and may qualify for state listing. Therefore, for purposes of this analysis, they are considered rare plants pursuant to Section 15380 of CEQA.

3.3.2 Environmental Setting

This section discusses the biological setting in the Plan Area. The Plan Area covers a total of 269,502 acres at elevations ranging from approximately 40 feet above sea level (asl) on the Sacramento Valley floor to 2,300 feet asl in the Sierra Nevada foothills north of Auburn (Figure 1-1). The Plan Area was developed with a focus on areas where growth and development may greatly affect state-protected and federally protected species. As shown in Figure 1-1 and described in Chapter 2, *Proposed Action and Alternatives*, the Plan Area A encompasses approximately 210,216 acres in western Placer County and the city of Lincoln, plus all unincorporated lands within western Placer County. Plan Area B comprises areas where some Covered Activities of the County and the Placer County Water Agency (PCWA) would be conducted within the non-participating cities, a portion of the Coon Creek floodplain in Sutter County, canals in Sutter County that are important for salmonid fish passage, and the Big Gun Conservation Bank in Michigan Bluff. Much of this section's description of the biological setting was derived from Chapter 3, *Physical and Biological Setting*, of the Plan.

The Plan Area was designed to encompass the area within which Covered Activities would be implemented and to provide sufficient land and resources to implement measures to provide for the conservation of Covered Species and habitats affected by the proposed Covered Activities.

Topography

The following discussion is based on information provided in Chapter 3 of the Plan (Appendix A).

The Plan Area straddles portions of the Sacramento Valley and Sierra Nevada foothills and lies within the Great Valley geomorphic province. As a whole, Placer County represents an elevational gradient from the Sacramento Valley to the crest of the Sierra Nevada. The Plan Area occupies the lower elevations of that gradient (Figure 3.3-1).

Elevations in Plan Area A range from approximately 40 feet asl in western Placer County to 1,600 feet asl in the Bear River watershed north of Auburn.

Plan Area B activity sites vary in elevation.

- Subarea B1—Permittee Activity in Non-Participating Cities ranges in elevation from 50 to 500 feet in Roseville, Rocklin, and Loomis. Auburn is at an elevation of 1,000–1,500 feet.
- Subarea B2—PCWA Zone 1 Operations and Maintenance extends from Auburn east to Lake Theodore at an elevation of 2,300 feet.
- Subarea B3—Coon Creek Floodplain Conservation is at an elevation of 60–80 feet.
- Subarea B4—Fish Passage Channel Improvements runs from the cross canal confluence with the Sacramento River at an elevation of 20 feet to the point where it meets the Coon Creek floodplain at an elevation of 60 feet.
- Subarea B5—Big Gun Conservation Bank is at an elevation of 3,500 feet.

Elevation, slope, and aspect strongly determine soils and climate and, hence, influence vegetation and land use. Plan Area A consists of two principal zones: the Valley and the Foothills. The divide between the two zones reflects the slope transition from the flat Valley to the lower Foothills that falls roughly along the 200-foot elevation contour. The Valley zone extends from the Plan's western border to the east to include all of the city of Lincoln.

The alluvial plain of the Valley is essentially flat, rising only 150 feet in nearly 8 miles. Slopes in the lower Foothills and along the Interstate (I-) 80 corridor are generally gentle to moderate, facing west and southwest. In the Bear River and Coon Creek watersheds, the foothill terrain is steeper and more sharply dissected, reflecting its different geology.

Geology and Soils

The following discussion is based on the information provided in Chapter 3, *Physical and Biological Setting*, of the Plan (Appendix A). Plan Area geology influences landforms and soil types, which influence vegetation and plant species distribution that, in turn, help determine the distribution of wildlife species. For example, the vernal pool crustaceans that would be covered by the Plan are closely associated with vernal pool ecosystems that are restricted to particular soil types and geologic substrates with the impervious hardpan that allows pools to form despite small amounts of rainfall.

The Plan Area's general geology reflects a transition from the Sacramento Valley floor to the Sierra Nevada foothills (Figure 3.3-2). The low-elevation Valley consists of Quaternary alluvium and sandstone sediments derived from the Sierra Nevada. Weathering of Sierra Nevada granite and other igneous rock produces sediments, ranging from very fine clay to coarse sand, that are deposited according to the hydrologic regime, usually in layers of different permeability. The Foothills are older, tertiary rocks consisting of granitic granodiorite on the south and metamorphic mafic rocks on the north, with a mixed band of igneous rocks along the fault zones that parallel State Route (SR) 49 and define the eastern edge of the Plan Area. Although mafic rock weathers faster and the resulting soils differ, both formations give rise to the dense clays that accumulate on the Sacramento basin floor.

Soil conditions are generally correlated with landforms. On the Valley terraces, most soils are well drained, moderately deep to deep over an impermeable claypan or hardpan, with a sandy loam or loam surface layer and a dense clay subsoil. The soils on alluvial bottoms are very deep, with a sandy loam or loam surface layer and a sandy loam to clay subsoil. At higher elevations in the Foothills, the soils are generally well-drained sandy loams and loams derived from metamorphic and volcanic parent materials.

The soil survey of western Placer County establishes numerous named associations that vary by texture and composition. Several soil types potentially significant to the conservation strategy are described here.

Hydric Soils

Several soil types in the Valley have dense subsurface clay and hardpan layers that impede water percolation and, therefore, are seasonally saturated. These soils are called hydric soils and they often support wetlands, especially when located in topographic depressions that hold water into the dry season. Most of the Valley soils formed above Quaternary sedimentary deposits show hydric properties and differ mainly in the character of the soils that overlie the hardpan. The soils tend to form vernal pools and other seasonal wetlands wherever local topography and hydrology are favorable.

Drainageway Alluvial Soils

Drainageways that correspond to the major stream courses and their immediate floodplain have greater depth to the hardpan or are effectively incised through it. The soils are well-drained and range from sandy loams to fluvents, a kind of alluvial soil where soil structure development is prevented by repeated deposition of sediment during periodic floods. The xerofluvents mapped for western Placer County are usually dry at the surface during summer in this Mediterranean climate, but the depth to groundwater is shallow enough that they tend to support riparian vegetation.

Mehrten Formation Soils

Mehrten formation soils can support distinct biotic communities. The Mehrten formation is derived from ancient volcanic mudflows approximately 4 million to 10 million years old that arose in the Sierra Nevada and flowed down the eastern foothills to the Central Valley. The mudflows now remain as high-standing, flat-topped ridges. The underlying volcanic rock is impermeable or very slowly permeable, and vernal pools form in the depressions. In western Placer County, northern volcanic mudflow vernal pools are restricted to the Mehrten formation.

Mehrten soils are limited to a band east of SR 65 in Roseville, Rocklin, and southeastern Lincoln. Although Mehrten formation soils cover approximately 4,200 acres of Plan Area A, nearly all of these lands have already been converted to urban and suburban development, with the few remaining patches of this soil type already incorporated into existing reserves.

Serpentine Soil Formations

Many of California's rare plants and unusual natural communities occur on serpentine soils, a chemically hostile substrate that helps better adapted native plants to resist competition from non-native invasive species. In Placer County, serpentine soils are found in small patches around Foresthill, between Auburn and Colfax, and in isolated areas of the Tahoe National Forest. Although a band of ultramafic rock mapped as peridotite and patches of derivative serpentine soils runs north from Auburn and east of SR 49, at the edge of Plan Area A, the Plan Area has no significant extent of serpentine soils, and none of the Covered Species is associated with serpentine soil communities.

Foothills Soil Associations

The more varied geology and topography of the Foothills give rise to numerous soil types that vary in texture, depth, and slope. These soil types contribute to the general mosaic of oak woodland.

Climate

Western Placer County is located within the Sacramento Valley Air Basin, which is relatively flat and bordered by mountains to the east, west, and north. The basin has a Mediterranean climate characterized by hot, dry summers and cool, rainy winters, sometimes with periods of dense and persistent low-level fog that are most prevalent between winter storms. The extreme summer aridity of the Mediterranean climate is caused by sinking air of subtropical high-pressure regions. In the Sacramento Valley, the ocean has less influence than in the coastal areas, giving the interior Mediterranean climate more seasonal temperature variation.

The Plan Area covers the transition from the low elevations of the Sacramento Valley to the Sierra Nevada foothills, with a corresponding transition in climate. Most precipitation results from air masses that move in from the Pacific Ocean during the winter months, from west or northwest. Rainfall increases as the air mass is pushed upward and cools; therefore, the lower western edge of the Plan Area is drier than the higher eastern edge. The normal annual precipitation, which occurs primarily from November through April, ranges across the Plan Area from 18 inches on the west to 36 inches on the east.

Temperature is less variable across the Plan Area. Winter temperature averages 49°F. During the summer months, average daily temperatures range from 58°F to more than 91°F, and daily high temperatures can exceed 110°F.

The inland location and surrounding mountains shelter the area from much of the ocean breezes or morning cloud cover that moderate coastal temperature. The predominant wind direction and speed is from the south-southwest at 10 miles per hour. The Plan Area has nearly 250 sunny days per year.

The heat and summer sun, and typically less than 1 inch of rainfall from May to August, cause rapid drying of open water. The climate, coupled with the extensive hardpan underlying Valley soils, creates the vernal pool condition. When rain fills the pools in the winter and spring, the water collects and remains in the depressions. In the springtime, the water gradually evaporates until the pools become completely dry in the summer and fall.

All of the natural communities and the Covered Species habitat depend on rainfall, and all of them are, to some degree, adapted to the range of normal variation. The local climate is driven mainly by conditions in the Pacific Ocean and affected by global cycles, such as the warming ocean surface during El Niño southern oscillation events. These cycles routinely produce wide variation in rainfall. From 1949 to 2006, annual rainfall for Sacramento ranged from 6.25 to 33.44 inches, with an average of 17.63 inches. The extreme variation is clear in the historical record, even before the likely effects of climate change.

Streams and Watersheds

The following discussion is based on information provided in Chapter 3 of the Plan (Appendix A).

The Plan Area is located on the west slope of the Sierra Nevada in the Lower Sacramento River Basin. Streams drain generally from east to west, eventually reaching the Sacramento River. Altogether, 738 miles of streams are mapped in western Placer County. The Sacramento and American River tributaries define a series of subbasins. Major streams in the Plan Area have extensive natural floodplains on the Valley floor.

Because the Valley and most of the non-participating cities are in the lower-elevation, downstream portion of the watersheds, 31% of the streams there are mapped as major streams, whereas 21% are mapped as major in the higher elevation Foothills. Conversely, 34% of streams in the Foothills are mapped as perennial; only 16% of streams in the Valley are mapped as perennial. However, the distinction between perennial and intermittent is often not meaningful because of the non-seasonal presence of irrigation water.

Western Placer County has extensive water transport facilities and artificial canals. Some 303 miles of irrigation supply and drainage canals are mapped. The supply canals take advantage of the abundant Sierra Nevada runoff in the Bear and American Rivers and connect to a series of small reservoirs in the Foothills. The drainage canals are found in the Foothills and Valley. In the Valley, the canals transport rainfall and irrigation water drainage in the flat alluvial plain. In the Foothills, the canals provide irrigation water for ponds, irrigated pasture, landscaping, and crop production. Although the canals are not natural hydrologic features, they are occasionally the source of perennial seeps that may create small pockets of wetland habitat or other wet areas that are not wetlands or habitat in the Foothills and may serve some aquatic habitat functions in the Valley.

Two major reservoirs are located in Plan Area A: Camp Far West Reservoir on the Bear River to the north and Folsom Reservoir on the American River to the southeast.

Rainfall, and the subsequent groundwater release, is the primary water source for surface flows in the winter and spring. Agricultural and urban runoff, water deliveries for irrigation, and wastewater treatment plant (WWTP) effluent contribute to total stream flow in the spring, summer, and fall. Some watersheds that were once seasonally intermittent are now artificially perennial. Irrigation also transfers water between watersheds. For example, Auburn Ravine receives water imports from the Bear, Yuba, and American Rivers and is used by Pacific Gas & Electric Company (PG&E), Nevada Irrigation District (NID), and PCWA as a conveyance feature.

Unless noted, the watershed descriptions below are based on the *Assessment of Habitat Conditions for Chinook Salmon and Steelhead in Western Placer County, CA*. For each watershed, seasonal flows are discussed in the context of salmonid habitat, if present. The natural pattern for small foothill streams is generally a gradual decrease in flow during the spring, summer, and early fall, until the first rainstorms begin in late fall. Flow is a component of fish habitat. Low-flow conditions can potentially result in lack of depth for adult fish passage, minimal flow over redds (a depression in the gravel of the river created by the salmonid fish males in which the females lay their eggs), increased siltation of redds and reduced levels of oxygen to the eggs, and reduced space for juvenile rearing. A complete description of the watersheds and subbasins constituting the Plan Area is presented in Section 3.5, *Hydrology and Water Quality*.

Bear River Watershed

Headwaters for the Bear River are in the vicinity of Emigrant Gap and Lake Spaulding in Nevada County. The Bear River flows southwest to a point approximately 8 miles north of Auburn where it turns west and flows to its confluence with the Feather River in the vicinity of Nicolaus in Sutter County. The Bear River is the second-largest tributary of the Feather River and is the border between Placer and Nevada Counties.

The Bear River historically experienced high winter flows and low summer flows, but today the timing of flow and volume is highly regulated by releases from reservoir storage and diversions. Camp Far West is the largest storage reservoir on the Bear River. Minimum flow releases are 25 cubic feet per second (cfs) in the spring and 10 cfs during the rest of the year. Bear River flows below the dam are 0 to 40 cfs from June to December. Winter flows during wet years are similar to unimpeded flows, averaging 2,500–5,200 cfs. Summer flows are 30–50% less than the unimpaired flows.

Anadromous fish have access to the Bear River from its confluence with the Feather River upstream for 15 miles to the diversion dam, which blocks farther upstream migration. Habitat for Chinook salmon and steelhead may be limited by inadequate stream flow and the high incidence of fine sediment, which is partially attributable to the relatively low gradient or reduced stream flow. During heavy rain events, flow spills from Camp Far West Reservoir, and Chinook salmon and steelhead may migrate through and spawn in the lower Bear River.

Yankee Slough is a part of the Bear River watershed and flows into the Bear River drainage downstream of SR 65 and outside of the Plan Area in Sutter County. Yankee Slough originates north and east of the unincorporated township of Sheridan in the lower Sierra foothills. Yankee Slough flows perennially due to irrigation runoff. Yankee Slough historically flowed into the American River basin, once a massive marsh complex that is now principally rice fields and urban neighborhoods. Little or no riparian vegetation is present on much of Yankee Slough in Placer County. Outside the Plan Area, Yankee Slough is mostly channelized and serves as drainage facility for agricultural runoff. Some of the largest perennial freshwater marshes in Placer County are along Yankee Slough east of SR 65. There is no evidence that anadromous fish are present within the Yankee Slough watershed.

Coon Creek Watershed

Coon Creek originates east of Auburn near Meadow Vista and flows westward. It is intercepted by the East Side Canal in Sutter County just west of the county line. The East Side Canal then flows into the Cross Canal where it is joined by flows from Markham Ravine and Auburn Ravine. Pleasant Grove Creek enters the Pleasant Grove Creek Canal, which joins the East Side Canal at a confluence in Sutter County, where it then becomes the Cross Canal. The Cross Canal joins the Sacramento River immediately downstream of the confluence of the Feather and Sacramento Rivers near Verona. Coon Creek historically flowed into the American River basin.

Most of Coon Creek's stream flow during the late spring through early fall consists of imported water en route to downstream agricultural diversions. Coon Creek historically had little or no summer flow in the lower reaches. NID discharges 7.5 cfs during the summer and fall (i.e., about April 15 through October 15). Flow in Coon Creek is controlled by releases from Orr Creek Reservoir, operated by NID. The last downstream diversion receiving NID deliveries of water is near Gladding Road. Stream flow is managed to have no excess flow (i.e., essentially dry at Lincoln Boulevard at the old alignment for SR 65).

In the lower reaches of Coon Creek, runs are the most dominant channel structure element, followed by low-gradient riffles, glides, dammed pools, mid-channel pools, lateral scour pools, and channel confluence pools. There are minimal amounts of in-stream cover (i.e., woody debris and undercut banks) and overhead cover (i.e., riparian vegetation). Because of livestock grazing, streamside vegetation is sparse in many places. Channel instability and resultant bank cutting may also prevent the establishment of vegetation. Stream channel substrates consist predominantly of cobble, gravel, sand, and silt- and clay-sized particles.

Doty Ravine, which originates west of Auburn, is the main tributary to Coon Creek. The streambed in the headwaters consists primarily of gravel and cobbles with some larger granitic boulders. Doty Ravine upstream of Gladding Road flows through oak woodland and is bordered by rural-residential and ranch lands. Downstream of Gladding Road, the ravine is highly disturbed because of livestock use.

Doty Ravine receives water from deliveries by NID as well as natural runoff. Import of NID deliveries and conveyance down Doty Ravine is generally completed by October. Winter flows can exceed several thousand cfs, but, during the irrigation season, the flows average less than 20 cfs. All irrigation water is diverted at the Doty South Diversion Dam west of Crosby Herold Road. Downstream of the diversion dam, flow in the stream accretes from dam leakage, groundwater, and agricultural runoff. Outside the irrigation season, flows are about 5 to 6 cfs.

Markham Ravine Watershed

The Markham Ravine watershed is almost entirely on the Valley floor, originating in the low hills northeast of Lincoln and emptying into the East Side Canal approximately 1 mile north of Auburn Ravine in Sutter County. Because of the nearly flat terrain and the extensive history of drainage and irrigation modifications, watershed boundaries are indistinct in the lower reaches.

In its headwaters, the channel of Markham Ravine is poorly defined. Near Lincoln Boulevard, the channel becomes more distinct and passes through industrial, light industrial, and rapidly urbanizing areas. West of Lincoln, the channel passes through a mixture of farms and ranches, including pastures for grazing and rice and grain fields. In this reach of Markham Ravine, stream flow is artificially augmented by irrigation return flows and urban runoff. There are no effluent discharges into the ravine. The presence of relatively permanent flow allows the establishment of riparian and wetland vegetation. Beavers are active west of Lincoln, resulting in small impoundments forming seasonal and perennial marshes.

Auburn Ravine Watershed

Auburn Ravine originates on the north side of Auburn and flows west to its confluence with the East Side Canal in Sutter County and then into the Cross Canal and the Sacramento River. The elevation of the basin ranges from 30 to 1,600 feet asl.

In its headwaters, Auburn Ravine is characterized by a high-gradient, incised channel with steep-sided banks. Large boulders and cobbles dominate the substrate. The channel includes scour pools, waterfalls, and high-velocity chutes. Riparian vegetation is abundant. In its middle reaches downstream to Lincoln, the stream's gradient decreases substantially, and the substrate is characterized by sand, gravel, and cobbles. Pools and riffles are common, and trees and shrubs dominate the riparian zone. The channel contains large woody debris and bank erosion increases relative to the upper reach.

Within the Lincoln city limits, Auburn Ravine has a very a low gradient and sandy substrate. Riparian vegetation is characterized by a relatively open tree canopy with an understory dominated by blackberries and shrubs. Downstream from Lincoln, rice farms and livestock ranches border the stream. In some places, Auburn Ravine is contained within levees and riparian vegetation may be absent. Stream channel substrate is mostly clay and fine sediments, with occasional pieces of large woody debris. Grazing and channel maintenance activities restrict the development of riparian vegetation. The lower 2.5 miles of Auburn Ravine was rerouted and leveed to flow into the East Side Canal.

Winter flow in Auburn Ravine is dominated by runoff from rainfall events and effluent from the City of Auburn WWTP, which contributes discharge year-round. Winter flows range from less than 3 cfs to an estimated 100-year flow event that exceeds 14,000 cfs.

Because NID, PG&E, and PCWA use Auburn Ravine as a water conveyance feature, summer flows are high relative to natural conditions. NID, PCWA, and PG&E transport water from the Bear, Yuba, and American Rivers through Auburn Ravine, creating above-normal spring and summer flow conditions. In addition to water imports, NID and PCWA customers indirectly affect Auburn Ravine hydrology through customer return flows. Additionally, inflows from the Auburn and Lincoln wastewater treatment facilities can also augment flows. In September or October, flow is substantially decreased as irrigation demands diminish or cease and PG&E conducts an annual outage for maintenance. Flow during the fall may often be less than 3 cfs. Auburn Ravine's artificially high flow in the summer months provides more, and substantially different, aquatic habitat than would exist under natural flow conditions. More natural flow conditions during September and October (prior to the onset of the rainy season) result in a reduction of the area of aquatic habitat relative to habitat available in the summer.

Pleasant Grove Creek Watershed

The Pleasant Grove Creek watershed and its constituent Curry Creek are located in western Placer County, including the western portions of Roseville and Rocklin and eastern Sutter County. Both creeks empty into the Pleasant Grove Creek Canal, which drains to the Sacramento River via the Cross Canal.

The watershed consists of five major drainages: Curry Creek, Lower Pleasant Grove Creek, Kaseberg Creek, South Branch Pleasant Grove Creek, and Upper Pleasant Grove Creek. In general, slopes are very flat, less than 5%, particularly in the lower watershed. These creeks were historically dry or very nearly dry in the summer months but are now mostly perennial because of urban runoff and agricultural irrigation return flows. The Pleasant Grove WWTP, operated by the City of Roseville, also augments natural stream flow, on average, by 11 cfs per day.

The dominant land cover types in the watershed are annual grassland, urban and suburban, and agriculture. Urban and suburban land uses in the watershed are currently confined to unincorporated Placer County, Roseville and Rocklin, and Loomis, but significant growth in urban and suburban land uses is expected to convert agricultural lands and grasslands during the next 10–20 years, including non-residential development in the unincorporated Sunset Industrial Area.

The Pleasant Grove Creek watershed was historically dominated by agriculture, which remains the dominant land use in the lower portions. In the lower watershed, farmers grow white, wild, and organic rice. Agriculture in the middle portion of the watershed involves primarily rice farming and cattle ranching on unirrigated grasslands.

Dry Creek Watershed

Major tributaries of Dry Creek are Antelope Creek, Secret Ravine, Miners Ravine, Strap Ravine Creek, Linda Creek, Clover Valley Creek, and Cirby Creek. The gradient of the main stem of Dry Creek is low, generally less than 1%. The channel is well defined with sandy substrate and bordering riparian vegetation.

The middle portion of the Dry Creek watershed has been subjected to extreme development pressure by relatively recent growth, primarily in Roseville and Rocklin. The lower portions of the watershed are currently experiencing similar growth. The upper watershed largely consists of rural residential property in the unincorporated area of the Loomis Basin and Penryn and suburban development in unincorporated Granite Bay. Urbanization has exacerbated flooding in the lower watershed, particularly in Sacramento County.

Water quality concerns have arisen because of the perceived increase in sedimentation and potential contamination from nonpoint sources such as stormwater runoff and drainage. Given these concerns, the Dry Creek Conservancy has collected a large amount of physical and biological data on the watershed. The Office of Environmental Health Hazard Assessment is analyzing the data, including data on water quality indicators, to gain a better understanding of the stressors in the watershed.

As with most of the streams in the Plan Area, late summer flows in Dry Creek are largely urban runoff and releases from WWTPs and PCWA facilities and its customers' return flows. The City of Roseville's Dry Creek WWTP drains into Dry Creek west of I-80.

American River Watershed

The North Fork American River defines the southeast border of Placer County and, with the South Fork in El Dorado County, forms Folsom Lake. The California Department of Parks and Recreation manages land along the North Fork. The Middle Fork of the American River is outside the Plan Area; however, a portion of the Middle Fork's watershed includes Plan Subarea B5—the Big Gun Conservation Bank for California red-legged frog near the unincorporated town site of Michigan Bluff, 21 miles east of Auburn.

Communities and Land Cover Types

All information on communities and land cover types was obtained from Chapter 3 of the Plan. This information was based on extensive land cover mapping conducted for the PCCP and, therefore, represents the best available landscape-scale data on biological resources in the Plan Area (see Chapter 3 of the Plan for details on the methods used for land cover mapping).

In the Plan and this document, the term *community* is used to mean land cover types that are grouped together because of similarity in vegetation type, vegetation structure, ecological function, and current land use. The Plan Area contains 12 community types, as listed in Table 3.3-1

The term *land cover type* is used to describe the specific mapping units for each of the community types, as listed in Table 3.3-1. The mapped land cover types in the Plan Area are generally based on the California Wildlife Habitat Relationship (CWHR or WHR) system used by CDFW. The distribution of land cover types in the Plan Area is depicted in Figure 3.3-3. The Plan uses the term *constituent habitat* to describe habitat elements within land cover types that could not be mapped and measured directly using aerial photography. Constituent habitats comprise wetlands and riparian vegetation that occur within other non-wetland and non-riparian land cover types. Section 3.3. of the Plan includes a discussion of the methods used to estimate these constituent habitats. The estimated acreages of these constituent habitats are presented in Table 3.3-2.

Descriptions of the land cover types and, where applicable, the constituent habitats are provided below. These descriptions contain information summarized from Chapter 3 of the Plan, which contains additional detailed information about these communities' environmental conditions, environmental gradients, invasive species, and ecosystem function.

Some of the land cover types occurring in the Plan Area are, for the purposes of this EIS/EIR, identified as special-status natural communities. These communities are considered special status because they include specific vegetation alliances that are recognized by CDFW as of limited distribution statewide or within a county or region (California Natural Diversity Database [CNDDDB] Rank of S1–S3), or because they require focused analysis under federal and state laws and regulations, as discussed in Section 3.3.1, *Regulatory Setting*. Special-status natural communities may be of special concern to resource agencies and conservation organizations for a variety of reasons, including their locally or regionally declining status or because they provide important habitat to common and special-status species. Many of these habitats are monitored and reported in the CNDDDB. The land cover types in the Plan Area that are considered special-status natural communities are indicated by an asterisk in Table 3.3-1. In addition, depending on specific locations and conditions, some areas of canal, reservoir, urban open water, urban riparian, and urban wetland could be regulated and considered special-status communities.

Table 3.3-1. Communities and Land Cover Types

Community Name	Land Cover Type	Total Acreage in Plan Area A	Valley	Foothills
Grassland		34,760	10,264	24,496
	Annual grassland	21,887	1,565	20,323
	Pasture	12,873	8,699	4,174
Vernal Pool Complex^a		45,065	44,278	788
	Vernal pool complex–high density*	10,138	10,138	–
	Vernal pool complex–intermediate density*	13,818	13,818	–
	Vernal pool complex–low density*	21,109	20,322	788
Aquatic/Wetland Complex		3,433	1,969	1,464
	Marsh complex*	2,370	1,544	826
	Pond*	1,063	425	638
Riverine/Riparian Complex	Riverine/riparian*	6,685	2,424	4,262
Oak Woodland		50,870	1,763	49,107
	Blue oak woodland*	9,937	966	8,971
	Foothill chaparral*	217	–	217
	Interior live oak woodland*	535	–	535
	Mixed oak woodland*	20,351	442	19,908
	Oak-foothill pine woodland*	11,037	355	8,320
	Oak savanna*	8,674	–	11,037
	Rock outcrop	119	–	119
Valley Oak Woodland	Valley oak woodland*	1,364	184	1,180
Rice Agriculture	Rice	19,580	19,580	–
Field Agriculture		2,757	1,162	1,594
	Alfalfa	176	176	–
	Cropland	2,512	970	1,542
	Eucalyptus	70	17	53

Community Name	Land Cover Type	Total Acreage in		
		Plan Area A	Valley	Foothills
Orchard and Vineyard Agriculture		2,618	1,685	933
	Orchard	2,522	1,685	837
	Vineyard	70	-	96
Managed Open Water		5,317	513	4,804
	Canal	145	145	-
	Reservoir	4,804	-	4,804
	Urban open water	368	368	-
Rural Residential		18,871	4,823	14,049
	Rural residential	15,568	4,434	11,134
	Rural residential forested	3,303	388	2,915
Urban		18,510	12,053	6,457
	Urban and suburban	14,777	9,487	5,289
	Urban golf course	914	434	481
	Urban park	375	36	340
	Urban riparian	104	3	101
	Urban wetland	21	4	17
	Urban woodland	77	6	70
	Barren/Industrial	764	605	158
	Road	1,477	1,477	-

Source: Appendix A: Table 3-13.

* These are considered special-status land cover types, as defined in the discussion above. Note that only certain specific associations mapped as foothill chaparral are listed as sensitive in the CNDDb, and most areas of chaparral would not be considered sensitive.

^a Vernal pool complex density classes defined in Plan Section 3.3.1.2 as: High Density >5%; Intermediate Density 1-5%; and Low Density <1%

Constituent Habitats

The Plan uses the term *constituent habitat* to describe habitat elements within land cover types that cannot be exhaustively mapped and measured using aerial photography. Constituent habitats are discussed in detail in Section 3.3, *Biological Setting Methodology*, of the Plan and are summarized below from language taken directly from that document.

Constituent habitats include wetlands and riparian vegetation that require actual ground-level access and detailed cartography that is not available uniformly throughout Plan Area A, or the Plan Area as a whole, to properly characterize and quantify. The analysis of these constituent wetland and riparian habitats is based on estimates of their presence in the various land cover types. The constituent habitats identified for this Plan are listed in Table 3.3-2, along with the natural communities with which they are most commonly associated. Note that the constituent habitats may be found in different land cover types across different communities.

Wetland, riverine, and riparian habitat features have regulatory significance and are important for Covered Species. Their occurrence in the Plan Area is usually in small patches or distributed in a mosaic that cannot consistently be mapped using the programmatic land cover type mapping methodology. These features usually occur in association with certain land cover types; therefore they are termed *constituent habitats*. Their presence in Plan Area A was estimated in the Plan by applying a density factor to land cover mapping. More detail on the development of these estimates are provided in Section 3.3.1.3, *Estimating Constituent Habitats*, of the Plan.

Table 3.3-2. Estimated Extent of Constituent Habitats in Plan Area A (acres)

	All Plan Area A	Valley	Foothills
Vernal Pool Complex (VPC) Constituent Habitats			
Vernal Pool	790	789	1
Seasonal Wetland in VPC	845	842	2
Seasonal Swales	602	599	3
Vernal Pool Total	2,237	2,230	6
Aquatic/Wetland Complex Constituent Habitats			
Fresh Emergent Marsh	1,112	633	479
Lacustrine	1,061	507	555
Non-Vernal Pool Seasonal Wetland	677	378	299
Aquatic/Wetland Total	2,850	1,517	1,333
Riverine/Riparian Complex Constituent Habitat			
Riverine	868	565	304
Riparian	4,651	1,454	3,196
Riverine/Riparian Total	5,519	2,019	3,500

Source: Appendix A: Table 3-14.

Grassland

The grassland community in the Plan Area is defined as annual grassland and pasture land cover types. Although vernal pool complex lands are also grasslands, they are treated as a separately defined community to focus on the conservation issues of covered vernal pool species. Figure 3.3-4 shows the distribution of grassland and vernal pool complex in the Plan Area A.

Land Cover Types

Annual Grassland

In western Placer County, annual grasslands occur naturally at the lower elevations below 300 feet asl. Annual grasslands in the Valley portion of the Plan Area are dominated by non-native grasses and forbs, with few trees. Nearly all of the vernal pool complex also functions as annual grassland. Taken together, nearly half of the Valley landscape is in some form of annual grassland. In the Valley, there are still a few remnant examples of native grasslands, often found around the edges of wetlands or moist bottomlands. These are patchy with poorly defined boundaries.

Foothill grasslands comprise mostly open annual grassland–oak woodland/savanna with widely scattered blue oaks (*Quercus douglasii*), interior live oaks (*Quercus wislizeni*), and valley oaks (*Quercus lobata*). Annual grasslands occur in the understory of open mixed oak, blue oak, interior live oak, and valley oak woodlands, in openings in oak–foothill pine woodland and foothill chaparral land cover types. Where tree canopy exceeds an estimated 5%, land cover was mapped as savanna. Nearly all of the oak savanna mapped in the Foothills functions ecologically as annual grassland. Taken together, roughly one-quarter of the Foothills landscape is annual grassland.

Species characteristic of annual grassland include slender wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), medusa-head (*Elymus caput-medusae*), and foxtail barley (*Hordeum jubatum*). Red-stemmed filaree (*Erodium cicutarium*) is a dominant forb. Dominant non-native forbs include rose clover (*Trifolium hirtum*), bur clover (*Medicago polymorpha*), little hop clover (*Trifolium dubium*), storksbill (*Erodium botrys*), and dove-foot geranium (*Geranium molle*).

Despite the dominance of introduced species, dry annual grasslands are still home to many native plant species, particularly native bulbs and early- and late-season annual wildflowers, such as California poppy (*Eschscholzia californica*), popcornflower (*Plagiobothrys* spp.), fiddlenecks (*Amsinckia* spp.), brodiaeas (*Brodiaea* spp.), Ithuriel's spear (*Triteleia laxa*), winecup clarkia (*Clarkia purpurea*), johnny-tucks (*Triphysaria eriantha*), common madia (*Madia elegans*), cream cups (*Platystemon californicus*), and goldfields (*Lasthenia* spp.). On poor, rocky soils, both native Foothill bunchgrasses and forbs are more abundant than in the long-grazed open grasslands of the county's lowest elevations. Characteristic grasses here include natives, such as California melic (*Melica californica*), squirreltail (*Elymus elymoides*), one-sided bluegrass (*Poa secunda*), purple needlegrass (*Stipa pulchra*), and blue wildrye (*Elymus glaucus*) as well as non-natives, such as soft chess, hedgehog dogtail (*Cynosurus echinatus*), and ripgut brome.

Annual grasslands provide abundant food and cover for high numbers of rodents and other small mammals. Consequently, several raptors, including red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), Swainson's hawk (*Buteo swainsoni*), and American kestrel (*Falco sparverius*), thrive in annual grasslands. Other characteristic wildlife species include western yellow-bellied racer (*Coluber constrictor mormon*), California whipsnake (*Masticophis lateralis*

lateralis), gopher snake (*Pituophis catenifer*), western kingbird (*Tyrannus verticalis*), western bluebird (*Sialia mexicana*), western meadowlark (*Sturnella neglecta*), black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), Botta's pocket gopher (*Thomomys bottae*), and American badger (*Taxidea taxus*). Exotic and invasive animal species characteristic of annual grasslands in the county include wild turkey (*Meleagris gallopavo*), European starling (*Sturnus vulgaris*), house mouse (*Mus musculus*), black rat (*Rattus rattus*), and wild pig (*Sus scrofa*).

Pasture

The pasture land cover type covers a range of grazing intensity and irrigation practices. Areas mapped as pasture are differentiated from annual grassland and vernal pool complex lands in that they show more extensive terrain modification to accommodate irrigation and from mechanical tilling for planting. Pasture lands are included in the grassland community rather than in the field crop community because merely discontinuing irrigation converts pasture lands into annual grassland.

Irrigated pastures occur throughout western Placer County. In the lower Foothills and Valley they tend to be located on floodplains, are more extensive in size, and are used for intensive cattle rearing. In the Foothills, pastures tend to be small irrigated fields for small-scale livestock rearing, usually associated with rural-residential areas.

Vegetation in irrigated pasture is generally a mixture of perennial grasses and legumes that form a dense ground cover. Native plant species are nearly absent from irrigated pastures because they are unable to compete with the vigorous pasture species and non-native wetland species, such as perennial ryegrass (*Festuca perennis*), fescues (*Festuca* spp.), dallisgrass (*Paspalum dilatatum*), orchard grass (*Dactylis glomerata*), velvet grass (*Holcus lanatus*), Bermuda grass (*Cynodon dactylon*), curly dock (*Rumex crispus*), barnyard grass (*Echinochloa crus-galli*), and white clover (*Trifolium repens*). Himalayan blackberry (*Rubus armeniacus*) is common and invasive in irrigated pastures in western Placer County; other potentially occurring noxious weeds include bull thistle (*Cirsium vulgare*), perennial pepperweed (*Lepidium latifolium*), nimblewell (*Muhlenbergia schreberi*), and Johnson grass (*Sorghum halepense*). Native species in irrigated pastures are generally found only in wetland settings.

Some birds that typically forage in the county's irrigated pastures include great blue heron (*Ardea herodias*), great egret (*Ardea alba*), Canada goose (*Branta canadensis*), American kestrel, California quail (*Callipepla californica*), western kingbird, American crow (*Corvus brachyrhynchos*), western meadowlark, Brewer's blackbird (*Euphagus cyanocephalus*), and red-winged blackbird (*Agelaius phoeniceus*).

Constituent Habitats

Prior to modification, most of the Valley pasture land was annual grasslands and, because of the pervasive underlying hardpan, most of it could have functioned as a vernal pool complex. Some elements of vernal pool constituent habitats are found associated with pasture lands, usually around the edges where irrigation water ponds are present on the remaining hardpan soil substrate. Table 3-10 in Chapter 3 of the Plan lists a low-density occurrence for vernal pool constituent habitats in Valley grasslands (0.3%) and pasture lands (0.4%).

In the Valley and in the Foothills, the grassland community is also associated with small amounts of aquatic/wetland (0.3–0.5%) and riverine/riparian (0.1–0.2%) constituent habitats, as shown in

Tables 3-11 and 3-12 in Chapter 3 of the Plan. The presence of these constituent habitats is a result of flood irrigation on small pastures and where grassland is mapped in the stream system and incorporates portions of riverine waters.

Vernal Pool Complex

Vernal pools are present in seasonally flooded depressions in annual grasslands, and their biological characteristics are determined by a combination of specific climatic, soil, hydrologic, and topographic conditions. Endemic vernal pool species carry out their entire lifecycle in vernal pool wetlands. Because the wetland watershed includes the surrounding upland areas, the pools and grassland together constitute the vernal pool complex. The description of the grassland community above applies to the grassland portion of the vernal pool complex, as well.

Land Cover Types

The vernal pool complex community comprises three vernal pool complex land cover types— high density, intermediate density, and low density—that differ in nominal wetland density as described in more detail below. Vernal pool complex lands at different densities are scattered broadly across the Valley portion of the Plan Area and extend only a short distance into the Foothills (Figure 3.3-4).

Vernal Pool Complex—High Density

Vernal pool complex—high density is a mapping unit that represents the mosaic of vernal pool wetlands, seasonal wetlands, swales, and uplands. This land cover type contains more than 5% vernal pool wetland density. Areas mapped as vernal pool complex—high density are estimated on average to comprise 4.5% vernal pool wetlands, 4.0% seasonal wetlands, and 2.0% seasonal swales, for a total of 10.5% of vernal pool constituent habitats.

Vernal Pool Complex—Intermediate Density

This land cover type includes a suite of vernal pool habitat types. It contains 1–5% wetland density within the vernal pool complex natural community. Areas mapped as vernal pool complex—intermediate density have roughly half of the wetland density as vernal pool complex—high density.

Vernal Pool Complex—Low Density

The vernal pool complex—low density land cover type contains less than 1% wetland density within the vernal pool complex natural community. This land cover type is intended to capture the large amount of Valley annual grasslands and pasture lands that retain small but appreciable vernal pool ecological function. In the Valley, areas mapped as vernal pool complex—low density are most likely, on average, to show 0.2% delineated vernal pools and larger amounts of seasonal wetlands or seasonal swales. In the Foothills, the fringe of grasslands on the extreme western edge adjoining the Valley has topographic conditions that may allow a very low density of vernal pool-type constituent habitats. Of more than 25,000 acres of grassland and pasture mapped in the Foothills, about 3% is considered to be vernal pool complex—low density, with a wetland factor half of that of the Valley.

The vernal pool complex natural community is intermixed with grassland, field agriculture, and rice agriculture. As a generalization, areas mapped as vernal pool complex—high density have the greatest proportion of minimal disturbance and the least proportion of high disturbance. Intermediate- and low-density vernal pool complex land often shows greater amounts of disturbance.

Vernal pools are classified on the basis of physical, geographical, and biological factors. Several types of restrictive soil layers have been described, two of which occur in western Placer County: hardpans and volcanic flows. Hardpans are formed when silica minerals are leached, redeposited, and then cemented lower down the soil profile. They occur on alluvial terraces on the east side of the Central Valley. Northern hardpan vernal pools are most common in the Southeastern Sacramento Valley Vernal Pool Region where they occur in complexes of many small pools and swales among mima mounds on soils of the Pentz-Pardee-Red Bluff, Redding-Corning, and San Joaquin series. Northern volcanic mudflow vernal pools occur on the Exchequer soils that formed on the lahars (mudflows) of the Mehrten Formation. Placer County contains most of the small number of volcanic mudflow vernal pools in the southeastern portion of the Sacramento Valley (Appendix A).

Native plants typical of vernal pools include several species of downingias (*Downingia* spp.), goldfields, popcornflowers, woolly marbles (*Psilocarphus* spp.), buttercups (*Ranunculus* spp.), and clovers (*Trifolium* spp.) as well as common hedgehyssop (*Gratiola ebracteata*), Great Valley button celery (*Eryngium castrense*), common spike-rush (*Eleocharis macrostachya*), mesamints (*Pogogyne* sp.), quillwort (*Isoetes* spp.), purslane speedwell (*Veronica peregrina* ssp. *xalapensis*), and white navarretia (*Navarretia leucocephala*). Non-native species commonly found in vernal pools in western Placer County include perennial ryegrass, small quaking grass (*Briza minor*), soft chess, hawkbit (*Leontodon saxatilis* ssp. *longirostris*), hyssop loosestrife (*Lythrum hyssopifolium*), and cut-leaved geranium (*Geranium dissectum*) (Appendix A). Vernal pools provide habitat for animals that can tolerate the extreme range of conditions that characterize these ecosystems. Many are specialized animals that are able to complete their life cycles in the short period during which pools are wet. These include crustaceans, such as vernal pool fairy shrimp (*Branchinecta lynchi*); clam shrimp (Order: Conchostraca); vernal pool tadpole shrimp (*Lepidurus packardii*); conservancy fairy shrimp (*Branchinecta conservatio*); seed shrimp (Class: Ostracoda), water fleas (*Daphnia* sp.); and other invertebrates, such as beetles (Families: Dytiscidae and Hydrophilidae), water boatmen (Family: Corixidae), and aquatic larvae of damselflies and dragonflies (Order: Odonata).

The aquatic habitat of vernal pools supports amphibians that use the pools for breeding. Western spadefoot (*Spea hammondi*) has been found in vernal pool complexes in the non-participating city of Roseville and may occur in the vernal pool complexes in the Plan Area, though there are no known occurrences to date. Sierran treefrogs (*Pseudacris sierra*) and western toads (*Anaxyrus boreas*) may be common in vernal pool complexes in the Plan Area.

In addition to the wildlife associated with annual grasslands, vernal pool wetlands in vernal pool complexes are important habitat for migratory birds, including sandpipers and herons, as well as waterfowl, and vernal pool complexes are important to the continuity of wetland habitats along the Pacific Flyway. Other birds, such as raptors (hawks, falcons, and kites) and a variety of songbirds, use vernal pool complexes for foraging and as water sources. Burrowing owls may use burrows in mima mounds in the surrounding annual grasslands (Appendix A). Many wildlife species use both the vernal pools and the surrounding annual grassland habitat of the vernal pool complex. For example, many of the typical vernal pool annual plants are pollinated by bee species that nest in the surrounding uplands and forage in annual grasslands when the pools dry out.

Constituent Habitats

Three constituent habitats associated with vernal pool complex may function as vernal pools and may be habitat for covered vernal pool species: vernal pool wetland, seasonal wetland in vernal pool complex, and seasonal swales.

The likely presence of these constituent habitats in an area is estimated by applying the presence factors shown in Table 3-10 in Chapter 3 of the Plan to the land cover types there. The vernal pool complex community is the primary association for vernal pool constituent habitats. However, other communities and land cover types may contain vernal pool complex constituent habitats, including those shown in Table 3-10 in Chapter 3 of the Plan.

Vernal Pool Wetland

Vernal pools are seasonally inundated wetlands found in depressions that have a shallow impervious layer such as a clay pan or indurated hardpan (an aquitard). The aquitard layer perches water and prevents percolation so that water loss from vernal pools occurs only through evaporation and evapotranspiration. Vernal pools are inhabited by a suite of specialized plants, such as Vasey's coyote thistle (*Eryngium vaseyi*), slender popcornflower (*Plagiobothrys stipitatus*), Fremont's goldfields (*Lasthenia fremontii*), and downingia (*Downingia* spp.), which are able to tolerate several months of inundation and anaerobic conditions followed by months of hot, dry weather. Vernal pools are sometimes difficult to separate from other types of seasonal wetlands; hydrology and flora are used to make the distinction.

Seasonal Wetland in a Vernal Pool Complex

Seasonal wetland is a general term for seasonally saturated wetlands that are not defined as vernal pools or other specific wetland types. They are often depressional or bermed wetlands that have wetland hydrology lasting until early or mid-spring but become dry before emergent marsh species can become established. Seasonal wetlands often support the same species as wetland swales in addition to generalist species such as hyssop loosestrife (*Lythrum hyssopifolia*), rushes (*Juncus* spp.), and Italian ryegrass. Wetlands defined as seasonal wetlands in a vernal pool complex for the purpose of the Plan are seasonal wetlands that occur within the vernal pool/grassland matrix but do not typically inundate for a long enough period to support typical vernal pool flora. They often consist of wetland features that were historically vernal pools but have been degraded as a result of past activities such as agricultural disking.

Seasonal Swales

Wetland swales are conveyance systems that occur on sloped topography. Water may flow during rainy periods in wetland swales, but not with enough intensity or duration to create the bed-and-bank morphology that defines riverine systems. Wetland swales are usually dominated by species that can occur in either wetlands or uplands, such as Italian ryegrass (*Lolium perenne* [*Festuca perennis*]) and curly dock (*Rumex crispus*). Upland swales lack extended soil saturation and have an upland flora that is not dominated by plant species dependent on wetlands or typical of vernal pools. Seasonal swales in a vernal pool complex are those that convey water within the vernal pool/grassland matrix.

Aquatic/Wetland Complex

The aquatic/wetland complex community consists of aquatic vegetation and wildlife that is not primarily riverine or riparian and not primarily associated with vernal pools. The complex is defined by the two mapped land cover types, marsh complex and pond (Figure 3.3-5). Within these two land cover types are inclusions of constituent habitats that were not mapped individually. The constituent habitats in marsh complex and pond include fresh emergent wetland, lacustrine, and non-vernal pool seasonal wetland, which are described below.

The aquatic/wetland community provides habitat for amphibians, reptiles, and various bird species, which are discussed below for each land cover type.

Land Cover Types

Marsh Complex

The marsh complex land cover type is a mapping unit that represents the mosaic of wetlands and uplands found around year-round water.

Pond

The pond land cover type is a mapping unit that represents small patches of open water and most closely represents lacustrine ecosystems. Nearly all of the ponds in the Plan Area are artificial impoundments, and therefore, the pond land cover type includes small reservoirs, stock ponds, and off-stream impoundments. The pond land cover type is distinct from the reservoir land cover type, which the Plan includes in the managed open water community. The distinction reflects the marked difference in ecological function and the habitat value of small ponds. Ponds in the Plan Area typically occur on relatively flat land and are shallow, with a perimeter that expands or contracts substantially based on the water depth. This variable fringe of the pond creates conditions that allow the formation of the area mapped as marsh complex land cover.

Constituent Habitats

The key constituent habitats for the aquatic/wetland complex are described below. The likely presence of these constituent habitats in an area was estimated as described in Section 3.3.1.1 of the Plan.

Fresh Emergent Marsh

Fresh emergent marsh is distinguished from deep-water aquatic habitats and wet meadows or grassland habitats by the presence of tall, perennial grass-like plants that are rooted in soils and permanently or seasonally flooded or inundated. They are often associated with small human-made ponds and natural drainage ways that are enhanced by intentional or unintentional releases of irrigation water. Fresh emergent marsh can also occur as a fringe around reservoirs where the slopes are gentle enough to create a rim of shallow water and where water levels do not fluctuate widely; this condition is mapped as the pond land cover type.

Unmaintained roadside and agricultural ditches can also support these ecosystems. Small marshes can also be found along low-gradient reaches of rivers and streams in backwater areas or ponded overflow channels. In the Foothills, flood irrigation often creates small wetlands that form around drainageways or small basins.

In western Placer County, characteristic freshwater marsh species include broadleaf cattail (*Typha latifolia*), common tule (*Schoenoplectus acutus* var. *occidentalis*), common spike-rush, common rush (*Juncus effusus*), Baltic rush (*Juncus balticus*), floating water-primrose (*Ludwigia peploides*), lanceleaf water-plantain (*Alisma lanceolatum*), and water pepper (*Persicaria hydropiperoides*). Goodding's black willow (*Salix gooddingii*) and sandbar willow (*Salix exigua*) are woody plants that tolerate flooding and are occasionally found around the margins of fresh emergent marshes. Most individual occurrences of fresh emergent marsh in the county are less than 1 acre in extent; some larger, restored fresh emergent marshes exist in the western part of Plan Area A, near Sheridan.

Compared to some other terrestrial large-patch ecosystems in western Placer County, fresh emergent marshes support a relatively low number of vertebrate species. This is because most reptiles and small mammals (i.e., most rodents) avoid flooded areas and permanently saturated soils. In contrast, many species, including large numbers of birds, such as ducks, waders (e.g., herons and egrets), shorebirds, and blackbirds (including tricolored blackbird), are drawn to marshes, mudflats, and other wetland habitats (Appendix A).

Characteristic waterbirds that nest in fresh emergent marshes in western Placer County include Canada goose, mallard (*Anas platyrhynchos*), cinnamon teal (*Anas cyanoptera*), gadwall (*Anas strepera*), Virginia rail (*Rallus limicola*), sora (*Porzana carolina*), American coot (*Fulica americana*), common gallinule (*Gallinula galeata*), killdeer (*Charadrius vociferus*), and Wilson's snipe (*Gallinago delicata*). These species are joined by a host of migratory waterfowl in fall and spring, with many remaining in the county throughout the winter and spring. Typical migratory and wintering waterfowl include American wigeon (*Anas americana*), northern shoveler (*Anas clypeata*), northern pintail (*Anas acuta*), green-winged teal (*Anas crecca*), ring-necked duck (*Aythya collaris*), bufflehead (*Bucephala albeola*), common goldeneye (*Bucephala clangula*), and ruddy duck (*Oxyura jamaicensis*) (Appendix A).

Amphibians in these habitats include California newt (*Taricha torosa*), California toad (*Bufo boreas halophilus*), and Sierran treefrog (*Pseudacris sierra*). Western pond turtle (*Emys marmorata*), giant garter snake (*Thamnophis gigas*), valley garter snake (*Thamnophis sirtalis fitchii*), and western aquatic garter snake (*Thamnophis couchii*) are the only reptiles that regularly occur in fresh emergent marshes of western Placer County. The most common mammals in these habitats are a variety of foraging bats, vagrant shrew (*Sorex vagrans*), dusky shrew (*Sorex monticolus*), ornate shrew (*Sorex ornatus*), American beaver (*Castor canadensis*), and muskrat (*Ondatra zibethicus*).

Non-Vernal Pool Seasonal Wetland

For the purposes of this analysis, non-vernal pool seasonal wetlands are defined as isolated wetlands and swales (those not part of a larger complex) that pond water or have saturated soil during the rainy season but that lack endemic vernal pool species. Seasonal wetlands are typically not found in well-defined depressions but occur in a variety of topographic situations, such as shallow basins in annual grassland or along ephemeral drainage ways and swales. They also occur as transitional zones between fresh emergent marsh and annual grassland in small shallow valleys that are gradually exposed as water levels fall during the dry season.

Where seasonal wetlands occur within vernal pool complexes, they form hydrological complexes composed of vernal pools, swales, and seasonal wetlands within an upland grassland matrix. This condition is considered to be part of the vernal pool-type wetland and an attribute of the vernal pool complex community, not the aquatic/wetland complex community.

Seasonal wetlands occur throughout the Plan Area of western Placer County. Individual seasonal wetlands are typically small, and most occur within grazed annual grassland and irrigated pasture ecosystems. Some larger areas occur adjacent to fresh emergent marshes in agricultural settings in the western part of the Plan Area.

Seasonal wetlands support a lower diversity of plant species than adjacent fresh emergent marsh and have a higher proportion of non-native species. Typical plant species characteristic of seasonal wetland ecosystems in western Placer County include Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), perennial ryegrass, curly dock, Baltic rush, and hyssop loosestrife. During the summer, seasonal wetlands may support late-season upland plants such as common spikeweed (*Centromadia fitchii*), common tarweed (*Holocarpha virgata*), vinegar weed (*Trichostema lanceolatum*), and turkey-mullein (*Eremocarpus setigerus*).

Similar to fresh emergent marshes, non-vernal pool seasonal wetlands support a relatively low number of vertebrate species compared to many other land cover types in western Placer County. This low number of vertebrate species is because many small mammal species (e.g., most rodents) avoid seasonally flooded areas and saturated soils. In contrast, many species, including large numbers of waterbirds, are drawn to seasonal wetland ecosystems (Appendix A). Characteristic waterbirds that visit seasonal wetlands in western Placer County include snowy egret (*Egretta thula*), black-crowned night-heron (*Nycticorax nycticorax*), white-faced ibis (*Plegadis chihi*), Canada goose, mallard, cinnamon teal, American wigeon, gadwall, killdeer, and Wilson's snipe.

Lacustrine

Lacustrine ecosystems are defined as inland natural ponds and lakes as well as artificial features such as stock ponds or small reservoirs.

Seasonally, reservoirs, irrigation and stock watering ponds, and other artificial water bodies provide important habitat for many wildlife species, including western pond turtle, California red-legged frog (*Rana draytonii*), waterfowl, shorebirds, and other migratory waterbirds (Appendix A). Lacustrine ecosystems in western Placer County are used as wintering grounds or temporary stopovers for resting and foraging waterfowl during migration. Typical waterfowl species include Canada goose, snow goose (*Chen caerulescens*), white-fronted goose (*Anser albifrons*), mallard, northern pintail, American wigeon, gadwall, cinnamon teal, green-winged teal, canvasback (*Aythya valisineria*), and ruddy duck. Other waterbirds that frequent lacustrine ecosystems include great blue heron, green heron (*Butorides virescens*), great egret, snowy egret, pied-billed grebe (*Podilymbus podiceps*), western grebe (*Aechmophorus occidentalis*), common loon (*Gavia immer*), and American white pelican (*Pelecanus erythrorhynchos*). Shorebirds (such as spotted sandpiper (*Actitis macularia*), western sandpiper (*Calidris mauri*), least sandpiper (*Calidris minutilla*), killdeer, and Wilson's phalarope (*Phalaropus tricolor*) and swallows—such as northern rough-winged swallow (*Stelgidopteryx serripennis*), tree swallow (*Tachycineta bicolor*), violet-green swallow (*Tachycineta thalassina*), and cliff swallow (*Petrochelidon pyrrhonota*)—are also common visitors to lacustrine ecosystems.

Riverine/Riparian Complex

Riverine and associated riparian ecosystems, including riparian habitat, are present in a diverse mosaic around the streams and rivers in the Plan Area (Figure 3.3-5). Other closely associated land cover types and constituent habitats are interspersed within the riverine/riparian complex: grasslands, valley oak woodland, fresh emergent wetland, off-channel wetlands (not mapped as a

land cover type, but included in the riverine type), and seasonal wetlands. This mosaic is mapped as a single riverine/riparian complex land cover type.

The riverine/riparian complex community has strong associations with the riverine and riparian habitat types. Therefore, the discussion of this community appears below under these constituent habitats.

The riverine aquatic habitat nominally represents the entire stream ecosystem for aquatic species including the salmonid fish. Because of the difficulty in mapping the narrow stream course itself, riverine/riparian land cover type appears discontinuously, which inadequately represents the continuity of the stream environment. For this reason, riverine habitat is also represented by the linear measure of streams.

Chinook salmon and Central Valley steelhead use 122 miles, or roughly 60%, of all major streams in western Placer County. They occur in the Bear River and the Coon Creek, Auburn Ravine, and Dry Creek stream systems.

Land Cover Types/Constituent Habitats

Due to the small patch size of some riparian habitats and linear nature of the streams, these biological resources were mapped as a complex and identified as constituent habitats in the Plan.

Riverine

Riverine systems occurring in western Placer County include perennial, intermittent, and ephemeral streams. The larger streams in the Plan Area and vicinity, such as the Bear River and American River, are perennial today and always have been perennial. Intermittent streams receive some input from groundwater discharge in addition to precipitation runoff and seasonal flow. They typically do not flow in the late summer and fall. Some streams in the Plan Area were historically intermittent but have been changed to perennial because of inter-basin irrigation water transfers, urban runoff, treated effluent discharges, and inputs of water destined for downstream uses (e.g., Pleasant Grove Creek, Markham Ravine). Ephemeral streams receive no input from groundwater and flow only during and following storm events in response to precipitation runoff. The flow regime in a stream profoundly affects its ecology, in particular its ability to support fish and other aquatic organisms.

Invertebrates that might be found in the county's rivers and creeks include mayflies (Order: Ephemeroptera), alderflies (Order: Megaloptera), stoneflies (Order: Plecoptera), dragonflies (Order: Odonata), damselflies (Order: Odonata), water striders (Family: Gerridae), and caddisflies (Family: Trichoptera). These provide food for fish and other aquatic wildlife. Emerging aquatic insects are a major food source for many bird and bat species that forage over open waters.

Fish-eating birds, such as ospreys (*Pandion haliaetus*) and bald eagles (*Haliaeetus leucocephalus*), forage for fish near the surface of pools and shallow waters along the Bear River. Belted kingfishers (*Megaceryle alcyon*), double-crested cormorants (*Phalacrocorax auritus*), and common mergansers (*Mergus merganser*) also forage for fish in streams and reservoirs. Many amphibians and reptiles depend on riverine ecosystems; these include California newt, western toad, foothill yellow-legged frog, coast garter snake (*Thamnophis elegans terrestris*), western aquatic garter snake, and western pond turtle.

Characteristic mammals in riverine ecosystems include several bat species, northern river otter (*Lontra canadensis*), American mink (*Neovison vison*), muskrat, and American beaver.

Riverine ecosystems in western Placer County support a diverse fish fauna despite their history of disturbance. The dominant native fish in cold, high-gradient, high-elevation streams are rainbow trout (*Oncorhynchus mykiss*), riffle sculpin (*Cottus gulosus*), Sacramento sucker (*Catostomus occidentalis*), speckled dace (*Rhinichthys osculus*), and California roach (*Hesperoleucus symmetricus*). In western Placer County, the upstream reaches and tributaries of the Bear River, North Fork American River, Auburn Ravine, Doty Ravine, and Upper Coon Creek support these same fish species.

The dominant native fish species in the small, warm tributaries of larger streams are Sacramento pikeminnow (*Ptychocheilus grandis*), hardhead (*Mylopharodon conocephalus*) and Sacramento sucker. California roach are also present in streams that are usually intermittent in summer, with constant flow during winter and spring. Summer water temperatures in isolated pools may exceed 86°F. California roach is the main permanent-resident native fish in these streams. The non-native green sunfish (*Lepomis cyanellus*) may displace California roach in some areas. In western Placer County, streams of this type may include tributaries of the Bear River (upstream of Camp Far West Reservoir), Pleasant Grove Creek, Coon Creek, Doty Ravine, Auburn Ravine, Antelope Creek, Linda Creek, Secret Ravine, and Miners Ravine, as well as intermittent reaches of Doty Ravine, Secret Ravine, and Miners Ravine.

Low- to mid-elevation streams with deep rock pools and broad, shallow riffles, clear water, high dissolved oxygen levels, low conductivity, and moderate summer water temperatures of 66°F to 72°F support Sacramento pikeminnow and Sacramento sucker, which are generally the most abundant fishes, along with hardhead in cooler reaches. Other native fishes may include speckled dace, California roach, riffle sculpin, and rainbow trout; downstream of permanent barriers, anadromous species such as Central Valley steelhead, Central Valley fall-run Chinook salmon, and Pacific lamprey (*Entosphenus tridentata*) are also known to occur.

Fall-run Chinook salmon adults enter freshwater in the fall and spawn in through the fall and into early winter, and juveniles leave the streams in the spring. Steelhead and rainbow trout may occupy the cool upper reaches year-round. Non-native species such as green sunfish, smallmouth (*Micropterus dolomieu*) and largemouth bass (*Micropterus salmoides*), carp (*Cyprinus carpio*), and black bullhead (*Ameiurus melas*) may dominate the fish community, especially in the lower reaches near the Valley floor. In western Placer County, Sacramento pikeminnow, hardhead, and Sacramento sucker streams include the lower reaches of the North Fork of the American River above Folsom Reservoir, the Bear River upstream and downstream from Camp Far West Reservoir, Coon Creek, Doty Ravine, Auburn Ravine, Antelope Creek, Secret Ravine, Miners Ravine, and Dry Creek. Markham Ravine, Pleasant Grove Creek, and Curry Creek may also support these species. Steelhead trout, Sacramento sucker, and pikeminnow have been found to generally be the dominant species in Auburn Ravine. Sacramento sucker and pikeminnow were dominant species in Coon Creek, but very few steelhead trout were found. Nearly 10% of the total catch on Auburn Ravine was non-native fishes during winter 2004 and spring 2005 sampling events. Coon Creek had a much larger proportion of non-native species; nearly 20% of the total catch was non-native fish in winter of 2004 and more than 30% was non-native fish during spring and summer sampling efforts in 2005 (Appendix A). This prevalence of non-native species is most likely due to the higher temperatures and lower flows found in Coon Creek.

In the low-gradient warm waterways on the Valley floor, native resident fishes include Sacramento pikeminnow, Sacramento sucker, and hitch (*Lavinia exilicauda*). Anadromous species, including fall-run Chinook salmon and steelhead, pass through these reaches to spawning areas upstream. Non-native species, including largemouth bass, black crappie (*Pomoxis nigromaculatus*), white crappie (*Pomoxis annularis*), black bullhead, red shiner (*Cyprinella lutrensis*), threadfin shad (*Dorosoma petenense*), and carp, dominate the fish community. Streams of this type include the lower reaches of the Bear River upstream from the confluence with the Feather River, the Cross Canal, and the lower reaches of Dry Creek.

Riparian

These ecosystems are widely distributed in western Placer County. Riparian constituent habitat includes both the narrower definition of the CWHR class valley foothill riparian habitat as stands of deciduous trees near perennial streams and the broader definition of riparian vegetation: herbs, forbs, and shrubs occurring in the riparian corridor without a woodland overstory. These ecosystems are dependent on surface and subsurface water sources (e.g., groundwater) in streams and floodplains. Riparian ecosystems are often characterized by highly variable successional stages of vegetation that are influenced by frequent disturbances associated with flooding, droughts, and grazing.

In western Placer County, riparian habitat of varying types occurs along most perennial and intermittent streams. The most significant stands occur on the American and Bear River corridors and along Coon Creek, lower Auburn Ravine, and lower Dry Creek. Significant stands are generally restricted to low-gradient depositional reaches with some floodplain development. Along most other creeks in western Placer County, this ecosystem occurs as narrow and generally discontinuous bands of trees, rarely occurs on intermittent streams, and never occurs on ephemeral streams that flow only during storm events. On high-energy, bedrock-constrained river systems, the riparian corridors are patchy and quite narrow, limited laterally by steep side slopes, and usually not more than one tree canopy wide. Willow scrub is generally persistent but in an early successional stage that is eventually over-topped by valley oak, cottonwood, or alder in mature riparian habitat (Appendix A).

Riparian habitat is dominated by willows (*Salix* spp.) and Fremont cottonwood (*Populus fremontii*) or white alder (*Alnus rhombifolia*). In drier settings, riparian habitat can be dominated by stands of valley oak. Interior live oak can be an important associated species in some riparian habitat ecosystems. Two or more age classes may be present in valley oak, Fremont cottonwood, or mixed riparian forests. Age classes and structural diversity are reduced in riparian forests that are heavily grazed by livestock, affected by development adjacent to the stream, or dominated by noxious weeds such as Himalayan blackberry, red sesbania (*Sesbania punicea*), tree-of-heaven (*Ailanthus altissima*), or giant reed (*Arundo donax*).

Early successional stages of riparian habitat are often dominated by sparse or dense stands of herbs and forbs such as willowherb (*Epilobium ciliatum* ssp. *ciliatum*), tall flatsedge (*Cyperus eragrostis*), torrent sedge (*Carex nudata*), horsetail (*Equisetum* spp.), and common rush. Common shrubs include mulefat (*Baccharis salicifolia*) and low-growing willows.

Species composition in a riparian corridor is determined largely by the depth of the summer water table and the frequency of flooding. On frequently flooded low terraces at or near the active channel, common riparian species in western Placer County include sandbar willow, water smartweed

(*Persicaria amphibium*), willowherb, tall flatsedge, torrent sedge, horsetail, common rush, occasional white alder, and, at the lowest elevations, mulefat.

Higher floodplain surfaces and terraces may support more diverse riparian habitat. The tall, dense canopies of mature valley oak and Fremont cottonwood riparian forest in the Central Valley and Sierra Nevada foothills typically have a subcanopy tree layer of white alder, Oregon ash (*Fraxinus latifolia*), several species of willow, and California black walnut (*Juglans californica*). Lianas of wild grape (*Vitis vinifera*) up to 50 feet high further contribute to the habitat values (Appendix A). White alder is a common sub-canopy component of mixed riparian forests of western Placer County, but at higher elevations, it frequently occurs in pure stands. Where interior live oaks are dominant, common understory species include poison-oak (*Toxicodendron diversilobum*), California buckeye (*Aesculus californica*), hoary coffeeberry (*Frangula californica* ssp. *tomentella*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), and coyote brush (*Baccharis pilaris*). Two non-native cottonwood species, silver poplar (*Populus alba*) and Lombard poplar (*Populus nigra*), can be abundant in riparian habitats in urbanized stream reaches and near old town or mining sites.

Common shrubs associated with multilayered riparian habitat include the noxious weeds and Himalayan blackberry as well as native species such as snowberry (*Symphoricarpos* spp.), wild rose (*Rosa* spp.), blue elderberry, poison-oak, spice bush (*Calycanthus occidentalis*), western ninebark (*Physocarpus capitatus*), California blackberry (*Rubus ursinus*), and shrubby willows.

Characteristic forbs and grasses include Douglas's mugwort (*Artemisia douglasiana*), Santa Barbara sedge (*Carex barbarae*), clustered field sedge (*Carex praegracilis*), blue wildrye, deer grass (*Muhlenbergia rigens*), common yarrow (*Achillea millefolium*), bracken fern (*Pteridium aquilinum*), and stinging nettle (*Urtica dioica*) as well as weedy non-native species such as common verbena (*Verbena lasiostachys*), velvet grass, Bermuda grass, and pennyroyal (*Mentha pulegium*). The herbaceous layer of riparian habitat is often sparse due to a well-developed and sometimes diverse shrub layer, often containing quantities of downed wood and debris from previous flood events. In areas where the shrub layer has been removed or grazed, these ecosystems may have a grassy understory of native and non-native grasses, sedges (*Carex* spp.), rushes (*Juncus* spp.), and forbs.

Birds are found in particularly high diversity and numbers in riparian habitats of western Placer County. Characteristic breeding birds include belted kingfisher, downy woodpecker (*Picoides pubescens*), black phoebe (*Sayornis nigricans*), warbling vireo (*Vireo gilvus*), western scrub-jay (*Aphelocoma californica*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), house wren (*Troglodytes aedon*), American robin (*Turdus migratorius*), orange-crowned warbler (*Oreothlypis celata*), yellow-breasted chat (*Icteria virens*), black-headed grosbeak (*Pheucticus melanocephalus*), lazuli bunting (*Passerina amoena*), spotted towhee (*Pipilo maculatus*), song sparrow (*Melospiza melodia*), house finch (*Haemorhous mexicanus*), and lesser goldfinch (*Spinus psaltria*). Riparian areas are also attractive to migratory species, including a variety of flycatchers, vireos, warblers, tanagers, and grosbeaks.

Most amphibians, reptiles, and mammals use riparian corridors for cover, shade, and as a source of water. Amphibians and reptiles in riparian habitats include Ensatina (*Ensatina eschscholtzii*), California slender salamander (*Batrachoseps attenuatus*), Sierran treefrog, California toad (*Anaxyrus boreas halophilus*), western yellow-bellied racer, common terrestrial garter snake, California whipsnake, Pacific gopher snake (*Pituophis catenifer catenifer*), northern Pacific rattlesnake (*Crotalus oreganus oreganus*), Skilton's skink (*Plestiodon skiltonianus skiltonianus*), California alligator lizard (*Elgaria multicarinata multicarinata*), and western fence lizard (*Sceloporus*

occidentalis). Bats frequently forage for insects over riparian areas in river canyons, and many individuals may roost in riparian trees. Some bat species may also use abandoned mine shafts and tunnels as roosts. Riparian habitats are especially important for migratory mule deer (*Odocoileus hemionus*) (Appendix A).

Oak Woodland

The oak woodland community occurs mainly in the Foothills and comprises diverse dominant tree species, which are represented by five woodland land cover types (Figure 3.3-6). Two non-woodland land cover types that have minor extent and are associated with woodland geographically are mapped with the oak woodland community. These land cover types are as follows:

- Blue oak woodland
- Interior live oak woodland
- Mixed oak woodland
- Oak-foothill pine woodland
- Oak savanna
- Foothill chaparral
- Rock outcrop

The mosaic of communities across the landscape creates linkages between the oak woodland and vegetation types that are not dominated by oaks, such as annual grassland, riparian habitat associated with perennial and intermittent streams and, at the eastern portion of Plan Area A, conifer forests. As a result, many of the wildlife species associated with these other vegetation types utilize oak woodlands at least in part to meet their habitat requirements.

Land Cover Types

Blue Oak Woodland

Oak woodlands dominated by blue oak were mapped as blue oak woodland when they had greater than 30% canopy-cover, were not associated with perennial streams, had less than 10% canopy cover of foothill pine (*Pinus sabiniana*), and could be distinguished by aerial photograph interpretation or field assessments. Blue oak woodland is the dominant interior foothill woodland, forming an almost continuous belt around the Central Valley. CDFW considers blue oak woodland a sensitive biotic community. Blue oak woodland dominates the lower elevations of western Placer County. In Plan Area A, it occurs at elevations of 90–1,600 feet. Above elevations of approximately 1,500 feet in Placer County, blue oak woodland occurs mainly on gently sloping, well-drained, nutrient-poor dry sites where trees grow slowly. On nutrient-poor soils, blue oaks of 8 inches in diameter may be up to 100 years old. Blue oak woodland intergrades with annual grassland at lower elevations and with oak-foothill pine woodland, foothill chaparral, or ponderosa pine forest at higher elevations (Appendix A).

In blue oak woodlands, blue oak generally dominates the tree layer, often in association with widely scattered emergent foothill pines. On some soils, blue oak and interior live oak occurs as co-dominants. The shrub layer in blue oak woodland is generally sparse, except for scattered poison-oak, hoary coffeeberry, buckbrush (*Ceanothus cuneatus*), California buckeye, and whiteleaf

manzanita (*Arctostaphylos viscida*) that generally occur only on rock outcrops or poor soils where trees are often very small. Dominant species in the understory include non-native grasses such as wild oat, soft chess, ripgut brome, foxtail barley, hedgehog dogtail, and rattail fescue (*Festuca myuros*), and forbs such as rose clover, hedge parsley (*Torilis arvensis*), and hairy vetch (*Vicia villosa*). Common noxious weeds include yellow star-thistle, Italian thistle (*Carduus pycnocephalus*), and medusa-head as well as many non-native annual grasses. Characteristic native species include California poppy, brodiaea, fiddlenecks, popcornflowers, winecup clarkia, soap plant (*Chlorogalum pomeridianum*), Ithuriel's spear, and goldfields. The understory of blue oak woodlands in western Placer County can support a wide diversity of colorful native perennial and annual wildflowers.

Amphibians and reptiles in blue oak woodland are mostly those that are associated with open annual grassland ecosystems: California slender salamander, western toad, western yellow-bellied racer, common garter snake (*Thamnophis* sp.), California whipsnake, California king snake (*Lampropeltis californiae*), gopher snake, Gilbert's skink (*Plestiodon gilberti*), Skilton's skink, southern alligator lizard, and western fence lizard. Oak woodland savanna and grassland components of this community attracts bird species such as American kestrel, lark sparrow (*Chondestes grammacus*), western meadowlark, and Bullock's oriole (*Icterus bullockii*), while oaks provide food for various songbirds and nesting sites for cavity nesters, such as woodpeckers, oak titmouse (*Baeolophus inornatus*), ash-throated flycatcher (*Myiarchus cinerascens*), house wren, Bewick's wren, and violet-green swallow. Mammals typical of these ecosystems include mule deer, California ground squirrel, and western gray squirrel (*Sciurus griseus*).

Interior Live Oak Woodland

Oak woodlands dominated by interior live oak were mapped as interior live oak woodland when they had greater than 30% canopy cover, were not associated with perennial streams, had less than 10% canopy cover of foothill pine, and could be distinguished by aerial photograph interpretation or field assessments.

Interior live oak woodland is widespread throughout the foothill region surrounding the Central Valley, from Shasta County south to the Kern River. However, interior live oak woodland has a restricted distribution in western Placer County, occurring at elevations of about 300–600 feet. Interior live oak woodland typically occurs on north-facing slopes and in drainages and stream canyons. Steep terrain and limited forage often reduces the potential for grazing in live oak woodland. In the Granite Bay and Folsom Lake area, interior live oaks are common on flat terrain. At elevations above approximately 1,500 feet in Placer County, they occur in a wider variety of settings, from steep, rocky canyon slopes to gentle slopes or ridges on nutrient-poor soils. The vegetation type is considered to be resilient to wildfire because of its ability to stump-sprout after fire. Live oak will often replace blue oak after catastrophic fire because it is a more successful sprouter, and interior live oak woodland is typically interspersed with blue oak woodland (Appendix A).

Dense shade and a thick, persistent layer of leaf litter directly under the oak canopy typically precludes development of an herbaceous layer. Few weedy annual grasses are present, and the shrub layer is often sparse or absent. Where light permits development of an herbaceous layer, dominant species in the understory of interior live oak woodland include non-native species that are somewhat shade tolerant, such as hedgehog dogtail, hedge parsley, chickweed (*Cerastium* spp.), and the noxious weed Italian thistle. Common native species include blue wildrye, miner's lettuce (*Claytonia perfoliata*), foothill sanicle (*Sanicula crassicaulis*), hairy wood rush (*Luzula comosa*), and western buttercup (*Ranunculus occidentalis*). At woodland edges or in canopy openings, such as rock

outcrops, common shrubs include hoary coffeeberry, whiteleaf manzanita, poison-oak, toyon (*Heteromeles arbutifolia*), and pink honeysuckle (*Lonicera hispidula*). In these canopy openings, common non-native herbaceous associates include slender wild oat, yellow star-thistle, and ripgut brome, in addition to those mentioned above. Native forbs and bunchgrasses are best represented on poor, rocky soils and include white globe lily (*Calochortus albus*), twining snakelily (*Dichelostemma volubile*), brodiaeas, many-flowered brodiaea (*Dichelostemma multiflorum*), soap plant, California melic, one-sided bluegrass (*Poa secunda*), purple needlegrass, common madia, and goldback fern (*Pentagramma triangularis*).

Interior live oak woodland often supports many of the wildlife species associated with foothill chaparral because the two land cover types are often intermixed on the same hillsides. The primary distinction between the two habitats is the presence, in interior live oak woodland, of larger trees, which offer a more complex structural framework and cavities for nesting by larger birds such as red-tailed hawk and great horned owl (*Bubo virginianus*).

Mixed Oak Woodland

In this land cover type, canopy cover exceeded 30%, there was less than 10% canopy cover of foothill pine, and the woodlands were not associated with perennial streams. There was no single clearly dominant oak species that could be discerned through aerial photograph interpretation. The principal oak species present in mixed oak woodland is blue oak. In mixed oak woodland, blue oak occurs in association with a variety of other trees, including interior live oak, canyon live oak (*Quercus chrysolepis*), Pacific madrone (*Arbutus menziesii*), tanoak (*Notholithocarpus densiflorus*), big-leaf maple, and foothill pine.

Mixed oak woodland occurs throughout the foothills of the Sierra Nevada and Coast Ranges and is widespread in western Placer County, occurring at elevations of about 70–1,600 feet.

Oak-Foothill Pine Woodland

Oak-foothill pine woodland is distinguished from other oak woodland types by having a component of foothill pine that exceeds 10% of the total canopy cover (Appendix A).

In Plan Area A, oak-foothill pine woodland occurs at elevations of about 190–1,600 feet. At the lowest elevations, oak-foothill pine woodland intergrades with annual grassland and oak woodland savanna. At mid to high elevations, it intergrades with blue oak woodland. At higher elevations, oak-foothill pine woodland merges with foothill chaparral or ponderosa pine forest. On gentle, grassy slopes at lower elevations in the county, oak-foothill pine woodlands occur as open park-like stands that are usually dominated by scattered blue oak, with foothill pine occurring sparsely on the more shallow and rocky soils (Appendix A). At higher elevations, interior live oak replaces blue oak, especially on steep, rocky soils on north-facing slopes. At these higher elevations, and in river canyons, foothill pine becomes more abundant.

Oak-foothill pine woodland usually has an understory of shrubs and an herbaceous layer dominated by non-native annual grasses. Where the woodland is a dense mix of foothill pine, interior live oak, blue oak, and black oak, the shrub layer is more developed and the herbaceous layer sparser. In western Placer County, common shrubs in such habitats include whiteleaf manzanita, buckbrush, deer brush (*Ceanothus integerrimus*), poison-oak, hoary coffeeberry, bush penstemon (*Keckiella* spp.), silver bush lupine (*Lupinus albifrons*), pink honeysuckle, chaparral honeysuckle (*Lonicera interrupta*), California buckeye, and western redbud (*Cercis occidentalis*). Native perennial

bunchgrasses such as California melic, one-sided bluegrass, blue wildrye, and purple needlegrass are usually present in canopy openings. Shade-tolerant forbs and grasses are often sparse in the shade of the oaks; these species include miner's lettuce, western buttercup, foothill sanicle, goldback fern, and non-native hedgehog dogtail and hedge parsley. Native forbs are usually sparse and best represented on rock outcrops. The shrub and herbaceous layers of open oak-foothill pine woodland at low elevations in western Placer County are characterized by foothill chaparral species, including shrubby California buckeye, whiteleaf manzanita, buckbrush, toyon, hoary coffeeberry, and poison-oak. Dominant species in the herbaceous layer include non-native wild oat, slender wild oat, riggut brome, and rose clover. Widely scattered native forbs include brodiaeas, Ithuriel's spear, fiddlenecks, and California poppy. Noxious weeds are most common along road edges and other disturbed or ruderal areas. The most frequent noxious weed and invasive non-native species include yellow star-thistle, Italian thistle, medusa-head, spring vetch (*Vicia sativa*), black mustard (*Brassica nigra*), and Klamath weed (*Hypericum perforatum*).

In oak-foothill pine woodlands, grass seeds, fruits of various shrubs, oak acorns, and foothill pine seeds all provide nutritious food sources for a wide variety of rodents, squirrels, larger mammals, and granivorous birds. Western scrub-jays, acorn woodpeckers (*Melanerpes formicivorus*), western gray squirrels, and other acorn specialists are common in these mixed woodlands. Newly emerged oak leaves in the spring support an abundance of insects that attract large numbers of migrating and nesting flycatchers, vireos, warblers, and other insectivorous birds. In areas where shrubs are present, birds such as spotted towhee, California towhee (*Pipilo crissalis*), white-crowned sparrow (*Zonotrichia leucophrys*), golden-crowned sparrow (*Zonotrichia atricapilla*) (winter only), wrentit (*Chamaea fasciata*), and blue-gray gnatcatcher (*Polioptila caerulea*) may occur. Characteristic amphibians and reptiles include California slender salamander, western toad, western yellow-bellied racer, common garter snake, California whipsnake, gopher snake, western rattlesnake (*Crotalis viridis*), Skilton's and Gilbert's skinks, southern alligator lizard, and western fence lizard.

Oak Savanna

Oak woodlands with between 5 and 30% canopy cover were mapped as oak woodland savanna. There are two types of oak woodland savanna in western Placer County. On upland hillsides and broad ridges, the dominant oak species is blue oak. Associated trees and shrubs include California buckeye, toyon, and poison-oak. This blue oak-dominated savanna commonly occurs within a diverse mosaic composed of other oak woodlands, riparian habitats, and annual grassland land cover types. On valley floodplains and terraces, oak woodland savanna is dominated by valley oak. In both types, community structure is characterized by limited shrub cover and an understory composed of annual grasses and forbs.

Foothill Chaparral

Foothill chaparral ecosystems in western Placer County are characterized by high topographic and geologic diversity. For the Plan Area, foothill chaparral is defined as shrub-dominated habitat with less than 10% cover of trees. Widely scattered emergent pines or oaks are common but generally represent less than 10% of the overall cover. Foothill chaparral occurs sparsely, intermixed with the various Foothills woodland land cover types, and is included as a component of the overall oak woodland community.

Foothill chaparral ecosystems include successional habitats in mixed oak woodland or lower-elevation ponderosa pine forest as well as persistent chaparrals on poor soils. The largest stands of foothill chaparral in western Placer County are on the slopes of the American River canyon and

north and east of Auburn, east of Plan Area A and partly in Plan Area B4, the PCWA operations and maintenance facility. Only about 217 acres of foothill chaparral are mapped in Plan Area A, at elevations of about 460–1,500 feet; they are most common between mixed oak woodland and ponderosa pine forest.

Foothill chaparral often occurs in settings that are too hot, dry, rocky, and steep to support tree-dominated habitats (Appendix A). It generally occurs on south-facing slopes, transitioning to interior live oak woodland or ponderosa pine forest on north-facing slopes.

Whiteleaf manzanita, buckbrush, and shrubby interior live oaks are the dominant species in foothill chaparral ecosystems of western Placer County. Foothill chaparral ecosystems in western Placer County may exhibit a wide diversity of native shrubs, including hoary coffeeberry, western redbud, birchleaf mountain mahogany (*Cercocarpus betuloides*), chamise (*Adenostoma fasciculatum*), Lemmon's ceanothus (*Ceanothus lemmonii*), Sierra plum (*Prunus subcordata*), yerba santa (*Eriodictyon californicum*), Fremont silk-tassel (*Garrya fremontii*), service berry (*Amelanchier* spp.), deer brush, Oregon white oak (*Quercus garryana*), shrubby interior live oak, chaparral honeysuckle, chaparral clematis (*Clematis lasiantha*), and poison-oak.

Many animal species frequent foothill chaparral ecosystems because they provide abundant food supplies, shelter, and nesting sites; some species can be found in their highest abundance in these communities. Approximately 120 vertebrate species—53 breeding species and 67 visitors—occur in these ecosystems in the Plan Area.

Dusky-footed woodrats (*Neotoma fuscipes*) and deer mice (*Peromyscus maniculatus*), both very common in foothill chaparral, provide abundant food for snakes and carnivorous mammals. A number of other mammals occupy these dense thickets where they can avoid human disturbance. Mountain lion (*Felis concolor*), black bear (*Ursus americanus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), and ring-tailed cat (*Bassariscus astutus*) are among the larger mammals that frequent these habitats. Other common mammals include western gray squirrel, California ground squirrel, and brush rabbit (*Sylvilagus bachmani*). Gopher snake, California whipsnake, western rattlesnake, and California kingsnake (*Lampropeltis getulus*) are commonly found in foothill chaparral ecosystems, along with smaller snakes such as western yellow-bellied racer, ringneck snake (*Diadophis* spp.) and sharp-tailed snake (*Contia tenuis*). Skilton's skink, Gilbert's skink, southern alligator lizard, and western fence lizard are also common to abundant in these communities. The most common amphibian is California slender salamander, which can be readily found during the rainy season but retreats far underground in summer.

Numerous bird species either nest in foothill chaparral ecosystems or use them seasonally. Common breeding species include Anna's hummingbird (*Calypte anna*), western scrub-jay, blue-gray gnatcatcher, wren-tit, spotted towhee, California towhee, and lazuli bunting. Birds can be particularly abundant in foothill chaparral in winter, perhaps because the ecosystem lies below the snow zone and because many native shrubs (e.g., toyon) produce fruits that attract species such as American robin, cedar waxwing (*Bombycilla cedrorum*), Townsend's solitaire (*Myadestes townsendi*), and hermit thrush (*Catharus guttatus*). Ruby-crowned kinglet (*Regulus calendula*) and Hutton's vireo (*Vireo huttoni*) are typical wintering and resident insectivorous birds that forage primarily in evergreen foliage.

Rock Outcrop

Natural barren areas comprise features such as rock outcrops and cliffs. In all cases, barren rock or soil dominates the ground layer, and tree and shrub cover is typically sparse or absent. Pockets of foothill chaparral and annual grassland may be present within natural barren areas. Rock outcrop is included as a component of the overall oak woodland community.

Shrubs range from 1 to 6 feet in height, and dominant species usually include chamise, whiteleaf manzanita, buckbrush, and shrubby interior live oak. Small, scattered stands of conifer forest within barren areas are dominated by foothill pine and incense cedar.

Despite their steep gradients and lack of vegetation, cliffs and rock outcrops are surprisingly rich in wildlife values. Various birds and mammals find safety and breeding sites within rocky crevices. Typical rock and cliff birds include white-throated swift (*Aeronautes saxatalis*), canyon wren (*Catherpes mexicanus*), rock wren (*Salpinctes obsoletus*), common raven (*Corvus corax*) (nesting), and an assortment of nesting raptors. Various snakes and lizards, including western fence lizard, western sagebrush lizard (*Sceloporus graciosus graciosus*), and western rattlesnake, favor rocky cliffs and outcrops. Most amphibians in the county avoid dry, barren habitats.

Constituent Habitats

The mapping methodology conducted for the land cover types that constitute the oak woodland community excludes potential riverine and wetland. Accordingly, there are no appreciable constituent habitats associated with this community. Some oak savanna may contain 0.2% riverine habitat where small, narrow streams are present but not associated with riparian tree canopy.

Valley Oak Woodland

Because of its conservation importance, valley oak woodland is treated as a separate community, comprising one land cover type (Figure 3.3-6).

Land Cover Type

Woodlands dominated by valley oak were mapped as valley oak woodland when they had greater than 30% canopy cover, were not associated with perennial streams, and could be distinguished by aerial photograph interpretation or field assessments.

In valley oak woodlands, large and broad-crowned valley oak trees occur in stands and blend into riparian habitats of valley oak or mixed tree species along stream courses and on active floodplains. The shrub layer, if present, contains bird-dispersed native species such as poison-oak, hoary coffeeberry, and toyon. Himalayan blackberry, a noxious weed species, may be common. The understory is often grazed and consists of a thick carpet of non-native annual grasses and forbs. Occasional native forbs and grasses found in the understory of valley oak woodlands in western Placer County include blue wildrye, western buttercup, and popcornflower.

Amphibians and reptiles in valley oak woodland are mostly those of open annual grassland ecosystems: California slender salamander, western toad, western yellow-bellied racer, common garter snake, California whipsnake, gopher snake, Skilton's and Gilbert's skinks, southern alligator lizard, and western fence lizard. Various bird species use valley oak woodlands, and are similar to those listed for blue oak woodland.

Constituent Habitats

In many places, valley oak woodland could be mapped as riparian because it is associated with the stream system. In the Plan, valley oak woodland and riparian habitat are treated essentially the same for mitigation; therefore, the mapping distinction is immaterial. The stream system association results in a small amount (0.2%) of riverine habitat present in areas that have been mapped as valley oak woodland, as shown in Table 3-12 in Chapter 3 of the Plan.

Rice Agriculture

The rice agriculture community is represented solely by the rice land cover type. Rice is considered at the community level in the Plan because of its large extent in the Valley and its relationship to historic vernal pool complex lands and potential vernal pool restoration (Figure 3.3-7).

Land Cover Type

All land in rice production in Plan Area A is in the Valley, at elevations from 45 to 140 feet. Mapped rice fields include fields that are under current cultivation and fields that are temporarily fallow but have water control structures in place. Rice is planted in April and May and harvested in September and October. Fields are flooded at the time of setting the rice seedlings in the spring and often again after harvest to control pests and to provide waterfowl habitat for hunting clubs. Rice is grown as a monoculture, using flooding, tillage, and/or herbicides to eliminate unwanted vegetation; remaining vegetation is generally confined to the berms, ditches, and canals between and around fields and is dominated by wetland plants, both native and non-native. Typical plants found in uncleared ditches and canals include bulrush, cattail, nutsedge (*Cyperus* spp.), rushes, Harding grass (*Phalaris aquatica*), purpletop vervain (*Verbena bonariensis*), and Bermuda grass.

Flooded rice fields in the Plan Area attract wintering and migrating waterfowl, waders, shorebirds, and gulls. Large concentrations (more than 10,000 individuals) of northern pintails congregate in flooded rice fields prior to spring migration (Appendix A). In spring, these fields often support foraging resident species such as black-crowned night-heron, Canada goose, cinnamon teal, mallard, gadwall, and killdeer.

In winter, flooded rice fields support large numbers of overwintering killdeer, greater yellowlegs (*Tringa melanoleuca*), long-billed curlew (*Numenius americanus*), dunlin (*Calidris alpina*), least sandpiper, long-billed dowitcher (*Limnodromus scolopaceus*), Wilson's snipe, and American pipit (*Anthus rubescens*). During these winter months, especially after the hunting season, large flocks of waterfowl forage in flooded rice fields. These concentrations of shorebirds and waterbirds attract raptors, especially northern harrier (*Circus cyaneus*), peregrine falcon (*Falco peregrinus*), and bald eagle. When rice fields are not flooded, rodent populations in the fields may also attract raptors, including white-tailed kite (*Elanus leucurus*), red-tailed hawk, Swainson's hawk, American kestrel, and short-eared owl (*Asio flammeus*) (Appendix A).

Rice fields, their associated waterways, and adjacent uplands provide the most important agricultural habitat for giant garter snakes, particularly in the Sacramento Valley (Appendix A). Abandoned contoured rice fields established in historic vernal pool landscapes often retain remnant areas of vernal pool vegetation and seasonal pools that can support listed vernal pool invertebrates, such as vernal pool fairy shrimp and vernal pool tadpole shrimp.

Field Agriculture

Field agriculture is represented by three land cover types: two crops and the geographically associated eucalyptus woodlands (Figure 3.3-7).

- Alfalfa
- Cropland
- Eucalyptus

Land Cover Types

Alfalfa

Small amounts of alfalfa are grown in western Placer County as a hay crop in irrigated fields. Alfalfa is a perennial plant that lives for 5 years or more and is harvested several times in the growing season. Herbicides are generally used to control weeds and eliminate unwanted vegetation. Any vegetation remaining on field margins may include a variety of introduced grasses and legumes, but noxious weeds and other non-native invasive plants may also be present.

Several open-country raptor species that occur in western Placer County (e.g., Swainson's hawk, white-tailed kite, northern harrier, red-tailed hawk, and American kestrel) use alfalfa fields, where they forage on the abundant rodent prey. Because alfalfa is planted in such a small amount in the Plan Area, this type of crop most likely provides limited habitat values for species in the Plan Area. When flooded for irrigation, these fields are used extensively for foraging by wading birds and for nesting by several species of ducks.

Cropland

Row crops are generally monotypic agricultural fields of herbaceous species, varying in height from 1 to 6 feet. Most row crops are annual species, although a few of the species that are grown in Western Placer County, such as strawberries, are perennial. Major row crops in western Placer County are grain, vegetable crops, and miscellaneous crops (e.g., corn and oats). Most crops are planted in spring and harvested in summer or fall. The crops are grown using tillage or herbicides to eliminate unwanted vegetation (Appendix A). Small-scale row crop production is increasing in the Foothills because of the continued growth of farmers markets and other direct farm-to-market initiatives.

Areas were mapped as unidentified croplands if they were plowed or fallow agricultural fields or if the crop could not be identified as one of the other subtypes. Most of these areas are likely to be a temporary habitat in the fallow period of the annual cycle of cultivation of row crops. The dominant plant species in temporary fallow croplands and the margins of row crops include a variety of introduced grasses and legumes, including noxious weeds and other non-native invasive plants. The major noxious weeds subject to biological control measures in western Placer County are yellow star-thistle, Italian thistle, Klamath weed, skeleton weed (*Chondrilla juncea*), and puncture vine; many other noxious and invasive plants have the potential to occur in and around row crops. In moist areas near irrigation ditches and farm ponds, noxious weeds such as Johnson grass and Bermuda grass are often present.

Row crops support relatively few native wildlife species. In the Plan Area, these ecosystems support about 47 vertebrate species—six breeding species and 41 visitors. Most of these species do not breed in active row crops, but a few mammals (e.g., black-tailed jackrabbit, desert cottontail [*Sylvilagus audubonii*], Botta's pocket gopher, and California ground squirrel) may have natal burrows along the margins of fields. Typical birds that forage in the county's row crops include great blue heron, great egret, northern harrier, red-tailed hawk, Swainson's hawk, American kestrel, California quail, mourning dove (*Zenaida macroura*), western kingbird, American crow, western meadowlark, Brewer's blackbird, and red-winged blackbird. Row crop production is typically small in scale and associated with organic farm operations.

Eucalyptus Woodland

Eucalyptus woodland is lumped with the field agriculture community because of its geographic affiliation. Eucalyptus groves have been planted as windbreaks and for firewood in various rural-residential forested and agricultural areas in western Placer County. Most of these groves are small (less than 5 acres).

Eucalyptus trees (*Eucalyptus* spp.) flower in winter, producing large quantities of nectar. The trees are highly attractive to a variety of nectar- and insect-foraging birds. Anna's hummingbird, rufous hummingbird (*Selasphorus rufus*), ruby-crowned kinglet, bushtit, yellow-rumped warbler (*Setophaga coronata*), American goldfinch (*Spinus tristis*), and house finch are among the species that are especially abundant in eucalyptus groves of the Plan Area. Eucalyptus woodland at the edges of croplands offers suitable nesting habitat for Swainson's hawks.

Orchards and Vineyards Agriculture

Orchards and vineyards are considered together as a separate other agriculture community type in the Plan, mainly so that the effects analysis and conservation strategy can segregate their land area from the other agricultural lands that have some value for species covered by the Plan (Figure 3.3-7).

Land Cover Types

Orchards

Orchards in western Placer County are often found near and interspersed within annual grassland, mixed, blue, interior, and valley oak woodlands ecosystems. They are frequently adjacent to streams or irrigation canals. Acreage of orchards in the western Placer County has increased by 44% in recent years (Placer County Agriculture Department n.d.; Placer County Agriculture Weights and Measures n.d.).

Orchards are generally monotypic, tree-dominated habitats, although pruning to facilitate harvest results in trees that range in height from 15 to 30 feet (Appendix A). The crowns do not overlap, and trees are uniformly spaced in straight rows. Most orchards are irrigated by sprinkler or drip irrigation and are intensively managed. Trees are replaced when they become old or diseased, generally by 40 years of age for fruit trees and upwards of 80 years for walnuts. There are many abandoned orchards in western Placer County, particularly around Ophir, Penryn, and Newcastle in the Sierra Nevada foothills; some of these abandoned orchards are open and grassy, with scattered old fruit trees, while others contain dense shrubs and regenerating oak trees (predominately blue oak).

Walnuts, plums, peaches, oranges, apples, and pears are the most commonly planted crops in orchards in western Placer County (Appendix A). Below the fruit trees, the understory is either bare soil or a periodically mowed herbaceous layer of non-native species, such as soft chess, annual ryegrass, wild oats, orchard grass, winter vetch, black mustard, red-stemmed filaree, dove-foot geranium, little hop clover, bur clover, or rose clover. In moist areas near irrigation ditches and farm ponds, noxious weeds such as Johnson grass and Bermuda grass are often present.

In the Plan Area, orchards support about 55 vertebrate species—12 breeding species and 43 visitors. Most of these species do not breed in active orchards, but a few mammals (e.g., black-tailed jackrabbit, desert cottontail, Botta's pocket gopher, and California ground squirrel) may have natal burrows along the margins of orchards. Birds that typically visit orchards in western Placer County include white-tailed kite, red-tailed hawk, American kestrel, California quail, mourning dove, red-breasted sapsucker (*Sphyrapicus ruber*), western kingbird, yellow-billed magpie (*Pica nuttalli*), and American crow. Bats, such western red bat (*Lasiurus blossevillii*), use orchards for roosting.

Vineyard

Rolling hills of deeper, well-drained soils in the middle elevations are the most likely setting for vineyards in western Placer County.

Structurally, vineyards are composed of a single species of grape cultivar planted in rows and supported on wood and wire trellises. Vineyards are managed intensively. The soil under the vines is generally sprayed and barren to prevent the growth of grasses and other herbs, which may transmit pests and diseases to the grapevines. Forbs may be allowed to grow between the rows as a cover crop to control erosion; such cover crops usually consist of introduced clover and other legumes and annual winter grasses. Drip irrigation is often employed. The overall cover is somewhat sparse, composed of young to mature long-lived woody vines that may persist for more than 40 years but are generally replaced earlier due either to fluctuations in product prices or decreases in productivity (Appendix A).

Aside from the grape cultivars, the sparse herbaceous layer, if present, typically consists of introduced annual weeds, unless the areas between vineyard rows are specifically seeded with a cover crop. Typical species include soft chess, black mustard, perennial ryegrass, slender wild oat, orchard grass, red-stemmed filaree, dove-foot geranium, little hop clover, and rose clover. Noxious weeds such as Bermuda grass and Johnson grass may also be present, particularly in moist areas.

In the Plan Area, vineyards support 52 vertebrate species—seven breeding species and 45 visitors. Native birds that typically forage in vineyards in western Placer County include mourning dove, western scrub-jay, American crow, western bluebird, white-crowned sparrow, golden-crowned sparrow, dark-eyed junco (*Junco hyemalis*), and house finch. Flocks of introduced European starlings may visit vineyards, especially in fall when they may cause damage to ripening grapes (Appendix A). Although there are relatively few acres of vineyard in production (265 acres as of 2016) (Placer County Agriculture Weights and Measures n.d.), agricultural trends in western Placer County indicate that vineyard acreage will increase over the proposed permit term.

Managed Open Water

The managed open water community was created to differentiate highly artificial open water from ponds in the aquatic/wetland community that would have lacustrine ecological function as a constituent habitat. The managed open water community comprises three land cover types.

- Canal
- Reservoir
- Urban Open Water

Reservoirs and urban open water have common wildlife associations similar to lacustrine.

Land Cover Types

Canal

The canal land cover type was created to differentiate highly managed water conveyance systems from altered streams and artificial channels that have enough natural character to have aquatic and riverine and riparian habitats associated with them. By contrast, areas mapped as the canal land cover type have concrete lining and bare earthen perimeters that are maintained free of vegetation.

Canals in the Valley below an elevation of 100 feet would be suitable aquatic habitat for giant garter snakes, especially when located adjacent to more productive aquatic habitat such as marsh complex and rice. Giant garter snakes are able to use canals for feeding and barren canal-side berms or access roads for sunning.

Canals are commonly associated with unscreened water diversions that may entrain fish, including salmonids if present.

Reservoir

The reservoir land cover type was created specifically to account for Camp Far West Reservoir on the Bear River and Folsom Lake on the American River, which border Placer County on the north and south, respectively. The reservoir land cover type is distinct from the pond land cover type included under aquatic/wetland complex community, which includes smaller reservoirs with distinctly different biology. The reservoir land cover type is excluded from the Plan effect and conservation analysis.

Reservoirs are different from natural lakes in their physical and biological characteristics. Most reservoirs fluctuate on an annual basis, being gradually drawn down in summer to supply water for irrigation, power generation, or agriculture. However, even a fluctuation of as little as 3–6 feet can prevent plants from establishing at the shoreline or aquatic plant beds from developing. Large reservoirs are usually built in steep-sided canyons with only small areas of shallow-water habitat.

Large reservoirs annually attract large concentrations of wintering gulls that roost along their shorelines. The largest gull roost in the Plan Area is near Granite Bay on the Placer County side of Folsom Lake (Appendix A). The reservoirs are stocked with non-native fish species for sport fishing. Species such as catfish (*Ameiurus* spp.), bass (*Micropterus* spp.), and sunfish (*Lepomis* spp.) are present in the reservoirs (CalFish 2016).

Water level fluctuation and limited shallow-water habitat result in a lack of cover for young fishes in shallow water and a lack of habitat diversity for adult fishes. The fish fauna at the dam end of a reservoir is often different from the fauna at the mouth of the river that supplies the reservoir (Appendix A). The dam end is usually deep and stratifies in summer, with a warmer layer near the surface and a cooler layer at the bottom.

Dams are commonly associated with unscreened water diversions that may entrain fish, including covered salmonids.

Urban Open Water

The urban open water land cover type was created to account for intensively managed open water, including WWTP ponds, water ski parks, and landscape and golf course ponds in the Valley. Urban open water is distinct from the pond land cover type, which is part of the aquatic/wetland complex community and has a strong association with functioning lacustrine ecosystems that urban open water does not have.

Many of these ponds were created by excavation and damming of seasonal creeks. These ponds are typically constructed for industrial or intensive recreational use and are maintained with a bare shoreline or with vegetation frequently maintained by mowing and trimming.

Constituent Habitats

Although the managed open water community contains open water, it is not considered in the Plan as having value as lacustrine habitat in a functioning aquatic/wetland ecosystem and is not assigned a constituent habitat factor.

The two large reservoirs lack a well-developed fringe of wetland and riparian plants because of their steep-sided slopes and fluctuations in water level.

Rural-Residential

The rural-residential community is an aggregation of two very low-density (1–10 acres per dwelling unit) residential development land cover types, based on land use categories used by the Placer County Planning Services Division.

- Rural-residential
- Rural-residential forested

Land Cover Types

Rural-residential

Rural-residential areas were defined as areas developed with 0.1–1 dwelling unit per acre and less than 70% tree canopy cover. Areas mapped as rural-residential include small pockets of remnant oak woodland land cover types, often with shrubs and lower branches cleared to reduce fuel loads and small paddocks grazed by a variety of livestock. Large residential lots may have most of the native vegetation removed and replaced with mowed annual grassland, lawns, and widely scattered trees; such management techniques are often intended to reduce the risk of fire.

Large ungrazed lots in rural-residential areas often become infested with weedy, non-native species, especially yellow star-thistle. Characteristic horticultural and pasture species that are known to invade wildlands near rural-residential areas locally include French broom (*Genista monspessulana*), tree-of-heaven, black locust (*Robinia pseudoacacia*), English ivy (*Hedera helix*), periwinkle (*Vinca major*), pampas grass (*Cortaderia selloana*), giant reed, scarlet wisteria (*Sesbania grandiflora*) pennyroyal, wild oat, tall fescue (*Festuca arundinacea*), and aquatic species, such as parrot's feather (*Myriophyllum aquaticum*), and water hyacinth (*Eichornia crassipes*). Other less serious invaders include hairy vetch, orchard grass, perennial ryegrass, rose clover, and red-stemmed filaree. Many other unintentional introductions are also common in urban and rural-residential areas of the county. These include noxious weeds such as Himalayan blackberry, which can dominate large areas; Italian thistle; knapweeds (*Centaurea* spp.); Klamath weed; field bindweed (*Convolvulus arvensis*); bull thistle; medusa-head; and other invasive species, such as fennel, black mustard, and woolly mullein (*Verbascum thapsus*). Other abundant non-native plants in these ecosystems include hedgehog dogtail, hedge parsley, dove-foot geranium, ripgut brome, red brome (*Bromus madritensis* ssp. *rubens*), velvet grass, dallisgrass, and many more.

Rural-residential areas may support about 122 vertebrate species—65 breeding species and 57 visitors. Native species that may occur in rural-residential areas include yellow-billed magpie, American crow, western scrub-jay, house wren, and brown-headed cowbird (*Molothrus ater*). The high densities of exotic fruits and flowers, birdbaths, and hummingbird and seed feeders attract Anna's hummingbird, rufous hummingbird, California towhee, spotted towhee, golden-crowned sparrow, white-crowned sparrow, and American goldfinch. Likewise, produce from vegetable gardens and pet food, when left out overnight, attract resident mammals such as Virginia opossum (*Didelphis virginiana*), Norway rat (*Rattus norvegicus*), black rat, house mouse, raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*).

Burrowing owl (*Athene cunicularia*) may occur in open rural-residential areas in the Valley that are interspersed with grassland and barren areas and have artificial and/or natural burrows.

Rural-residential Forested

Rural-residential forested areas were defined as areas developed with 0.1–1 unit per acre and more than 70% cover of large, mature trees. Undeveloped lots or the natural portion of developed lots in rural-residential forested areas may support remnant patches of mature oak woodland land cover types, unless they have been previously cleared. However, some native species, particularly oaks, may die prematurely as a result of regular surface irrigation, grading near the base of trees, or root damage caused by trenching and excavation (Appendix A).

Rural-residential forested areas support about 122 vertebrate species—70 breeding species and 52 visitors. Native species that may occur in unnaturally high densities in rural-residential forested areas include raccoon, Botta's pocket gopher, cliff swallow, yellow-billed magpie, American crow, Steller's jay (*Cyanocitta stelleri*), western scrub-jay, brown-headed cowbird, and Brewer's blackbird. Non-native animals that frequent rural-residential forested areas of western Placer County include house sparrow, European starling, wild turkey, American bullfrog (*Lithobates catesbeiana*), black rat, Norway rat, and house mouse.

Constituent Habitats

Areas mapped as rural-residential in the Valley include patches of functional vernal pool complex. These areas are associated with a small amount (0.8%) of vernal pool constituent habitat, as shown in Table 3-10 in Chapter 3 of the Plan.

Urban

Land Cover Types

The urban community represents a variety of developed land cover types, generally based on the Placer County Planning Services Division land use categories where urban and suburban is defined as greater than one dwelling unit per acre (Figure 3.3-8).

- Urban/Suburban
- Urban Golf Course
- Urban Parks
- Urban Riparian
- Urban Wetland
- Urban Woodland
- Barren/Industrial
- Road

Urban and Suburban

Urban and suburban areas were mapped where development was denser than one dwelling unit per acre or located along with intensive non-residential land uses, including commercial, industrial, office, and related uses. Ornamental plantings in the older neighborhoods of Auburn, Lincoln, and Granite Bay are often introduced evergreen and deciduous trees that may be as old as 100 years. These ornamental species range from approximately 20 to 50 feet high at maturity and are typically much smaller and younger than the occasional remnant oaks and pines in these neighborhoods. Urban neighborhoods that were built in the last 40 or 50 years tend to have younger or smaller trees and less structural diversity than older neighborhoods. In outlying suburban areas, mature native oaks and pines are also present between the buildings. Intensively developed areas with highly manicured yards typically have very low wildlife habitat values. Small lawns and mature hedges in urban and suburban areas include many introduced fruiting species that may be attractive to birds and other wildlife.

Urban and suburban areas tend to support a low diversity of wildlife. However, some species thrive in urban and suburban areas and tend to be in greater abundance than in natural habitats. Urban and suburban areas in the Plan Area support about 67 vertebrate species—25 breeding species and 42 visitors. Some wildlife typical of urban and suburban habitats include feral and free-ranging cats (*Felis catus*) and dogs (*Canis lupus familiaris*), raccoons, striped skunks, opossums, coyotes, western scrub-jays, Steller's jays, and American crows.

Urban Parks and Golf Courses

Urban parks were defined as isolated city parks, playgrounds, or grass fields. Parks in the Plan Area range from large areas that may include remnant patches of valley oak woodland, with a diverse and multilayered understory (e.g., McBean Park in Lincoln and Granite Bay Park in Granite Bay)) to small, heavily landscaped and managed playgrounds and ball fields. However, most developed parks in the Plan Area are dominated by lawn grass, along with a few mature trees.

Golf courses support about 131 vertebrate species—70 breeding species and 61 visitors. Wildlife species typically found in these areas are Canada goose, American coot, red-shouldered hawk, northern flicker (*Colaptes auratus*), black phoebe, white-breasted nuthatch (*Sitta carolinensis*), northern mockingbird (*Mimus polyglottos*), western tanager (*Piranga ludoviciana*), bobcat (*Lynx rufus*), and mule deer.

Urban Riparian

Urban riparian areas are creeks and riparian habitats (often occurring as greenbelts) that are surrounded by urban and suburban development. They are generally disturbed by human activities, including transportation and recreational uses. The creeks are often straightened and channeled, and the riparian habitat is generally traversed by footpaths and bicycle paths. Wooded riparian areas within or close to urban and suburban areas that appeared to be undisturbed and unused for recreation were mapped as riparian habitat.

Placement of bridges, roads, paved areas, and structures within the lower floodplains of perennial streams in many instances has resulted in the removal of native vegetation and unnaturally narrowed channels that make them more prone to flooding and erosion. The native riparian species in urban areas are frequently displaced by noxious weeds and other invasive non-native species, such as Himalayan blackberry, that can form a single-species monoculture over miles of affected stream corridor. In outlying communities, suburban developments often have more mature vegetation and greater wildlife species diversity (Appendix A).

Despite their small size, urban riparian areas support about 137 vertebrate species—83 breeding species and 54 visitors. Urban riparian habitats usually support more species than other urban habitat types (Appendix A). Strips of habitat (greenbelts) along streams can make urban areas much more attractive to birds and other wildlife as well as to people. Some typical native species that might be found in urban greenbelt areas of western Placer County include Anna's hummingbird, cedar waxwing, American robin, black-headed grosbeak, house finch, Bullock's oriole, Douglas squirrel (*Tamiasciurus douglasii*), western gray squirrel, and mule deer.

Urban riparian provides habitat for western pond turtle and potential habitat for California red-legged frog. Most of the major salmonid streams pass through urban areas, and steelhead are observed in highly disturbed stream environments.

Urban Wetland

Urban wetland includes vernal pools, seasonal wetlands, and fresh emergent marshes that are surrounded by urban and residential development. These areas are much less than 1% of the Plan Area.

Urban wetlands support about 34 vertebrate species—20 breeding species and 14 visitors. Native species that might be found in urban wetlands are California newt, Sierran treefrog, mallard, American coot, red-winged blackbird, and muskrat. Urban wetlands may provide habitat for western pond turtle.

Urban Woodland

Urban woodland includes city parks with predominantly tree-dominated vegetation, windbreaks with mostly non-native trees, and remnant patches of the former tree cover, usually oak woodland land cover types, that are disturbed and surrounded by urban development. Species composition of urban woodland often varies with the age of the community, reflecting the changing preferences of homeowners and designers. Common landscape tree species include sugar maple (*Acer saccharum*), red maple (*Acer rubrum*), deodar cedar (*Cedrus deodara*), linden tree (*Tilia* spp.), Modesto ash (*Fraxinus velutina*), Washington hawthorn (*Crataegus phaenopyrum*), and English holly (*Ilex aquifolium*). In newer developments, frequently planted trees include liquidambar (*Liquidambar styraciflua*), European birch (*Betula* spp.), weeping willow (*Salix babylonica*), coast redwood (*Sequoia sempervirens*), purple-leaf plum (*Prunus* spp.), and eastern dogwood (*Cornus florida*). Locally native oak and conifer species are rarely planted and are not widely available in local nurseries.

Urban woodland areas support many of the same vertebrate species that occur in urban riparian areas. Strips of urban woodland (greenbelts) can make urban areas much more attractive to birds and other wildlife as well as to people. Some of the native species that might be found in urban greenbelt areas of western Placer County include Anna's hummingbird, cedar waxwing, western bluebird, American robin, black-headed grosbeak, house finch, Bullock's oriole, Douglas squirrel, western gray squirrel, and mule deer.

Barren/Industrial Lands

Barren/industrial lands are historically and recently disturbed sites such as landfills and graded non-agricultural lands. Barren rock or soil dominates the ground layer, and tree and shrub cover is typically sparse or absent. Vegetation is usually absent and wildlife values are low.

Artificially disturbed lands support only about 14 vertebrate species. Two breeding species and 12 visitors occur in these areas. Local landfills may attract large numbers of foraging and roosting gulls, especially in winter.

Roads

Roads were mapped as a specific land cover type only in the Valley, outside of areas that were otherwise mapped as urban/suburban. The area mapped includes both the paved roadway itself and the adjoining right-of-way. This land cover type was created to account for the rather extensive existing network of roads that amount to 1.6% of the Valley outside of the existing urban and suburban area.

Special-Status Species

Special-status species are defined as plants and animals that are legally protected under ESA, CESA, or other regulations and taxa that meet the criteria for listing, even if not currently included on any list, as described in Section 15380 of the CEQA Guidelines. Special-status species are species, subspecies, or varieties that fall into one or more of the categories listed below.

- Species that are listed or proposed for listing as threatened or endangered under ESA.
- Species that are proposed or candidates for listing under ESA.
- Species listed as threatened or endangered under CESA.
- Species that are candidates for listing under CESA.
- Species that meet the definitions of rare or endangered under CEQA (State CEQA Guidelines Section 15380).
- Animals listed as California species of special concern on CDFW's Special Animals List (California Department of Fish and Wildlife 2017a).
- Animals that are fully protected in California under the California Fish and Game Code (Sections 3511 [birds], 4700 [mammals], and 5050 [reptiles and amphibians]).
- Plants listed as rare under the NPPA (California Fish and Game Code Section 1900 et seq.).
- Plants ranked as "rare, threatened, or endangered in California" (CRPR 1B and 2).
- Plants about which more information is needed to determine their status and plants of limited distribution (CRPR 3 and 4) that may be included as special-status species on the basis of local significance or recent biological information, or because they are taxa closely associated with a habitat that is declining at a significant rate.

Special-Status Plants

A total of 18 special-status plant species were identified as occurring or having the potential to occur in the Plan Area. Profiles for each species are provided in Table 3.3-3, including listing status, geographic distribution, habitat requirements, and specific occurrence data in the Plan Area. Many of the species are known in the Plan Area from only one or two occurrences. None of the species is federally listed as threatened or endangered, and only one species, Boggs Lake hedge hyssop (*Gratiola heterosepala*), is state listed as endangered. None of the 18 special-status plants would be covered under the proposed Plan.

Special-Status Fish and Wildlife

A total of 51 special-status wildlife and 3 special-status fish species are known to occur or have the potential to occur in the Plan Area. Refer to Table 3.3-4 for a summary of legal status, distribution, habitat, and likelihood for occurrence in the proposed Plan area for each of these special-status species. Of the 54 special-status wildlife and fish species, 14 would be covered under the proposed Plan (Table 3.3-4). Detailed species accounts for the Covered Species are presented in Appendix D, *Species Accounts*, of the Plan. These species accounts include a description of the species models (habitat descriptions) used in the Plan for estimating effects and planning species conservation. The EIS/EIR has adopted these species models for the analysis except for the models for tricolored blackbird and valley elderberry longhorn beetle. A discussion of the habitats identified for these two species is presented following Tables 3.3-3 and 3.3-4.

Table 3.3-3. Special-Status Plants Identified as Potentially Occurring in the Plan Area

Common Name <i>Scientific Name</i>	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
Big-scale balsamroot <i>Balsamorhiza macrolepis</i> var. <i>macrolepis</i>	-/-/1B.2	Sometimes on serpentine soils in chaparral, cismontane woodland, valley and foothill grassland; 295–5,102 feet. Scattered occurrences in the Coast Ranges and Sierra Nevada foothills.	Known from historic collections near Roseville and Lincoln; unknown whether still extant in Placer County	No
Hispid bird's-beak <i>Chloropyron molle</i> ssp. <i>hispidum</i>	-/-/1B.1	Meadow and seep, valley and foothill grassland, playa, on alkaline soils; below 510 feet. Central Valley in Alameda, Fresno, Kern, Merced, Placer, and Solano Counties.	One occurrence present in Roseville	No
Brandegee's clarkia <i>Clarkia biloba</i> ssp. <i>brandegeae</i>	-/-/4.2	Chaparral, cismontane woodland, lower coniferous forest, often on road cuts; 240–3,000 feet. Northern Sierra Nevada foothills, from Butte County to El Dorado County.	Four occurrences present along the Foothill portion of the Plan Area	No
Streambank spring beauty <i>Claytonia parviflora</i> ssp. <i>grandiflora</i>	-/-/4.2	Vernally moist areas in oak-pine woodland; 500–3,900 feet. Sierra Nevada foothills and Tehachapi Mountains.	Three occurrences outside of the Plan Area along the North Fork of the American River east of Auburn	No
Dwarf downingia <i>Downingia pusilla</i>	-/-/2B.2	Wet areas in valley and foothill grassland, vernal pools; below 1,460 feet. Inner North Coast Ranges, southern Sacramento Valley, northern and central San Joaquin Valley.	Twenty-one occurrences present in the Valley portion of the Plan Area	No
Stinkbells <i>Fritillaria agrestis</i>	-/-/4.2	Chaparral, cismontane woodland, pinyon-juniper woodland, valley and foothill grassland, on clay or serpentinite substrate; 30–5,100 feet. At scattered localities in the Sacramento and San Joaquin Valleys, Sierra Nevada foothills, and South Coast Ranges.	Present historically in grasslands between Rocklin and Lincoln; only one recent observation, in Rocklin	No
Butte County fritillary <i>Fritillaria eastwoodiae</i>	-/-/3.2	Oak woodland, grassy openings in chaparral, and Ponderosa pine forest; 165–4,900 feet. Sierra Nevada foothills, from Shasta County to Yuba County.	One occurrence in the B2 PCWA O&M Area along the North Fork of the American River east of Auburn	No
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	-/E/1B.2	Clay soils in areas of shallow water, lake margins of swamps and marshes, vernal pool margins; 33–7,792 feet. Inner North Coast Ranges, central Sierra Nevada foothills, Sacramento Valley, and Modoc Plateau.	One extant occurrence in the Valley portion of the Plan Area and one occurrence in Roseville within Plan Area B1.	No

Common Name <i>Scientific Name</i>	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
Hogwallow starfish <i>Hesperex caulescens</i>	-/-/4.2	Vernal pools, clay flats in grassland; below 985 feet. Broadly ranging in California, primarily in the Central Valley and adjacent foothills, also in South Coast Ranges, Peninsular Ranges.	Present in grasslands in Valley portion of the Plan Area (Preston pers. comm.)	No
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	-/-/1B.2	Vernal pools; from 100–325 feet. East edge of Sacramento Valley from Butte County to Sacramento County.	One occurrence in Lincoln, possibly extirpated	No
Red bluff dwarf rush <i>Juncus leiospermus</i> var. <i>leiospermus</i>	-/-/1B.1	Vernally mesic sites in chaparral, valley and foothill grassland, cismontane woodland; 110–3,315 feet. Shasta, Tehama, and Butte Counties.	One reported occurrence in Roseville	No
Dubious pea <i>Lathyrus sulphureus</i> var. <i>argillaceus</i>	-/-/3	Chaparral, oak woodland; 490–903 feet. Interior North Coast Ranges, Cascade Range foothills, northern Sierra Nevada foothills.	One historic occurrence near Auburn	No
Legenere <i>Legenere limosa</i>	-/-/1B.1	Vernal pools; below 2,900 feet. Primarily in the lower Sacramento Valley, also from North Coast Ranges, northern San Joaquin Valley and the Santa Cruz mountains.	Two extant occurrences in Valley portion of the Plan Area	No
Sylvan microseris <i>Microseris sylvatica</i>	-/-/4.2	Grassland, oak woodland, open grassy areas in chaparral; below 5,580 feet. Scattered locations in California, primarily in the interior North Coast Ranges, eastern San Francisco Bay, interior South Coast Ranges, Sierra Nevada foothills, and Tehachapi Mountains.	Two known occurrences in Roseville and Lincoln	No
Hoary navarretia <i>Navarretia eriocephala</i>	-/-/4.3	Seasonally wet clay flats in grassland, oak woodland; below 1,310 feet. Sacramento Valley, northern Sierra Nevada foothills.	Known mostly from historic collections between Roseville and Sheridan	No
Pincushion navarretia <i>Navarretia myersii</i> ssp. <i>myersii</i>	-/-/1B.1	Vernal pools; 65–1,080 feet. Eastern edge of the Central Valley, from Placer County to Merced County.	One occurrence reported from near Lincoln	No
Adobe navarretia <i>Navarretia nigelliformis</i> ssp. <i>nigelliformis</i>	-/-/4.2	Vernal pools and clay flats; below 3,280 feet. Central Valley and adjacent foothills.	Known from a single collection south of Lincoln	No

Common Name <i>Scientific Name</i>	Legal Status ^a Federal/State/CRPR	Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
Sanford's arrowhead <i>Sagittaria sanfordii</i>	-/-/1B.2	Freshwater marshes, sloughs, canals, and other slow-moving shallow water habitats; below 2,130 feet. Scattered locations in the Central Valley and Coast Ranges.	Only one known occurrence in the Plan Area where the species was part of inoculum for the Silvergate Mitigation Bank (Wildlands 2003.), although Plan Area is within species range and contains suitable habitat	No

Sources: California Department of Fish and Wildlife 2017b; California Consortium of Herbaria 2017; Preston pers. comm.; Wildlands 2003.

^a Status explanations:

Federal

- = No listing status.

State

E = Listed as endangered under CESA.

- = No listing status.

California Rare Plant Rank (CRPR)

1B = List 1B species: rare, threatened, or endangered in California and elsewhere.

2B = List 2 species: rare, threatened, or endangered in California but more common elsewhere.

3 = List 3 species: more information is needed about this plant.

4 = List 4 species: limited distribution; species on a watch list.

.1 = Seriously endangered in California (over 80% of occurrences threatened—high degree and immediacy of threat).

.2 = Fairly endangered in California (20–80% occurrences threatened).

.3 = Not very threatened in California (less than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known).

Table 3.3-4. Special-Status Fish and Wildlife Species Considered for Analysis (in the Plan Area)

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Invertebrates					
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	E/-	G1 S1	Found in large turbid vernal pools. Occurs from Butte and Tehama Counties to Ventura County.	CNDDDB (2017) occurrences in the Plan Area.	Yes
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	T/-	G3 S3	Occurs in the Central Valley from Shasta County to Tulare County and the central and southern Coast Ranges from northern Solano County to Ventura County.	CNDDDB (2017) occurrences in the Plan Area. Final designated critical habitat is in the Plan Area.	Yes
Vernal pool tadpole shrimp <i>Lepidurus packardi</i>	E/-	G3 S2S3	Occupies a variety of vernal pool habitats Central Valley of California and San Francisco Bay Area.	CNDDDB (2017) occurrences in the Plan Area.	Yes
California linderiella <i>Linderiella occidentalis</i>	-/-	G2G3 S2S3	Vernal pools, swales, and other ephemeral wetlands. Central Valley and central coastal California.	CNDDDB (2017) occurrences in the Plan Area.	No
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	T/-	G3T2 S2	Elderberry shrubs, typically in riparian habitats. Central Valley, including the BDCP Plan Area, below approximately 3,000 feet elevation.	CNDDDB (2017) occurrences in the Plan Area.	Yes
Ricksecker's water scavenger beetle <i>Hydrochara rickseckeri</i>	-/-	G2? S2?	Aquatic, known to occur in vernal pools. Recorded in central coastal California and southern Sacramento Valley, known to occur in Solano County near Jepson Prairie.	CNDDDB (2017) occurrences in the Plan Area.	No
Blennosperma vernal pool andrenid bee <i>Andrena blennospermatis</i>	-/-	G2 S2	Upland areas near vernal pools. Occurs in central California between Lake and San Joaquin Counties; known from locations east and west of the Plan Area.	CNDDDB (2017) occurrences in the Plan Area.	No
Morrison bumble bee <i>Bombus morrisoni</i>		G4? S1S2	Associated primarily with arid environments. Food plants are Cirsium, Cleome, Helianthus, Lupinus, Chrysothamnus, and Melilotus. Occurs in the Sierra-Cascade crest east to the Intermountain West and south into Mexico (Koch et al. 2012).	CNDDDB (2017) occurrences in the Plan Area.	No

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Amphibians					
Foothill yellow-legged frog <i>Rana boylei</i>	-/C	G2G3 S2S3	Foothill ponds and streams with emergent vegetation and open areas for basking, minimum 11–20 weeks of water for larval development, and upland refugia for aestivation. Occurs primarily in the foothills of the central Coast Ranges, with isolated populations in the Sierra Nevada.	CNDDDB (2017) occurrence in the Plan Area. Final designated critical habitat is in the Plan Area.	Yes
Foothill yellow-legged frog <i>Rana boylei</i>	-/SSC	G3 S3	Associated with rocky streams in valley foothill woodlands, riparian, mixed conifer, chaparral and wet meadow habitat. Require permanent water or at least streams where pools persist through the dry season. In California, occurs in the Cascade Mountains, the Coast Ranges, and the Sierra Nevada foothills.	No CNDDDB (2017) occurrences in the Plan Area.	Yes
Western spadefoot <i>Spea hammondi</i>	-/SSC	G3 S3	In winter, breeds in vernal pools and seasonal wetlands with a minimum 3-week inundation period; in summer, aestivates in grassland habitat, in soil crevices and rodent burrows. Range includes the Central Valley, South Coast Ranges, and foothills.	CNDDDB (2017) occurrences in the Plan Area	No
Reptiles					
Western pond turtle <i>Emys marmorata</i>	-/SSC	G3G4 S3	Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nests in nearby uplands with low, sparse vegetation. Range spans across California west of the Sierra-Cascade crest, below 5,000 feet in elevation.	CNDDDB (2017) occurrences in the Plan Area.	Yes
Blaniville's horned lizard <i>Phrynosoma blainvilli</i>	-/SSC	G3G4 S3S4	Variety of open habitats, including chaparral, oak savanna, and grassland; found primarily in areas with sandy, friable soils, scattered shrubs, and abundant ant colonies. Range includes most of western central and southwestern California below 8,000 feet elevation.	No CNDDDB (2017) occurrences in the Plan Area. Could occur in foothills in eastern part of the Plan Area.	No

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Giant garter snake <i>Thamnophis gigas</i>	T/T	G2 S2	Forages in slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches; also requires upland refugia not subject to flooding during the snake's inactive season. Range spans the southern Sacramento and northern San Joaquin Valleys.	No CNDDDB (2017) occurrences in the Plan Area; however, there are numerous records in Sutter and Sacramento Counties just west of the Plan Area. The westernmost portion of the Plan Area represents potential habitat.	Yes
Birds					
Short-eared owl <i>Asio flammeus</i>	-/SSC (nesting)	G5 S3	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes. Breeding range is patchily distributed throughout the State, including portions of the Sacramento and San Joaquin Valleys, northeastern California, and a few scattered coastal sites.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the valley portion of the Plan Area. Observed at Duncan Peak, Stanford Ranch, and Brewer Road (Jones & Stokes 2003).	No
Long-eared owl <i>Asio otus</i>	-/SSC (nesting)	G5 S3?	Uses riparian deciduous forest, conifer forests, and mixed forests. Uncommon yearlong resident throughout California except the Central Valley, some coastal areas, and Coachella and Imperial Valleys of Southern California.	No CNDDDB (2017) or eBird (2016) records. Suitable habitat is present in oak woodland in the easternmost portion of the Plan Area. Observed near Foresthill (Jones & Stokes 2003).	No
Grasshopper sparrow <i>Ammodramus savannarum</i>	-/SSC (nesting)	G5 S3	Nests and forages in dense grasslands; favors a mix of native grasses, forbs, and scattered shrubs. Breeding range spans much of the Central Valley and California coast, but populations are typically localized and disjunct; most individuals migrate, although some may be present year-round.	CNDDDB (2017) occurrence in the Plan Area.	No
Burrowing owl <i>Athene cunicularia</i>	BCC/SSC (nesting)	G4 S3	Nests and forages in grasslands, agricultural fields, and low scrub habitats, especially where ground squirrel burrows are present; occasionally inhabits artificial structures and small patches of disturbed habitat. Year-round range includes the Central Valley and Delta and portions of the central coast, eastern California, and southern California	CNDDDB (2017) occurrences in the Plan Area.	Yes

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Golden eagle <i>Aquila chrysaetos</i>	BCC/ FP, WL (nesting, wintering)	G5 S3	Nests and forages in a variety of open habitats, including grassland, shrubland, and cropland; most common in foothill habitats; rare foothill breeder; nests in cliffs, rock outcrops, and large trees. Winter range spans most of California; breeding range excludes the Central Valley floor.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the Plan Area.	No
Bald eagle <i>Haliaeetus leucocephalus</i>	BCC/E, FP (nesting, wintering)	G5 S2	Nests in large trees with open branchwork. Often chooses large tree in a stand to build a platform nest. Forages primarily in large inland fish-bearing waters with adjacent large trees or snags, and occasionally in uplands with abundant rabbits, other small mammals, or carrion. Breeding range includes the Sierra Nevada, Cascade Range, and portions of the Coast Ranges; winter range expands to include most of the state except southeastern California (although the species occurs along the Colorado River).	No CNDDDB (2017) records but numerous eBird (2016) records throughout the Plan Area. Uncommon migrant and non-breeding visitor to most large lakes, reservoirs, and rivers in Placer County; regular at Folsom Lake and Camp Far West (Jones & Stokes 2003)	No
American peregrine falcon <i>Falco peregrinus anatum</i>	BCC/FP (nesting)	G4T4 S3S4	Nests on high cliffs, banks, dunes, or mounds in a scrape on a depression or ledge in an open site. Will occasionally use manmade structures and tree or snag cavities or old nests of other raptors. Forages in a wide variety of habitats, but is most common near water, where shorebirds and waterfowl are abundant. Year-round range includes the Sierra Nevada, Cascade Range, northeastern California, Coast Ranges, and coast; winter range expands to include the Central Valley and the Delta and additional portions of eastern and southern California.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the Plan Area. Appears to use Plan Area during fall and winter. Plan Area may not provide suitable nesting habitat.	No
Merlin <i>Falco columbarius</i>	-/WL (wintering)	G5 S3S4	Forages in a wide variety of habitats, but in the Central Valley is most common around agricultural fields and grasslands. Winter range encompasses most of California except the highest elevations; does not breed in California.	No CNDDDB (2017 records but numerous eBird (2016) records throughout the Plan Area. Rare non-breeding visitor to Placer County (Jones & Stokes 2003),	No

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Prairie falcon <i>Falco mexicanus</i>	BCC/WL (nesting)	G5 S4	Nests in a scrape on a sheltered ledge of a cliff overlooking a large, open area. Sometimes nests on old raven or eagle stick nest on cliff, bluff, or rock outcrop. Forages most commonly in grasslands and low shrublands; also forages in agricultural fields. Year-round range includes eastern California, the Coast Ranges, and much of southern California; winter range expands to include the Delta, Central Valley, and coastal California.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the Plan Area. Appears to use Plan Area during fall and winter. Plan Area may not provide suitable nesting habitat.	No
Northern harrier <i>Circus cyaneus</i>	-/SSC (nesting)	G5 S3	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes. Breeding range encompasses much of lowland California; winter range expands to include the remaining lowland areas.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the valley portion of the Plan Area.	No
White-tailed kite <i>Elanus leucurus</i>	-/FP (nesting)	G5 S3S4	Forages in ponds, marshes, slow-moving streams, sloughs, and irrigation/drainage ditches; nests in nearby uplands in valley/foothill riparian or other trees associated with compatible foraging habitat. Year-round range spans the Central Valley, Coast Ranges and coast, Sierra Nevada foothills, and Colorado River.	CNDDDB (2017) occurrences in the Plan Area.	No
Cooper's hawk <i>Accipiter cooperii</i>	-/WL (nesting)	G5 S4	Nests and forages primarily in riparian habitats and other wooded habitats. Year-round range spans most of the wooded portions of California.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the Plan Area.	No
Ferruginous hawk <i>Buteo regalis</i>	BCC/WL (wintering)	G4 S3S4	Forages most commonly in grasslands and shrublands; also forages in agricultural fields. Winter range spans most of California except the higher elevations of the Sierra Nevada and northern Coast Ranges; does not nest in California.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the valley portion of the Plan Area.	No
Swainson's hawk <i>Buteo swainsoni</i>	BCC/T (nesting)	G5 S3	Nests in isolated trees, open woodlands, and woodland margins; forages in grasslands and agricultural fields. Breeding range spans the Central Valley and Delta west of Suisun Marsh, northeastern California, and a few additional scattered sites; most of the population migrates south of California in fall/winter, although a small number winters in the Delta.	CNDDDB (2017) occurrences in the Plan Area.	Yes

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Osprey <i>Pandion haliaetus</i>	-/WL (nesting)	G5 S4	Forages exclusively in fish-bearing waters; nests close to water on a platform of sticks on top of large snags, in dead-topped trees, on cliffs, or on human-made structures. Breeding range includes most of northern California, the central Coast Ranges, and the southern Sierra Nevada; winter range also includes the central coast and additional portions of southern California.	CNDDDB (2017) occurrence in the Plan Area.	No
Purple martin <i>Progne subis</i>	-/SSC (nesting)	G5 S3	Nests in tree cavities, bridges, utility poles, lava tubes, and buildings; forages in foothill and low montane oak and riparian habitats, and less frequently in coniferous forests and open or developed habitats. Breeding range includes the Sierra Nevada, Cascade Range, portions of the Coast Ranges and coast, and parts of southern California; extirpated from the Delta, and nesting in the Central Valley has been reduced to transportation structures in and around the city of Sacramento.	CNDDDB (2017) occurrence in Plan Area.	No
Redhead <i>Aythya americana</i>	-/SSC (nesting)	G5 S3S4	Nests in freshwater emergent wetlands with dense patches of tules or cattails interspersed with open water more than 3 feet deep; forages by diving in deep open water. Year-round range is patchily distributed through portions of the Central Valley, northeastern California, and southern California	No CNDDDB (2017) records but numerous eBird (2016) records throughout the valley portion of the Plan Area. Rare spring, fall, and winter visitor to large lakes and reservoirs of Placer County (Jones & Stokes 2003).	No
Great blue heron <i>Ardea herodias</i>	-/ (rookeries)	G5 S4	Nests colonially in tall trees; forages in freshwater and saline marshes, shallow open water, and occasionally cropland or low, open upland habitats, such as pastures. Year-round range spans most of California except the eastern portion of the State and the highest elevations; winter range expands to include eastern California.	CNDDDB (2017) occurrences in the Plan Area.	No
California black rail <i>Laterallus jamaicensis coturniculus</i>	BCC/T, FP	G3G4T1 S1	Nests and forages in saline, freshwater, or brackish emergent marshes with gently grading slopes and upland refugia with vegetative cover beyond the high-water line. Year-round range includes Suisun Marsh, San Pablo Bay, Morro Bay, a few patches in the Sierra Nevada foothills, and portions of southern California; winter range expands to include San Francisco Bay and the Marin County coast.	CNDDDB (2017) occurrences in the Plan Area.	Yes

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
White-faced ibis <i>Plegadis chihi</i>	-/WL (rookeries) (nesting colony)	G5 S3S4	Forages in wetlands and irrigated or flooded croplands and pastures; breeds colonially in dense freshwater marsh. Year-round resident in scattered locations in the Central Valley and southern California; also nests in northeastern California.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the Valley portion of the Plan Area.	No
Yellow warbler <i>Setophaga petechia</i>	BCC/SSC (nesting)	G5 S3S4	Nests and forages in early successional riparian habitats. Range includes coastal and northern California and the Sierra Nevada below approximately 7,000 feet; mostly extirpated from the southern Sacramento and San Joaquin Valleys.	No CNDDDB (2017) records but numerous eBird (2016) records throughout the Plan Area.	No
Yellow-breasted chat <i>Icteria virens</i>	-/SSC (nesting)	G5 S3	Nests and forages in riparian thickets of willow and other brushy tangles near water and thick understory in riparian habitat. Breeding range includes the northern Sacramento Valley, Cascade Range, Sierra Nevada foothills, northwestern California, most of the Coast Ranges, the Colorado River, and other scattered sites; migrates south of California in fall/winter.	No CNDDDB (2017) records but there are eBird (2016) records in the eastern portion of the Plan Area. Probably common to uncommon breeder in riparian habitats in the foothills and middle elevations of Placer County	No
Song sparrow ("Modesto" population) <i>Melospiza melodia</i>	-/SSC	G5 S3?	Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats, and infrequently in mature riparian forest and sparsely vegetated ditches and levees. Year-round range includes the Delta east of Suisun Marsh, the Sacramento Valley, and the northern San Joaquin Valley.	CNDDDB (2017) occurrences. Modesto song sparrow is a common marsh and riparian resident of valley floor in western Placer County	No
Tricolored blackbird <i>Agelaius tricolor</i>	BCC/C (nesting)	G2G3 S1S2	Nests colonially in large, dense stands of freshwater marsh, riparian scrub, and other shrubs and herbs; forages in grasslands and agricultural fields. Year-round resident throughout the Central Valley and the central and southern coasts, with additional scattered locations throughout California.	CNDDDB (2017) occurrences in the Plan Area.	Yes

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Bank swallow <i>Riparia riparia</i>	-/T (nesting)	G5 S2	Nests in vertical banks or bluffs, typically adjacent to water, devoid of vegetation, and with friable, eroding soils; forages in a wide variety of habitats. Breeds in much of lowland and riparian California, with 75% nesting colonies along the Sacramento and Feather Rivers and their tributaries; additional breeding locations are scattered throughout the northern and central portions of the state; migrates south of California in fall/winter.	CNDDDB (2017) nest occurrence in the Plan Area on the north bank of the Bear River east of Wheatland.	No
Mammals					
American badger <i>Taxidea taxus</i>	-/SSC	G5 S3	Found in drier, open shrub, forest, and herbaceous habitats with friable soils. Year-round range spans all of California except the Humboldt and Del Norte coasts.	No CNDDDB (2017) occurrences in the Plan Area. Plan Area is within species' known distribution and habitat is suitable.	No
Ringtail <i>Bassariscus astutus</i>	-/FP	G5 SNR	Large acreages of oak woodland, riparian, and other dense brush habitats with rock recesses or hollow snags for cover. Year-round range spans much of California except the San Joaquin Valley, northeastern California, and portions of southern California.	No CNDDDB (2017) occurrences in the Plan Area but suitable habitat is present and it is within the species' range.	No
Pallid Bat <i>Antrozous pallidus</i>	-/SSC	G5 S3	Deserts, grasslands, shrublands, woodlands, and forests; most common in open, dry habitats; typically roosts in rock crevices, also in tree hollows, bridges, and buildings, in colonies ranging from 1 to more than 200 individuals. Year-round range spans nearly all of California.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	-/C	G3G4 S2	This species may use several alternate roost sites (Woodruff and Ferguson 2005). Typically roosts in colonies of fewer than 100 individuals in caves or mines; occasionally roosts in buildings or bridges, and rarely, hollow trees; forages in all habitats except alpine and subalpine, although most commonly in mesic forests and woodlands. Year-round range spans most of California except the highest elevations of the Sierra Nevada south of Lake Tahoe.	CNDDDB (2017) occurrence in the Plan Area.	No

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Spotted bat <i>Euderma maculatum</i>	-/SSC	G4S3	Roosts primarily in rock crevices; uses arid deserts and open pine forests set in rocky terrain; females may favor ponderosa pine forests during reproduction. Occurs throughout eastern and southern California, the central Sierra Nevada, and the Sierra Nevada foothills bordering the San Joaquin Valley; probably occurs in other portions of the state where habitat is suitable.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No
Silver-haired bat <i>Lasionycteris noctivagans</i>	-/-	G5 S3S4	Tree-roosting species that is associated with mixed conifer forests. The species uses cavities, spaces under bark and other structural openings in trees and snags to shelter their small maternity colonies during the spring and summer. Silver-haired bats are known to move their roosts frequently during the summer, while remaining in the same general area. As a result, stands with multiple suitable roost trees and snags are likely necessary for this species. Silver-haired bats may hibernate in tree hollows, or in rock formations such as abandoned mines and caves. Occurs throughout California. Primarily associated with coniferous and mixed conifer/hardwood forests but also occurs in lower elevations during seasonal migrations and winter.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No
Western red bat <i>Lasiurus blossevillii</i>	-/SSC	G5 S3	Mature riparian broadleaf forest in the Central Valley is primary summer breeding habitat for the species in California (females and pups). Riverside orchards may also be used as maternity roosts. Roosts alone or in small family groups in tree foliage, occasionally shrubs; prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands. Unsubstantiated records of hibernation in leaf litter during the winter. Year-round range spans the Central Valley, Sierra Nevada foothills, Coast Ranges, and coast except Humboldt and Del Norte Counties.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Hoary bat <i>Lasiurus cinereus</i>	-/-	G5 S4	Ranges widely in North America, but populations in the Central Valley are most likely non-reproductive or migratory. Typically roosts alone in a variety of broadleaf tree species such as cottonwood and sycamore; also found roosting in conifers. May be found in a range of vegetation and roost substrates during migration.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No
Fringed myotis <i>Myotis thysanodes</i>	-/-	G4S3	Found in open woodlands in the Sierra Nevada, Klamath Mountains, Coast Ranges, and Transverse and Peninsular Ranges.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No
Yuma myotis <i>Myotis yumanensis</i>	-/-	G5 S4	Widely distributed in California. Strongly associated with water sources. Roosts in a variety of structures including bridges, buildings, caves, mines, trees and rock crevices. Has been known to roost in cliff swallow nests. Typically forages low over water.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No
Long-eared myotis <i>Myotis evotis</i>	-/-	G5 S3	Forms colonial maternity roosts in trees, and is particularly associated with, though not limited to, conifer forest. Is also known to roost in anthropogenic structures and rock formations. Sierra Nevada, Klamath Mountains, Coast Ranges, and Transverse and Peninsular Ranges.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No
Long-legged myotis <i>Myotis volans</i>	-/-	G5 S3	Most common in woodlands and forests above 4,000 feet but occurs from sea level to 11,000 feet. Mountains throughout California; absent from Central Valley and desert areas.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No
Small-footed myotis <i>Myotis ciliolabrum</i>	-/-	G5 S3	Occurs through much of California, except the northwest and coastal areas. Particularly associated with coniferous forests and rocky xeric habitats. Typically roosts in rock crevices in mines, caves and occasionally in buildings, bridges and other human structures. Forages over a variety of habitats.	No CNDDDB (2017) occurrences in the Plan Area but the species could roost and forage in the Plan Area.	No

Common Name <i>Scientific Name</i>	Status ^a		Habitat and Distribution in California	Known Occurrences in the Plan Area	Covered in Plan
	Federal/ State	Other			
Fish					
Central Valley steelhead <i>Oncorhynchus mykiss</i>	T/SSC	G5T2Q S2	Occurs in Sacramento and San Joaquin Rivers and their major tributaries. Small to large perennial rivers and creeks with cold water flows and suitable spawning gravel.	Yes, present in drainages in the Plan Area.	Yes
Central Valley fall-/late fall-run Chinook salmon <i>Oncorhynchus tshawytscha</i>	SC/SSC	G5T2T3Q S2?	Occurs in Sacramento and San Joaquin Rivers and their major tributaries. Large perennial rivers and creeks with cold water flows and suitable spawning gravel.	Yes, present in drainages in the Plan Area.	Yes
Hardhead <i>Mylopharodon conocephalus</i>	-/SSC	G3 S3	Occurs in the Sacramento and San Joaquin River systems. Undisturbed portions of larger streams at low and middle elevations here they prefer large, deep, rock or sand-bottomed pools.	Yes, present in drainages in the Plan Area.	No
Pacific lamprey <i>Lampetra ayresii</i>	-/SSC	G4 S4	Occurs in Sacramento and San Joaquin Rivers and their associated tributaries. Adults live in the ocean and migrate into fresh water to spawn. Juveniles (ammocoetes) live in fresh water for 5-7 years before migrating downstream to the ocean. (Moyle 2002)	Yes, present in drainages in the Plan Area.	No

Sources: California Department of Fish and Wildlife (CNDDDB) 2017b.

^a Status

Federal Listing Categories:

- E = Listed as endangered under the federal Endangered Species Act (ESA).
- T = Listed as threatened under the ESA.
- PT = Proposed for listing as threatened under the ESA.
- BCC = U.S. Fish and Wildlife Service bird of conservation concern.
- C = Candidate for listing under the ESA.
- SC = Species of Concern.
- = No status.

State Listing Categories:

- E = Listed as endangered under the California Endangered Species Act (CESA).
- T = Listed as threatened under CESA.
- C = Candidate for protection under CESA.
- FP = Fully protected under the California Fish and Game Code.
- SSC = California species of special concern.
- WL = California Department of Fish and Wildlife watch list.
- CFGC = Rookeries protected under the California Fish and Game Code.
- = No status.

Table 3.3-4 (Continued)**Other:****NatureServe Conservation Status** (shown only for species without legal status):

- GH = Possibly Extinct (species)—Missing; known from only historical occurrences but still some hope of rediscovery
- G1 = Critically Imperiled—At very high risk of extinction because of extreme rarity (often 5 or fewer populations), very steep declines, or other factors
- G2 = Imperiled—At high risk of extinction because of very restricted range, very few populations (often 20 or fewer), steep declines, or other factors
- G3 = Vulnerable—At moderate risk of extinction because of a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors
- G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern because of declines or other factors
- G5 = Secure—Common; widespread and abundant
- G#G# = Range Rank—A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty in the status of a species or community
- G#? = Question mark indicated uncertainty as to status of a species
- SH = Possibly Extirpated (Historical)—Species or community occurred historically in the State, and there is some possibility that it may be rediscovered
- S1 = Critically Imperiled—Critically imperiled in the State because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the State
- S2 = Imperiled—Imperiled in the State because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the State
- S3 = Vulnerable—Vulnerable in the State because of a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation
- S4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern because of declines or other factors
- S#S# = Range Rank—A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty in the status of a species or community
- S#? = Question mark indicates uncertainty as to status of a species
- SNR = Not ranked
- T = Intraspecific Taxon (trinomial)—The status of intraspecific taxa (subspecies or varieties) are indicated by a “T-rank” following the species’ global rank State Rank Lower numbers equate to higher vulnerability
- Q = Q following the T-rank denotes the taxon’s information taxonomic status

Tricolored Blackbird

The PCCP model for tricolored blackbird habitat distribution only includes areas below 300 feet in elevation; however, the species is known to occur at elevations above 4,000 feet and, in adjacent El Dorado County, has been found up to 1,640 feet in elevation (California Department of Fish and Wildlife 2017b). Airola et al. (2015a:65) found active colonies in the Sierra Nevada foothills up to 1,720 feet in elevation. The maximum elevation in the Plan Area is 1,600 feet.

Tricolored blackbirds in the Sierra Nevada foothills have been observed primarily nesting in blackberry thickets (Airola et al. 2015b:97). The species is also known to nest in triticale, wheat, mustard, and milk thistle (Holyoak et al. 2014:5; Meese 2014:9). Airola et al. (2015b:99) identify suitable tricolored blackbird habitat in Placer County generally west of SR 49.

For the purposes of this analysis and using information from Airola et al. (2015b) and Meese (2014), the EIS/EIR team modified the tricolored blackbird habitat distribution model. Below is a summary of the modified model, and tricolored habitat in the Plan Area is shown in Table 3.3-5. Additional information is presented in Section 4.3.

Nesting Habitat

The PCCP model for tricolored blackbird nesting habitat included fresh emergent marsh up to 300 feet in elevation the Plan Area. The model was modified for this analysis to include all fresh emergent marsh in the Plan Area, added blackberry thickets in the foothills, and added wheat and triticale. To estimate the extent of this nesting habitat in the foothills, the GIS dataset associated with CDFW's *Northern Sierra Nevada Foothills Vegetation Project* (Menke et al. 2011) was queried for the *Rubus armeniacus* vegetation alliance (Himalayan blackberry) in the Plan Area. Because the PCCP mapping data for croplands did not include crop types, crop type data for the Plan Area were obtained from the U.S. Department of Agriculture's CropScape—Cropland Data Layer (U.S. Department of Agriculture 2009). These data did not include the weedy vegetation types the species is known to nest in, such as mustard and thistle, but did include triticale and wheat. Though crop types often change from year to year, the intent for this analysis is to provide an estimate of what these acreages could be in a given year.

Foraging Habitat

The PCCP model for tricolored blackbird foraging habitat included vernal pool complex, grasslands, alfalfa, and cropland up to 300 feet in elevation in the Plan Area. The model was modified for this analysis to include all of these land covers in the Plan Area and added rice. Rice is considered to be a preferred foraging habitat for tricolored blackbird (Shuford and Gardali 2008:440).

Table 3.3-5. Modeled Tricolored Blackbird Habitat in the Plan Area

Modeled Tricolored Habitat in Plan Area	Acres
Foraging	
Vernal pool complex	45,065
Grassland	24,746
Alfalfa	176
Cropland	2,512
Rice	19,580
Total foraging habitat	104,952
Nesting	
Fresh emergent marsh	1,112
Triticale	181
Wheat	1,795
Blackberry thicket	1,202
Total nesting habitat	4,290

Note: The Plan identifies 60,974 acres of suitable foraging habitat and 633 acres of suitable nesting habitat for this species in the Plan Area.

Valley Elderberry Longhorn Beetle

The PCCP model for valley elderberry longhorn beetle includes valley oak woodland and riverine/riparian up to 650 feet in elevation. Valley elderberry longhorn beetle is known to occur up to 3,000 feet in elevation (U.S. Fish and Wildlife Service 1999) and in Placer County has been documented up to 1,875 feet in elevation (California Department of Fish and Wildlife 2017b). The species is also known to occur in urban riparian areas and, in fact, has been found along urban streams in areas of Roseville, Rocklin, and Sacramento (California Department of Fish and Wildlife 2017b). The model was modified for this analysis to include valley oak woodland, riverine/riparian, and urban riparian throughout the Plan Area. The acreages of these habitats are summarized in Table 3.3-6.

Table 3.3-6. Modeled Valley Elderberry Longhorn Beetle Habitat in the Plan Area

Habitat	Acres
Valley oak woodland	1,364
Riverine/riparian	6,685
Urban riparian	104
Total Habitat	8,153

Note: The Plan identifies 6,367 acres of suitable habitat for this species in the Plan Area.

3.3.3 References Cited

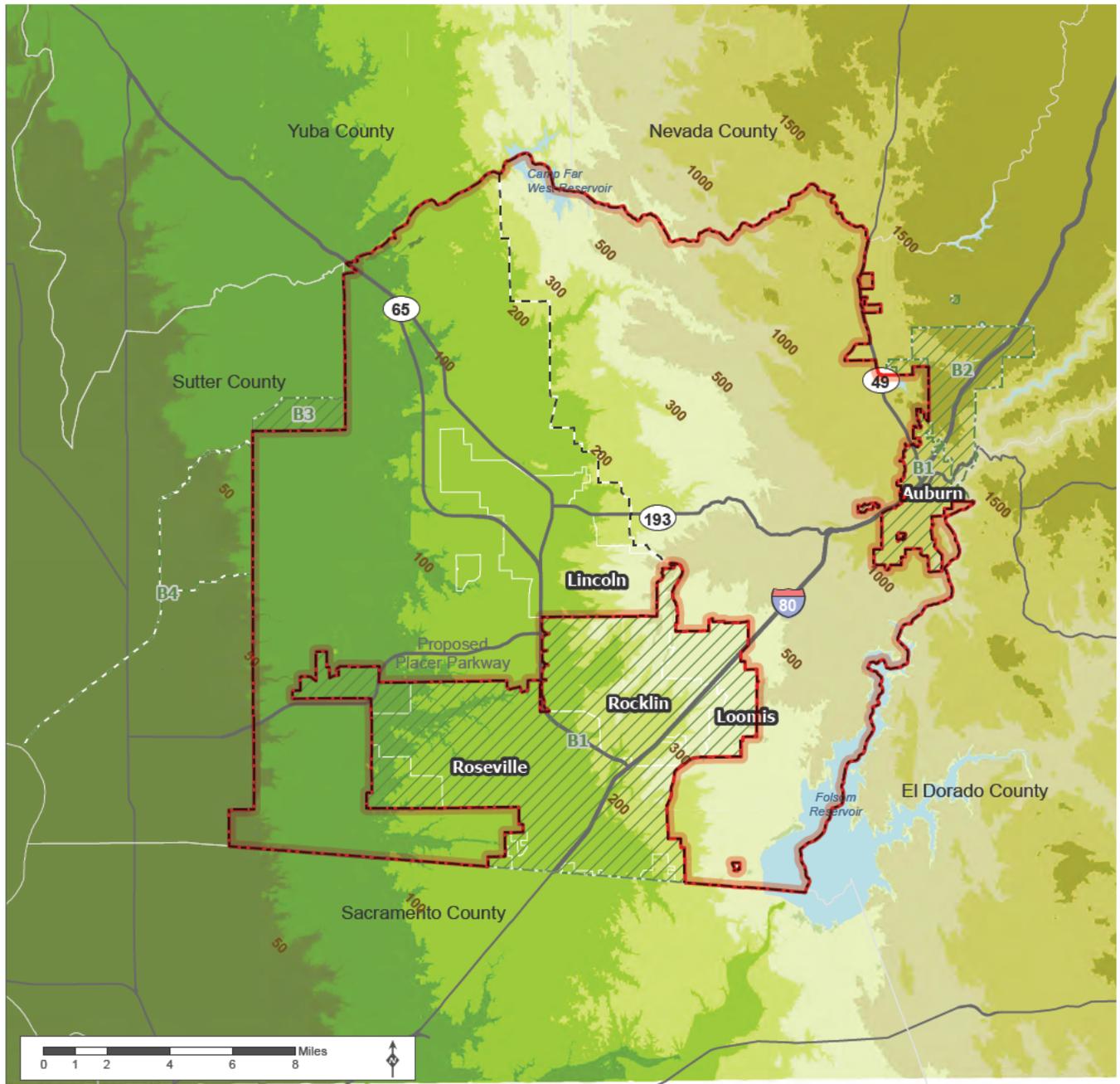
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Source: Placer County, 2014; MIG | TRA, 2015; USGS

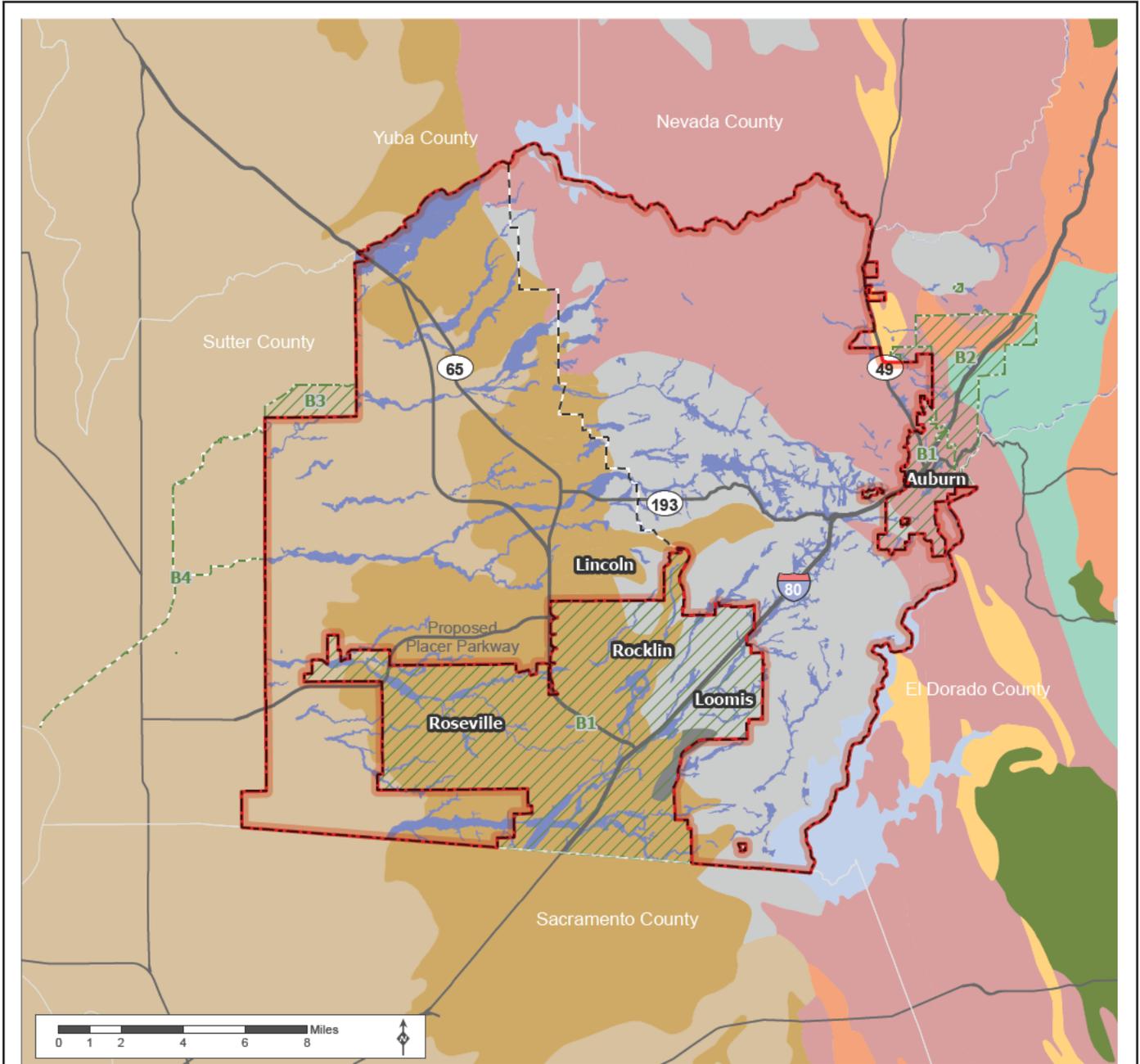


Source: Appendix A.

Graphics ... 04-40.6.04 (7-12-2018)19



Figure 3.3-1
Topography
Placer County Conservation Program – EIS/EIR



Source: Placer County, 2014; California Geologic Survey, GIS Data for the Geologic Map of California, 2000, reference field ROCKTYPE_1 ; NRCS

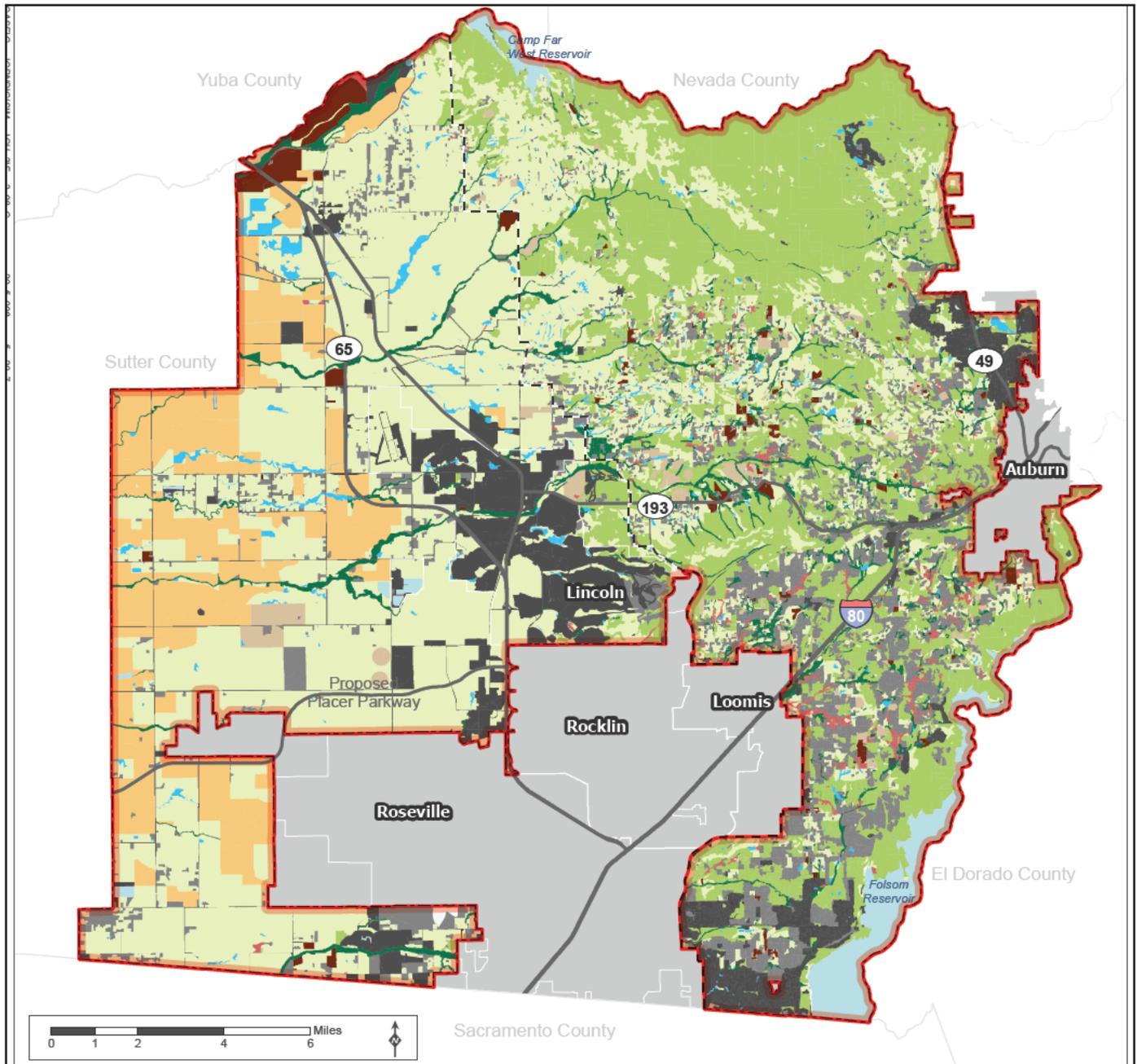
- | | |
|------------------------------|--|
| Geologic Unit | — Major Road |
| alluvium | - - Valley/Foothill Divide |
| andesite | Plan Area A |
| gabbro | Plan Area A Boundary |
| granodiorite | Plan Area B |
| mafic volcanic rock | B1 Non-Participating Cities |
| peridotite | B2 PCWA O&M |
| sandstone | B3 Coon Creek Floodplain |
| schist | B4 Fish Passage Improvement |
| slate | B5 Big Gun Conservation Bank (not shown) |
| water | |
| Soil Type | |
| mapped in Placer County only | |
| Xerofluvent | |

Source: Appendix A.

Graphics ... 04-40-6.04 (7-12-2018)19



Figure 3.3-2
Geology and Soils
 Placer County Conservation Program – EIS/EIR



Source: Placer County, 2014; MIG | TRA, 2015

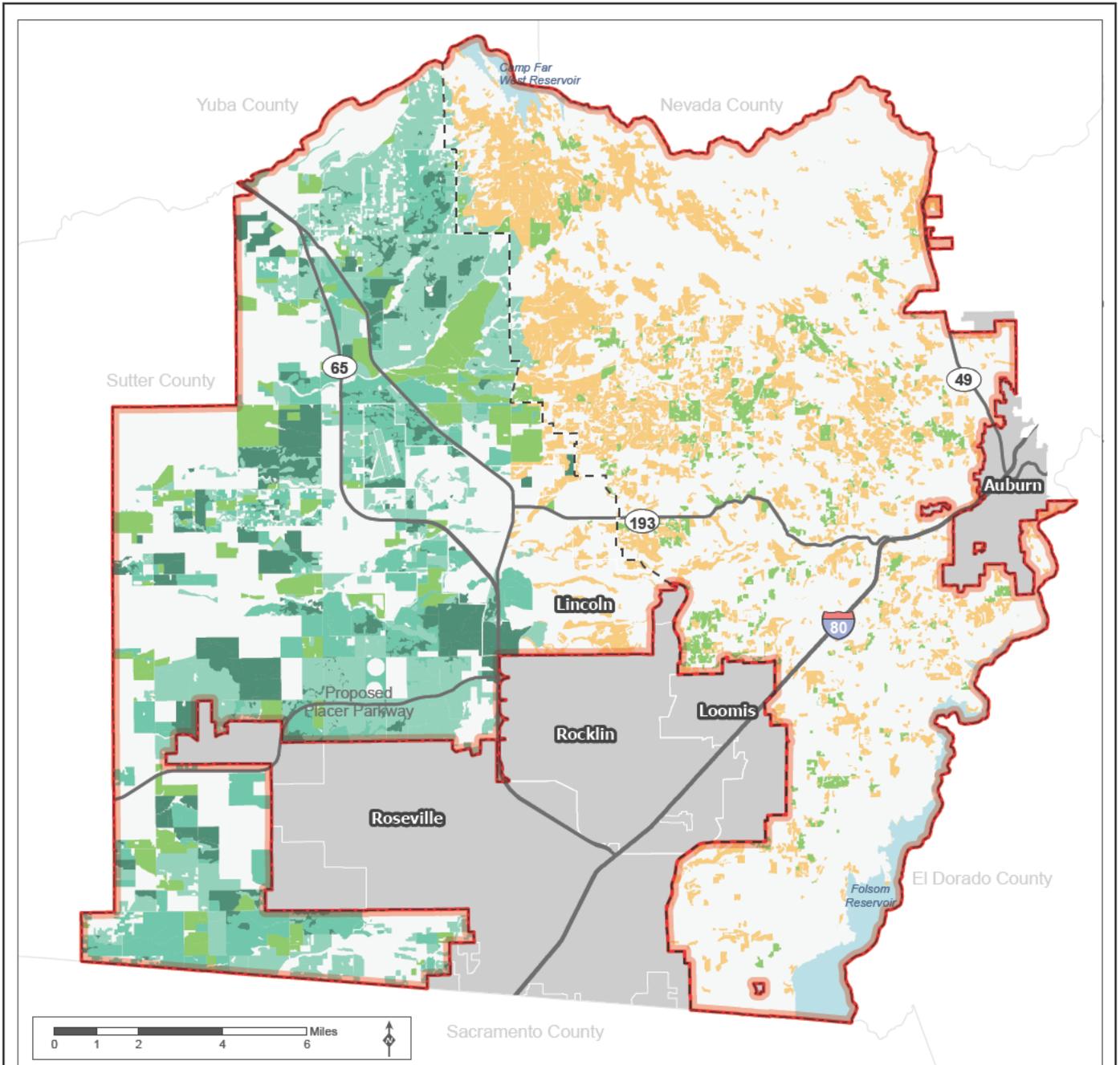
- | | |
|---|--|
| Community and Land Cover Type | <ul style="list-style-type: none"> ■ Non-Participating City - - Valley/Foothill Divide ▭ Plan Area A Boundary |
| Natural Communities | |
| ■ Vernal Pool Complex and Grassland | |
| ■ Aquatic/Wetland Complex | |
| ■ Riverine/Riparian Complex | |
| ■ Oak Woodland | |
| ■ Valley Oak Woodland | |
| Semi-Natural Communities and Other Agriculture | |
| ■ Rice Agriculture | |
| ■ Field Agriculture | |
| ■ Orchard and Vineyard Agriculture | |
| Urban (Non-natural) Communities | |
| ■ Managed Open Water | |
| ■ Rural Residential | |
| ■ Urban | |

Source: Appendix A.

Graphics ... 04-40-6.04 (7-12-2018)119



Figure 3.3-3
Land Cover Types
 Placer County Conservation Program – EIS/EIR



Source: Placer County 2014 MIG | TRA 2015

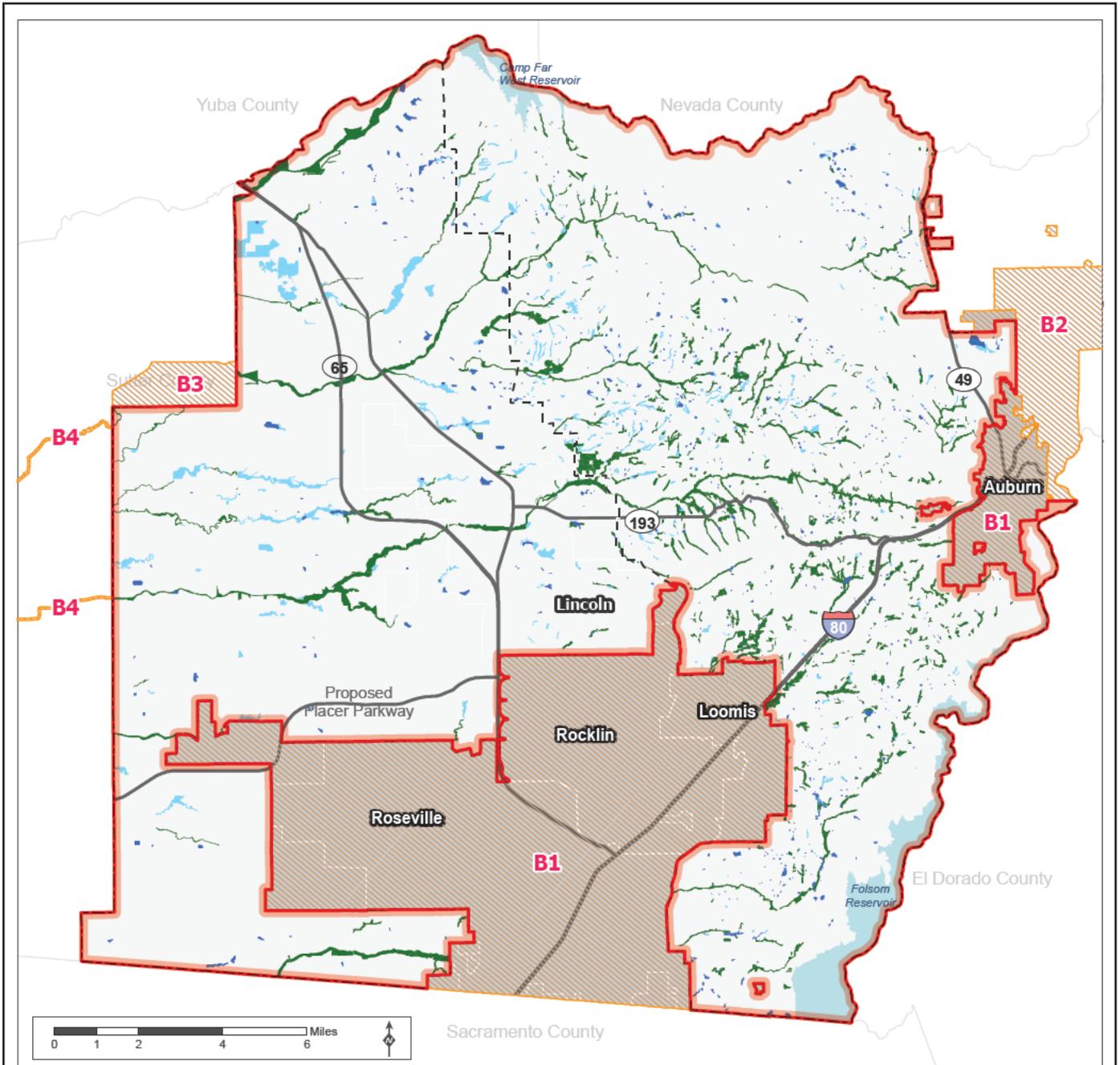
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|--------------------------------------|----------------------------|
| Community and Land Cover Type | ■ Non-Participating City |
| Grassland | — Major Road |
| ■ Annual Grassland | - - Valley/Foothill Divide |
| ■ Pasture | ■ Plan Area A Boundary |
| Vernal Pool Complex | |
| ■ VPC High Density | |
| ■ VPC Intermediate Density | |
| ■ VPC Low Density | |

Graphics ... 04-40-6.04 (7-12-2018)19

Source: Appendix A.



Figure 3.3-4
Grassland and Vernal Pool Complex
 Placer County Conservation Program – EIS/EIR



Source: Placer County 2014 MIG | TRA 2015

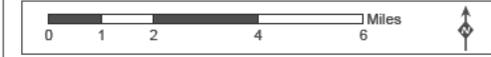
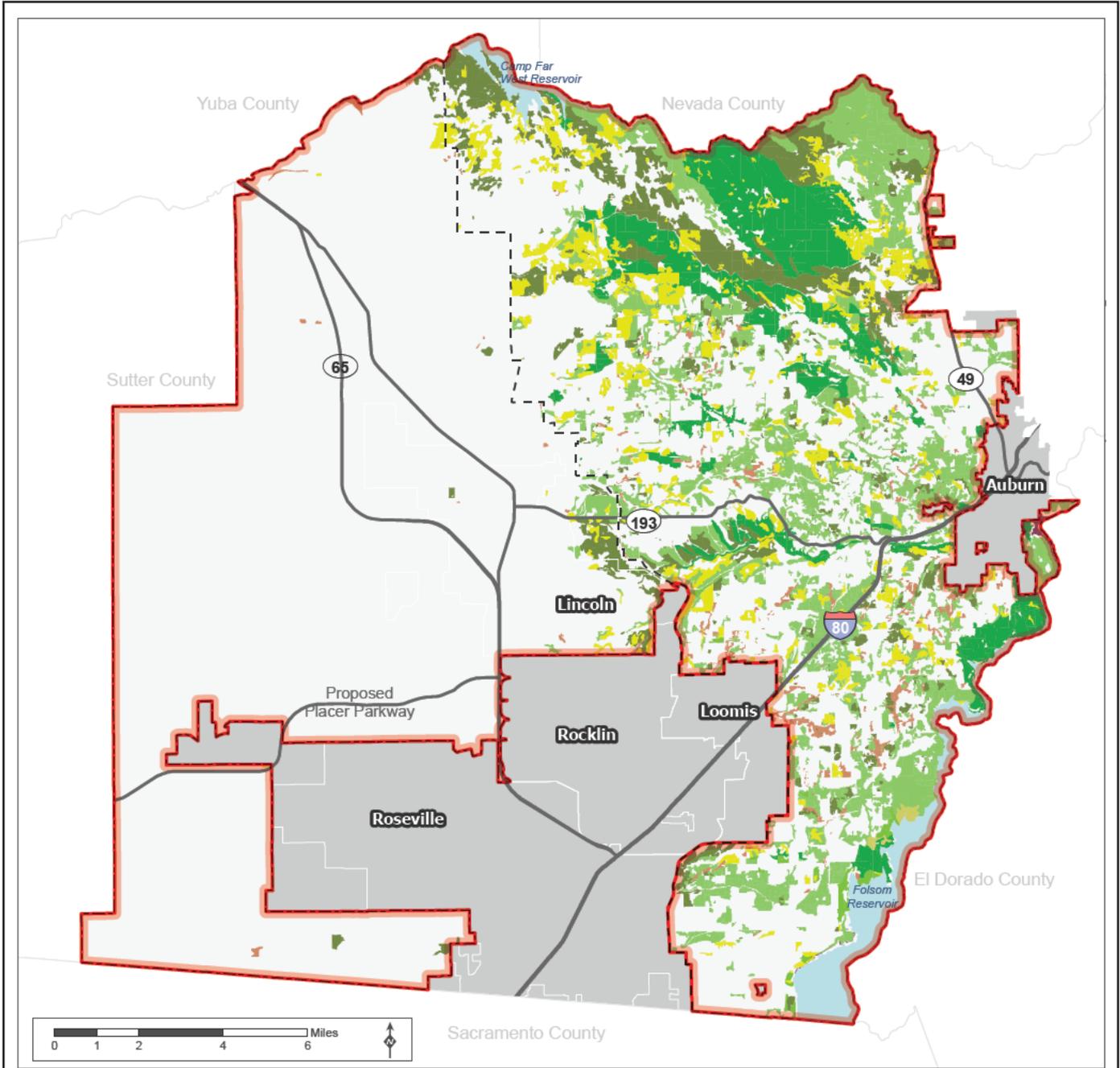
- | | |
|--------------------------------------|--|
| Community and Land Cover Type | <ul style="list-style-type: none"> Non-participating City Major Road Valley/Foothill Divide |
| Aquatic/Wetland Complex | <ul style="list-style-type: none"> Marsh Complex Pond |
| Riverine/Riparian Complex | <ul style="list-style-type: none"> Riverine/Riparian |
| | <ul style="list-style-type: none"> Plan Area A Boundary |
| | <ul style="list-style-type: none"> Plan Area B B1: Non-Participating Cities B2: PCWA O&M B3: Coon Creek Floodplain B4: Fish Passage Improvement B5: Big Gun Conservation Bank (not shown) |

Source: Appendix A.

Graphics ... 04-40-6.04 (7-12-2018)19



Figure 3.3-5
Aquatic/Wetland Complex and Riverine/Riparian Complex
 Placer County Conservation Program – EIS/EIR



Source: Placer County 2014 MIG | TRA 2015

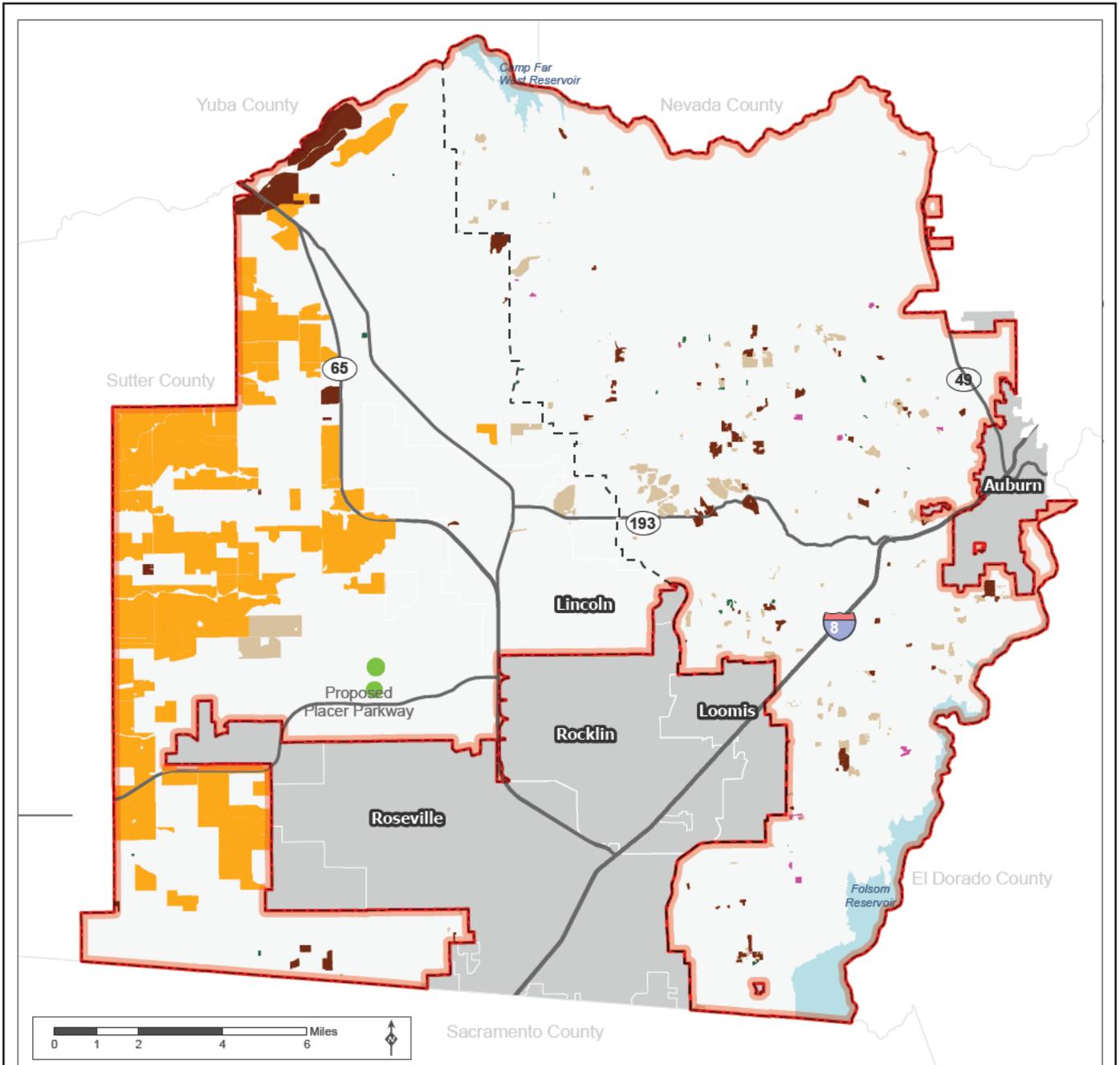
- | | |
|--------------------------------------|--|
| Community and Land Cover Type | <ul style="list-style-type: none"> ■ Non-participating City — Major Road - - Valley/Foothill Divide ▭ Plan Area A Boundary |
| Oak Woodland | |
| ■ Blue Oak Woodland | |
| ■ Foothill Chaparral | |
| ■ Interior Live Oak Woodland | |
| ■ Mixed Oak Woodland | |
| ■ Oak-Foothill Pine Woodland | |
| ■ Oak Savanna | |
| ■ Rock outcrop | |
| Valley Oak Woodland | |
| ■ Valley Oak Woodland | |

Source: Appendix A.

Graphics ... 04-40-6.04 (7-12-2018)19



Figure 3.3-6
Oak Woodland and Valley Oak Woodland
 Placer County Conservation Program – EIS/EIR



Source: Placer County 2014 MIG | TRA 2015

Community and Land Cover Type

Semi-natural and Other Agriculture Communities

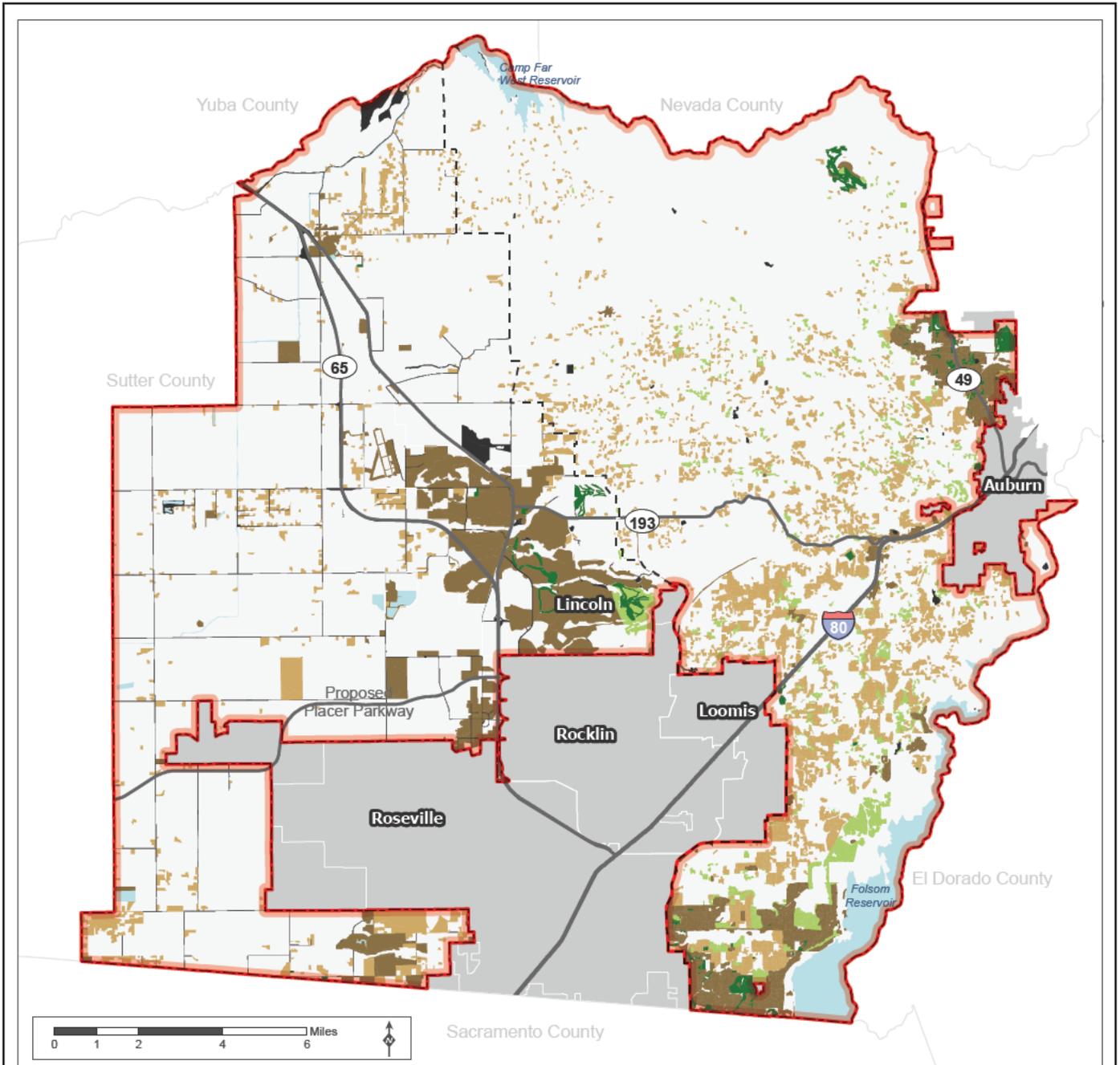
- Alfalfa
- Cropland
- Eucalyptus
- Orchard
- Rice
- Vineyard
- Non-participating City
- Valley/Foothill Divide
- Plan Area A Boundary

Source: Appendix A.

Graphics ... 04-40-6.04 (7-12-2018)19



Figure 3.3-7
Agriculture and Semi-Natural Communities
 Placer County Conservation Program – EIS/EIR



Source: Placer County 2014 MIG | TRA 2015

- | | |
|--|----------------------------|
| Community and Land Cover Type | ■ Non-participating City |
| Urban (Non-Natural) Communities | — Major Road |
| ■ Canal | - - Valley/Foothill Divide |
| ■ Reservoir | ■ Plan Area A Boundary |
| ■ Urban open water | |
| ■ Rural residential | |
| ■ Rural residential forested | |
| ■ Urban and suburban | |
| ■ Barren/Industrial Road | |
| ■ Urban golf course | |
| ■ Urban park | |
| ■ Urban riparian | |
| ■ Urban wetland | |
| ■ Urban woodland | |

Source: Appendix A.

Graphics ... 04-40-6.04 (7-12-2018)19



Figure 3.3-8
Urban and Non-Natural Communities
 Placer County Conservation Program – EIS/EIR