

3.6 BIOLOGICAL RESOURCES

This section addresses common and sensitive biological resources that could be affected by implementation of the proposed program. Biological resources include common terrestrial vegetation/habitat types and wildlife, aquatic biological resources, sensitive plant communities and habitats, and special-status plant and animal species. Regulatory requirements that pertain to biological resources are summarized. The analysis describes potential direct, indirect, and cumulative impacts from implementation of the proposed program and identifies mitigation measures for those impacts determined to be significant.

The primary issues raised in comments on the notice of preparation that pertain to biological resources included the following:

- ▶ Assessment of the flora and fauna within and adjacent to the project footprint, with particular emphasis on identifying rare, threatened, endangered, and other sensitive species and their associated habitats.
- ▶ Impacts from lighting, noise, human activity, wildlife-human interactions, exotic or invasive species, and drainage.
- ▶ Assessment of potential indirect and cumulative impacts, including to resources in open space lands adjacent to the program area.
- ▶ Impacts on nesting birds.
- ▶ Design of mitigation measures to avoid or minimize impacts to protected species and sensitive plant communities, with emphasis on avoidance; and, for unavoidable impacts, consideration of onsite mitigation.
- ▶ Qualifications of individuals preparing restoration and revegetation plans to include expertise in California ecosystems and native plant restoration techniques.
- ▶ Presence of a qualified biologist to monitor ground-disturbing activities to protect special-status wildlife or other species with limited mobility that may otherwise be injured or killed by project related activities.
- ▶ Lack of support for the relocation or salvage of special-status plant species.
- ▶ Support for removal of encroaching conifers from meadows in the program area and aspen stands.
- ▶ Measures to protect sensitive meadow and riparian habitat while conducting fuels reduction and restoration treatments.

For this analysis, information about common and sensitive biological resources known or with potential to occur in the program area is based primarily on review of the following sources: results of previous biological surveys conducted for other projects planned in the program area; TRPA and U.S. Forest Service (USFS) survey and GIS data; a records search of the California Natural Diversity Database (CNDDDB; CDFW 2019); a list of federally proposed, candidate, threatened, and endangered species that may occur in the program region obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system (USFWS 2019); USFWS National Wetlands Inventory (updated July 2016) (USFWS 2016); high resolution aerial imagery; and various reports and published studies cited in this section. Additionally, the analysis of cumulative effects incorporates relevant outputs from the LANDIS-II modeling of wildlife habitat conducted for the Lake Tahoe West Restoration Partnership (Lake Tahoe West).

No adopted habitat conservation plans (HCPs) or natural community conservation plans (NCCPs) apply to the proposed program. Therefore, the following analysis does not evaluate potential conflicts with adopted conservation plans.

The proposed program has been developed in a manner that is consistent with applicable local plans (e.g., general plans), policies, and ordinances to the extent the program is subject to them. Tree removal would not conflict because the program was developed consistent with regional and local plans, including TRPA Code Section 61.1. Tree removal is further discussed in Section 3.4, "Agriculture and Forestry Resources." Implementation of the proposed program would not conflict with any local or regional tree preservation policies or ordinances. This issue is not evaluated further.

3.6.1 Regulatory Setting

FEDERAL

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA; 16 U.S.C. Section 1531 et seq.), USFWS and the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) regulate the taking of species listed in the ESA as threatened or endangered. In general, persons subject to ESA (including private parties) are prohibited from “taking” endangered or threatened fish and wildlife species on private property, and from “taking” endangered or threatened plants in areas under federal jurisdiction or in violation of state law. Under Section 9 of the ESA, the definition of “take” is to “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.” USFWS has also interpreted the definition of “harm” to include significant habitat modification that could result in take.

Two sections of the ESA address take. Section 10 regulates take if a non-federal agency is the lead agency for an action that results in take and no other federal agencies are involved in permitting the action. However, if a project would result in take of a federally listed species and federal discretionary action (even if a non-federal agency is the overall lead agency) is involved (i.e., a federal agency must issue a permit), the involved federal agency consults with USFWS under Section 7 of the ESA. Section 7 of the ESA outlines procedures for federal interagency cooperation to protect and conserve federally listed species and designated critical habitat. Section 7(a)(2) requires federal agencies to consult with USFWS and NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species or destroy or adversely modify designated critical habitat.

Clean Water Act

Section 404 of the CWA requires a project applicant to obtain a permit before engaging in any activity that involves any discharge of dredged or fill material into waters of the United States, including wetlands. Fill material is material placed in waters of the United States that has the effect of replacing any portion of waters of the United States with dry land or changing the bottom elevation of any portion of waters of the United States. Waters of the United States include navigable waters; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; relatively permanent tributaries to any of these waters; and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands typically must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of the CWA pending USACE verification.

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate state agency stating that the intended dredging or filling activity is consistent with the state’s water quality standards and criteria. In California, the authority to grant water quality certification is delegated by the State Water Resources Control Board to the nine regional water quality control boards (RWQCBs).

Bald and Golden Eagle Protection Act

Under the Bald and Golden Eagle Protection Act, it is illegal to take bald eagles, including their parts, nests, or eggs unless authorized. “Take” is defined as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” Disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment (USFWS 2007:31156). In addition to immediate impacts, this definition also addresses impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle’s return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA), first enacted in 1918, provides for protection of international migratory birds and authorizes the Secretary of the Interior to regulate the taking of migratory birds. The MBTA provides that it shall be unlawful, except as permitted by regulations, to pursue, take, or kill any migratory bird, or any part, nest, or egg of any such bird. Under the MBTA, “take” is defined as “to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or any attempt to carry out these activities.” A take does not include habitat destruction or alteration, as long as there is not a direct taking of birds, nests, eggs, or parts thereof. The current list of species protected by the MBTA can be found in Title 50 of the Code of Federal Regulations (CFR), Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

Executive Order 13112—National Invasive Species Management Plan

Executive Order 13112 directs all federal agencies to prevent the introduction and control the spread of invasive species in a cost-effective and environmentally sound manner to minimize economic, ecological, and human health impacts. It established a national Invasive Species Council made up of federal agencies and departments and a supporting Invasive Species Advisory Committee composed of state, local, and private entities. The Invasive Species Council and advisory committee oversee and facilitate implementation of the executive order.

TAHOE REGIONAL PLANNING AGENCY

Tahoe Regional Plan

The TRPA Regional Plan is a regulatory framework that includes several initiatives and documents, including Goals and Policies, threshold standards (thresholds), and Code of Ordinances (Code). The elements of the Regional Plan that apply to terrestrial and aquatic biological resources are summarized below.

Thresholds

The TRPA thresholds include standards and indicators that have been developed to focus management efforts and provide a measure of progress for vegetation, wildlife, and fisheries. The threshold standards for vegetation, wildlife, and fisheries, and the attainment status for each are summarized in Table 3.6-1 (TRPA 2016). Specific targets and indicators used to evaluate the standards can be found in the TRPA 2015 Threshold Evaluation Report (TRPA 2016).

Table 3.6-1 TRPA Vegetation, Wildlife, and Fisheries Resource Threshold Standards and their Attainment Status

TRPA Threshold Reporting Category and Standard	2015 Attainment Status
Vegetation	
Common Vegetation:	
Vegetation Community Richness	At or Somewhat Better than Target
Relative Abundance of Red Fir Forest in Seral Stages Other Than Mature	Considerably Worse than Target
Relative Abundance of Yellow Pine Forest in Seral Stages Other Than Mature	Considerably Worse than Target
Relative Abundance of Meadow and Wetland Vegetation	Somewhat Worse than Target
Relative Abundance of Shrub Vegetation	Considerably Better than Target
Relative Abundance of Deciduous Riparian Vegetation	Considerably Worse than Target
Size of Forest Openings and Juxtaposition of Vegetation Communities – Management Standard	Implemented
Consistency with Baily Land Capability System	Implemented
Nondegradation of Stream Environment Zones	Implemented
Appropriate Management Practices	Implemented
Uncommon Plant Communities:	
Upper Truckee Marsh	Somewhat Worse than Target

TRPA Threshold Reporting Category and Standard	2015 Attainment Status
Taylor Creek Marsh	Insufficient Data to Determine Status
Pope Marsh	Insufficient Data to Determine Status
Osgood Swamp	Insufficient Data to Determine Status
Hell Hole	Insufficient Data to Determine Status
Grass Lake	Insufficient Data to Determine Status
Freel Peak Cushion Plant Community	Somewhat Worse than Target
Deep-Water Plants	Considerably Worse than Target
Sensitive Plants:	
Tahoe Yellow Cress	Considerably Better than Target
Tahoe Draba	Considerably Better than Target
Long-petaled Lewisia	Considerably Better than Target
Cup Lake Draba	Considerably Better than Target
Galena Creek Rockcress	Considerably Worse than Target
Late Seral/Old Growth Ecosystems Overall and in Montane, Upper Montane, and Subalpine Elevation Zones	Considerably Worse than Target (in all elevation zones)
Wildlife	
Special Interest Species:	
Northern Goshawk Population Sites	Insufficient Data to Determine Status
Osprey	Considerably Better than Target
Nesting Bald Eagle Population	At or Somewhat Better than Target
Wintering Bald Eagle Population Sites	Considerably Better than Target
Golden Eagle Population Sites	Insufficient Data to Determine Status
Peregrine Falcon Population Sites	Considerably Better than Target
Waterfowl Population Sites	Somewhat Worse than Target
Deer	Insufficient Data to Determine Status
Disturbance Free Zones Management Standards	Implemented
Habitats of Special Significance:	
Riparian Habitat	Implemented
Fisheries	
Stream Habitat:	
Miles of Stream Habitat in Excellent Condition	Considerably Better than Target
Miles of Stream Habitat in Good Condition	Considerably Worse than Target
Miles of Stream Habitat in Marginal Condition	Considerably Worse than Target
Instream Flow:	
Nondegradation Standard for Instream Flow	Implemented
Divert Stream Intakes to Lake Sources	Implemented
Lahontan Cutthroat Trout	Implemented
Lake Habitat:	
Acres of "Prime" Fish Habitat	At or Somewhat Better than Target

Source: TRPA 2016

Goals and Policies

The Conservation Element of the TRPA Goals and Policies document establishes goals for the preservation, development, utilization, and management of natural resources within the Tahoe Basin. These goals and policies are designed to achieve and maintain adopted threshold standards and are implemented through the Code.

The Conservation Element includes 10 subelements that address the range of Lake Tahoe's natural and historical resources. The applicable Subelements and Goals are discussed in this section. Policies associated with each goal can be found in the TRPA Goals and Policies document online at: <http://www.trpa.org/regional-plan/goals-policies/>.

Chapter 4 of the Goals and Policies identifies the following six goals and associated policies for vegetation in the Tahoe Region:

GOAL Veg-1: Provide for a wide mix and increased diversity of plant communities.

- ▶ **Policy VEG-1.1:** Forest management practices shall be allowed when consistent with acceptable strategies for the maintenance and enhancement of forest health and diversity, prevention of wildfire, protection of water quality, and enhancement of wildlife habitats.
- ▶ **Policy VEG-1.2:** Opportunities to improve the age structure of the pine and fir plant communities shall be encouraged when consistent with other environmental considerations.
- ▶ **Policy VEG-1.3:** Forest pattern shall be manipulated whenever appropriate as guided by the size and distribution of forest openings.
- ▶ **Policy VEG-1.7:** Maintain forest litter for its erosion control and nutrient cycling functions in naturally-vegetated areas except to the extent it poses a fire hazard.
- ▶ **Policy VEG-1.9:** All proposed actions shall consider the cumulative impact of vegetation removal with respect to plant diversity and abundance, wildlife habitat and movement, soil productivity and stability, and water quality and quantity.
- ▶ **Policy VEG-1.10:** Work to eradicate and prevent the spread of invasive species.
- ▶ **Policy VEG-1.11:** Encourage local governments to develop urban forestry components within their area plans. Urban forestry programs should seek to reestablish natural forest conditions in a manner that does not increase the risk of catastrophic wildfire.

GOAL Veg-2: Provide for the protection, maintenance, and restoration of such unique ecosystems as wetlands, meadows, and other riparian vegetation.

- ▶ **Policy VEG-2.1:** Riparian plant communities shall be managed for the beneficial uses of passive recreation, groundwater recharge, and nutrient catchment, and as wildlife habitats.
- ▶ **Policy VEG-2.2:** Riparian plant communities shall be restored or expanded whenever and wherever possible. When complete restoration is not feasible, restoration programs shall focus on restoring the natural function of riparian areas to the greatest extent practical.

GOAL Veg-3: Conserve threatened, endangered, and sensitive plant species and uncommon plant communities of the Lake Tahoe Region.

- ▶ **Policy VEG-3.1:** Uncommon plant communities shall be identified and protected for their natural values.
- ▶ **Policy VEG-3.2:** The population sites and critical habitat of all sensitive plant species in the Lake Tahoe region shall be identified and preserved.

GOAL Veg-4: Provide for and increase the amount of late seral/old growth stands within the Lake Tahoe Region.

- ▶ **Policy VEG-4.1:** Stands exhibiting late seral/old growth characteristics shall be managed to allow these stands to sustain these conditions.

- ▶ **Policy VEG-4.2:** Stands not exhibiting late seral/old growth characteristics shall be managed to progress towards late seral/old growth.
- ▶ **Policy VEG-4.3:** Prescriptions for treating these stands shall be prepared by licensed foresters or otherwise qualified individuals on a stand-by-stand basis. Each prescription shall demonstrate/ explain how it will promote late seral or old growth characteristics prior to applying any mechanical treatment or prescribed fire. Stand-specific prescriptions will be developed using the best available forest and ecosystem management science, strategies, standards and guidelines as well as all applicable regulations.
- ▶ **Policy VEG-4.4:** Retain large trees as a principal component of late seral/old growth ecosystems.
- ▶ **Policy VEG-4.5:** Retain trees of medium and small size sufficient to provide for large tree recruitment over time, and to provide structural diversity. Preferably, these trees will be the most vigorous in the stand using one of the standard tree classifications. In addition, species composition should be key consideration in tree retention.
- ▶ **Policy VEG-4.6:** Use of prescribed fire is preferred to reduce fire hazard and perpetuate desired natural ecological processes. Manual and mechanical treatment may be used to reduce forest fuel levels and to improve late seral forest conditions in addition to, or in lieu of, prescribed fire.

GOAL Veg-5: The appropriate stocking level and distribution of snags and coarse woody debris shall be retained in the Region's forests to provide habitat for organisms that depend on such features and to perpetuate natural ecological processes.

- ▶ **Policy VEG-5.1:** Allow for a sufficient number and an appropriate distribution of snags throughout the region's forests to provide and maintain habitat for species dependent on such features.
- ▶ **Policy VEG-5.2:** Allow for an appropriate amount, level and distribution of coarse woody debris (downed woody material) throughout the region's forests to maintain biological integrity, to stabilize soil, and to afford a reasonable level of fire safety.

GOAL Veg-6: TRPA shall work with fire protection agencies in the Region to reduce the risk of catastrophic wildfire.

- ▶ **Policy VEG 6.1:** Promote hazardous fuels reduction in order to reduce the intensity of naturally occurring wildfire and prevent catastrophic wildfire.
- ▶ **Policy VEG-6.2:** Promote creation of defensible space using forest management practices that are consistent with state defensible space codes and community wildfire protection plans.

The two goals and associated policies identified for wildlife are as follows:

GOAL WL-1: Maintain suitable habitats for all indigenous species of wildlife without preference to game or nongame species through maintenance and improvement of habitat diversity.

- ▶ **Policy WL-1.1:** All proposed actions shall consider impacts to wildlife.
- ▶ **Policy WL-1.2:** Riparian vegetation shall be protected and managed for wildlife.

GOAL WL-2: Preserve, enhance, and where feasible, expand habitats essential for threatened, endangered, rare, or sensitive species found in the Region.

- ▶ **Policy WL-2.1:** Endangered, threatened, rare, and special interest species shall be protected and buffered against conflicting land uses.

The following describes goals and policies of the Regional Plan that relate to protection of water quality and aquatic species.

GOAL WQ-3: Reduce or eliminate nonpoint sources of pollutants which affect, or potentially affect, water quality in the Tahoe Region in a manner consistent with the Lake Tahoe TMDL [total maximum daily load], where applicable.

- ▶ **Policy WQ-3.3:** Units of local government, state transportation departments, U.S. Forest Service and other implementing agencies shall restore 25 percent of the SEZ lands (from the 1983 baseline) that have been disturbed, developed, or subdivided in accordance with the environmental improvement program.

GOAL FI-1: Improve aquatic habitat essential for the growth, reproduction, and perpetuation of existing and threatened fish resources in the Lake Tahoe Region.

- ▶ **Policy FI-1.1:** Development proposals affecting streams, lakes and adjacent lands shall evaluate impacts to the fishery.
- ▶ **Policy FI-1.2:** Unnatural blockages and other impediments to fish movement shall be prohibited and removed, wherever appropriate.
- ▶ **Policy FI-1.3:** An instream maintenance program should be developed and implemented.
- ▶ **Policy FI-1.4:** Standards for boating activity shall be established for the shallow zone of Lake Tahoe.
- ▶ **Policy FI-1.5:** Habitat improvement projects are acceptable practices in streams and lakes.
- ▶ **Policy FI-1.6:** Instream flows shall be regulated, when feasible, to maintain fishery values.
- ▶ **Policy FI-1.7:** Existing points of water diversion from streams shall be transferred to lakes, whenever feasible, to help protect instream beneficial uses.
- ▶ **Policy FI-1.8:** Support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout in appropriate remote locations.
- ▶ **Policy FI-1.9:** Prohibit the release of nonnative aquatic invasive species in the region in cooperation with public and private entities. Control or eradicate existing populations of these species and take measures to prevent accidental or intentional release of such species.

Code of Ordinances

The applicable provisions of the TRPA Code regarding vegetation, wildlife, and aquatic resources are summarized below.

Protection and Management of Vegetation

The Code requires the protection and maintenance of all native vegetation types. Section 61.3, "Vegetation Protection and Management," of Chapter 61, "Vegetation and Forest Health," provides for the protection of stream environment zone (SEZ) vegetation, other common vegetation, uncommon vegetation, and sensitive plants in SEZs (TRPA 2012). TRPA defines an SEZ as an area that owes its biological and physical characteristics to the presence of surface water or groundwater. TRPA can require the preparation and implementation of a remedial vegetation management plan, where the need has been identified, for the purposes of threshold standard maintenance or attainment. In addition, Chapter 61, Section 61.4, "Revegetation," specifies minimum criteria for revegetation programs.

Protection of Sensitive and Uncommon Plants

Code Chapter 61, Section 61.3.6, "Sensitive and Uncommon Plant Protection and Fire Hazard Reduction," establishes standards for preserving and managing sensitive plants and uncommon plant communities, as referenced above in Thresholds. Projects and activities that are likely to harm, destroy, or otherwise jeopardize sensitive plants or their habitat must fully mitigate their significant adverse effects. Measures to protect sensitive plants and their habitat include:

- ▶ fencing to enclose individual populations or habitat,
- ▶ restricting access or intensity of use,
- ▶ modifying project design as necessary to avoid adverse impacts,
- ▶ dedicating open space to include entire areas of suitable habitat, and
- ▶ restoring disturbed habitat.

Wildlife

TRPA sets standards for preserving and managing wildlife habitats, with special emphasis on protecting and increasing habitats of special significance, such as deciduous trees, wetlands, meadows, and riparian areas (Code Chapter 62). Specific habitats that are protected include riparian areas, wetlands, and SEZs; wildlife movement and migration corridors; important habitat for any species of concern; critical habitat necessary for the survival of any species; nesting habitat for raptors and waterfowl; fawning habitat for deer; and snags and coarse woody debris. In addition, TRPA-designated special-interest species (also referred to as "threshold species"), which are locally important because of rarity or other public interest, and species listed under the ESA or California Endangered Species Act (CESA) are protected from habitat disturbance by conflicting land uses.

TRPA-designated special-interest wildlife species are northern goshawk (*Accipiter gentilis*), osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), peregrine falcon (*Falco peregrinus anatum*), mule deer (*Odocoileus hemionus*), and waterfowl species.

The Code includes the following requirements for protection of wildlife movement and migration corridors.

- ▶ SEZs adjoining creeks and major drainages that link islands of habitat will be managed, in part, for use by wildlife as movement corridors. Structures, such as bridges, proposed within these movement corridors will be designed to avoid impairment of wildlife movement.
- ▶ Projects and activities in the vicinity of deer migration areas will be required to mitigate or avoid significant adverse impacts.

The TRPA Code also contains several provisions regarding critical habitat. TRPA defines critical habitat as any element of the overall habitat for any species of concern that, if diminished, could reduce the existing population or impair the stability or viability of the population. This also applies to habitat for special-interest species native to the Tahoe Basin whose breeding populations have been extirpated, but could return or be reintroduced. The Code includes the following critical-habitat provisions.

- ▶ No project or activity will cause, or threaten to cause, the loss of any habitat component considered critical to the survival of a particular wildlife species.
- ▶ No project or activity will threaten, damage, or destroy nesting habitat of raptors and waterfowl or fawning habitat of deer.
- ▶ Wetlands shall be preserved and managed for their ecological significance, including their value as nursery habitat to fishes, nesting and resting sites for waterfowl, and as a source of stream recharge, except as permitted pursuant to Chapter 30 of the TRPA Code.

Fish Resources

Chapter 63, "Fish Resources," of the TRPA Code includes provisions to ensure the protection of fish habitat and to provide for the enhancement of degraded habitat. The chapter applies to all projects and activities that could interfere with the health of fish populations in Lake Tahoe, its tributaries, and other lakes in the region. Provisions for the protection or enhancement of fish habitat shall be included for all new uses, projects and activities within fish habitat as identified by TRPA fish habitat maps or a qualified biologist. Fish habitat consists of a complex set of elements, such as spawning and nursery areas, food supply, and escape cover.

For instream habitats, protection provisions in Chapter 63 include prohibiting stream channel alterations, facilitating fish movement at stream crossings, removing barriers to fish movement, mitigating impacts on fish habitat from development, maintaining instream flows, preventing sediment entry into the stream system, and encouraging native vegetative cover.

Aquatic Invasive Species

Code Section 63.4, "Aquatic Invasive Species," discusses how aquatic invasive species (AIS) pose a serious threat to the waters of the Tahoe Region and can disrupt the ecology and economy of the region. Section 63.4.1 prohibits the transport or introduction of AIS into the Tahoe Basin.

STATE

California Endangered Species Act

Pursuant to CESA, a permit from California Department of Fish and Wildlife (CDFW) is required for projects that could result in the “take” of a plant or animal species that is listed by the state as threatened or endangered. Under CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species, but the CESA definition of take does not include “harm” or “harass,” like the ESA definition does. As a result, the threshold for take is higher under CESA than under ESA. Authorization for take of state-listed species can be obtained through a California Fish and Game Code Section 2081 incidental take permit.

California Native Plant Protection Act

In addition to CESA, the California Native Plant Protection Act provides protection to endangered and rare plant species, subspecies, and varieties of wild native plants in California. The California Native Plant Protection Act definitions of “endangered” and “rare” closely parallel the CESA definitions of endangered and threatened plant species.

California Fish and Game Code Sections 3503 and 3503.5—Protection of Bird Nests and Raptors

Section 3503 of the Fish and Game Code states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 of the California Fish and Game Code states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders *Falconiformes* and *Strigiformes*), including their nests or eggs. Typical violations include destruction of active nests as a result of tree removal or disturbance caused by project construction or other activities that cause the adults to abandon the nest, resulting in loss of eggs and/or young.

California Fish and Game Code Fully Protected Species

Protection of fully protected species is described in Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code. These statutes prohibit take or possession of fully protected species and do not provide for authorization of incidental take. CDFW has informed nonfederal agencies and private parties that their actions must avoid take of any fully protected species.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act requires that each of the nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. The RWQCB’s jurisdiction includes waters of the United States, as well as areas that meet the definition of “waters of the state.” “Waters of the state” is defined as any surface water or groundwater, including saline waters, within the boundaries of the state. The RWQCB has the discretion to take jurisdiction over areas not federally protected under CWA Section 404 provided they meet the definition of waters of the state and the State Water Resources Control Board published a new set of procedures for discharges of dredged or fill material into waters of the state on March 22, 2019. Mitigation requiring no net loss of wetlands functions and values of waters of the state typically is required by the RWQCB.

The State Water Resources Control Board has adopted the following definition of wetlands:

An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater or shallow surface water or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area’s vegetation is dominated by hydrophytes the area lacks vegetation.

Section 1602 of the California Fish and Game Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream, or lake in California that supports wildlife resources are subject to regulation by CDFW under Section 1600 et seq. of the California Fish and Game Code. Under Section 1602, it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by CDFW, or use any material from the streambeds, without first notifying CDFW of such activity and obtaining a final agreement

authorizing such activity. CDFW's jurisdiction in altered or artificial waterways is based on the value of those waterways to fish and wildlife.

LOCAL

Placer County General Plan

The Placer County General Plan includes Goal 6.C, to protect, restore, and enhance habitat that support fish and wildlife species to maintain populations at viable levels and Goal 6.D, to preserve and protect the valuable vegetation resources of Placer County.

Placer County Code

Article 12.20. Tree Preservation in Area East of Sierra Summit

Placer County Code, Article 12.20, addresses tree preservation in the county east of the Sierra summit. The ordinance is applicable to all trees east of the Sierra summit that are 6 inches diameter or greater at breast height, excluding lands devoted to the growing and harvesting of timber for commercial purposes. A Timber Harvest Plan must be prepared and considered by the California Department of Forestry and Fire Protection before the removal of timberland, and a tree permit must be obtained before removal of trees over 6 inches dbh.

El Dorado County General Plan

The El Dorado County General Plan includes Goal 7.3 which supports conservation, enhancement, and management of water resources and protecting their quality from degradation. Goal 7.4 promotes identification, conservation, and management of wildlife, wildlife habitat, fisheries, and vegetation resources of significant biological, ecological, and recreational value. The general plan also supports conservation of open space land for the continuation of the county's rural character, commercial agriculture, forestry and other productive uses, the protection of natural resources, for wildlife habitat, and other qualities (Goal 7.6). The following policies are applicable to the proposed program:

- ▶ **Policy 7.3.1.1:** Encourage the use of Best Management Practices, as identified by the Soil Conservation Service, in watershed lands as a means to prevent erosion, siltation, and flooding.
- ▶ **Policy 7.3.2.1:** Stream and lake embankments shall be protected from erosion, and streams and lakes shall be protected from excessive turbidity, provided for horticultural and grazing activities on agriculturally zoned lands that utilize "best management practices (BMPs)" as recommended by the County Agricultural Commission and adopted by the Board of Supervisors. Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue. For projects where the County allows an exception to wetland and riparian buffers, development in or immediately adjacent to such features shall be planned so that impacts on the resources are minimized. If avoidance and minimization are not feasible, the County shall make findings, based on documentation provided by the project proponent, that avoidance and minimization are infeasible.
- ▶ **Policy 7.3.4.2:** Modification of natural stream beds and flow shall be regulated to ensure that adequate mitigation measures are utilized.
- ▶ **Policy 7.4.2.6:** El Dorado County Biological Community Conservation Plans shall be required to protect, to the extent feasible, rare, threatened, and endangered plant species only when existing federal or State plans for non-jurisdictional areas do not provide adequate protection.

City of South Lake Tahoe General Plan

The following policies from the City of South Lake Tahoe General Plan (CSLT 2011) apply to vegetation, wildlife, and fisheries and aquatic resources that could be affected by the proposed program.

- ▶ **Policy NCR-3.1:** Natural Habitat Preservation: The City shall protect, maintain, and restore key riparian areas, natural open space meadows, and Stream Environment Zones for the preservation of natural habitats.
- ▶ **Policy NCR-3.6:** Stream Environment Zone (SEZ) Restoration and Enhancement: The City shall increase the area of naturally functioning SEZs by preserving existing SEZ and restoring/rehabilitating disturbed SEZ.
- ▶ **Policy NCR-3.11:** Natural Habitat and Open Space Management: The City shall encourage and support public agencies formed to acquire and manage important natural habitat areas, and other open space lands.
- ▶ **Policy NCR-3.12:** Tree Preservation: The City shall adopt a tree preservation ordinance that protects large native trees, trees with historic importance, and trees that support sensitive species and healthy forest habitat.
- ▶ **Policy NCR-3.14:** Diseased Tree Removal: The City shall support awareness and removal of diseased trees to reduce the threat of urban fires.

3.6.2 Environmental Setting

The following sections summarize the biological resources in the program area that are most relevant to the significance criteria and impact analysis applicable to the program, which are provided in Section 3.6.3, "Environmental Impacts and Mitigation Measures."

The proposed program is located within a substantial portion of the western Lake Tahoe Basin, which includes numerous vegetation communities, terrestrial and aquatic habitats, special-status plant and animal habitats, and sensitive plant communities. By virtue of the nature and scope of the proposed treatment activities focused in the WUI, program implementation is expected to primarily affect the more urban-influenced areas of the region, which are concentrated in the lower to middle elevation ranges and areas of relatively moderate topography.

Because of the program level and regional scope of this analysis, the environmental setting described herein is not intended to provide a full inventory of all common and sensitive biological resources that are known or could occur in the program area or in a specific later treatment activity site. During any project-level planning and evaluation for later treatment activities, a combination of data sources and survey efforts would be used to determine the specific biological resources known or with potential to occur in a treatment site.

TERRESTRIAL VEGETATION TYPES AND WILDLIFE HABITATS

The program area is located within a unique Sierra Nevada geologic basin. The types, distribution, and functions of vegetation and wildlife resources in the Lake Tahoe Basin and the PTEIR program area are strongly influenced by the geology, climate, topography, and hydrology of the region, as well as development and land use patterns in the WUI. In the Lake Tahoe Basin, the Lake elevation averages 6,225 feet, and surrounding peaks reach elevations of up to 10,880 feet; the PTEIR program area spans much of this elevation range, up to 8,840 feet. This elevation gradient results in three general vegetation zones that are recognized in the Basin: montane, upper montane, and subalpine. Numerous vegetation types are present within each vegetation zone. The hydrologic, topographic, and elevation gradients present in the Tahoe Basin support a diverse mix of vegetation communities and wildlife habitats. For example, more than 50 vegetation types and 22 California Wildlife Habitat Relationships System (CWHR) habitat types are recognized in the Tahoe Basin, many of which are represented in the PTEIR program area.

Table 3.6-2 summarizes the CWHR vegetation and wildlife habitat types mapped in the program area (USFS 2014); maps displaying the distribution of these habitat types are provided in Appendix E. Vegetation/habitat types were mapped using the comprehensive existing vegetation (EVEG) databases that meet regional and national vegetation mapping standards. EVEG vegetation types are based on the Classification of California Vegetation (CALVEG) classification system. CWHR classifications were derived primarily from CALVEG type and relative cover. Because of the

large number of vegetation communities and wildlife habitats in the program area, these are not described in further detail in this PTEIR. Most of these vegetation/habitat types have been described numerous times in various environmental review and other documents; and descriptions can be found in the *Lake Tahoe Watershed Assessment* (Murphy and Knopp 2000) and the CWHR habitat classification and type descriptions (CDFW 2020).

Table 3.6-2 Vegetation Types and Wildlife Habitats in the Program Area

California Wildlife Habitat Relationships Vegetation/Habitat Type	Acres
Forest Habitats	
Jeffrey pine	5,908.32
Sierran mixed conifer	5,403.7
White fir	685.1
Lodgepole pine	607.9
Red fir	594.8
Subalpine conifer	69.1
Aspen	60.6
Montane hardwood-conifer	25.6
Eastside pine	13.4
Chaparral and Scrub Habitats	
Montane chaparral	938.6
Sagebrush	63.3
Bitterbrush	14.23
Alpine-dwarf shrub	1.4
Riparian and Aquatic Habitats	
Montane riparian	338.5
Lacustrine	43.2
Riverine	9.4
Meadow Habitats	
Wet meadow	909.2
Perennial grassland	727.8
Barren Habitats	
Barren	133.8
Anthropogenic (Human-Made) Habitats	
Urban	936.4
Total	17,484.2

Source: USFS 2014

FISHERIES AND AQUATIC RESOURCES

Aquatic Habitat

Aquatic habitats utilized by fishes found in the program area include stream, nearshore, and pelagic habitats. Streams provide freshwater to lakes and ponds, recharge groundwater, and provide habitat and migration corridors for a wide variety of aquatic organisms. The program area includes approximately 184 linear miles of stream habitat; 42 linear miles occur within Community Fuel Reduction Areas and 142 miles are within Planned CWPP Project Areas (SFEI 2016). Approximately 80 percent of stream length in the program area is characterized as 1st, 2nd, and 3rd order (i.e., relatively small streams and headwaters (SFEI 2016). Streamflow regimes within the program area are mostly ephemeral (61 percent) and perennial (31 percent), with a relatively small amount of stream length (8 percent) characterized by an intermittent flow. Perennial, ephemeral, and intermittent streams are defined by different flow patterns: perennial streams have continuous flow year-round during years of normal precipitation, ephemeral streams have flow in them for a short duration (days or weeks) after a precipitation event occurs, and intermittent streams cease flowing for weeks or months each year. The program area includes approximately 21 miles of lake perimeter (nearshore) habitat; 11 miles in the Community Fuel Reduction Areas and 10 miles in the Planned CWPP Project areas. Within the program area, approximately 54 percent of lake perimeter habitat occurs around Lake Tahoe and the remaining 46 percent around other small lakes. The program area also includes approximately 220 acres of the Upper Truckee Marsh, over 99% of which is located in the Planned CWPP Project areas. The effects of program activities on nearshore, pelagic, or marsh habitats would be limited to potential water quality effects, as discussed in Section 3.11, "Hydrology and Water Quality."

Stream habitats in the Tahoe Basin were historically characterized by "v-shaped" channels bordered by deciduous and coniferous riparian forests and understory vegetation (TRPA 2016). At higher elevations, Tahoe streams are characterized by cascades, riffles, runs, and pools with substrates dominated by boulder, cobble, and gravel (TRPA 2016). At lower elevations, streams are characterized by low-gradient floodplains bordered by willow and meadows, with streambed substrates dominated by sand and silt (TRPA 2016).

Decades of resource extraction throughout the Tahoe Basin has adversely affected the physical features of streams and their biota. Channel modifications associated with logging and livestock grazing are two of the primary activities that altered stream channel structure and watershed-specific hydrology. Historical logging frequently led to the degradation of spawning stream; whereas, livestock grazing damaged stream banks and altered stream channel habitat structure through sedimentation and degradation of riparian habitats (Murphy and Knopp 2000). As a result of these past activities, Tahoe Basin streams have a high percentage of sand and fine sediment (TRPA 2016).

To assess stream condition, the TRPA stream habitat condition monitoring program was developed in partnership with the EPA, CDFW, Nevada Department of Environmental Protection (NDEP), Lahontan Water Quality Control Board (Lahontan), and the U.S. Forest Service (USFS). Benthic macroinvertebrates (BMIs), and physical and chemical stream characteristics, are sampled annually from 48 streams in the Tahoe Basin using Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California (Ode 2007). Results of these surveys are analyzed using the California Stream Condition Index (CSCI) model developed by the CDFW Aquatic Bioassessment Laboratory (Rehn et al. 2015). CSCI is a robust analytical scoring tool that requires the use of GIS and statistical software for its calculation (Rehn et al. 2015). In the development of the CSCI, the State of California developed four conditional categories for stream health (Figure 3.6-1). In the 1980s, the TRPA adopted their own stream condition categories. Translation of the four CSCI categories to the three TRPA categories is provided in Table 3.6-3 below.

Table 3.6-3 California Stream Condition Categories and Corresponding TRPA Condition Categories

California (CSCI) Condition Categories	TRPA Condition Categories
CSCI Score ≥ 0.92 = good	CSCI Score ≥ 0.92 = excellent
0.91 to 0.80 = fair	0.91 to 0.80 = good
0.79 to 0.63 = poor	≤ 0.79 = marginal
≤ 0.62 = very poor	

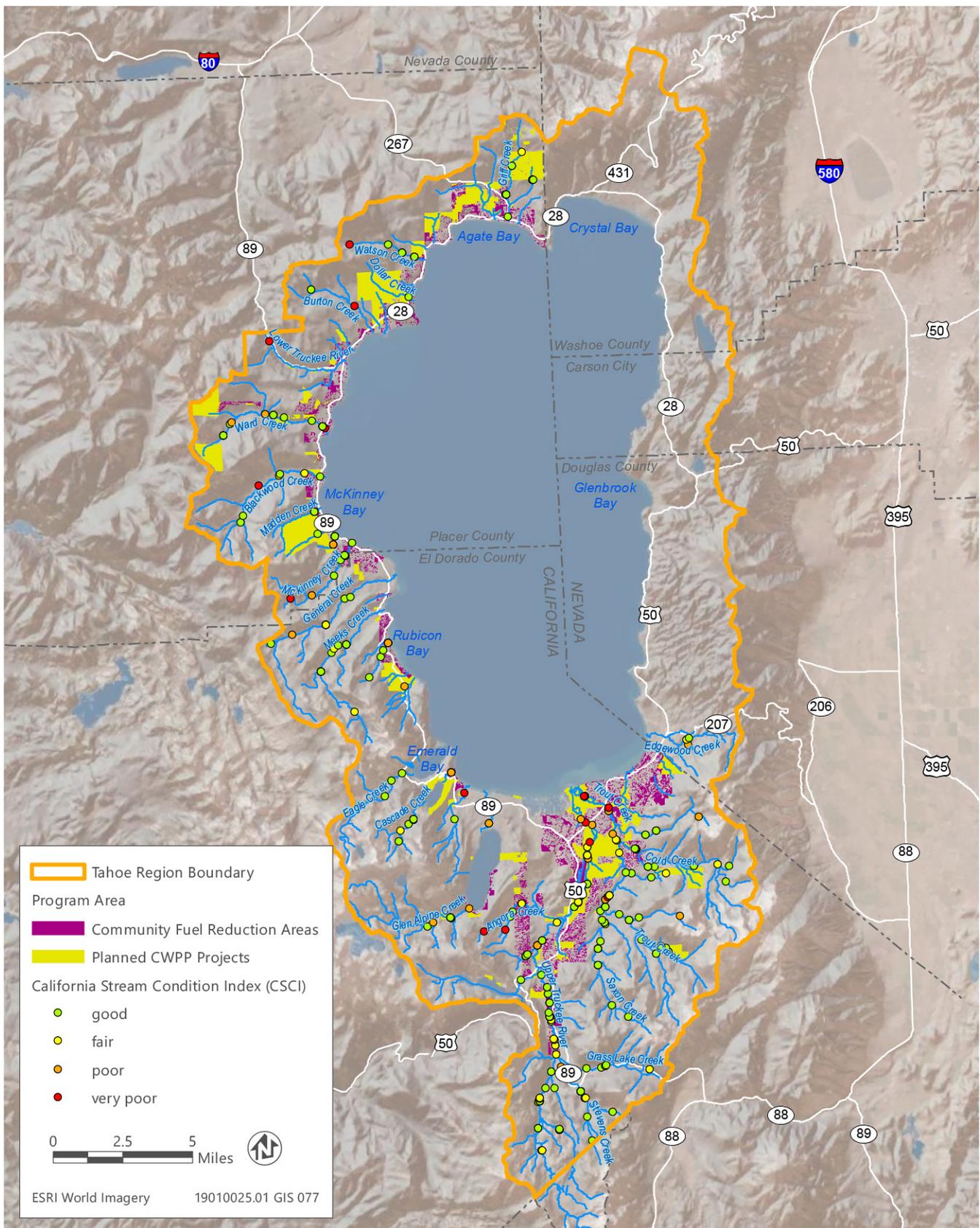
Source: TRPA 2016

Stream condition targets set by the TRPA include four percent of streams in excellent condition, 48 percent in good condition, and 17 percent in marginal condition. Monitoring results from 2009 through 2014 indicate 55 percent of streams are in excellent condition, which exceeds the target of 4 percent; approximately 18 percent of streams are in good condition, which is less than the target of 48 percent; and approximately 27 percent of streams are in marginal condition, which exceeds the target of 17 percent (TRPA 2016). Stream habitat conditions based on CSCI data (SWAMP 2019) were found to be good or fair throughout most of the program area. Poor conditions occurred in only a few locations including the mouth of Ward Creek and Tallac Creek, at the inlet to Fallen Leaf Lake, and at downstream reaches of the Upper Truckee River.

To conserve and protect aquatic and associated upland and riparian habitats, as well as water quality, TRPA delineated SEZs and developed threshold standards, goals, and policies to protect the environmental resources within SEZs (TRPA 2012). SEZ is a land designation unique to the Tahoe Basin that includes lands surrounding and including streams, lakes, and wetlands. In addition to providing water quality protection, SEZs are designed to protect streams, wetlands, ponds, lakes, seeps, springs and transitional areas between surface waters and adjacent upland plant communities (Roby et al. 2015). SEZ data were obtained from the Tahoe Aquatic Resources Inventory (SFEI 2016). Approximately 3,700 acres of SEZ occur in the program area (Figures 3.6-2 through 3.6-7).

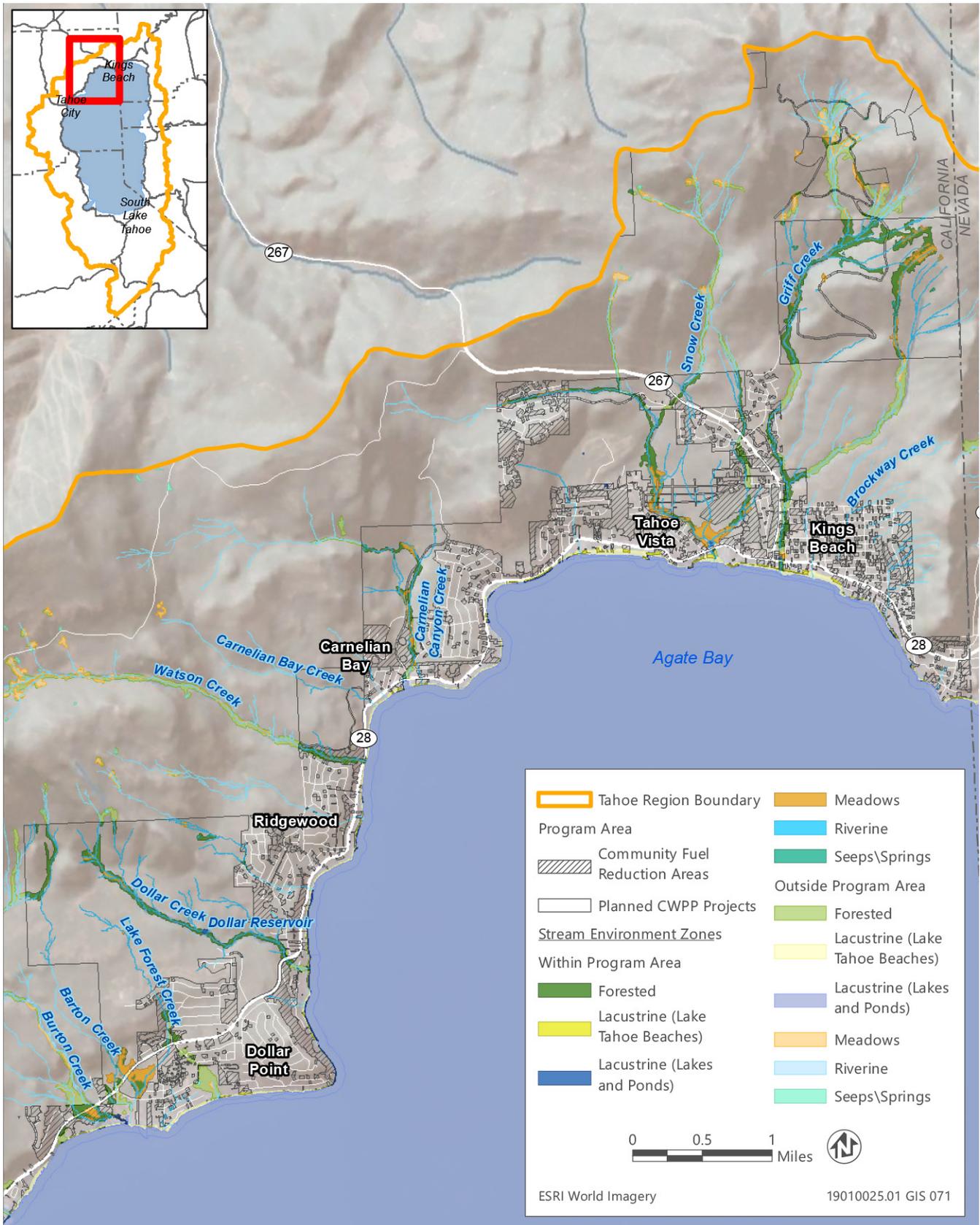
Fish Species

Common native fish species known or with potential to occur in the program area include Lahontan redband shiner (*Richardsonius egregius*), speckled dace (*Rhinichthys osculus*), Tahoe sucker (*Catostomus tahoensis*), and Paiute sculpin (*Cottus beldingi*). Special-status native fish with potential to occur, which are addressed further in "Sensitive Biological Resources," below, include Lahontan cutthroat trout (*Oncorhynchus clarkia henshawi*, Federally Threatened), mountain sucker (*Castostomus platyrhynchus*; California species of special concern [SSC]), mountain whitefish (*Prosopium williamsoni*; SSC), and Lahontan Lake tui chub (*Siphateles bicolor pectinifer*; SSC). Non-native fish species known or with potential to occur in the program area include rainbow trout (*Oncorhynchus mykiss*), brown trout (*Salmo trutta*), brook trout (*Salvelinus fontinalis*), lake trout (*Salvelinus namaycush*), Kokanee salmon (*Oncorhynchus nerka*), bluegill (*Lepomis macrochirus*), brown bullhead (*Ameiurus nebulosus*), smallmouth bass (*Micropterus dolomieu*), largemouth bass (*Micropterus salmoides*), black crappie (*Pomoxis nigromaculatus*), and goldfish (*Carassius auratus*).



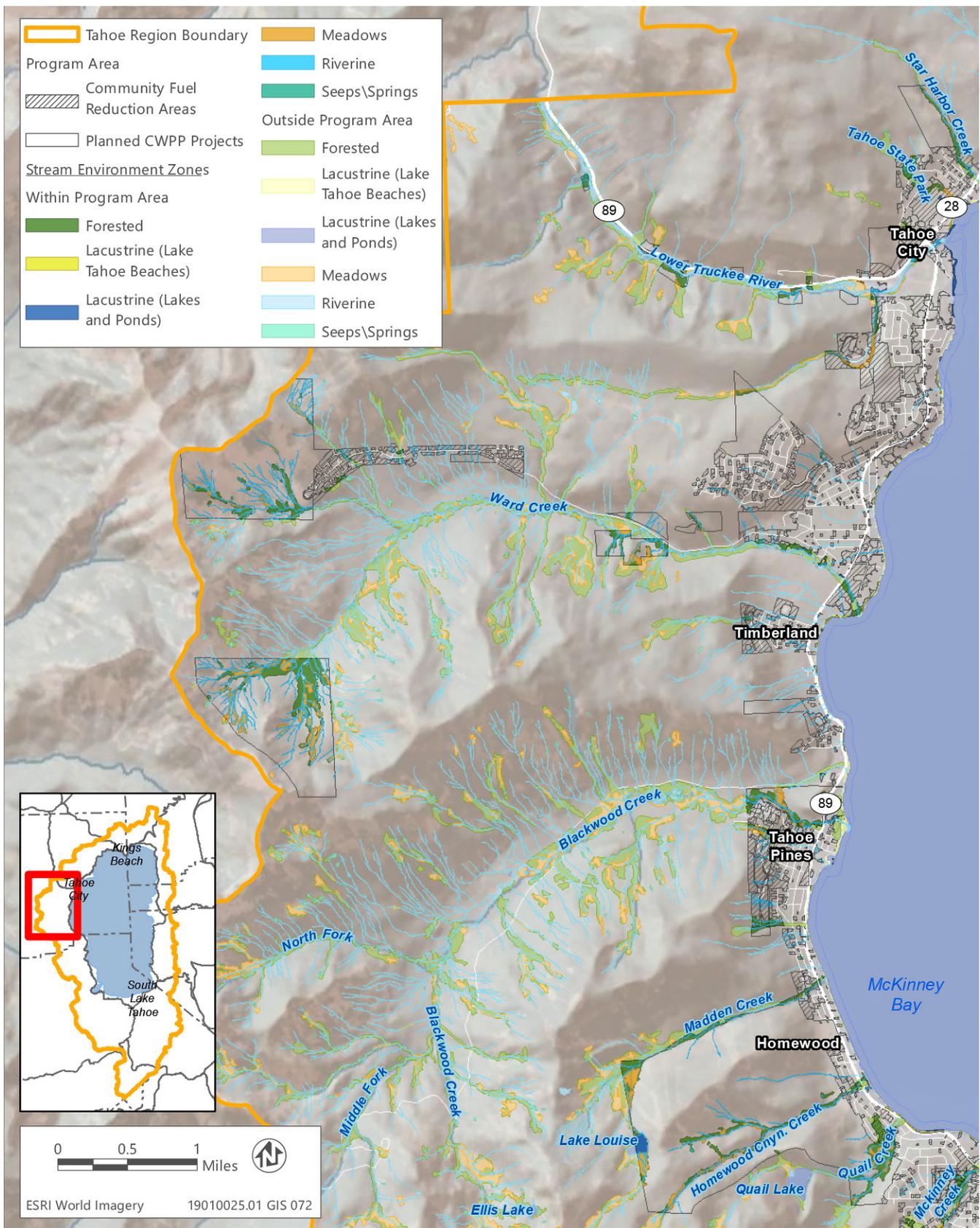
Source: Data received from CTC, Stillwater Sciences, and TRPA in 2019

Figure 3.6-1 Stream Condition in the Program Vicinity



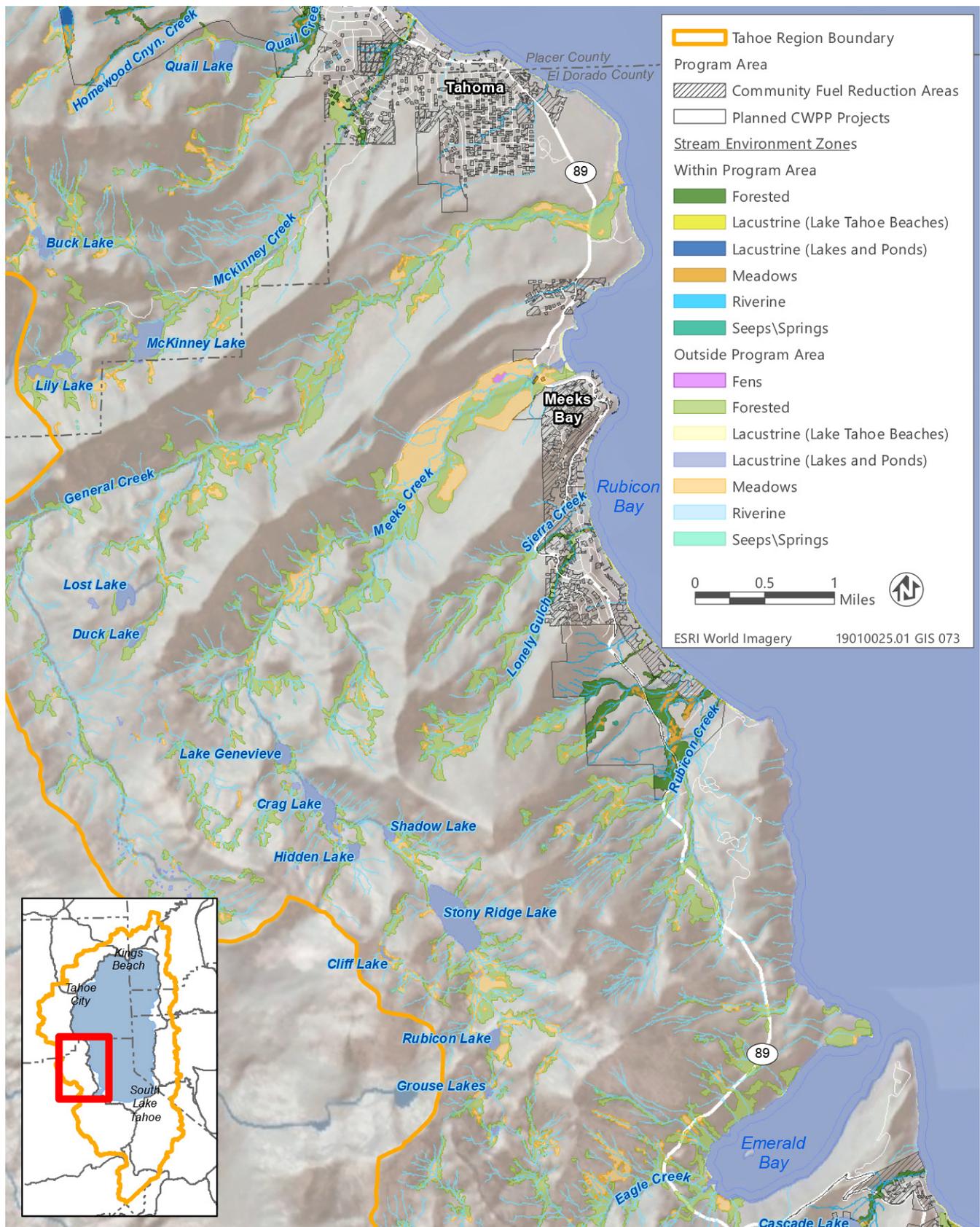
Source: Data received from CTC, Stillwater Sciences, and TRPA in 2019

Figure 3.6-2 Stream Environment Zone: Kings Beach to Dollar Point



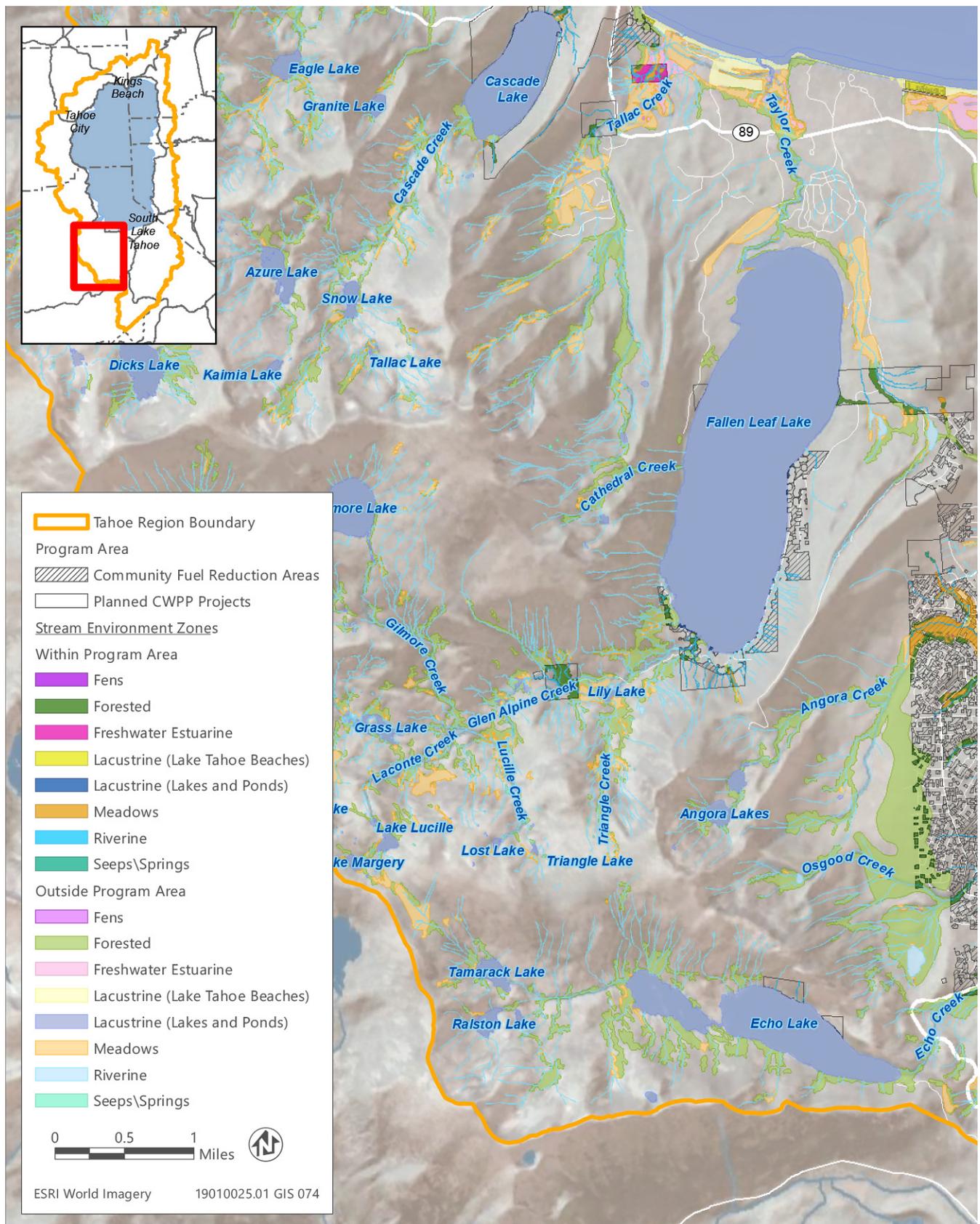
Source: Data received from CTC, Stillwater Sciences, and TRPA in 2019

Figure 3.6-3 Stream Environment Zone: Tahoe City to Homewood



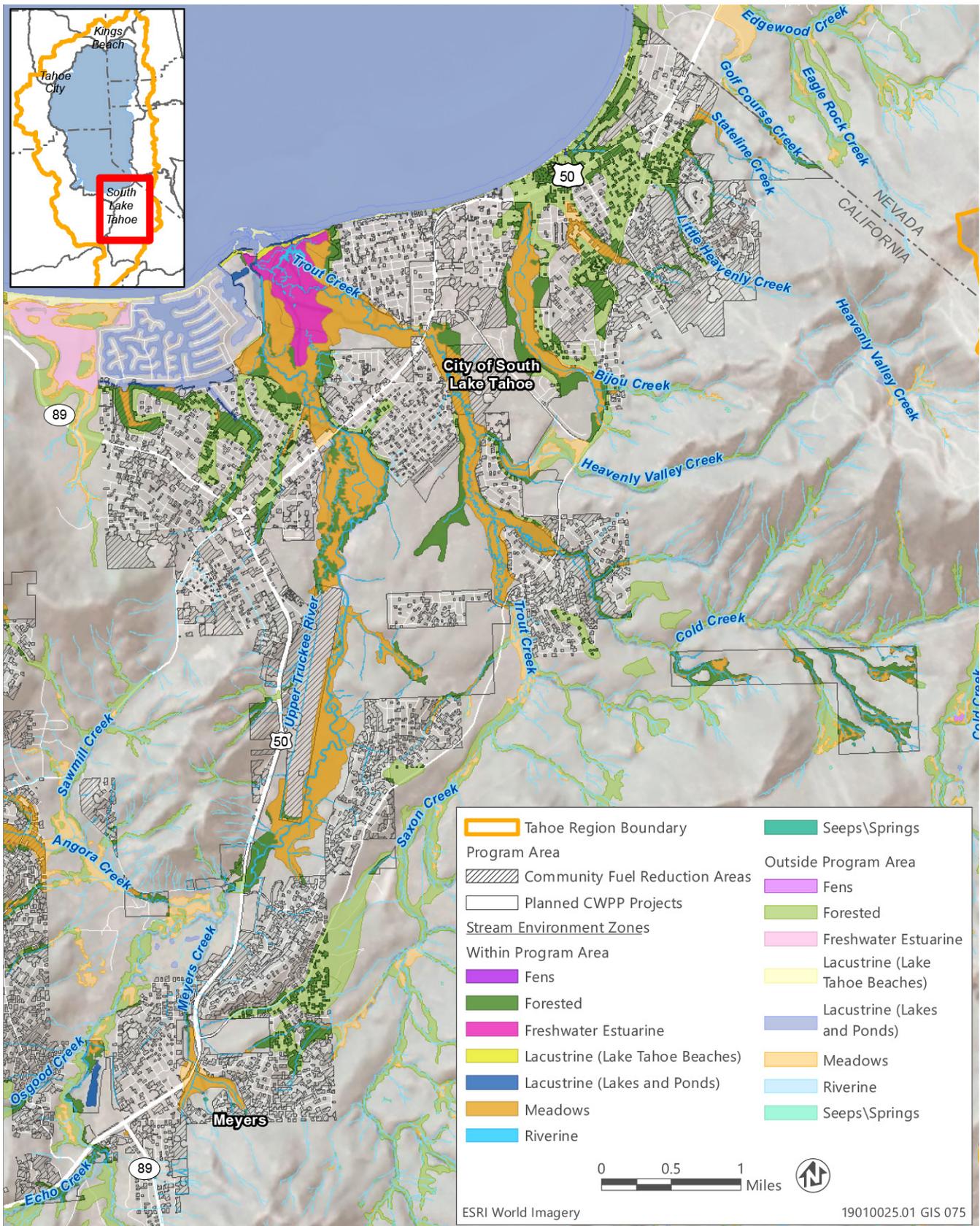
Source: Data received from CTC, Stillwater Sciences, and TRPA in 2019

Figure 3.6-4 Stream Environment Zone: Tahoma to Emerald Bay



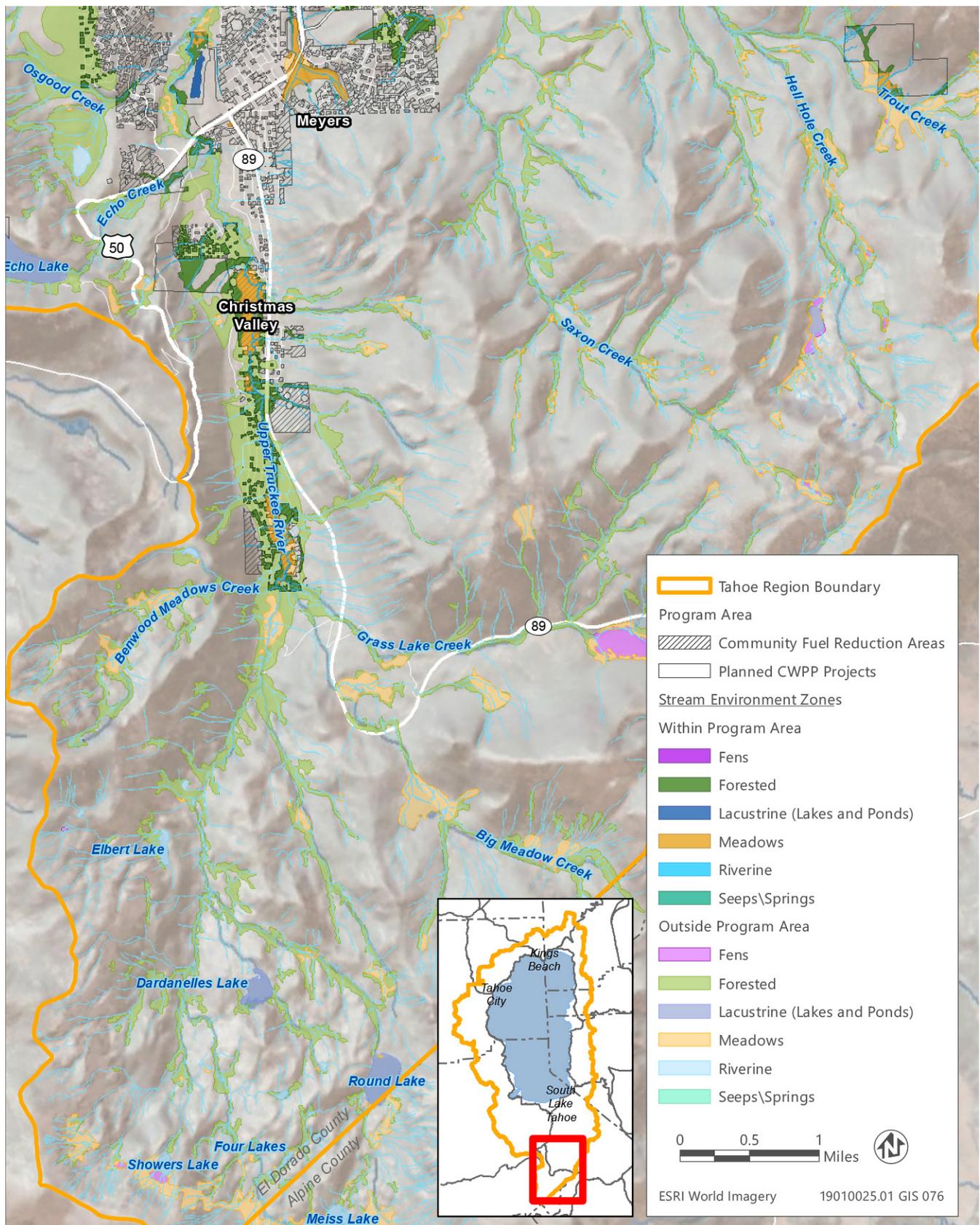
Source: Data received from CTC, Stillwater Sciences, and TRPA in 2019

Figure 3.6-5 Stream Environment Zone: Cascade Lake to North Upper Truckee



Source: Data received from CTC, Stillwater Sciences, and TRPA in 2019

Figure 3.6-6 Stream Environment Zone: South Lake Tahoe



Source: Data received from CTC, Stillwater Sciences, and TRPA in 2019

Figure 3.6-7 Stream Environment Zone: Christmas Valley

INVASIVE PLANTS

Several invasive plant species are present in the western portion of the Tahoe Basin and are assumed to occur in parts of the program area. The TRPA Code specifically prohibits the release of invasive or nonnative species in the Tahoe Basin because they can invade important native habitats and compete for resources. Table 3.6-4 lists invasive plants that have been documented in the vicinity of the program area.

Table 3.6-4 Status of Several Invasive Plant Species Known to Occur in the California Portion of the Tahoe Basin

Common Name and <i>Scientific Name</i>	LTBWCG ¹	CDFA ²	Cal-IPC ³	LTBMU ⁴
Cheatgrass, <i>Bromus tectorum</i>	-	-	High	Low
Bull thistle, <i>Cirsium vulgare</i>	Group 2	-	Moderate	High
Poison hemlock, <i>Conium maculatum</i>	-	-	Moderate	Medium
Scotch broom, <i>Cytisus scoparius</i>	Group 2	C	High	Medium
Klamath weed, <i>Hypericum perforatum</i>	Group 1	C	Moderate	Medium
Dyer's woad, <i>Isatis tinctoria</i>	-	B	Moderate	Medium
Broadleaved pepperweed, <i>Lepidium latifolium</i>	Group 2	B	High	Medium
Oxeye daisy, <i>Leucanthemum vulgare</i>	Group 2	-	Moderate	Medium
Dalmatian toadflax, <i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	Group 2	A	Moderate	High
Butter and eggs, <i>Linaria vulgaris</i>	Group 2	-	Moderate	Medium
Eurasian water milfoil, <i>Myriophyllum spicatum</i>	-	C	High	N/A
Scotch thistle* <i>Onopordum acanthium</i> ssp. <i>acanthium</i>	Group 1	A	High	High
Russian thistle, <i>Salsola tragus</i>	-	C	Limited	-
Woolly mullein, <i>Verbascum thapsus</i>	-	-	Limited	-

Note: N/A = not applicable.

- ¹ Lake Tahoe Basin Weed Coordinating Group (LTBWCG) prioritizes invasive weeds of concern by management group. Group 1: watch for, report, and eradicate immediately. Group 2: manage infestations with the goal of eradication.
- ² The California Department of Food and Agriculture's (CDFA) noxious weed list (<http://www.cdffa.ca.gov/phpps/ipc/>) List A: eradication or containment is required at the state or county level; List B: eradication or containment is at the discretion of the County Agricultural Commissioner; List C: eradication or containment only when found in a nursery or at the discretion of the County Agricultural Commissioner.
- ³ California Invasive Plant Council (Cal-IPC) High: these species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure; Moderate: these species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure; Limited: these species are invasive but their ecological impacts are minor on a statewide level. (Cal-IPC 2006, 2020)
- ⁴ The Lake Tahoe Basin Management Unit (LTBMU) High: species that have a large ecological impact and/or invasive potential and are easily controlled; Medium: species that have a medium ecological impact and/or invasive potential and medium ability to be controlled; Low: species that have a low ecological impact and/or invasive potential and are not easily controlled; species with an N/A were not evaluated.

Source: Compiled by Ascent Environmental 2019

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources addressed in this PTEIR include those that are afforded special protection or consideration through CEQA, the California Fish and Game Code (including but not limited to the CESA), ESA, CWA, Porter-Cologne Water Quality Control Act (Porter-Cologne Act), and local or regional policies.

Special-Status Species

Plants and animals may be special-status species due to declining populations, vulnerability to habitat change, or restricted distributions. Special-status species include those species legally protected under the CESA, the ESA, or other regulations, as well as species considered sufficiently rare by the scientific community to qualify for such listing. In this document, special-status species are defined as the following.

- ▶ Species listed or proposed for listing as threatened or endangered under ESA (50 CFR 17.12 for listed plants, 50 CFR 17.11 for listed animals, and various notices in the Federal Register for proposed species) or candidates for possible future listing as threatened or endangered under ESA (75 CFR 69222);
- ▶ Species listed or candidates for listing by the State of California as threatened or endangered under CESA (14 Cal. Code Regs., Section 670.5);
- ▶ Animals fully protected under the California Fish and Game Code (FGC) (Section 3511 for birds, Section 4700 for mammals, Section 5050 for reptiles and amphibians, and Section 5515 for fish);
- ▶ Plants and animals designated as a sensitive, special interest, or threshold species by TRPA (TRPA Code of Ordinances, Chapters 61, 62, and 63);
- ▶ Plants listed as rare under the California Native Plant Protection Act (FGC Section 1900 et seq.);
- ▶ Plants considered by CDFW to be “rare, threatened or endangered in California” (California Rare Plant Ranks of 1A, presumed extinct in California and either rare or extinct elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California but common elsewhere; and 2B, considered rare or endangered in California but more common elsewhere). While these rankings do not afford the same type of legal protection as ESA or CESA, the uniqueness of these species requires special consideration under Section 15380 of the CEQA Guidelines;
- ▶ Animals identified by CDFW as species of special concern;
- ▶ Species considered locally significant, that is, a species that is not rare from a statewide perspective but is rare or uncommon in a local context such as within a county or region (CEQA Section 15125 (c)) or is so designated in local or regional plans, policies, or ordinances (CEQA Guidelines, Appendix G); or
- ▶ Species that otherwise meets the definition of rare or endangered under CEQA Section 15380.

A preliminary list of special-status plant and animal species with potential to occur in the program area was developed based on a review of the existing data sources described previously.

Plants

The data review preliminarily identified 29 special-status plant species that could occur in or near the program area. Table E-1 in Appendix E summarizes the regulatory status, habitat associations, and potential for occurrence in the program area for each special-status plant species evaluated during this analysis. Of these 29 plant species, six have documented occurrences in the program area (threetip sagebrush, scalloped moonwort, woolly-fruited sedge, broad-nerved hump moss, American manna grass, Tahoe yellow cress), 13 have a moderate or high likelihood to occur (Mingan moonwort, upswept moonwort, common moonwort, western goblin, Davy’s sedge, marsh skullcap, mud sedge, short-leaved hulsea, Santa Lucia dwarf rush, alder buckthorn, Munro’s desert mallow, Tulare rockcress, Galena Creek rockcress) and the remainder have a low (or no) potential and are not expected to occur (Table E-1 in Appendix E). (Scientific names for these species are provided in Table E-1.) These determinations were based on the types, extent, and quality of habitats in the program area determined during the reconnaissance-level field surveys; the proximity of the program area to known occurrences of the species; and the regional distribution and abundance of the species.

Wildlife and Fish

The data review preliminarily identified 28 special-status wildlife and fish species that could occur in or near the program area. Table E-1 (Appendix E) summarizes the regulatory status, habitat associations, and potential for occurrence in the program area for each special-status wildlife and fish species evaluated during this analysis. Of these 28 animal species, 12 are known or assumed to occur in the program area (northern goshawk, California spotted owl, osprey, bald eagle,

peregrine falcon, willow flycatcher, yellow-headed blackbird, olive-sided flycatcher, yellow warbler, Sierra Nevada mountain beaver, Sierra Nevada snowshoe hare, mule deer), six have a moderate or high likelihood to occur (southern long-toed salamander, western red bat, pallid bat, Lahontan cutthroat trout, mountain whitefish, mountain sucker), and the remainder have a low (or no) potential and are not expected to occur (Table E-1 in Appendix E). (Scientific names for these species are provided in Table E-1.) These determinations were based on the types, extent, and quality of habitats in the program area determined during the reconnaissance-level field surveys; the proximity of the program area to known occurrences of the species; and the regional distribution and abundance of the species.

Sensitive Natural Communities and Habitats

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through CEQA, Section 1602 of the California Fish and Game Code, Section 404 of the CWA, the state's Porter-Cologne Act, the TRPA Goals and Policies, and the TRPA Code. Sensitive natural habitat may be of special concern to 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. Sensitive natural communities are those native plant communities defined by CDFW as having limited distribution statewide or within a county or region and that are often vulnerable to environmental effects of projects (CDFW 2018); many of these communities are tracked in the CNDDDB. In addition to habitats officially identified by CDFW as sensitive natural communities or meeting the definition of waters of the United States, examples of other sensitive habitats in California include riparian habitats, oak woodlands, chaparral, and coastal sage scrub.

In the program area, sensitive habitats include montane riparian, wet meadow, riverine (streams and rivers), and lacustrine (open water). The wet meadow, riverine, and lacustrine habitats would likely be considered jurisdictional by U.S. Army Corps of Engineers (USACE) and Lahontan Regional Water Quality Control Board (Lahontan RWQCB) under Section 404 of the federal CWA and the state's Porter-Cologne Act. Montane riparian habitats sometimes meet all three criteria required to qualify as wetlands as defined under the CWA; however, it is also common for one or more wetland criteria to be lacking in montane riparian communities. Regardless of whether riparian communities meet the wetland criteria to qualify as waters of the United States, they would all likely meet the definition of waters of the state regulated by the Lahontan RWQCB. The channel within the ordinary high water mark of rivers and creeks (e.g., Truckee River, Griff Creek, and Blackwood Creek) would also likely qualify as waters of the United States even if the associated riparian habitat did not. In addition, CDFW has jurisdiction over activities affecting the bed and bank of drainages. Additionally, habitats consisting of deciduous trees, wetlands, and meadows (i.e., riparian, wetland, and meadow habitats) are designated by TRPA as habitats of special significance. The TRPA threshold standard for habitats of special significance is non-degradation while providing for opportunities to increase the acreage of these habitats. Most of the areas within wetland/riparian habitats in the program area are also designated as SEZ, which is one of two TRPA-adopted threshold standards for soil conservation, as described previously.

WILDLIFE MOVEMENT CORRIDORS

A wildlife movement corridor is generally a topographical/landscape feature or movement zone that connects two or more natural habitat areas. Wildlife corridors link areas of suitable wildlife habitat that are separated by variation in vegetation, rugged terrain, human disturbance and habitat fragmentation, or other biophysical factors. Movement corridors may provide favorable locations for wildlife to travel between different habitat areas, such as foraging sites, breeding sites, cover areas, and preferred summer and winter range locations. They may also function as dispersal corridors allowing animals to move between various locations within their range. Therefore, wildlife movement and migration corridors are considered an important ecological resource by CDFW and other agencies and are protected by many local governments in California.

Ecological movement corridors have been addressed in several conservation biology and landscape planning applications. As landscapes become increasingly fragmented, organisms that occupy remaining patches of suitable habitat may experience a reduction in habitat quality and area, and become at risk to processes that affect small or isolated populations. These processes may include changes in microclimates, limits to daily or seasonal movements, inbreeding depression, and random demographic or environmental catastrophes. These factors can result in

increased mortality or local extinction of populations. Protecting and managing ecological corridors that link core areas of habitat, and facilitate movement or dispersal among habitat patches, has been widely proposed to reduce the adverse effects of habitat fragmentation. By maintaining or increasing connectivity among habitat patches or distinct regions, corridors may play an important role in maintaining population persistence and genetic diversity, facilitating recolonization of sites where populations have gone extinct, or allowing for traditional seasonal movements within a population's overall range.

In addition to large blocks of open space and traditional long-distance migratory corridors across landscapes, many habitat features provide wildlife dispersal and other movement opportunities at more local or site-specific scales. For example, depending on their landscape position and habitat quality, riparian areas can function as important movement corridors for amphibians, reptiles, birds, mammals, and fish by providing connectivity between other areas of natural habitat and between populations. Additionally, relatively small open space lands (e.g., County and regional parks) can function as part of a regional corridor or "stepping stones" for species whose movements are less sensitive to the presence of human disturbance and major roads or other impediments to movement, such as birds.

Some long-ranging mammal species (e.g., mule deer [*Odocoileus hemionus*], mountain lion [*Felis concolor*], and black bear [*Ursus americana*]) are known or likely to occur in the program area and these species exhibit several different movement and migration strategies. Mule deer, the most common ungulate species in California, is not considered abundant in the program area but occurs there primarily during non-winter months, including spring/fall migrations. The Verdi sub-unit of the Loyalton-Truckee Deer Herd migrates from the eastern Sierra Nevada foothills outside of Reno, Nevada, southwest into eastern Sierra, Nevada, and Placer counties in California during the spring and summer months after breeding. As described in the Loyalton-Truckee Deer Herd Management Plan (CDFG 1982), individuals migrated along the northern and southern sides of Interstate 80 (I-80) southwest from the Truckee Meadows in Nevada. Deer moving along the southern side of I-80 then followed the Truckee River into the Martis Valley before diverging into the Donner Lake and western Lake Tahoe Basin areas. Migratory corridors are believed to cross Martis Valley as deer move along riparian corridors to the western Lake Tahoe Basin. The program area is located in the vicinity of, or overlaps with a portion of, the migration route along the Truckee River into the western Lake Tahoe Basin.

Because the 1982 Loyalton-Truckee Deer Herd Management Plan is over 35 years old, deer migratory and fawning patterns may have shifted since the Plan's completion because of development in the Truckee and Northstar region, the increased use of SR 267, and the expansion of I-80. For example, decreased migration across SR 267 and through the portions of the project west of SR 267, and limited movement across I-80, have likely occurred to some extent. Additionally, over the last 15 years, migratory habitat loss and fragmentation has increased throughout the herds' range because of residential development; also, the mule deer population has declined. The loss of wintering habitat and reduced access to wintering areas may be the primary causes of this population decline. One of the objectives of the CDFW California Deer Conservation and Management Plan is to update and maintain range maps for this species including migration routes in order to better manage the species (CDFW 2015).

Additionally, although rarely observed in the Lake Tahoe Basin, the range of resident mountain lion includes most of the wildland areas of the program area. Mountain lions occupy a variety of habitats but may be most abundant in riparian habitats. Habitat use is typically associated with prey availability. Mule deer make up a large percentage of mountain lion diet. Mountain lion home ranges can be greater than 200 square miles, though home ranges typically range from 5 to 100 square miles (Allen et al. 2015). The program area overlaps with deer summer and migratory ranges and thus also contains mountain lion home ranges. Deer migration areas, and thus mountain lion occurrences, are probably largely associated with waterways and riparian areas within the program area.

While smaller wildlife species typically do not migrate distances as large as ungulates and mountain lions, these species exhibit movement patterns throughout their habitats in search of foraging opportunities, mates, aquatic breeding sites (e.g., reptiles, amphibians) or cover (e.g., nests, dens), as well as in response to stressors (e.g., weather, predators, other disturbance). Forest species such as Pacific marten require large contiguous blocks of forest habitat with a high degree of canopy cover, large structural features (e.g., logs, rock piles, snags), and a dense shrub layer (Zielinski et al. 2001, Sauder and Rachlow 2014). Martens will avoid forest habitats without complex understory structure, which can result in decreased foraging success and increased vulnerability to predation (Moriarty et al. 2016). Other smaller wildlife species (e.g., rodents, amphibians, reptiles) migrate much smaller distances than larger

wildlife species. Amphibians typically migrate no more than 1 mile; some only several feet (Russell et al. 2005) although distances greater than 2 miles have been recorded (Bulger et al. 2003).

WILDLIFE NURSERY SITES

Nursery sites are locations where fish and wildlife concentrate for hatching and/or raising young, such as spawning areas for native fish, fawning areas for deer, and maternal roosts for bats, and nesting rookeries for birds. In this PTEIR, nursery sites are considered for native wildlife that are not defined as special-status species; special-status species are considered separately. The program area could contain a variety of wildlife nursery sites. For example, mule deer use early to mid-successional stages of several vegetation types, including riparian, meadow, and forest for summer range. Important habitat requirements for mule deer fawning include undisturbed meadow and riparian areas that provide hiding cover and forage. The program area includes potential fawning habitat for mule deer in riparian and wet meadow areas; however, the suitability of these areas for deer fawning in much of the WUI is limited because of existing levels of human disturbance and lack of dense vegetation in some areas. Bat maternity roost sites could also occur throughout the program area. The type and suitability of roost sites vary by bat species, but may include specialized roosting habitat, such as caves or tree foliage, or a bat species may use multiple different habitat types for maternity roosts. Other roosting habitat includes buildings, bridges, and other built structures, cliffs including rock crevices and cracks, rip-rap, and tree hollows. Some bat species will also use different types of roost habitat in different geographic regions within their range. Native nursery sites are not mapped on a regional scale and would need to be evaluated at a project-specific level.

3.6.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

The impact analysis below is primarily based on review of the existing data sources described previously. To evaluate the potential impacts of the Tahoe PTEIR on biological resources, the types, extent, and quality of biological resources that could be directly or indirectly affected were considered in relation to the range of proposed treatment activities within the program area and any policies and programs related to the protection of biological resources. This section analyzes the proposed program and its potential effects on biological resources at a program level of detail. Individual projects implemented under the Tahoe PTEIR would be evaluated to determine if they would result in new or greater impacts than those identified in this PTEIR.

This program-level impact analysis generally assumes that some of the vegetation communities, wildlife habitats, aquatic resources, sensitive natural communities, and special-status species known or with potential to occur in the program area could be directly or indirectly affected by implementation of the Tahoe PTEIR, depending on the specific location, type, and timing of the treatment activity. For analysis of fisheries and aquatic habitats, any stream, lake, or SEZ within or immediately downstream of the program area was considered potentially affected.

Among other factors, the determination of impacts includes an evaluation of whether treatments under the proposed program could result in a loss of habitat function. Maintenance of habitat function is one of the performance standards for mitigation. Habitat function is defined here as the arrangement and capability of habitat features to provide refuge, foraging, and reproduction habitat to plants and animals, and thereby contribute to the conservation of biological and genetic diversity and evolutionary processes (de Groot et al. 2002). Some modification of habitat characteristics may occur without causing a significant effect, provided that habitat function is maintained (i.e., the location, essential habitat features, and species supported are not substantially changed). Essential habitat features are those that provide food, water, shelter, living space, breeding areas or substrates, and nursery areas to the species that reside in or migrate through the habitat type.

Section 3.6.2, "Environmental Setting," describes the special-status plant and animal species evaluated in this analysis, and Table E-1 in Appendix E summarizes the potential for each of these species to occur in the program area. Generally, plant and animal species that are not expected to regularly occur or with a low probability to occur

(because of a lack of suitable habitat, existing disturbance levels, or lack of occurrence records) are not addressed further in the impact analysis. Implementation of the Tahoe PTEIR would not considerably affect those species.

Importantly, the impact analysis for biological resources assumes that implementation of later activities would be planned, designed, and confirmed to comply, as required, with all resource protection provisions of the California Forest Practice Rules (CFPRs) (included in Appendix B) and applicable state, federal, TRPA, and local regulations and policies. Therefore, mitigation measures are provided for impacts determined to be significant after compliance with applicable state, federal, TRPA, and local regulations and policies. Significance determinations also account for the influence of relevant SPRs (also included in Appendix B), which are incorporated into treatment design and include:

- ▶ **SPR BIO-1 Review and Survey Project-Specific Biological Resources:** The project proponent will require a qualified RPF or biologist to conduct a data review and reconnaissance-level survey prior to treatment. The data reviewed will include the biological resources setting, species and sensitive natural communities tables, and habitat information in this PTEIR for the ecoregion(s) where the treatment will occur. It will also include review of the best available, current data for the area, including vegetation mapping data, species distribution/range information, CNDDDB, California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California, relevant BIOS queries, and relevant general and regional plans. Reconnaissance-level biological surveys will be general surveys that include visual and auditory inspection for biological resources to help determine the setting present on a treatment site. The qualified surveyor will 1) identify and document sensitive resources, such as riparian or other sensitive habitats, sensitive natural community, wetlands, or wildlife nursery site or habitat (including bird nests); and 2) assess the suitability of habitat for special-status plant and animal species. The surveyor will also record any incidental wildlife observations. Habitat assessments will be completed at a time of year that is appropriate for identifying habitat and no more than one year prior to the submittal of the Project Consistency Checklist for each treatment activity, unless it can be demonstrated that habitat assessments older than one year remain valid. The Project Consistency Checklist includes habitat suitability maps that would guide project proponents in project planning based on the habitat suitability at individual later treatment activity sites. Based on the results of the data review and reconnaissance-level survey, the project proponent, in consultation with a qualified RPF or biologist, will determine which one of the following best characterizes the treatment:

1. **Suitable Habitat Is Present but Adverse Effects Can Be Clearly Avoided.** If, based on the data review and reconnaissance-level survey, the qualified RPF or biologist determines that suitable habitat for sensitive biological resources is present but adverse effects on the suitable habitat can clearly be avoided through one of the following methods, the avoidance mechanism will be implemented prior to initiating treatment and will remain in effect throughout the treatment:
 - a. by physically avoiding the suitable habitat, or
 - b. by conducting treatment outside of the season when a sensitive resource could be present within the suitable habitat or outside the season of sensitivity (e.g., outside of special-status bird nesting season, during dormant season of sensitive annual or geophytic plant species, or outside of maternity and rearing season at wildlife nursery sites).

Physical avoidance will include flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway) to delineate the boundary of the avoidance area around the suitable habitat. For physical avoidance, a buffer may be implemented as determined necessary by the qualified RPF or biologist.

2. **Suitable Habitat is Present and Adverse Effects Cannot Be Clearly Avoided.** Further review and surveys will be conducted to determine presence/absence of sensitive biological resources that may be affected, as described in the SPRs below. Further review may include contacting USFWS, NOAA Fisheries, CDFW, CNPS, or local resource agencies as necessary to determine the potential for special-status species or other sensitive biological resources to be affected by the treatment activity. Focused or protocol-level surveys will be conducted as necessary to determine presence/absence. If protocol surveys are conducted, survey procedures will adhere to methodologies approved by resource agencies and the scientific community, such as those that are available on the CDFW webpage at: <https://www.wildlife.ca.gov/Conservation/Survey->

Protocols. Specific survey requirements are addressed for each resource type in relevant SPRs (e.g., additional survey requirements are presented for special-status plants in SPR BIO-7).

- ▶ **SPR BIO-2 Require Biological Resource Training for Workers:** The project proponent will require crew members and contractors to receive training from a qualified RPF or biologist prior to beginning a treatment activity. The training will describe the appropriate work practices necessary to effectively implement the biological SPRs and mitigation measures and to comply with the applicable environmental laws and regulations. The training will include the identification, relevant life history information, and avoidance of pertinent special-status species; identification and avoidance of sensitive natural communities and habitats with the potential to occur in the treatment area; impact minimization procedures; and reporting requirements. The training will instruct workers when it is appropriate to stop work and allow wildlife encountered during treatment activities to leave the area unharmed and when it is necessary to report encounters to a qualified RPF, biologist, or biological technician. The qualified RPF, biologist, or biological technician will immediately contact CDFW or USFWS, as appropriate, if any wildlife protected by the California Endangered Species Act (CESA) or Federal Endangered Species Act (ESA) is encountered and cannot leave the site on its own (without being handled).
- ▶ **SPR BIO-3 Survey Sensitive Natural Communities and Other Sensitive Habitats:** If SPR BIO-1 determines that sensitive natural communities or sensitive habitats may be present and adverse effects cannot be avoided, the project proponent will:
 - require a qualified RPF or biologist to perform a protocol-level survey following the CDFW “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities” (current version dated March 20, 2018) of the treatment area prior to the start of treatment activities for sensitive natural communities and sensitive habitats. Sensitive natural communities will be identified using the best means possible, including keying them out using the most current edition of *A Manual of California Vegetation*, or referring to relevant reports (e.g., reports found on the VegCAMP website).
 - map and digitally record, using a Global Positioning System (GPS), the limits of any potential sensitive habitat and sensitive natural community identified in the treatment area.
- ▶ **SPR BIO-4 Design Treatment to Avoid Loss or Degradation of Riparian Habitat Function:** The project proponent, in consultation with a qualified RPF or qualified biologist, will design treatments in riparian habitats to retain or improve habitat functions by implementing the following within riparian habitats:
 - Retain at least 75 percent of the overstory and 50 percent of the understory canopy of native riparian vegetation within the limits of riparian habitat identified and mapped during surveys conducted pursuant to SPR BIO-3. Native riparian vegetation will be retained in a well distributed multi-storied stand composed of a diversity of species similar to that found before the start of treatment activities.
 - Treatments will be limited to removal of uncharacteristic fuel loads (e.g., removing dead or dying vegetation), trimming/limbing of woody species as necessary to reduce ladder fuels, and select thinning of vegetation to restore densities that are characteristic of healthy stands of the riparian vegetation types characteristic of the region. This includes hand removal (or mechanized removal where topography allows) of dead or dying riparian trees and shrubs, invasive plant removal, selective thinning, and removal of encroaching upland species.
 - Removal of large, native riparian hardwood trees (e.g., willow, ash, maple, oak, alder, sycamore, cottonwood) will be minimized to the extent feasible and 75 percent of the pretreatment native riparian hardwood tree canopy will be retained. Because tree size varies depending on vegetation type present and site conditions, the tree size retention parameter will be determined on a site-specific basis depending on vegetation type present and setting; however, live, healthy, native trees that are considered large for that type of tree and large relative to other trees in that location will be retained.
 - Removed trees will be felled away from adjacent streams or waterbodies and piled outside of the riparian vegetation zone (unless there is an ecological reason to do otherwise that is approved by applicable regulatory agencies, such as adding large woody material to a stream to enhance fish habitat, e.g., see

Accelerated Wood Recruitment and Timber Operations: Process Guidance from the California Timber Harvest Review Team Agencies and National Marine Fisheries Service).

- Vegetation removal that could reduce stream shading and increase stream temperatures will be avoided.
 - Ground disturbance within riparian habitats will be limited to the minimum necessary to implement effective treatments.
 - The project proponent will notify CDFW pursuant to California Fish and Game Code Section 1602 prior to implementing any treatment activities in riparian habitats. Notification will identify the treatment activities, map the vegetation to be removed, identify the impact avoidance identification methods to be used (e.g., flagging), and appropriate protections for the retention of shaded riverine habitat, including buffers and other applicable measures to prevent erosion into the waterway.
 - In consideration of spatial variability of riparian vegetation types and condition and consistent with California Forest Practice Rules (CFPR) (14 CCR Section 956.9[v]), a different set of vegetation retention standards and protection measures from those specified in the above bullets may be implemented on a site-specific basis if the qualified RPF and the project proponent demonstrate through substantial evidence that alternative design measures provide a more effective means of achieving the treatment goals and would result in effects to the Beneficial Functions of Riparian Zones equal or more favorable than those expected to result from application of the above measures. Deviation from the above design specifications, different protection measures and design standards will only be approved when the treatment plan incorporates an evaluation of beneficial functions of the riparian habitat and with written concurrence from CDFW.
- ▶ **SPR BIO-5 Water Drafting:** Water drafting involves drawing water from sources such as a lake, pond, or stream into a pump and could serve to provide a supply of water for dust abatement or fire suppression in treatment areas that are inaccessible to water trucks or are not in close proximity to fire hydrants. The project proponent and project implementer, as applicable, will comply with the following requirements and best management practices:
- Water drafting operations shall follow CFPR requirements in 14 CCR Section 963.7(l), which are intended to apply to water drafting operations in watersheds with listed anadromous salmonids but for this PTEIR are proposed to apply throughout the program area.
 - Vehicles used for water drafting shall only access drafting sites through existing watercourse crossings and will not enter WLPZs/SEZs where they would otherwise be prohibited.
 - Water drafting shall be subject to all applicable requirements of Fish and Game Code Section 1600, as determined in consultation with CDFW.
 - In addition to the above (if not required for Section 1600 compliance), the following requirements shall be met for all water drafting operations in the program area:
 - a. The project proponent shall consult with CDFW prior to any water drafting operation to convey and receive any information relevant to the drafting operation.
 - b. Water shall not be drafted by more than one truck simultaneously at the same site.
 - c. In Class I watercourses, streambed or bank material shall not be excavated for intakes or any other purposes related to drafting.
 - d. All water drafting vehicles shall be checked each day used, and shall be repaired as necessary to prevent leaks of deleterious materials from entering the watercourse, the Watercourse and Lake Protection Zone (WLPZ), or the stream environment zone (SEZ).
 - e. Pumps used for drafting shall be capable of being adjusted to comply with specified withdrawal rates.
 - f. Operators shall follow all applicable requirements and guidelines to prevent the introduction and spread of aquatic invasive species (AIS). This shall include: (i) inspecting truck tires, hoses, screens, and any equipment entering the water before and after each drafting operation and removing and properly

disposing of any aquatic plants or other aquatic organisms; (ii) decontaminating prior to initiation of drafting any truck or equipment that has come into contact with any waterbody outside the Tahoe Basin; and (iii) applying water only within the same watershed in which it originated. Inspection and decontamination shall follow the latest protocols endorsed by the Lake Tahoe Aquatic Invasive Species Coordination Committee, and may be accomplished at existing boat decontamination stations located throughout the Tahoe Basin.

- g. Intake screens shall be kept in good repair and shall be used wherever water is drafted. Intakes shall be inspected periodically and kept clean and free of accumulated algae, leaves, or other debris that could block portions of the screen surface and increase approach velocities at any point on the screen.
- h. Intakes shall be at least 6 inches above the bottom of the channel and away from submerged vegetation, where practicable. Where not practicable, intakes shall maximize these clearances.
- i. At the end of drafting operations, intakes shall be completely removed from the watercourse and disturbed ground, including exposed soil, shall be treated according to CFPR requirements or Fish and Game Code Section 1600 requirements to minimize erosion.

- ▶ **SPR BIO-6 Survey for Special-Status Plants:** If SPR BIO-1 determines that suitable habitat for special-status plant species is present and cannot be avoided, the project proponent will require a qualified RPF or botanist to conduct protocol-level surveys for special-status plant species with the potential to be affected by a treatment prior to initiation of the treatment. The survey will follow the methods in the current version of CDFW's "Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities."

Surveys to determine the presence or absence of special-status plant species will be conducted in suitable habitat that could be affected by the treatment and timed to coincide with the blooming or other appropriate phenological period of the target species (as determined by a qualified RPF or botanist), or all species in the same genus as the target species will be assumed to be special-status.

If potentially occurring special-status plants are listed under CESA or ESA, protocol-level surveys to determine presence/absence of the listed species will be conducted in all circumstances, unless determined otherwise by CDFW or USFWS.

For other special-status plants not listed under CESA or ESA, as defined in Section 3.6.2 of the Tahoe PTEIR, surveys will not be required under the following circumstances:

- If protocol-level surveys, consisting of at least two survey visits (e.g., early blooming season and later blooming season) during a normal weather year, have been completed in the last 5 years and no special-status plants were found, and no treatment activity has occurred following the protocol-level survey, treatment may proceed without additional plant surveys.
- If the target special-status plant species is an herbaceous annual, stump-sprouting, or geophyte species, the treatment may be carried out during the dormant season for that species or when the species has completed its annual lifecycle without conducting presence/absence surveys provided the treatment will not alter habitat or destroy seeds, stumps, or roots, rhizomes, bulbs and other underground parts in a way that would make it unsuitable for the target species to reestablish following treatment.

- ▶ **SPR BIO-7 Prevent Spread of Invasive Plants and Noxious Weeds:** The project implementer will take the following actions to prevent the spread of invasive plants and noxious weeds:
 - clean clothing, footwear, and equipment used during treatments of soil, seeds, vegetative matter or other debris or seed-bearing material before entering the treatment area or when leaving an area with infestations of invasive plants and noxious weeds;
 - for all heavy equipment and vehicles traveling off road, pressure wash, if feasible, or otherwise appropriately decontaminate equipment at a designated weed-cleaning station prior to entering the treatment area from

an area with infestations of invasive plants and noxious weeds. Anti-fungal wash agents will be specified if the equipment has been exposed to any pathogen that could affect native species;

- inspect all heavy equipment, vehicles, tools, or other treatment-related materials for mud or other signs that weed seeds or propagules could be present prior to use in the treatment area. If the equipment is not clean, the qualified RPF or biological technician will deny entry to the work areas;
 - stage equipment in areas free of invasive plant infestations unless there are no uninfested areas present within a reasonable proximity to the treatment area;
 - identify significant infestations of invasive plant species (i.e., those rated as invasive by Cal-IPC or designated as noxious weeds by California Department of Food and Agriculture) during reconnaissance-level surveys and target them for removal during treatment activities. Treatment methods will be selected based on the invasive species present and may include herbicide application, manual or mechanical treatments, and/or prescribed burning, and will be designed to maximize success in killing or removing the invasive plants and preventing reestablishment based on the life history characteristics of the invasive plant species present. Treatments will be focused on removing invasive plant species that cause ecological harm to native vegetation types, especially those that can alter fire cycles;
 - treat invasive plant biomass onsite to eliminate seeds and propagules and prevent reestablishment or dispose of invasive plant biomass offsite at an appropriate waste collection facility (if not kept on site); transport invasive plant materials in a closed container or bag to prevent the spread of propagules during transport; and
 - implement Fire and Fuel Management BMPs outlined in the “Preventing the Spread of Invasive Plants: Best Management Practices for Land Mangers” (California Invasive Plant Council [Cal-IPC] 2012, or current version).
- ▶ **SPR BIO-8 Survey for Special-Status Wildlife and Nursery Sites:** If SPR BIO-1 determines that suitable habitat for special-status wildlife species or nurseries of any wildlife species is present and cannot be avoided, the project proponent will require a qualified RPF or biologist to conduct focused or protocol-level surveys for special-status wildlife species or nursery sites (e.g., bat maternity roosts, deer fawning areas, heron or egret rookeries) with potential to be directly or indirectly affected by a treatment activity. The survey area will be determined by a qualified RPF or biologist based on the species and habitats and any recommended buffer distances in agency protocols.

The qualified RPF or biologist will determine if following an established protocol is required, and the project proponent may consult with CDFW and/or USFWS for technical information regarding appropriate survey protocols. Unless otherwise specified in a protocol, the survey will be conducted no more than 21 days (3 weeks) prior to the beginning of treatment activities. Focused or protocol surveys for a special-status species with potential to occur in the treatment area may not be required if presence of the species is assumed.

- ▶ **SPR BIO-9 Protect Common Nesting Birds, Including Raptors.** The project proponent will schedule treatment activities to avoid the active nesting season of common native bird species, including raptors, that could be present within or adjacent to the treatment site, if feasible. Common native birds are species not otherwise treated as special status in this PTEIR. The active nesting season will be defined by the qualified RPF or biologist.

If active nesting season avoidance is not feasible, a qualified RPF or biologist will conduct a survey for common nesting birds, including raptors. Existing records (e.g., CNDDDB, eBird database, State Wildlife Action Plan) should be reviewed in advance of the survey to identify the common nesting birds, including raptors, that are known to occur in the vicinity of the treatment site. The survey area will encompass reasonably accessible areas of the treatment site and the immediately surrounding vicinity viewable from the treatment site. The survey area will be determined by a qualified RPF or biologist, based on the potential species in the area, location of suitable nesting habitat, and type of treatment. For vegetation removal or later treatment activities that would occur during the nesting season, the survey will be conducted at a time that balances the effectiveness of detecting nests and the reasonable consideration of potential avoidance strategies. Typically, this timeframe would be up to 3 weeks before treatment. The survey will occur in a single survey period of sufficient duration to reasonably detect nesting birds, including raptors, typically one day for most treatment projects (depending on the size,

configuration, and vegetation density in the treatment site), and conducted during the active time of day for target species, typically close to dawn and/or dusk. The survey may be conducted concurrently with other biological surveys, if they are required by other SPRs. Survey methods will be tailored by the qualified RPF or biologist to site and habitat conditions, typically involving walking throughout the survey area, visually searching for nests and birds exhibiting behavior that is typical of breeding (e.g., delivering food).

If an active nest is observed (i.e., presence of eggs and/or chicks) or determined to likely be present based on nesting bird behavior, the project proponent, in consultation with CDFW and/or TRPA (depending on species), will implement a feasible strategy to avoid disturbance of active nests, which may include, but is not limited to, one or more of the following:

- **Establish Buffer.** The project proponent will establish a temporary, species-appropriate buffer around the nest sufficient to reasonably expect that breeding would not be disrupted. Treatment activities will be implemented outside of the buffer. The buffer location will be determined by a qualified RPF or biologist. Factors to be considered for determining buffer location will include: presence of natural buffers provided by vegetation or topography, nest height above ground, baseline levels of noise and human activity, species sensitivity, and expected treatment activities. Nests of common birds within the buffer need not be monitored during treatment. However, buffers will be maintained until young fledge or the nest becomes inactive, as determined by the qualified RPF, biologist, or biological technician.
- **Modify Treatment.** The project proponent will modify the treatment in the vicinity of an active nest to avoid disturbance of active nests (e.g., by implementing manual treatment methods, rather than mechanical treatment methods). Treatment modifications will be determined by the project proponent in coordination with the qualified RPF or biologist.
- **Defer Treatment.** The project proponent will defer the timing of treatment in the portion(s) of the treatment site that could disturb the active nest. If this avoidance strategy is implemented, treatment activity will not commence until young fledge or the nest becomes inactive, as determined by the qualified RPF, biologist, or biological technician.

Feasible actions will be taken by the project proponent to avoid loss of common native bird nests. The feasibility of implementing the avoidance strategies will be determined by the project proponent based on whether implementation of this SPR will preclude completing the treatment project within the reasonable period of time necessary to meet program objectives, including, but not limited to, protection of vulnerable communities. Considerations may include limitations on the presence of environmental and atmospheric conditions necessary to execute treatment prescriptions (e.g., the limited seasonal windows during which prescribed burning can occur when vegetation moisture, weather, wind, and other physical conditions are suitable). If it is infeasible to avoid loss of common bird nests (not including raptor nests), the project proponent will document the reasons implementation of the avoidance strategies is infeasible in the Project Consistency Checklist. After completion of the Project Consistency Checklist and prior to or during treatment implementation, if there is any change in the feasibility of avoidance strategies from those explained in the checklist, this will be documented in the post-project implementation report.

The following avoidance strategies may also be considered together with or in lieu of other actions for implementation by a project proponent to avoid disturbance to raptor nests:

- **Monitor Active Raptor Nest During Treatment.** A qualified RPF, biologist, or biological technician will monitor an active raptor nest during treatment activities to identify signs of agitation, nest defense, or other behaviors that signal disturbance of the active nest is likely (e.g., standing up from a brooding position, flying off the nest). If breeding raptors are showing signs of nest disturbance, one of the other avoidance strategies (establish buffer, modify treatment or defer treatment) will be implemented or a pause in the treatment activity will occur until the disturbance behavior ceases.
- **Retention of Raptor Nest Trees.** Trees with visible raptor nests, whether occupied or not, will be retained.

- ▶ **SPR HYD-1 Comply with Water Quality Regulations:** The project implementer will comply with all applicable water quality requirements adopted by Lahontan RWQCB and approved by the SWRCB (i.e., Basin Plan). If applicable, this includes compliance with the conditions of general waste discharge requirements (GWDR) and waste discharge requirement waivers for timber or silviculture activities where these waivers are designed to apply to non-commercial fuel reduction and forest health projects. In general, GWDR and Conditional Waiver of Waste Discharge Requirements for Waste Discharges Resulting From Timber Harvest and Vegetation Management Activities in the Lahontan Region (Timber Waiver; Lahontan RWQCB 2019) for fuel reduction and forest health activities require that wastes, including petroleum products, soil, silt, sand, clay, rock, felled trees, slash, sawdust, bark, ash, and pesticides must not be discharged to surface waters or placed where it may be carried into surface waters; and that Lahontan RWQCB staff must be allowed reasonable access to the property in order to determine compliance with the waiver conditions.
- ▶ **SPR HYD-3 Identify and Protect Watercourse and Lake Protection Zones:** The project proponent will establish WLPZs as defined in 14 CCR Section 916.5 of the CFPR and Waterbody Buffer Zones as defined in Attachment B of the Timber Waiver (Lahontan RWQCB 2019). WLPZs and Waterbody Buffer Zones are classified based on the uses of the stream and the presence of aquatic life. Wider WLPZs are required for steep slopes. Waterbody Buffer Zone widths for Class I and II watercourses are equivalent to WLPZs. Whereas WLPZ widths or other watercourse protections for Class III and IV watercourses are determined on a site-specific basis (see 14 CCR Section 956.4), Waterbody Buffer Zone widths for Class III and IV watercourses are fixed and correspond with the steepness of adjacent slopes, as defined in Attachment B of the Timber Waiver (Lahontan RWQCB 2019). The following WLPZ protections will be applied for all treatments:
 - Treatment activities within Waterbody Buffer Zones and WLPZs will meet the overstory and understory vegetation retention guidelines and ground disturbance limitations described in the Timber Waiver (Lahontan RWQCB 2019) and in 14 CCR Section 956.4 Subsection (b) and Section 956.5, including retention of at least 75 percent surface cover and undisturbed area.
 - Equipment, including tractors and vehicles, must not be driven in wet areas, Waterbody Buffer Zones, or WLPZs, except over existing roads or watercourse crossings where vehicle tires or tracks remain dry.
 - Equipment used in vegetation removal operations will not be serviced in Waterbody Buffer Zones or WLPZs, within wet meadows or other wet areas, or in locations that would allow grease, oil, or fuel to pass into lakes, watercourses, or wet areas.
 - Watercourses will be kept free of slash, debris, and other material that harm the beneficial uses of water. Accidental deposits will be removed immediately.
 - Burn piles will be located outside of WLPZs or other applicable watercourse protection zones unless all applicable Timber Waiver and/or Basin Plan exemption requirements are met.
 - No fire ignition will occur within WLPZs or other applicable watercourse protection zones unless all applicable Timber Waiver and/or Basin Plan exemption requirements are met; however, low intensity backing fires may be allowed to enter or spread into watercourse protection zones.
 - Within the WLPZs, mulch treatments to stabilize soils, minimize soil erosion, and prevent significant sediment discharge, as described in 14 CCR Section 956.9(n)(1), will be as follows:
 - Soil stabilization is required for areas where timber operations have exposed bare soil exceeding 100 contiguous square feet.
 - Where straw or slash mulch is used, the minimum straw coverage shall be 90 percent, and any treated area that has been reused or has less than 90 percent surface cover shall be treated again by the end of timber operations.
 - Where slash mulch is packed into the ground surface through the use of a tractor or equivalent piece of heavy equipment the minimum slash coverage shall be 75 percent.

- Equipment limitation zones (ELZs) will be designated adjacent to Class III and Class IV watercourses with minimum widths of 25 feet where side-slope is less than 30 percent and 50 feet where side-slope is 30 percent or greater. An RPF will describe the limitations of heavy equipment within the ELZ and, where appropriate, will include additional measures to protect the beneficial uses of water.
- ▶ **SPR HYD-4 Identify and Protect Stream Environment Zones:** Prior to conducting treatment activities, an RPF or qualified biologist or botanist will flag SEZ areas within the treatment site. Project implementers will comply with TRPA requirements for tree cutting within SEZ areas. These requirements are described in detail under TRPA Code of Ordinances Section 61.1.6.C and Attachment N of the Timber Waiver (Lahontan RWQCB 2019), include:
 - Vehicle use is restricted in SEZs with exceptions for use of vehicles in over-snow tree removal operations and use of “innovative technology” vehicles or “innovative techniques,” provided that no significant soil disturbance or significant vegetation damage will result from the use of equipment;
 - Work within SEZs shall be limited to times of the year when soil conditions are dry and stable, when conditions are adequate for over-snow tree removal operations, or when conditions are consistent with TRPA and Lahontan RWQCB standards for tree removal operations on frozen ground;
 - Felled trees and harvest debris are kept out of all watercourses classified as Class I through IV including perennial streams, intermittent streams, man-made waterbodies, and ephemeral (unclassified) streams;
 - Crossings of perennial streams or other wet areas, shall be limited to improved crossings meeting Best Management Practices or to temporary bridge spans that can be removed upon project completion or at the end of the work season, whichever is sooner; and
 - New waterholes will not be constructed within the 100-year floodplain or SEZ;
 - Permanent disturbance or fill within SEZs will be avoided;
 - Activities conducted within 100-year floodplains or in SEZs that would require a Timber Waiver exemption granted by the Lahontan RWQCB include: enlargement of existing permanent watercourse crossings and/or roads, construction of temporary roads, construction of temporary watercourse crossings and associated approaches in place longer than one season, construction of skid trails, slash piling and burning not conducted in accordance with Timber Waiver, and conventional equipment operated off-road in SEZs or floodplains; and
 - Discharge or threatened discharge, attributable to human activities, of solid or liquid waste materials including soil, silt, clay, sand, and other organic or earthen materials to lands within the highwater rim of Lake Tahoe or 100-year floodplains of any tributary (including the Truckee River and Little Truckee River and tributaries) to Lake Tahoe and to SEZs in the Lake Tahoe Basin is prohibited.
- ▶ **SPR AQ-3 Create Burn Plan:** The project proponent or project implementer will create a burn plan using the CAL FIRE burn plan template for all prescribed burns. The burn plan will include a fire behavior model output of First Order Fire Effects Model and BEHAVE or other fire behavior modeling simulation and that is performed by a qualified fire behavior technical specialist that predicts fire behavior, calculates consumption of fuels, tree mortality, predicted emissions, greenhouse gas emissions, and soil heating. The project implementer will minimize soil burn severity from understory burning to reduce the potential for runoff and soil erosion. The burn plan will be created with input from a qualified technician or certified State burn boss. This SPR applies to pile and understory burning.
- ▶ **SPR AQ-4 Minimize Dust:** To minimize dust that has the potential to transport fine sediment to waterbodies during treatment activities, the project implementer will implement the following measures:
 - Limit the speed of vehicles and equipment traveling on unpaved areas to 15 miles per hour to reduce fugitive dust emissions, in accordance with the California Air Resources Board (CARB) Fugitive Dust protocol.

- If road use creates excessive dust, the project implementer will wet appurtenant, unpaved, dirt roads using water trucks or treat roads with a non-toxic chemical dust suppressant (e.g., emulsion polymers, organic material) during dry, dusty conditions. Any dust suppressant product used will be environmentally benign (i.e., non-toxic to plants and will not negatively impact water quality) and its use will not be prohibited by CARB, U.S. Environmental Protection Agency (EPA), or the State Water Resources Control Board (SWRCB). The project implementer will not over-water exposed areas such that the water results in runoff. The type of dust suppression method will be selected by the project implementer based on soil, traffic, site-specific conditions, and air quality regulations.
 - Remove visible dust, silt, or mud tracked-out on to public paved roadways where sufficient water supplies and access to water is available. The project implementer will remove dust, silt, and mud from vehicles at the conclusion of each workday, or at a minimum of every 24 hours for continuous treatment activities, in accordance with Vehicle Code Section 23113.
 - Suspend ground-disturbing treatment activities, including land clearing and bulldozer lines, when there is visible dust transport (particulate pollution) outside the treatment boundary, if the particulate emissions may "cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property," per Health and Safety Code Section 41700.
- ▶ **SPR GEO-1 Suspend Disturbance during Heavy Precipitation:** The project implementer will suspend mechanical treatments if the National Weather Service forecast is a "chance" (30 percent or more) of rain within the next 24 hours. Activities that cause mechanical soil disturbance may resume when precipitation stops and soils are no longer saturated (i.e., when soil and/or surface material pore spaces are filled with water to such an extent that runoff is likely to occur). Indicators of saturated soil conditions may include, but are not limited to: (1) areas of ponded water, (2) pumping of fines from the soil or road surfacing, (3) loss of bearing strength resulting in the deflection of soil or road surfaces under a load, such as the creation of wheel ruts, (4) spinning or churning of wheels or tracks that produces a wet slurry, or (5) inadequate traction without blading wet soil or surfacing materials. This SPR applies only to mechanical treatment methods.
- ▶ **SPR GEO-3 Stabilize Disturbed Soil Areas:** The project implementer will stabilize soil disturbed during mechanical treatments with mulch or equivalent immediately after treatment activities, to the maximum extent practicable, to minimize the potential for substantial sediment discharge. If mechanical treatment activities could result in substantial sediment discharge from soil disturbed by machinery or animal hooves, organic material from mastication or mulch will be incorporated onto at least 75 percent of the disturbed soil surface where the soil erosion hazard is moderate or high, and 50 percent of the disturbed soil surface where soil erosion hazard is low to help prevent erosion. Where slash mulch is used, it will be packed into the ground surface with heavy equipment so that it is sufficiently in contact with the soil surface. This SPR applies only to mechanical treatment activities to disrupt overland flow but does not compact the soil.
- ▶ **SPR GEO-4 Erosion Monitoring:** The project proponent will inspect treatment areas for the proper implementation of erosion control SPRs and mitigations prior to the rainy season. Additionally, the project proponent will inspect for evidence of erosion a sufficient number of times during the extended wet weather period, particularly after large winter storm events (i.e., ≥ 1.5 inches in 24 hours) and at least once annually, to evaluate the function of drainage facilities and structures. Any area of erosion that will result in substantial sediment discharge will be remediated. This SPR applies only to mechanical and understory burning treatment methods.
- ▶ **SPR GEO-5 Drain Stormwater via Water Breaks:** The project proponent will drain compacted and/or bare linear treatment areas capable of generating storm runoff (i.e., roads and skid trails) via water breaks using the spacing and erosion control guidelines contained in Section 954.6(c) of the CFPR. Where waterbreaks cannot effectively disperse surface runoff, including where waterbreaks cause surface runoff to be concentrated on downslopes, other erosion controls will be installed as needed to comply with 14 CCR Sections 954 et seq.].

- ▶ **SPR GEO-7 Minimize Erosion on Steep Slopes:** To minimize erosion, the project proponent will limit mechanical treatments on steep slopes. If TRPA regulations are not changed, mechanical treatments as described will not occur in slopes exceeding 30 percent. If TRPA regulations are changed, mechanical treatments will not occur in slopes exceeding the new threshold, or the CFPR for the Southern District, whichever is lower.

THRESHOLDS OF SIGNIFICANCE

Significance criteria are based on Appendix G of the State CEQA Guidelines. Applicable TRPA threshold standards and biological resources criteria from the TRPA Initial Environmental Checklist were also considered in developing thresholds of significance.

An impact on biological resources is considered significant if implementation of later activities under the Tahoe PTEIR would:

- ▶ have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS;
- ▶ have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS;
- ▶ have a substantial adverse effect on state or federally protected wetlands through direct removal, filling, hydrological interruption, or other means;
- ▶ interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- ▶ cause the introduction or spread of new or invasive species of animals; or
- ▶ substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

IMPACTS AND MITIGATION MEASURES

Impact 3.6-1: Potential to Substantially Affect Special-Status Plant Species Either Directly or Through Habitat Modifications

Later treatment activities could result in direct removal or destruction, or indirect death or reduced vigor of special-status plants through habitat modifications. Implementation of SPRs BIO-1, BIO-2, BIO-6, and BIO-7 requires special-status plants to be identified prior to treatment activities, Worker Environmental Awareness Program (WEAP) training for workers, and actions to prevent the spread of invasive plants that could threaten special-status plant populations. While SPRs would minimize impacts, treatment activities could inadvertently damage or destroy special-status plants and adversely modify their habitat resulting in reduced growth and reproduction or death and loss of special-status plant occurrences. This would be a **potentially significant** impact.

The proposed treatment activities could result in death, altered growth, or reduced seed set through physically breaking, crushing, burning, scorching, trampling, or uprooting special-status plants. A total of 18 special-status plants known or with moderate to high potential to occur in the program area are identified in Section 3.6.2, "Environmental Setting," and listed in Table E-1 in Appendix E. Any of the treatment activities have the potential to kill or damage special-status plants, if present within a treatment area.

Treatment activities could also alter growth and reproduction of special-status plants through habitat modifications. An indirect impact would occur if ground disturbance during treatment activities altered habitat or site conditions in a manner that later resulted in the death or lack of regeneration of special-status plants. Treatment activities could disrupt ecosystem, community, or population structure or processes in ways that reduce growth, survival, and

reproduction of special-status plants. Habitat alteration could make the habitat conditions unsuitable to support special-status plants in the long term. Indirect beneficial effects could result from improved habitat conditions by restoring the normal fire return interval, removing invasive plant infestations and unnatural buildup of litter and debris, and thinning live trees and shrubs and removing dead or dying trees and shrubs. This would open the canopy where tree or shrub densities are uncharacteristic of healthy or desired examples of the vegetation type and result in both immediate and long-term benefits to special-status plants.

Aspen, meadow, riparian, and wet-area restoration is a special prescription intended to restore, retain, or enhance such areas for their ecological value. Degraded conditions of the target aspen, meadow, riparian, and/or wet area would be identified, which often includes encroachment and shading by conifers and other vegetation. Treatment goals and measures of success would be based on the site-specific conditions. Treatments would be designed specifically to restore or enhance habitat elements that are currently impaired or degraded, such as through the removal of encroaching conifers. Because the locations, site-specific objectives, and treatment prescription specifications for specific treatment activities have not been identified, the magnitude of potential benefits to special-status plants associated with mesic habitats is unknown. However, this analysis assumes that these restoration treatments would result in improved ecosystem functions and habitat quality for some special-status plants to varying degrees within the program area.

SPRs BIO-1, BIO-2, and BIO-6 require special-status plants to be identified prior to treatment activities and WEAP training for workers. SPR BIO-7 requires implementation of actions to prevent the spread of invasive plants and noxious weeds that could compete with special-status plants for water, light, and nutrients, so indirect impacts on special-status plants from invasive plants as a result of the program would be minimized. Additionally, SPRs AQ-3, AQ-4, GEO-1, GEO-3, GEO-4, GEO-5, and GEO-7 require implementation of measures to minimize soil erosion and fugitive dust thereby reducing potential indirect impacts on special-status plants from soil destabilization and dusting.

As explained above, relevant SPRs would be integrated into the design of later treatment activities under the Tahoe PTEIR to avoid and minimize impacts. While SPRs would minimize impacts, treatment activities could still adversely affect special-status plant species. The following sections describe impact mechanisms that are unique to each treatment activity. Most treatment activities would be implemented in combination with other treatment activities to achieve the objectives of a treatment type. For example, mechanical and manual treatments could be used together to remove vegetation, which could then be piled and burned. Understory burning also involves establishing a containment line around the burn perimeter, typically using mechanical and manual treatment activities prior to burning.

Prescribed Burning

Prescribed burns could consume special-status plants completely or could scorch, singe, or wilt parts of plants, adversely affecting their growth and reproduction but not immediately killing or consuming them. In addition, prescribed burning could destroy or reduce the viability of seedbanks of special-status plant species if they are not adapted to fire or if the fire burns too hot for the seedbank to tolerate. Residual chemicals from accelerants used to ignite prescribed burns have potential to reduce plant regeneration, survivorship, growth, and vigor; however, accelerants would be applied sparingly, in limited and carefully targeted locations along a burn unit perimeter or in planned strips through a burn unit, generally dispersed over the application area so that they would not concentrate in the soil and the residual amount of accelerant post-burn at a given location would be minimal. Accelerants are degraded during combustion and accelerant residuals are degraded through chemical and biological processes (e.g., microbial activity, adherence to minerals in the soil), which further reduces their availability for plant uptake during and after vegetative growth (USFS 2002).

Mechanical Treatment

In comparison to other treatment activities, mechanical treatments have the highest potential to harm special-status plants. Mastication can disturb soil several inches below the surface affecting roots, rhizomes, bulbs and other underground parts of special-status plants, as well as the seedbed, and affecting soil stability. In addition, the removal of vegetation using mechanical treatments is less precise (in comparison to manual treatments); therefore, this treatment activity is used at sites where precision removal is not necessary. Mechanical treatments in areas occupied by special-status plants would likely directly kill or damage these plants. This treatment activity would also have the

highest potential to adversely modify habitat in a way that reduces survivorship, growth, and reestablishment of special-status plant populations because of the large-scale vegetation removal and soil disturbance.

Manual Treatment

Manual treatments typically result in less ground disturbance than mechanical treatments and therefore have a lower risk of damaging or removing special-status plants that may be present in treatment areas. Special-status plants may be trampled by workers, damaged if beneath debris piles, or inadvertently removed if not identified for avoidance prior to treatment.

Conclusion

Adverse effects on special-status plant species as a result of program implementation could occur from direct removal or from habitat modification. For special-status plants that are already listed, or candidates for listing under ESA or CESA, loss of a single population or occurrence could reduce their population below self-sustaining numbers, or substantially reduce their numbers or restrict their range. One plant species that is listed as endangered under CESA – Tahoe yellow cress (*Rorippa subumbellata*) – occurs in the program area; however, this species is endemic only to certain beaches along Lake Tahoe and would not be affected by later treatment activities under the PTEIR.

There are 19 special-status plant taxa that are not listed, or candidates for listing under ESA or CESA, that have potential to occur in the program area. The threshold of significance may be higher for these taxa because they are generally not as rare as those protected under CESA and ESA. However, some of these plant taxa have narrow ranges or limited distribution, and loss of occurrences could substantially reduce regional population numbers or further reduce their range and contribute to a trend toward listing as threatened or endangered. Other special-status species have more widespread distributions but are not abundant anywhere they occur. For these species, loss of individual occurrences or populations could substantially reduce local or regional population numbers, thereby resulting in a reduction of species range and potentially contributing to a trend toward listing as threatened or endangered. Furthermore, because of the geographic scale of the Tahoe PTEIR, it has potential to remove or reduce the size of multiple occurrences of special-status plant taxa.

SPR BIO-1 requires data review and reconnaissance surveys to identify potential habitat for and previously documented occurrences of special-status plants. SPR BIO-6 requires surveys for special-status plants be conducted if they have potential to occur in a treatment area. SPR BIO-2 requires biological resource training for workers to make them aware of the presence of special-status plants and the mitigation measures, work practices, and laws and regulations that protect these plants. SPR BIO-7 requires BMPs to be implemented to prevent the spread of invasive plants and noxious weeds that could have indirect adverse effects on special-status plants through competition for resources and habitat degradation. SPRs BIO-1 and BIO-6 would avoid and minimize impacts to special-status plants by identifying them before treatment activities are implemented so they can be avoided, and appropriate mitigation measures can be implemented to protect them. Implementation of these SPRs would avoid and minimize direct and indirect impacts on special-status plants from treatment and most later treatment activities implemented under the Tahoe PTEIR could implement SPRs to avoid substantial adverse effects on special-status plants. However, even with implementation of SPRs, some proposed treatments at specific sites where special-status plants may occur could result in direct removal of special-status plants or habitat modifications that leads to reduced growth and reproduction or death and loss of special-status plant occurrences as a result of treatment activities. This would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.6-1a: Avoid Loss of Special-Status Plants

If special-status plant species are determined to be present through application of SPR BIO-1 and SPR BIO-6, the project proponent will implement the following measures to avoid loss of individuals and maintain habitat function of occupied habitat:

- ▶ Physically avoid the area occupied by the special-status plants by establishing a no-disturbance buffer around the area occupied by species and marking the buffer boundary with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway). The no-disturbance buffers will generally be a minimum

of 50 feet from special-status plants, but the size and shape of the buffer zone may be adjusted if a qualified RPF or botanist determines that a smaller buffer will be sufficient to avoid loss of or damaging to special-status plants or that a larger buffer is necessary to sufficiently protect plants from the treatment activity. The appropriate size and shape of the buffer zone will be determined by a qualified RPF or botanist and will depend on plant phenology at the time of treatment (e.g., whether the plants are in a dormant, vegetative, or flowering state), the individual species' vulnerability to the treatment method being used, and environmental conditions and terrain. Consideration of factors such as site hydrology, changes in light, edge effects, and potential introduction of invasive plants and noxious weeds may inform an appropriate buffer size and shape.

- ▶ Treatments may be conducted within this buffer if the potentially affected special-status plant species is a geophytic, stump-sprouting, or annual species, and the treatment can be conducted outside of the growing season (e.g., after it has completed its annual life cycle) or during the dormant season using only treatment activities that would not damage the stump, root system or other underground parts of special-status plants or destroy the seedbank.
- ▶ Treatments will be designed to maintain the function of special-status plant habitat. For example, for treatments proposed in locations occupied by special-status plants, if the removal of shade cover would degrade the special-status plant habitat despite the requirement to physically or seasonally avoid the special-status plant itself, habitat function would be diminished and the treatment would need to be modified or precluded from implementation.
- ▶ No fire ignition (and associated use of accelerants) will occur within the special-status plant buffer.

A qualified RPF or botanist with knowledge of the special-status plant species habitat and life history will review the treatment design and applicable impact minimization measures (potentially including others not listed above) to determine if the anticipated residual effects of the treatment would be significant under CEQA because implementation of the treatment would not maintain habitat function of the special-status plant habitat (i.e., the habitat would be rendered unsuitable) or because the loss of special-status plants would substantially reduce the number or restrict the range of a special-status plant species. If the project proponent determines the impact on special-status plants would be less than significant, no further mitigation will be required. If the project proponent determines that the loss of special-status plants or degradation of occupied habitat would be significant under CEQA after implementing feasible treatment design alternatives and impact minimization measures, then Mitigation Measure 3.6-1b will be implemented.

The only exception to this mitigation approach is in cases where it is determined by a qualified RPF or botanist that the special-status plants would benefit from treatment in the occupied habitat area even though some of the non-listed special-status plants may be killed during treatment activities. For a treatment to be considered beneficial to non-listed special-status plants, the qualified RPF or botanist will demonstrate with substantial evidence that habitat function is reasonably expected to improve with implementation of the treatment (e.g., by citing scientific studies demonstrating that the species (or similar species) has benefitted from increased sunlight due to canopy opening, eradication of invasive species, or otherwise reduced competition for resources), and the substantial evidence will be included in the Project Consistency Checklist. If it is determined that treatment activities would be beneficial to special-status plants, no compensatory mitigation will be required.

Mitigation Measure 3.6-1b: Compensate for Unavoidable Loss of Special-Status Plants

If significant impacts on special-status plants cannot feasibly be avoided as specified under the circumstances described under Mitigation Measure 3.6-1a, the project proponent will prepare a Compensatory Mitigation Plan that identifies the residual significant impacts that require compensatory mitigation and describes the compensatory mitigation strategy being implemented and how unavoidable losses of special-status plants will be compensated. The project proponent will consult with CDFW and/or any other applicable responsible agency prior to finalizing the Compensatory Mitigation Plan to satisfy that responsible agency's requirements (e.g., permits, approvals) within the plan. If the special-status plant taxa are listed under ESA or CESA, the plan will be submitted to CDFW and/or USFWS (as appropriate) for review and comment.

The first priority for compensatory mitigation will be preserving and enhancing existing populations outside of the treatment area in perpetuity, or if that is not an option because existing populations that can be preserved in perpetuity are not available, one of the following mitigation options will be implemented by the project proponent instead:

- ▶ creating populations on mitigation sites outside of the treatment area through seed collection and dispersal (annual species) or transplantation (perennial species);
- ▶ purchasing mitigation credits from a CDFW- or USFWS-approved conservation or mitigation bank in sufficient quantities to offset the loss of occupied habitat; and
- ▶ if the affected special-status plants are not listed under ESA or CESA, compensatory mitigation may include restoring or enhancing degraded habitats so that they are made suitable to support special-status plant species in the future.

If relocation efforts are part of the Compensatory Mitigation Plan, the plan will include details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, success criteria, and remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements. The following performance standards will be applied for relocation:

- ▶ the extent of occupied area will be substantially similar to the affected occupied habitat and will be suitable for self-producing populations. Re-located/re-established populations will be considered suitable for self-producing when:
 - habitat conditions allow for plants to reestablish annually for a minimum of 5 years with no human intervention, such as supplemental seeding; and
 - reestablished habitats contain an occupied area comparable to existing occupied habitat areas in similar habitat types in the region.

If preservation of existing populations or creation of new populations is part of the mitigation plan, the Compensatory Mitigation Plan will include a summary of the proposed compensation lands and actions (e.g., the number and type of credits, location of mitigation bank or easement, restoration or enhancement actions), parties responsible for the long-term management of the land, and the legal and funding mechanisms (e.g., holder of conservation easement or fee title). The project proponent will submit evidence that the necessary mitigation has been implemented or that the project proponent has entered into a legal agreement to implement it and that compensatory plant populations will be preserved in perpetuity.

If mitigation includes dedication of conservation easements, purchase of mitigation credits, or other offsite conservation measures, the details of these measures will be included in the mitigation plan, including information on responsible parties for long-term management, conservation easement holders, long-term management requirements, funding assurances, and success criteria such as those listed above and other details, as appropriate to target the preservation of long term viable populations.

If mitigation includes restoring or enhancing habitat within the treatment area or outside of the treatment area, the Compensatory Mitigation Plan will include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored habitat.

If the loss of occupied habitat cannot be offset (e.g., if preservation of existing populations or creation of new populations through relocation efforts are not available for a certain species), and as a result treatment activities would substantially reduce the number or restrict the range of listed plant species, then the treatment will not qualify as within the scope of this PTEIR.

Compensatory mitigation may be satisfied through compliance with permit conditions, or other authorizations obtained by the project proponent (e.g., incidental take permit for state-listed plants), if these requirements are equally or more effective than the mitigation identified above.

Significance after Mitigation

Implementing Mitigation Measures 3.6-1a and 3.6-1b would reduce potentially significant impacts on special-status plants because it would require avoidance of special-status plant occurrences, which would be identified and delineated under SPRs BIO-1 and BIO-7, with physical buffers or seasonal restrictions, and would require

compensation for unavoidable losses of special-status plants. Mitigation Measures 3.6-1a and 3.6-1b would reduce significant impacts because placing a no-disturbance buffer around the area occupied by special-status plants would keep workers from implementing treatment activities that could damage or destroy special-status plants to be retained within the area where the special-status plants are living so these populations would be retained and their population numbers would not be reduced, they would not be eliminated from an area, and their range would not be reduced. In instances where treatments would be allowed in areas occupied by special-status plants, under the specific conditions described under Mitigation Measures 3.6-1a and 3.6-1b, additional impact minimization and avoidance measures or design alternatives to reduce impacts to less than significant would be identified in consultation with the resource agencies, as appropriate. The project proponent would then determine if the impact on special-status plants has been reduced below the level of significance and if not, Mitigation Measure 3.6-1b would compensate for unavoidable losses by creating, enhancing, or preserving populations to offset plants killed by treatment activities such that no special-status plant population would be reduced below self-sustaining levels and treatment activities would not contribute to a trend toward a species not already listed becoming listed as threatened or endangered, or substantially reduce the number or restrict the range of a species that is already listed as endangered, rare, or threatened. With implementation of mitigation, this impact would be **less than significant**.

There is a potential long-term benefit to special-status plants from implementation of the Tahoe PTEIR because it would reduce the risk of catastrophic wildfires that can eliminate special-status plant populations. Given the unpredictability of wildfire, in terms of location and severity, evaluating the specific benefits to biological resources is not feasible and is not considered in determining the significance of this impact under CEQA. There could also be long-term benefits to fire-adapted special-status plants through the introduction of low-intensity prescribed fire. Additionally, the proposed aspen, meadow, riparian, and wet-area restoration prescription involving the removal of conifers in these areas could result in improved ecosystem functions and habitat quality for some special-status plants associated with these mesic habitats to varying degrees within the program area.

Impact 3.6-2: Substantially Affect Special-Status Wildlife Species Either Directly or Through Habitat Modifications

Later treatment activities implemented under the proposed Tahoe PTEIR, including prescribed burning, mechanical treatment, and manual treatment could result in direct or indirect adverse effects to special-status wildlife species. SPRs require pre-treatment surveys to identify special-status wildlife and habitats and avoidance and protection of certain sensitive habitats. While implementation of SPRs would minimize impacts, later treatment activities would still remove vegetation and disturb the ground surface, which could result in the disturbance to or loss of individuals, reduced breeding productivity of affected species, or loss of habitat function. The loss of special-status wildlife species and habitat function would be a **potentially significant** impact.

Twelve special-status wildlife species are known or assumed to occur in the program area: northern goshawk, California spotted owl, osprey, bald eagle, peregrine falcon, willow flycatcher, yellow-headed blackbird, olive-sided flycatcher, yellow warbler, Sierra Nevada mountain beaver, Sierra Nevada snowshoe hare, and mule deer. Additionally, three special-status wildlife species were determined to have a moderate or high likelihood to occur: southern long-toed salamander, western red bat, and pallid bat (Table E-1 in Appendix E). Potential impacts are discussed below for these species, except mule deer. Impacts related to mule deer are discussed in Impact 3.6-6, which addresses effects on wildlife movement corridors and nursery sites. Level of significance and a discussion of any impacts that would be considered significant are provided at the end of each species discussion and under "Impact Summary," below.

One federally listed species that is not expected to occur in the program area, Sierra Nevada yellow-legged frog, is addressed in this analysis. The program area does not contain optimal habitat for this species, and, although historic records exist, there are no known extant occurrences documented in the program area. However, due to some remaining uncertainty regarding the likelihood of Sierra Nevada yellow-legged frog to use the program area in the future for breeding or movement, this species is discussed here due to the presence of potential habitat in the program area and regional connectivity to more suitable and/or occupied habitats outside the program area, and the high level of vulnerability and severe population declines of this species across its range.

Forest Nesting Birds: Northern Goshawk, California Spotted Owl, Olive-Sided Flycatcher, Long-eared Owl, Bald Eagle, and Osprey

This section addresses potential proposed program-related effects on special-status bird species that nest in trees within conifer forest habitats.

Northern goshawk is designated as a species of special concern by CDFW and a special interest species by TRPA. In the Sierra Nevada, northern goshawks breed at elevations from approximately 2,500 feet in the ponderosa pine/mixed-conifer vegetation types through approximately 10,000 feet in the red fir and lodgepole pine vegetation types, and throughout eastside pine forests on the east slope (Bloom et al. 1986). Additionally, northern goshawks nest in aspen stands occurring in shrub vegetation types on the eastern slope of the Sierra Nevada (Bloom et al. 1986). Northern goshawks are year-round residents in the Truckee and Lake Tahoe regions and are suspected to be year-round residents throughout the Sierra Nevada, although some limited seasonal altitudinal movements may occur. TRPA maintains a non-degradation standard for habitat within a 0.25-mile buffer zone ("disturbance zone") around each goshawk nest site.

California spotted owl is designated as a species of special concern by CDFW. California spotted owl occurs in several forest vegetation types: mixed conifer, ponderosa pine, red fir, and montane hardwood. In the Sierra Nevada, approximately 80 percent of known spotted-owl sites occur in mixed conifer forest, 10 percent are in red fir, 7 percent are in ponderosa pine/hardwood forest, and 3 percent occur in foothill riparian/hardwood forest and eastside pine (USFS 2001). Nesting habitat is generally characterized by dense canopy closure (i.e., 70 percent or greater) with medium to large trees and multistoried stands (i.e., at least two canopy layers). Foraging habitat can include intermediate to late-successional forest with greater than 40 percent canopy cover (Verner et al. 1992).

Suitable foraging and nesting habitat for northern goshawk and California spotted owl is present throughout conifer forest in the program area; and, multiple detections of both species and nesting have been documented. Additionally, portions of the program area are located within TRPA goshawk disturbance zones.

Olive-sided flycatcher is designated by CDFW as a species of special concern. In general, this species breeds in open canopy, late-succession forest. Open conifer forests are used within the Sierra Nevada, and forest edges are important for foraging. Tree species used for nesting vary throughout the species' range; snags provide valuable habitat and nesting features throughout the range. Olive-sided flycatcher uses lofty perches for foraging and singing, and can often be found perched on the apical tip of trees, above the surrounding canopy (Shuford and Gardali 2008). This species is not uncommon in the Tahoe region and is known to occur in open canopy conifer forests within the Tahoe Basin. Olive-sided flycatcher occurs in the program area and forest habitat conditions there could support all life stages of this species. Specifically, mixed-conifer forests with ample edge habitat dominated by Jeffrey pine or lodgepole pine provides foraging and nesting habitat for olive-sided flycatcher.

Long-eared owl is designated by CDFW as a species of special concern. Specific habitat associations of long-eared owl vary over the species' range. Long-eared owls nest in woodland, forest, and open settings (e.g., grassland, shrub-steppe, and desert). Wooded and non-wooded areas that are occupied by long-eared owls often support relatively dense vegetation (e.g., trees, shrubs) adjacent to or within larger open areas such as grassland or meadows (e.g., habitat edges) (Bloom 1994; Marks et al. 1994). However, this species also has been documented as breeding in contiguous conifer forest habitat with heavy mistletoe infestation (Bull et al. 1989). In California, this species occurs in medium-aged and mature live oak and riparian woodlands. Long-eared owls also breed in oak thickets and conifer forests at higher elevations (CDFG 2005). Although long-eared owls have been documented in the Tahoe Basin, its breeding status and distribution in the program area and most of the Tahoe region are unknown; and habitat use has not been well studied. Conifer forest and riparian habitat in the program area provide potential foraging and nesting habitat for long-eared owl.

Osprey is designated by TRPA as a special interest species. Osprey is associated with large fish-bearing waters. In the Tahoe Basin, osprey nests are distributed primarily along the northern portion of the east shore and the southern portion of the west shore of Lake Tahoe. Other osprey nests in the Tahoe Basin are located along the shorelines of smaller lakes (such as Fallen Leaf Lake) and in forest uplands up to 1.5 miles from water. Ospreys forage in Lake Tahoe as well as several other fish-bearing lakes, streams, and rivers within the Tahoe Basin. The osprey population in

the Tahoe Basin has increased over the last several years. For example, between 1997 and 2015, the number of active nests increased steadily from 12 to 31 (TRPA 2016). The status of the Tahoe Basin's osprey population has been in attainment with respect to TRPA's threshold standard for this species during the last six threshold evaluation periods (1991, 1996, 2001, 2006, 2011, 2016). The TRPA threshold standard for osprey includes maintaining a minimum of four population sites (i.e., four nests). TRPA maintains a non-degradation standard for habitat within a 0.25-mile disturbance zone around each osprey nest site. The number of nesting pairs, active nests, and associated disturbance zones in the shorezone vary annually, and the locations of nest sites have shifted over the last several years. For example, some trees along Lake Tahoe that were historically used by osprey for nesting have fallen down in recent years. The program area contains osprey nest sites and overlaps with several TRPA osprey disturbance zones.

Bald eagle is listed as endangered under CESA and designated as a special-interest species by TRPA; it also is fully protected under the California Fish and Game Code and federally protected by USFWS under the Bald and Golden Eagle Protection Act. Bald eagles require large bodies of water or free-flowing streams with abundant fish and adjacent snags or other perches for hunting. They generally nest in undisturbed coniferous forests, usually within one mile of a lake or reservoir. Bald eagle habitat typically consists of several components, most significantly, proximity to large bodies of water and wetlands associated with lakes, mature coniferous stands with presence of dominant trees, and adequate protection from human disturbance. Over the past several years, bald eagles have nested consistently in two areas of the Tahoe Basin – Marlette Lake and Emerald Bay. More recently, a third bald eagle nest site was documented at Sugar Pine Point along the west shore; this nest was active in 2013, 2014, and 2015 (TRPA data), and possibly more recently. TRPA maintains a non-degradation standard for habitat within a 0.5-mile disturbance zone around each bald eagle nest site. The Tahoe Basin is also a wintering area for bald eagles, and the wintering population is considerably greater than during the breeding season. A small portion of the program area overlaps with a TRPA bald eagle disturbance zone near Sugar Pine Point

Design of later treatment activities under the proposed program would integrate several SPRs designed to avoid and minimize disturbances to special-status wildlife species and their habitats. SPR BIO-1 requires a reconnaissance-level survey of the proposed treatment site to determine whether there is potential for special-status wildlife to occur. If it is determined that special-status wildlife may occur, then SPR BIO-8 requires focused or protocol-level survey for special-status wildlife to identify these species prior to treatment so that they can be avoided under other measures. SPR BIO-2 requires crew members and contractors to receive training regarding biological resources from a qualified RPF or biologist familiar with the life history of the species so crews are aware of potential special-status wildlife in the treatment area and measures to reduce adverse effects. SPRs designed to identify sensitive natural communities (SPR BIO-3) and retain the habitat function of riparian habitat (SPRs BIO-4, HYD-3, HYD-4) reduce the likelihood and magnitude of impacts to tree-nesting species within these habitats. However, many of these special-status species would be present outside of these habitats and therefore would not be protected by these SPRs. While SPRs would minimize impacts, treatment activities could still result in direct or indirect adverse effects on special-status wildlife if these species and their habitat are not sufficiently avoided after identification and if these species occur within areas or habitats that are not avoided by implementation of the SPRs. Potential residual impacts to special-status tree-nesting species are described for each treatment activity below.

Prescribed Burning

Prescribed burning treatment activities would include pile burning and understory burning. If prescribed burning occurs during the breeding season (varies by species), active nests present in the program area could be burned directly, removed or damaged by falling, or otherwise damaged by fire (e.g., heat scorch, smoke damage). This could result in the direct mortality of adults or young, if present. These potential adverse effects would be more likely due to understory burning than pile burning, because pile burning would occur in a discrete location rather than throughout the understory. Additionally, special-status birds could be alarmed by the visual, auditory, and olfactory cues of prescribed burns (e.g., flames, smoke) and by the presence of associated personnel and equipment (e.g., vehicles). This could result in nest abandonment, and potential mortality of young or loss of eggs.

Residual chemicals from accelerants used to ignite prescribed burns would not substantially adversely affect tree-nesting species because accelerants would be applied sparingly, in limited locations along a burn unit perimeter or in planned strips through a burn unit, generally dispersed over the application area so that they would not concentrate

in the soil, and the residual amount of accelerant post-burn at a given location would be minimal. Accelerants are degraded during combustion and any remaining accelerant residuals, located primarily in the soil or water, are degraded through chemical and biological processes (e.g., microbial activity, adherence to minerals in the soil), further reducing their potential for exposure to wildlife (USFS 2002). A USFS (2002) risk assessment report summarized the estimated risk to wildlife from use of a range of accelerants and analyzed risks from residues of multiple fire accelerants. The report considered extensive toxicity and exposure information generated by dozens of studies on the toxicity of the chemical constituents in commercially available accelerants. The study found that managed use of the accelerants did not result in a substantial risk to terrestrial wildlife, including sensitive species. Additionally, although tree- and cavity-nesting predator species could consume prey species (e.g., terrestrial invertebrates) that were previously exposed to these residual chemicals, potentially constituting a partial exposure, substantial risk of exposure would not occur because the accelerant applications are not a substantial risk to prey species and would be limited in their application (USFS 2002).

Depending on severity, prescribed burning treatment activities could result in reduced understory complexity if understory trees, shrubs, and downed woody debris are burned. Removal of these understory features may benefit some prey species for northern goshawk, California spotted owl, and long-eared owl by facilitating movement in the forest floor (McIver et al. 2013). However, because these understory features also provide refuge for prey, changes to understory complexity may result in some loss of habitat function and exclusion of these species from an individual treatment site.

Mechanical Treatment

Mechanical treatment activities would include cutting, masticating, crushing/compacting, or chopping of existing vegetation. If mechanical treatment occurs during the breeding season, these activities could result in the direct loss of nests if present within trees that are subject to cutting or other removal methods. This could result in the direct mortality of adults or young, if present. Additionally, tree-nesting species could be alarmed by the presence of personnel or heavy equipment (e.g., masticators, skidders) that may cause noise, vibration, and dust, which could result in nest abandonment, and potential mortality of young or loss of eggs.

Mechanical treatment activities could result in reduced canopy cover and reduced overstory and understory complexity if canopy trees, understory trees, shrubs, snags, and downed woody debris are removed (e.g., cut, masticated, chopped). Overstory thinning may result in increased light penetration and increased growth of herbaceous plant and shrub species, which may benefit populations of prey for special-status forest birds. For species such as northern goshawk and California spotted owl, which have very specific habitat-structure requirements (e.g., dense canopy closure, complex overstory structure, presence of large trees), major changes to the character of forest habitat could result in loss of habitat function and exclusion of these species from a treatment site.

Manual Treatment

Manual treatment activities would include the use of hand tools (e.g., loppers) and hand-operated power tools (e.g., chainsaws) to prune, thin, or remove vegetation. If manual treatment, including manual removal of trees or tree limbs, occurs during the breeding season, these activities could result in the direct loss of nests if present within the trees that are subject to cutting or other removal methods. This could result in the direct mortality of adults or young, if present. Additionally, nesting birds could be alarmed by the presence of personnel, which could result in nest abandonment and potential mortality of young or loss of eggs.

Manual treatment activities could result in reduced canopy cover and reduced understory complexity if canopy trees, understory trees, shrubs, snags, and downed woody debris are removed (e.g., cut, masticated, chopped). For species such as northern goshawk and California spotted owl, which have very specific habitat-structure requirements (e.g., dense canopy closure, complex overstory structure, presence of large trees), major changes to the character of forest habitat could result in loss of habitat function and exclusion of these species from a treatment site.

Conclusion

Relevant SPRs would be implemented to avoid and minimize treatment-related disturbances and long-term habitat loss for special-status forest bird species (northern goshawk California spotted owl, olive-sided flycatcher, long-eared owl,

bald eagle, osprey). SPR BIO-1 requires data review (e.g., vegetation mapping, databases with existing special-status wildlife and plant occurrences) and a reconnaissance-level survey of the proposed treatment site to determine whether there is potential for special-status wildlife to occur. If it is determined that special-status wildlife may occur, then SPR BIO-8 requires focused or protocol-level survey for special-status wildlife to determine whether the species is present. Several tree-nesting special-status wildlife species require specific protocol-level surveys to determine occupancy, including northern goshawk and California spotted owl. SPR BIO-2 requires crew members and contractors to receive training regarding biological resources from a qualified RPF or biologist familiar with the life history of the species so crews are aware of potential special-status wildlife in the treatment area and measures to reduce adverse effects. SPRs designed to identify sensitive natural communities (SPR BIO-3) and retain the habitat function of riparian habitat (SPRs BIO-4, HYD-3, HYD-4) reduce the likelihood of impacts to species within these habitats. While SPRs would minimize impacts, treatment activities could still result in the direct or indirect adverse effects described above if these species occur within areas or habitats that are not avoided by implementation of the SPRs. As described above, potential direct adverse effects include mortality or injury of special-status species or their nests. Indirect adverse effects would include disturbance to nests or dens due to the presence of crews or heavy machinery, or loss of habitat function as a result of treatment activities (e.g., prescribed burning, mechanical treatment). Substantial adverse effects on northern goshawk California spotted owl, olive-sided flycatcher, long-eared owl, bald eagle, or osprey due to direct injury or mortality or habitat modifications would be a *potentially significant* impact.

American Peregrine Falcon

American peregrine falcon is listed as a fully protected species by CDFW and a special interest species by TRPA. Peregrine falcons nest almost exclusively on protected ledges of high cliffs, primarily in woodland, forest, and coastal habitats. A number of reintroduced pairs also nest on tall buildings and other artificial structures (e.g., towers) in urban or suburban environments. Peregrine falcons are also known to occasionally use tree or snag cavities, old nests of other raptors, and small outcrops. Cliffs that provide ledges, potholes, or small caves, usually with an overhang, and that are relatively inaccessible to mammalian predators are important components of nesting habitat. Nest sites usually provide a panoramic view of open country, are near water, and are associated with a local abundance of passerine, waterfowl, or shorebird prey. In the Tahoe Basin, five active peregrine falcon nests have been documented in recent years, including one located within the program area at Eagle Rock near Blackwood Creek. A TRPA 0.25-mile disturbance zone for peregrine falcon is associated with this nest site.

If implemented near the peregrine falcon nest site at Eagle Rock, the proposed treatment activities are not expected to remove the nest site itself or substantially affect the quality or availability of foraging habitat in the vicinity. Additionally, as discussed above for forest nesting birds, relevant SPRs would be implemented to avoid and minimize treatment-related disturbances and long-term habitat loss for special-status bird species. However, prescribed burning, mechanical treatment, or manual treatment activities could still disturb active nesting attempts if implemented near a peregrine falcon nest site (i.e., near Eagle Rock) during the breeding season. Nesting birds could be alarmed by the presence of personnel and operation of heavy equipment (e.g., masticators, skidders) that may cause noise, vibration, dust, and other physical and audible disturbances, which could result in nest abandonment, and potential mortality of young or loss of eggs. The potential disruption of breeding attempts and reproductive failure of peregrine falcon would be a *potentially significant* impact.

Riparian/Wet Meadow Nesting Birds and Burrowing Mammals: Yellow Warbler, Willow Flycatcher, Yellow-headed Blackbird, and Sierra Nevada Mountain Beaver

Yellow warbler and yellow-headed blackbird are designated as species of special concern by CDFW. In the Sierra Nevada, yellow warblers typically breed in wet areas with dense riparian vegetation. Breeding habitats primarily are willow patches in montane meadows, and riparian scrub and woodland dominated by willow, cottonwood, aspen, or alder with dense understory cover. Localized breeding has been documented in more xeric (dry) sites, including chaparral, wild rose (*Rosa* spp.) thickets, and young conifer stands (Siegel and DeSante 1999, RHJV 2004). Yellow-headed blackbird typically breeds in marshes that have tall emergent vegetation such as cattails or tules, in open areas near and over relatively deep water. Although not common, yellow warbler occurs in suitable riparian/meadow habitat in the Lake Tahoe Basin, including the program area (e.g., Upper Truckee Marsh). Yellow-headed blackbird, which is rare in the Lake Tahoe Basin, has also been documented in the program area at the Upper Truckee Marsh.

Willow flycatcher is listed as endangered under CESA. In the Sierra Nevada, suitable habitat typically consists of montane meadows that support riparian deciduous shrubs (particularly willows) and remain wet through the nesting season (i.e., midsummer). Important characteristics of suitable meadows include a high water table that results in standing or slow-moving water, or saturated soils (e.g., "swampy" conditions) during the breeding season; abundant riparian deciduous shrub cover (particularly willow); and riparian shrub structure with moderate to high foliar density that is uniform from the ground to the shrub canopy. Most breeding occurrences are in meadows larger than 19 acres, but the average size of occupied meadows is approximately 80 acres (USFS 2001). Although less common in the Sierra Nevada, riparian habitat along streams also can function as suitable habitat for willow flycatcher. However, those areas must support the hydrologic and vegetation characteristics described for suitable meadows (e.g., standing or slow-moving water, and abundant and dense riparian vegetation). Willow flycatcher is rare in the Lake Tahoe Basin; however, this species has been documented in the program area at the Upper Truckee Marsh.

Sierra Nevada mountain beaver is designated by CDFW as a species of special concern. This species is associated with riparian habitats with soft, deep soils for burrowing, lush growth of preferred food sources such as willow and alder, and a variety of herbaceous species for bedding material. Vegetation types preferred by mountain beaver include wet meadows and willow-alder-dominated riparian corridors typically along perennial water sources. Suitable riparian habitats are characterized by dense growth of small deciduous trees and shrubs near permanent water. Mountain beaver is generally solitary, except during its short breeding season; mountain beavers spend a high portion of their time in extensive underground burrow systems with multiple openings, tunnels, and food caches. CNDDDB records indicate the presence of Sierra Nevada mountain beaver within and adjacent to the program area. Known occurrences of this species have been increasing in the Tahoe region in recent years because of increased survey efforts.

Potential impacts of program implementation on riparian and wet meadow habitats in treatment areas, which could potentially support nesting yellow warbler, willow flycatcher, yellow-headed blackbird, and Sierra Nevada mountain beaver, are analyzed and described in detail in Impact 3.6-3, below. For the reasons discussed in Impact 3.6-3, potential disturbances to potential breeding habitat for these species as a result of later treatment activities would not be substantial. Design of later treatment activities under the proposed program would comply with CFPRs and integrate several SPRs designed to avoid and minimize disturbances to aquatic, riparian, and wet meadow habitats and associated special-status wildlife species such as Sierra Nevada yellow-legged frog (14 CCR Sections 956.3, 956.4, 956.5, 956.7, 963, 963.6, 963.7, and 963.9). SPR HYD-1 requires compliance with water quality regulations and SPR HYD-3 requires WLPZs to be established on each side of watercourses, which would: minimize disturbance to amphibians within aquatic and riparian habitat by limiting treatment activities within WLPZs; and protect aquatic and riparian habitat by avoiding erosion and associated sedimentation that could degrade breeding/overwintering habitat or riparian vegetation. SPR HYD-4 and TRPA Code requires delineation and protection of SEZs.

Additionally, SPR BIO-1 requires data review and reconnaissance surveys of proposed treatment sites to identify potential riparian, wet meadow, or other aquatic habitats, and to determine whether there is potential for special-status wildlife (including yellow warbler, yellow-headed blackbird, willow flycatcher, and Sierra Nevada mountain beaver) to occur. If it is determined that special-status wildlife may occur, then SPR BIO-8 requires focused or protocol-level surveys to identify these species prior to treatment so they can be avoided under other measures. SPR BIO-2 requires crew members and contractors to receive training regarding biological resources from a qualified RPF or biologist familiar with the life history of the species so crews are aware of potential special-status wildlife in the treatment area and measures to reduce adverse effects. SPR BIO-3 requires site-specific surveys to identify and map the limits of these sensitive habitats using standard field protocols. SPR BIO-4 requires the design of treatments to avoid loss or degradation of riparian and SEZ habitat functions and values, such as riparian vegetation removal that could reduce stream shading and result in increased temperatures. SPR BIO-7 requires BMPs to prevent the spread of invasive plants, noxious weeds, and plant pathogens that could degrade the quality of sensitive habitats communities.

While SPRs and compliance with CFPRs would substantially reduce potential direct and indirect impacts on montane riparian and wet meadow habitats that may support yellow warbler, willow flycatcher, yellow-headed blackbird, and Sierra Nevada mountain beaver, treatment activities could still result in the direct or indirect adverse effects if these species occur within areas or habitats that are not avoided by implementation of the SPRs. Potential residual impacts on special-status birds associated with riparian/wet meadow habitats for each treatment activity would be similar to those

described above for forest nesting birds. As described above, potential direct adverse effects include mortality or injury of special-status species or their nests. For Sierra Nevada mountain beaver, treatments within or adjacent to suitable montane riparian habitat could disturb or result in injury or mortality of mountain beavers if present. Because Sierra Nevada mountain beavers generally dig large burrow complexes hidden beneath dense brush, potential treatment-related impacts would result primarily from site preparation and vegetation removal, soil disturbance or compaction, or other treatment-related disturbances that may occur in or near dense riparian areas during treatments. These activities could cause the collapse or fill of burrows, including active breeding sites. In addition, noise from mechanical treatment methods may disrupt Sierra Nevada mountain beaver breeding activities. Indirect adverse effects on these species could include disturbance to nests or burrows due to the presence of crews or heavy machinery, or loss of habitat function as a result of treatment activities. Substantial adverse effects on yellow warbler, willow flycatcher, yellow-headed blackbird, and Sierra Nevada mountain beaver due to direct injury, mortality or disruption of breeding attempts and reproductive failure, or loss of habitat functions would be a *potentially significant* impact.

Sierra Nevada Yellow-legged Frog

Sierra Nevada yellow-legged frog is listed as endangered under ESA and endangered under CESA. This species is highly aquatic (almost always found within a few feet of water) and associated with high mountain lakes, ponds, tarns, streams, montane riparian, and wet meadow habitats (USFS 2014). Alpine lakes used by this species often have grassy or muddy margins and are typically greater than 8 feet in depth (USFS 2014). Less frequently, Sierra Nevada yellow-legged frogs are also known to occur in stream habitats, including high-gradient channels with pools and rapids, and streams with marshy edges and sod banks (USFS 2014). Although Sierra Nevada yellow-legged frogs have been observed successfully breeding in shallow locations (less than 8 feet in depth), typically depth is an important factor for breeding locations because adults and larvae require overwintering habitat in perennial waters. For up to nine months, adults and larvae will live/hibernate below ice, or in nonfrozen portions of ponds or lakes; therefore, perennial waters with depths that are sufficient to prevent complete freezing of the aquatic habitat (e.g., deep perennial lakes, ponds, pools, or similar features) are required for breeding/overwintering populations to persist. Threats to Sierra Nevada yellow-legged frog include introduced fish and other predators, disease (e.g., chytridiomycosis), habitat loss and fragmentation, fire suppression, habitat restoration, livestock grazing, locally applied pesticides, mining, recreational activities (e.g., packstock), research activities, roads, vegetation and fuels management, water development and diversion, acid deposition, airborne contaminants (e.g., pesticides), climate change, and UV-B radiation (USFS 2014).

The only known population of Sierra Nevada yellow-legged frog in the Lake Tahoe Basin occurs at Hell Hole bog, in the southern end of the Lake Tahoe Basin, outside the program area. The closest known populations are west of the Tahoe Basin in Desolation Wilderness and the vicinity of Five Lakes near Squaw Valley. There are also limited records of the species on the Tahoe National Forest, with the largest known population in the Soda Springs area more than 12 miles northwest of the program area. The program area is not known to contain optimal habitat for this species; most lake and stream habitat likely does not provide the specific ecological conditions required for various life stages of this species (e.g., sufficient water depth, low abundance or absence of nonnative fish predators). Although historic records exist, there are no known extant occurrences of Sierra Nevada yellow-legged frog documented in the program area. However, due to some remaining uncertainty regarding the likelihood of Sierra Nevada yellow-legged frog to use the program area in the future for breeding or movement, this species is discussed here due to the presence of potential habitat in the program area and regional connectivity to more suitable and/or occupied habitats outside the program area, and the high level of vulnerability and severe population declines of this species across its range.

Under the proposed program, treatments would not be implemented within aquatic habitat types but could occur within riparian zones and other areas adjacent to perennial aquatic features. Potential impacts of program implementation on riparian, wet meadow, and aquatic habitats in treatment areas, which could potentially support Sierra Nevada yellow-legged frog, are analyzed and described in detail in Impact 3.6-3 and Impact 3.6-5, below. For the reasons discussed in Impact 3.6-3 and Impact 3.6-5, potential disturbances to potential habitat for Sierra Nevada yellow-legged frog as a result of later treatment activities would not be substantial. Treatment design of later projects under the proposed program would integrate several SPRs designed to avoid and minimize disturbances to aquatic, riparian, and wet meadow habitats and associated special-status wildlife species such as Sierra Nevada yellow-legged frog. SPR HYD-1 requires compliance with water quality regulations and SPR HYD-3 requires WLPZs to be established

on each side of watercourses, which would: minimize disturbance to amphibians within aquatic and riparian habitat by limiting treatment activities within WLPZs; and protect aquatic and riparian habitat by avoiding erosion and associated sedimentation that could degrade breeding/overwintering habitat or riparian vegetation. SPR HYD-4 and TRPA Code requires delineation and protection of SEZs.

Additionally, SPR BIO-1 requires data review and reconnaissance surveys of proposed treatment sites to identify potential riparian, wet meadow, or other aquatic habitats, and to determine whether there is potential for Sierra Nevada yellow-legged frog and other special-status wildlife to occur. If it is determined that special-status wildlife may occur, then SPR BIO-8 requires focused or protocol-level surveys to identify these species prior to treatment so they can be avoided under other measures. SPR BIO-2 requires crew members and contractors to receive training regarding biological resources from a qualified RPF or biologist familiar with the life history of the species so crews are aware of potential special-status wildlife in the treatment area and measures to reduce adverse effects. SPR BIO-3 requires site-specific surveys to identify and map the limits of these sensitive habitats using standard field protocols. SPR BIO-4 requires the design of treatments to avoid loss or degradation of riparian and SEZ habitat functions and values, such as riparian vegetation removal that could reduce stream shading and result in increased temperatures. SPR BIO-7 requires BMPs to prevent the spread of invasive plants, noxious weeds, and plant pathogens that could degrade the quality of sensitive habitats communities.

While SPRs would substantially reduce potential direct and indirect impacts to aquatic, montane riparian, and wet meadow habitats that may support Sierra Nevada yellow-legged frog, treatment activities could still result in the direct or indirect adverse effects if this species occurs within areas or habitats that are not avoided by implementation of the SPRs. Potential residual impacts on Sierra Nevada yellow-legged frog would occur if treatment activities are implemented within occupied habitat and individuals, young, or eggs are injured or killed through direct crushing (e.g., by personnel) or burning (e.g., during prescribed burning activities) during implementation. All treatment activities would involve varying degrees of heavy machinery use and presence of fire and other personnel. Noise and other disturbance from operation of heavy machinery, chainsaws, or other vehicles during treatment activities could cause displacement of Sierra Nevada yellow-legged frog. Displacement would be temporary and could cause an increase in predation risk if individuals are unable to locate proper cover. Indirect adverse effects would occur if treatment activities altered habitat or site conditions in a manner that later resulted in a loss or degradation of suitable aquatic or adjacent upland habitat for Sierra Nevada yellow-legged frog or resulted in indirect water quality impacts (e.g., introduction of sediment to a perennial stream or other aquatic feature).

While the treatment activities described above could result in injury or death of Sierra Nevada yellow-legged frog or temporary degradation of habitat, the overall risk to this species as a result of implementation of the proposed program is considered low due to the lack of documented occurrences of the species within the program area, the scarcity of high-quality breeding habitat (e.g., perennial aquatic features with sufficient depth and absence of nonnative fish predators), and the geographic position of the program area relative to the species' current elevation range in the region (i.e., most extant occurrences of the species in the region are located above the elevation range of the program area). Although the risk to Sierra Nevada yellow-legged frog is likely low, comprehensive surveys for the species have not been conducted within the program area, and this analysis assumes that the species may be present within potentially suitable habitat. Adverse effects on Sierra Nevada yellow-legged frog due to direct injury or mortality or habitat modifications would be a *potentially significant* impact.

Southern Long-toed Salamander

Southern long-toed salamander is a CDFW species of special concern that occurs within forests associated with meadows where snowmelt provides temporary ponds for breeding. Breeding typically occurs in late May or June, and migration may occur within approximately 0.6 mile of breeding habitat. In upland habitats, the species spends most of the year underground or under rocks, logs, and other similar locations. CNDDDB records indicate the presence of southern long-toed salamanders at in or adjacent to the program area (CDFW 2019). If water is present for long enough to allow for completion of the aquatic portion of the species' lifecycle, ponds and wet meadows that may occur within the program area are potentially suitable breeding habitat for this species. In addition, suitable upland habitat may be present within 0.6 mile of breeding habitat.

As described previously, SPRs including requirements for limiting water drafting, delineating and protecting WLPZs and SEZs, and maintaining riparian habitat function would minimize potential effects of project implementation in suitable aquatic breeding habitats. However, if southern long-toed salamander occurs within treatment units, felling of trees, use of mechanical equipment, and other treatment activities involving ground disturbances could result in the death or injury of individuals above ground, and the potential fill or collapse of burrows resulting in entombment and death. This would be a *potentially significant* impact.

Western Red Bat and Pallid Bat

Western red bat is designated as a species of special concern by CDFW and High Priority by the Western Bat Working Group. Red bats are found primarily in dense riparian woodland habitats containing willow, cottonwood, and sycamore trees. Red bats appear to differentially select relatively wide, well-developed riparian habitats with large trees for breeding roosts; however, roosting has also been documented in orchards adjacent to riparian areas (Pierson et al. 2006). Western red bats typically forage within or near riparian zones, along stream banks and gravel bars (Pierson et al. 2006) or at high altitudes over the tree canopy (Tahoe National Forest 2009). Foraging typically begins 1 to 2 hours after sunset (Tahoe National Forest 2009). In the Lake Tahoe Basin, western red bat is not common but has been detected occasionally. In the program area, a western red bat was detected along the northeast boundary of the Conservancy's Griff Creek property and in Blackwood Canyon during acoustic surveys in July and August 2015. The acoustical data (bat echolocation calls) were collected by the Nevada Department of Wildlife for the Conservancy and analyzed by West Ecosystems Analysis (2016). At the Griff Creek property, the acoustic survey location where the detection was made was approximately 300 feet west of a prominent riparian corridor, which the species was likely associated with. The survey location in Blackwood Canyon where red bat was detected was along the bank of Blackwood Creek. In June 2019, during acoustic bat surveys conducted by the Tahoe Resource Conservation District, western red bat was also detected on the Conservancy's Dollar property northwest of Dollar Point and northeast of North Tahoe High School near Tahoe City.

Pallid bat is designated as a species of special concern by CDFW and High Priority by the Western Bat Working Group. Throughout California, pallid bat is usually found in arid habitats below 6,000 feet elevation; however, the species has been found up to 10,000 feet in the Sierra Nevada. Pallid bats use a variety of habitats including grasslands, shrublands, woodlands, and coniferous forests. Pallid bats are most common in open, dry habitats that contain rocky areas for roosting. Day roosts may vary but are commonly found in rock crevices, tree hollows, mines, caves and a variety of human-made structures. Night roosts are usually more open sites and may include open buildings, porches, mines, caves, and under bridges. Tree roosting has been documented in large conifer snags, inside basal hollows of redwoods and giant sequoias, and bole cavities in oaks (Sherwin 1998). Pallid bats are yearlong residents in most of their range and hibernate in winter near their summer roost (CDFG 1990). In June 2019, during acoustic bat surveys conducted by the Tahoe Resource Conservation District, pallid bat was detected on the Conservancy's Dollar property. Though no other documented occurrences of pallid bat are known from the program area, the coniferous forest present in the program area and vicinity may provide suitable foraging habitat as well as roosting habitat in large trees and snags and in more open areas.

Treatment design of later activities under the PTEIR would integrate the SPRs identified above. SPR BIO-1 requires a reconnaissance-level survey of the proposed treatment site to determine whether there is potential for special-status wildlife, including special-status bats, to occur. If it is determined that special-status wildlife may occur, then SPR BIO-8 requires focused or protocol-level survey for special-status wildlife to identify these species prior to treatment so that they can be avoided under other measures. SPR BIO-2 requires crew members and contractors to receive training regarding biological resources from a qualified RPF or biologist familiar with the life history of the species so crews are aware of potential special-status wildlife in the treatment area and measures to reduce adverse effects. SPRs designed to identify sensitive natural communities (SPR BIO-3), delineate and protect WLPZs and SEZs (SPRs HYD-3 and HYD-4), and retain the habitat function of riparian habitat (SPR BIO-4) reduce the likelihood of impacts to special-status bats within these habitats. However, pallid bat and western red bat could be present outside of these habitats and would not be protected by these SPRs. While SPRs would minimize impacts, treatment activities could still result in direct or indirect adverse effects on special-status bats if these species and their habitat are not

sufficiently avoided after identification and if these species occur within areas or habitats that are not avoided by implementation of the SPRs. Potential impacts to special-status bats are described for each treatment activity below.

Prescribed Burning

Prescribed burning treatment activities would include pile burning and understory burning. These activities are not anticipated to directly remove suitable roost or colony sites for special-status bats such as rock crevices, buildings, caves, mines, or bridges. However, if prescribed burning occurs within the vicinity of special-status bat roosts in trees (e.g., sloughing tree bark, tree cavities, leaves), these activities could result in the direct mortality or injury of special-status bats within roosts or maternity colonies. These potential adverse effects would be more likely due to understory burning than pile burning, because pile burning would occur in a discrete location rather than throughout the understory. In rare instances, western red bat, a tree foliage-roosting species, may roost in leaf litter on the forest floor and would be at risk for injury or death from understory burning. Further, prescribed burning treatment activities during the spring to early fall may have greater potential to adversely affect special-status bats, because female bats and their young are present within maternity colonies during this time and young bats may be unable to fly, thus unable to escape. Additionally, special-status bats within tree habitat and other habitats (e.g., bridges, caves, mines, rock crevices) could be alarmed by the visual, auditory, and olfactory cues of prescribed burns (e.g., flames, smoke) and by the presence of associated personnel and equipment (e.g., vehicles, helicopters) if these activities are in the vicinity of the roost or maternity colony. This could result in abandonment of the colony and potential mortality of young.

Residual chemicals from accelerants used to ignite prescribed burns would not substantially adversely affect special-status bat species because accelerants would be applied sparingly, in limited locations along a burn unit perimeter or in planned strips through a burn unit, generally dispersed over the application area so that they would not concentrate in the soil and the residual amount of accelerant post-burn at a given location would be minimal. Accelerants are degraded during combustion and any remaining accelerant residuals, located primarily in the soil or water, are degraded through chemical and biological processes (e.g., microbial activity, adherence to minerals in the soil), further reducing their potential for exposure to wildlife (USFS 2002). A USFS (2002) risk assessment report summarized the estimated risk to wildlife from use of a range of accelerants and analyzed risks from residues of multiple fire accelerants. The report considered extensive toxicity and exposure information generated by dozens of studies on the toxicity of the chemical constituents in commercially available accelerants. The study found that managed use of the accelerants did not result in a substantial risk to terrestrial wildlife, including sensitive species. Additionally, although special-status bat species could consume prey species (e.g., terrestrial invertebrates) that were previously exposed to these residual chemicals, potentially constituting a partial exposure, substantial risk of exposure would not occur because the accelerant applications are not a substantial risk to prey species and would be limited in their application (USFS 2002).

Mechanical Treatment

Mechanical treatment activities would include cutting, uprooting, crushing/compacting, or chopping of existing vegetation. It is not anticipated that these activities would result in direct impacts to special-status bat habitat such as rock crevices, buildings, caves, mines, or bridges. However, mechanical treatment could result in the direct removal of trees potentially being used by special-status bat species as roosts or maternity colonies. Removal of this habitat could result in mortality of special-status bats if present within the trees. Further, mechanical treatment activities during the spring to early fall may have greater potential to adversely affect special-status bats, because female bats and their young are present within maternity colonies during this time and young bats may be unable to fly, thus unable to escape. Additionally, special-status bats within tree habitat and other habitats (e.g., bridges, rock crevices) could be alarmed by the presence of heavy equipment (e.g., masticators, trucks) and personnel, which could result in abandonment of the colony, and potential mortality of young.

Manual Treatment

Manual treatment activities would include the use of hand tools (e.g., loppers) and hand-operated power tools (e.g., chainsaws) to prune, thin, or remove vegetation. It is not anticipated that these activities would result in direct impacts to special-status bat habitat such as rock crevices, buildings, or bridges. However, manual treatment could result in the direct removal of trees potentially being used by special-status bat species as roosts or maternity

colonies. Removal of this habitat could result in mortality of special-status bats if present within the trees. Further, manual treatment activities during the spring to early fall may have greater potential to adversely affect special-status bats, because female bats and their young are present within maternity colonies during this time and young bats may be unable to fly, thus unable to escape. Additionally, special-status bats within tree habitat and other habitats (e.g., bridges, rock crevices) could be alarmed by the presence of personnel which could result in abandonment of the colony, and potential mortality of young.

Conclusion

Relevant SPRs would be implemented to avoid and minimize treatment-related disturbances and long-term habitat loss for special-status bats. SPR BIO-1 requires data review (e.g., vegetation mapping, databases with existing special-status wildlife and plant occurrences) and a reconnaissance-level survey (e.g., visual inspection of habitat features that may provide roosting habitat for special-status bats, acoustic surveys) of the proposed treatment site to determine whether there is potential for special-status wildlife to occur. If it is determined that special-status wildlife may occur, then SPR BIO-8 requires focused or protocol-level survey for special-status wildlife to determine whether the species is present. SPR BIO-2 requires crew members and contractors to receive training regarding biological resources from a qualified RPF or biologist familiar with the life history of the species so crews are aware of potential special-status wildlife in the treatment area and measures to reduce adverse effects. SPRs designed to identify sensitive natural communities (SPR BIO-3), identify and protect WLPZs and SEZs (SPRs HYD-3 and HYD-4), and retain the habitat function of riparian habitat (SPR BIO-4) reduce the likelihood of impacts (e.g., habitat loss) on special-status bats within these habitats. While SPRs would minimize impacts, treatment activities could still result in direct or indirect adverse effects described above on pallid bat or western red bat if these species occur within areas or habitats that are not avoided by implementation of the SPRs. As described above, potential direct adverse effects include mortality or injury to special-status bats. Indirect adverse effects would include disturbance to roosts due to the presence of crews or heavy machinery, or loss of habitat function as a result of treatment activities (e.g., prescribed burning, mechanical treatment). Substantial adverse effects on special-status bats due to direct injury or mortality or habitat modifications would be a *potentially significant* impact.

Sierra Nevada Snowshoe Hare

Sierra Nevada snowshoe hare is designated by CDFW as a species of special concern. This species is found within middle to high elevations in the Sierra Nevada. Snowshoe hare most frequently occupies riparian areas and other densely vegetated deciduous habitats. For shelter, snowshoe hares typically do not dig or occupy burrows; rather, they use scrapes or shallow depressions on the ground. Sierra Nevada snowshoe hare has been detected in or adjacent to the program area (CDFW 2019); and, the program area contains suitable habitat for this species. Therefore, snowshoe hare could potentially occur within riparian and other densely vegetated habitats in the program area. Mechanical treatment, manual treatment, and prescribed burning could occur within suitable habitat for Sierra Nevada snowshoe hare. These activities could result in the temporary disturbance of foraging and breeding behaviors. However, snowshoe hare does not use burrows where they may be trapped or crushed by later treatment activities; and, for the same reasons described above for riparian nesting birds and burrowing mammals (including incorporation of applicable SPRs to protect and limit treatment activities within riparian habitats, WLPZs, and SEZs), program implementation would not substantially remove or disturb high-quality habitat for snowshoe hare.

While activities that occur within or adjacent to riparian zones may still temporarily disturb snowshoe hare breeding and foraging behaviors, with the implementation of applicable SPRs the project would not substantially affect the distribution, breeding productivity, viability, or the regional population of Sierra Nevada snowshoe hare. Therefore, the potential impact to this species would be *less than significant*.

Impact Summary and Conclusion

As described in detail above, relevant SPRs would be implemented to avoid and minimize treatment-related disturbances and substantial long-term habitat loss for special-status wildlife species. However, implementation of later treatment activities under the PTEIR could potentially result in the loss of individuals or nests, or disruptions to nesting attempts, of northern goshawk, California spotted owl, long-eared owl, osprey, bald eagle, peregrine falcon, olive-sided flycatcher, yellow warbler, willow flycatcher, and yellow-headed blackbird; the removal of an active roost

site for, or injury to, pallid bat and western red bat; and removal of occupied burrows, injury or mortality of individuals, and loss of reproductive success of Sierra Nevada mountain beaver and southern long-toed salamander. Additionally, later treatment activities could alter the composition and structure of suitable habitat for these species, particularly for special-status forest birds and bats (northern goshawk, California spotted owl, long-eared owl, olive-sided flycatcher, western red bat, and pallid bat). Although the risk of program-related disturbances to Sierra Nevada yellow-legged frog is likely low, this analysis assumes that the species may be present within potentially suitable habitat and subject to adverse effects. This impact on special-status wildlife species would be **potentially significant**. For other special-status species, although program implementation could disturb suitable habitats and adversely affect individuals locally, the magnitude and intensity of potential adverse effects would not affect the species' distribution, active breeding sites, breeding productivity, viability, or regional populations.

Mitigation Measures

Mitigation Measure 3.6-2a: Avoid Mortality, Injury, or Disturbance and Maintain Habitat Function for Federally and State-Listed Wildlife Species

If wildlife species listed under ESA or CESA (e.g., willow flycatcher, Sierra Nevada yellow-legged frog) are observed during reconnaissance surveys (conducted pursuant to SPR BIO-1) or focused or protocol-level surveys (conducted pursuant to SPR BIO-8), the project proponent will avoid adverse effects on the species by implementing the following.

Avoid Mortality, Injury, or Disturbance of Individuals

- ▶ The project proponent will implement one of the following two measures to avoid mortality, injury, or disturbance of individuals:
 1. Treatment will not be implemented within the occupied habitat. Any treatment activities outside occupied habitat will be a sufficient distance from the occupied habitat such that mortality, injury, or disturbance of the species will not occur, as determined by a qualified RPF or biologist, in consultation with CDFW and/or TRPA (depending on the potentially affected species), using current and commonly-accepted science and considering published agency guidance; OR
 2. Treatment will be implemented outside the sensitive period of the species' life history (e.g., outside the breeding or nesting season) during which the species may be more susceptible to disturbance, or disturbance could result in loss of eggs or young. For species present year-round, CDFW and/or USFWS will be consulted to determine if there is a period of time within which treatment could occur that would avoid mortality, injury, or disturbance of the species.
- ▶ For species listed under ESA or CESA, if the project proponent cannot avoid mortality, injury or disturbance by implementing one of the two options listed above, the project proponent will implement Mitigation Measure 3.6-2c.

Maintain Habitat Function

- ▶ The project proponent will design treatment activities to maintain the habitat function, by implementing the following:
 - While performing review and surveys for SPR BIO-1 and SPR BIO-8, a qualified RPF or biologist will identify any habitat features that are necessary for survival (e.g., habitat necessary for breeding, foraging, shelter, movement) of the affected wildlife species. These habitat features will be marked and treatments applied to the features will be designed to minimize or avoid the loss or degradation of suitable habitat for listed species during treatments. Identification and treatment of these features will be based on the life history and habitat requirements of the affected species and the most current, commonly accepted science.
 - If it is determined during implementation of SPR BIO-1 and SPR BIO-8 that federally or state-listed wildlife with specific requirements for dense vegetation cover (e.g., willow flycatcher) are present within a treatment area, then vegetation cover within existing suitable areas will be retained at the percentage preferred by the species (as determined by expert opinion, published habitat association information, or other documented standards that are commonly accepted) such that habitat function is maintained.

- ▶ A qualified RPF or biologist will determine if, after implementation of the impact avoidance measures listed above, the habitat function will remain for the affected species after implementation of the treatment. Because this measure pertains to species listed under CESA or ESA, the qualified RPF or biologist will consult with CDFW and/or USFWS regarding the determination that habitat function is maintained. If consultation determines that the treatment will not maintain habitat function for the special-status species, the project proponent will implement Mitigation Measure 3.6-2c.

Mitigation Measure 3.6-2b: Avoid Mortality, Injury, or Disturbance and Maintain Habitat Function for Other Special-Status Wildlife Species

If other special-status wildlife species (i.e., species not listed under CESA or ESA, but meeting the definition of special status as stated in Section 3.6.3 of the PTEIR) are observed during reconnaissance surveys (conducted pursuant to SPR BIO-1) or focused or protocol-level surveys (conducted pursuant to SPR BIO-8), the project proponent will avoid or minimize adverse effects to the species by implementing the following.

Avoid Mortality, Injury, or Disturbance of Individuals

The project proponent will implement the following to avoid mortality, injury, or disturbance of individuals:

- ▶ For all treatment activities except prescribed burning, the project proponent will establish a no-disturbance buffer around occupied sites (e.g., nests, dens, bat roosts, burrows). Buffer size will be determined by a qualified RPF or biologist, in consultation with CDFW and/or TRPA (depending on the potentially affected species), using the most current, commonly accepted science and will consider published agency guidance; however, buffers will generally be a minimum of 500 feet for special-status birds and 100 feet for other special-status wildlife species, unless site conditions indicate a smaller buffer would be sufficient for protection or a larger buffer would be needed. Factors to be considered in determining buffer size will include, but not be limited to, the species' tolerance to disturbance; the presence of natural buffers provided by vegetation or topography; nest height; locations of foraging territory; baseline levels of noise and human activity; and treatment activity. Buffer size may be adjusted if the qualified RPF or biologist determines that such an adjustment would not be likely to adversely affect (i.e., cause mortality, injury, or disturbance to) the species within the nest, den, burrow, or other occupied site. If a no-disturbance buffer is reduced below these minimum standards around an occupied site, a qualified RPF or biologist will provide the project proponent with a site- and/or treatment activity-specific explanation for the buffer reduction, which will be included in the Project Consistency Checklist.
- ▶ No-disturbance buffers will be marked with high-visibility flagging, fencing, stakes, or clear, existing landscape demarcations (e.g., edge of a roadway). No activity will occur within the buffer areas until the qualified RPF or biologist has determined that the young have fledged or dispersed; the nest, den, roost, or other occurrence is no longer active; or reducing the buffer would not likely result in disturbance, mortality, or injury. A qualified RPF, biologist, or biological technician will be required to monitor the effectiveness of the no-disturbance buffer around the nest, den, burrow, or other occurrence during treatment. If treatment activities cause agitated behavior of the individual(s), the buffer distance will be increased, or treatment activities modified until the agitated behavior stops. The qualified RPF, biologist, or biological technician will have the authority to stop any treatment activities that could result in mortality, injury or disturbance to special-status species.
- ▶ For prescribed burning, the project proponent will implement the treatment outside the sensitive period of the species' life history (e.g., outside the breeding or nesting season) during which the species may be more susceptible to disturbance, or disturbance could result in loss of eggs or young. For species present year-round, the qualified RPF or biologist will determine the period of time within which prescribed burning could occur that will avoid or minimize mortality, injury, or disturbance of the species. The project proponent may consult with CDFW and/or USFWS for technical information regarding appropriate limited operating periods.

Maintain Habitat Function

For all treatment activities, the project proponent will design treatment activities to maintain the habitat function by implementing the following:

- ▶ While performing review and surveys for SPR BIO-1 and SPR BIO-8, a qualified RPF or biologist will identify any habitat features that are necessary for survival (e.g., habitat necessary for breeding, foraging, shelter, movement) of the affected wildlife species (e.g., trees with complex structure, trees with large cavities, trees with nesting platforms; tree snags; large raptor nests [including inactive nests]; downed woody debris). These habitat features will be marked and treatments applied to the features will be designed to minimize or avoid the loss or degradation of suitable habitat for listed species during treatments. Identification and treatment of these features will be based on the life history and habitat requirements of the affected species and the most current, commonly accepted science.
- ▶ If it is determined during implementation of SPR BIO-1 and SPR BIO-8 that special-status wildlife with specific requirements for dense canopy or vegetation cover (e.g., northern goshawk, California spotted owl, Sierra Nevada mountain beaver) are present within a treatment area, then tree or shrub canopy cover within existing suitable areas will be retained at the percentage preferred by the species (as determined by expert opinion, published habitat association information, or other documented standards that are commonly accepted) such that the habitat function is maintained.
- ▶ A qualified RPF or biologist will determine if, after implementation of the impact avoidance measures listed above, the habitat function will remain for the affected species after implementation of the treatment. The qualified RPF or biologist may consult with CDFW and/or USFWS for technical information regarding habitat function.

A qualified RPF or biologist with knowledge of the special-status wildlife species habitat and life history will review the treatment design and applicable impact minimization measures (potentially including others not listed above) to determine if the anticipated residual effects of the treatment would be significant under CEQA because implementation of the treatment will not maintain habitat function of the special-status wildlife species' habitat or because the loss of special-status wildlife would substantially reduce the number or restrict the range of a special-status wildlife species. If the project proponent determines the impact on special-status wildlife would be less than significant, no further mitigation will be required. If the project proponent determines that the loss of special-status wildlife or degradation of occupied habitat would be significant under CEQA or may conflict with the TRPA Code after implementing feasible treatment design alternatives and impact minimization measures, then Mitigation Measure 3.6-2c will be implemented.

The only exception to this mitigation approach is in cases where it is determined by a qualified RPF or biologist that the non-listed special-status wildlife would benefit from treatment in the occupied habitat area even though some of the non-listed special-status wildlife may be killed, injured, or disturbed during treatment activities. For a treatment to be considered beneficial to non-listed special-status wildlife, the qualified RPF or biologist will demonstrate with substantial evidence that habitat function is reasonably expected to improve with implementation of the treatment (e.g., by citing scientific studies demonstrating that the species (or similar species) has benefitted from increased sunlight due to canopy opening, eradication of invasive species, or otherwise reduced competition for resources), and the substantial evidence will be included in the Project Consistency Checklist. If it is determined that treatment activities would be beneficial to special-status wildlife, no compensatory mitigation will be required. The qualified RPF or biologist may consult with CDFW and/or USFWS for technical information regarding the determination that a non-listed special-status species would benefit from the treatment.

Mitigation Measure 3.6-2c: Compensate for Mortality, Injury, or Disturbance and Loss of Habitat Function for Special-Status Wildlife if Applicable

If the provisions of Mitigation Measure 3.6-2a or 3.6-2b cannot be implemented and the project proponent determines that additional mitigation is necessary to reduce significant impacts, the project proponent will compensate for such impacts to species or habitat by acquiring and/or protecting land that provides (or will provide in the case of restoration) habitat function for affected species that is at least equivalent to the habitat function removed or degraded as a result of the treatment.

Compensation may include:

1. Preserving existing habitat outside of the treatment area in perpetuity; this may entail purchasing mitigation credits and/or lands from a CDFW- or USFWS-approved entity in sufficient quantity to offset the residual significant impacts, generally at a ratio of 1:1 for habitat; and

2. Restoring or enhancing existing habitat within the treatment area or outside of the treatment area (including decommissioning roads, adding perching structures, removing existing perching structures, or removing existing movement barriers or other existing features that are adversely affecting the species).

The project proponent will prepare a Compensatory Mitigation Plan that identifies the residual significant effects that require compensatory mitigation and describes the compensatory mitigation strategy being implemented to reduce residual effects, and:

1. For preserving existing habitat outside of the treatment area in perpetuity, the Compensatory Mitigation Plan will include a summary of the proposed compensation lands (e.g., the number and type of credits, location of mitigation bank or easement), parties responsible for the long-term management of the land, and the legal and funding mechanisms for long-term conservation (e.g., holder of conservation easement or fee title). The project proponent will submit evidence that the necessary mitigation has been implemented or that the project proponent has entered into a legal agreement to implement it and that compensatory habitat will be preserved in perpetuity.
2. For restoring or enhancing habitat within the treatment area or outside of the treatment area, the Compensatory Mitigation Plan will include a description of the proposed habitat improvements, success criteria that demonstrate the performance standard of maintained habitat function has been met, legal and funding mechanisms, and parties responsible for long-term management and monitoring of the restored habitat.

Review requirements are as follows:

- ▶ The project proponent will consult with CDFW and/or any other applicable responsible agency prior to finalizing the Compensatory Mitigation Plan in order to satisfy that responsible agency's requirements (e.g., permits, approvals) within the plan.
- ▶ For species listed under ESA or CESA, the project proponent will submit the mitigation plan to CDFW and/or USFWS for review and comment.
- ▶ For other special-status wildlife species the project proponent may consult with CDFW and/or USFWS regarding the availability and applicability of compensatory mitigation and other related technical information.

Compensatory mitigation may be satisfied through compliance with permit conditions, or other authorizations obtained by the project proponent (e.g., incidental take permit, if required), if these requirements are equally or more effective than the mitigation identified above.

Significance after Mitigation

Mitigation Measures 3.6-2a, 3.6-2b, and 3.6-2c would reduce potential impacts on special-status wildlife species by requiring avoidance and protection of these species from injury, mortality, and other disturbance; maintenance of habitat function through retention of important habitat features such that there would be no substantial long-term loss or degradation of habitat; and compensation for impacts if these impacts cannot be avoided. Implementation of these mitigation measures would reduce impacts to special-status wildlife species such that no populations of these species would be reduced below self-sustaining levels and treatment activities would not contribute to a trend toward a species not already listed becoming listed as threatened or endangered, or substantially reduce the number or restrict the range of a species that is already listed as endangered, rare, or threatened. Additionally, TRPA's non-degradation standard for wildlife disturbance zones would be maintained. Impacts would be reduced to **less than significant**.

Impact 3.6-3: Potential to Substantially Affect Riparian Habitat or Other Sensitive Habitats Through Direct Loss or Degradation that Leads to Loss of Habitat Function

Later treatment activities could potentially result in loss or degradation of montane riparian, wet meadow, and other sensitive habitats. Implementation of SPRs BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-7, HYD-3, and HYD-4 require that potential sensitive natural communities and other sensitive habitats be identified and protected prior to implementing treatments. With implementation of applicable SPRs and compliance with existing CFPRs and TRPA, federal, and state regulations and permitting requirements that protect SEZs, wetlands, and other sensitive habitats, the potential loss or degradation of montane riparian, wet meadow, or other sensitive habitats from later treatment activities would be **less than significant**.

As described in Section 3.6.2, "Environmental Setting," sensitive habitats in the program area include montane riparian, wet meadow, and aquatic (including riverine, open water/lacustrine) habitats. Potential effects of implementing the PTEIR on aquatic habitats and fisheries specifically are discussed separately in Impact BIO-3.6-5. The following describes potential project-related effects on riparian/wet meadow habitats.

The PTEIR proposes a range of treatment activities to reduce the risk of wildfire including mechanical thinning, manual/hand thinning, prescribed understory burning, pile burning, sale and transport of merchantable timber, and the transport and use of biomass for energy generation and wood pulp products. Specific locations of specific treatment activities under the PTEIR have not yet been identified for this program-level analysis. However, to the extent that treatments would be implemented within or adjacent to riparian or wet meadow habitats, project implementation could directly or indirectly disturb or remove some of these areas unless effective and comprehensive protection measures are implemented. Conversely, treatments designed specifically to enhance riparian, aspen, and wet areas, including removal of encroaching conifers, are expected to improve habitat functions. The discussion below first summarizes how SPRs would be incorporated into later treatment activities to identify and protect sensitive habitats for each treatment project under the PTEIR, followed by a summary of potential residual effects on sensitive habitats after SPRs have been applied.

Riparian/Wet Meadow Protection Requirements and Enhancement Projects

SPR BIO-1 requires data review and a reconnaissance-level survey of proposed treatment sites to determine the potential for sensitive habitats to occur or be affected by treatment activities. If sensitive habitats may be present, SPR BIO-1 requires those resources to be avoided if possible while meeting high-priority treatment objectives. SPR BIO-2 requires crew members and contractors to receive training regarding biological resources from a qualified biologist so crews are aware of potential sensitive habitats in the treatment area and requirements to reduce or avoid disturbances. If treatment in areas that may support sensitive habitats cannot be avoided, SPR BIO-3 requires site-specific surveys to identify and map the limits of these sensitive habitats using standard field protocols prior to treatment so that appropriate avoidance and minimization measures can be implemented. SPR BIO-4 requires that treatments in riparian habitat be designed to avoid loss or degradation of riparian habitat function. SPRs designed to identify sensitive habitats (SPR BIO-3), identify and protect WLPZs and SEZs (SPRs HYD-3 and HYD-4), and retain the habitat functions of riparian habitat (SPR BIO-4) would avoid and minimize the disturbance or loss of these sensitive habitats. Additionally, SPR BIO-7 requires BMPs to prevent the spread of invasive plants, noxious weeds, and plant pathogens that could degrade the quality of sensitive habitats. These SPRs would substantially reduce potential direct and indirect impacts to sensitive habitats, including montane riparian and wet meadow. Design of later treatment activities under the proposed program would comply with CFPRs designed to avoid and minimize disturbances to aquatic, riparian, and wet meadow habitats (14 CCR Sections 956.3, 956.4, 956.5, and 956.7). However, because specific treatment locations or prescription details in relation to high-quality sensitive habitats have not been identified, this analysis assumes that some treatment activities could still result in direct or indirect degradation or loss of riparian/wet meadow habitats. These potential residual impacts are discussed for each sensitive natural community/sensitive habitat category in the sections that follow.

Aspen, meadow, riparian, and wet-area restoration is a special prescription intended to restore, retain, or enhance such areas for their ecological value. Degraded conditions of the target aspen, meadow, riparian, and/or wet area would be identified, which often includes encroachment and shading by conifers and other vegetation. Treatment

goals and measures of success would be based on the site-specific conditions. Treatments would be designed specifically to restore or enhance habitat elements that are currently impaired or degraded, such as through the removal of encroaching conifers. These restoration treatments would result in improved ecosystem functions to varying degrees within the program area.

Potential Residual Effects on Riparian/Wet Meadow Habitats

Implementing treatment activities under the PTEIR may result in temporary disturbance or direct removal of native riparian vegetation resulting in a loss of riparian habitat acreage or function. While treatments in or adjacent to riparian habitats would primarily focus on removal of uncharacteristic fuel loads, it may be determined necessary in some instances to remove native riparian shrubs and trees to reduce fire-hazard risks to human lives and property. Additionally, when prescribed fire is used, a burn perimeter would be established around the treatment area, including possibly in riparian and wet meadow areas. Removal of native understory vegetation could reduce habitat functions for wildlife species that use the shrub layer or require structural complexity, and removal of woody vegetation could leave stream banks more susceptible to erosion and reduce stormwater filtration. SPR BIO-4 would reduce some of the potential indirect impacts on riparian habitat, such as avoiding removing vegetation that shades streams or contributes large woody debris for fish and amphibians, but indirect impacts could still occur from removal of native riparian vegetation. Not all species benefit from an open understory free of shrubs. Many species that use riparian habitats for cover, nesting, denning, and roosting are dependent on a well-developed shrub layer. Riparian habitats that are diverse in both the composition of vegetation species and physical habitat structure are likely to support a wider variety of wildlife; and, reducing structural complexity and species diversity can reduce habitat functions for many species. Removal of dead and dying trees, encroaching upland species, invasive plants, and excess understory vegetation growth can also have beneficial effects through increased water and nutrient availability for native riparian vegetation. While both beneficial and adverse impacts could occur, any permanent removal of native riparian vegetation could result in a net loss of riparian habitat area and function in treatment areas.

The following sections describe potential impact mechanisms that are unique to each treatment activity. Most treatment activities would be implemented in combination with other treatment activities to achieve the objectives of a treatment type (i.e., WUI fuel reduction, ecological restoration). For example, mechanical and manual treatments could be used together to remove vegetation, which could then be piled and burned. Understory burning also involves establishing a containment line around the burn perimeter, typically using mechanical and manual treatment activities prior to burning.

Prescribed Burning

Prescribed burning could result in directly burning and consuming vegetation that characterizes sensitive natural communities or sensitive habitats. Prescribed burns could consume vegetation completely or could reduce the viability of seedbanks of dominant vegetation if they are not adapted to fire or if the fire burns too hot. Prescribed burning has potential to reduce regeneration of sensitive habitats that are not adapted to fire.

Mechanical Treatment

Mechanical treatments in riparian areas, wet meadows, and other SEZs are limited by TRPA Code Section 61.1.6.C. This code section restricts vehicles to outside of SEZs, except in limited cases where over-snow tree removal or innovative technology is proposed and where the project proponent can demonstrate that these approaches will not result in significant soil disturbance or vegetation damage. Thus, mechanical treatments would have little potential to degrade riparian/wet meadow habitats.

Manual Treatment

Manual treatments typically result in less ground disturbance than mechanical treatments; nonetheless, there is still a risk of trampling, breaking, cutting nontarget vegetation, including species that characterize sensitive habitats. Temporary ground disturbance could occur during treatment implementation, including turning soil where roots of invasive plants are pulled out; driving motorized vehicles, such as off-highway vehicles, to access treatment sites and haul treated material off-site; and ground crews walking over vegetation. However, because manual treatments are implemented on a relatively small scale by trained individuals selectively treating targeted vegetation by hand, there is

limited risk of removing non-targeted vegetation and this treatment type would generally not substantially alter or result in a loss of sensitive habitats unless designed to do so.

Conclusion

SPR BIO-1 requires data review and reconnaissance surveys to identify potential riparian or other sensitive habitats and sensitive natural communities and SPR BIO-2 requires biological resource training for workers so they would learn to recognize sensitive natural communities and habitats and the SPRs, mitigation measures, BMPs, and laws and regulations that protect these resources. SPR BIO-3 requires site-specific surveys to identify and map the limits of sensitive natural communities and other sensitive habitats using standard field protocols. SPR BIO-4 requires the design of treatments to avoid loss or degradation of riparian habitat functions and values, and SPRs HYD-3 and HYD 4 require the identification and protection of WLPZs and SEZs. SPR BIO-7 requires BMPs to prevent the spread of invasive plants, noxious weeds, and plant pathogens that could degrade the quality of sensitive habitats communities. These SPRs would substantially reduce potential direct and indirect impacts to sensitive habitats, including montane riparian and wet meadow.

Although there would still be potential for direct removal of sensitive vegetation or habitat modifications that degrade the quality or amounts of sensitive habitats, the magnitude of these potential effects is expected to be minor with implementation of the applicable SPRs. Furthermore, later treatment activities under the PTEIR would be required to comply with existing TRPA, federal, and state regulations and permitting requirements that protect SEZs, wetlands, and other sensitive habitats. TRPA's existing policies and Code provisions address potential project-related impacts to SEZs and other sensitive habitats Basin. Specifically, the TRPA Goals and Policies and the Code require protection of riparian habitats and SEZs through limitations on vegetation removal in SEZs, restrictions on the use of mechanical equipment in SEZs and other measures. Impacts to riparian, wetland, and other sensitive habitats would also be minimized, avoided, or mitigated, as needed, through the permitting processes required by CWA Section 401 and CDFW Code Section 1600 et seq. Depending on the type and magnitude of a potential impact to SEZ or other sensitive habitat, permit requirements can include BMPs or setbacks specifically designed to protect those resources.

In addition to incorporation of applicable SPRs designed for the PTEIR, project-level planning and compliance with existing regulations would minimize or avoid potential impacts through the design, siting and permitting process; and require site-specific measures as a condition of permitting. Therefore, potential disturbances or loss of montane riparian, wet meadow, or other sensitive habitats from later treatment activities under the PTEIR would be **less-than-significant**.

Mitigation Measures

No mitigation is required.

Impact 3.6-4: Potential to Substantially Affect State or Federally Protected Wetlands

Limited treatment activities including aspen and meadow restoration (i.e., removal of conifers in these areas) and watercourse crossings could occur on lands that contain state or federally protected wetlands. These activities have the potential to remove wetland vegetation and alter wetland hydrology or topography resulting in loss or degradation of wetland function. Implementation of SPRs BIO-1 and HYD-4 require that potential wetlands be identified and protected prior to implementing treatments. Compliance with the CFPRs would require the site-specific mapping and identification of protection measures, which would avoid substantial effects on state and federal wetlands. This would be a **less than significant** impact.

The proposed program does not specifically propose treatment activities in state and federally protected wetlands, or other aquatic habitats. However, manual treatments for the proposed aspen, meadow, riparian, and wet-area restoration prescriptions may be implemented in wetland habitats under this program. Additionally, later treatment activities in upland habitats adjacent to wetlands could inadvertently directly or indirectly disturb or degrade wetlands. SPR BIO-1 requires data review and reconnaissance surveys to identify potential sensitive biological resources, SPRs HYD-1 and HYD-3 require water quality protections, and SPR HYD-4 requires identification and protection of WLPZs. In addition, TRPA Code Section 61.1.6.C restricts vehicles to outside of SEZs (which include all state and federally protected wetlands), except in limited cases where over-snow tree removal or innovative

technology is proposed and where the project proponent can demonstrate that these approaches will not result in significant soil disturbance or vegetation damage.

Furthermore, all later treatment activities would comply with applicable requirements of the CFPRs intended to protect federal and state wetlands (see Appendix B). The CFPRs protect watercourses, WLPZ, marshes, wet meadows, and other wet areas by restricting the placement of roads and landings (14 CCR 963), prohibiting the discharge of sediment or other materials, restricting vegetation removal, maintaining large woody debris (LWD) recruitment (14 CCR 956.3), and requiring a site-specific assessment by an RPF and development of site-specific measures to protect and restore the following conditions: water temperature, streambed and flow modification by LWD, filtration of organic and inorganic material, upslope stability, bank and channel stabilization, spawning and rearing habitat for salmonids, and vegetation structure diversity for fish and wildlife habitat (14 CCR 956.4). These CFPR requirements are applied to each later treatment activity by an RPF and are included as requirements in each Program Timber Harvest Plan.

These SPRs and compliance with CFPRs would substantially reduce potential direct and indirect impacts to wetlands and aquatic habitats. This would be a **less than significant** impact.

Mitigation Measures

No mitigation is required.

Impact 3.6-5: Potential to Substantially Affect Distribution, Abundance, or Viability of Special-Status Fish, Other Native Fish, or Game Fish Species Either Directly or Through Habitat Modifications

Later treatment activities implemented under the Tahoe PTEIR may cause short-term indirect impacts to fish through temporary disturbance or degradation of stream and riparian habitat. Direct impacts are also possible if heavy equipment or toxic substances enter waterbodies and cause injury or mortality of fish eggs or larvae or if fish are harmed during water drafting activities. Incorporation of SPRs and adherence to the CFPRs and other applicable measures would protect riparian and aquatic habitats in watercourse and lake protection zones (WLPZs) and SEZs, minimize erosion, limit stream crossings, protect water quality, and minimize the risk of injury and mortality of fish, thus avoiding or minimizing the magnitude and extent of any impacts to vulnerable fish life stages or sensitive fish habitat. As a result, habitat disturbance and the risk of fish injury or mortality would be minor and fish distribution, abundance, and viability would not be substantially reduced. Impacts are therefore considered **less than significant**.

Indirect Impacts

Minor, short-term degradation of some stream habitats and minor, short-term loss of riparian function may result from vegetation removal in riparian areas, inputs of fine sediment at stream crossings, and erosion and delivery of fine sediment to streams due to ground disturbance or burning, but these effects would be temporary and, with riparian, stream, and upland protections provided by SPRs and applicable CFPRs, would be of limited extent and magnitude. Later treatment activities would include selected removal of vegetation throughout the program area but effects on fish from alteration of riparian habitat would be limited to areas where treatment (e.g., tree thinning) adjacent to streams and lakes causes short-term reductions in riparian functions such as stream shading, inputs of nutrients and woody material, and the provision of cover for fish. Adverse impacts on riparian function are expected to be minor because later treatment activities in riparian areas (WLPZs and SEZs) would be relatively limited in extent and subject to restrictions and protections afforded by SPRs, the CFPRs and the TRPA Code, which would avoid or minimize degradation of functions and processes affecting fish habitat. Implementation of SPRs BIO-1 through BIO-4 and HYD-3 would identify and delineate riparian areas (WLPZs and SEZs) and other sensitive habitats prior to treatment, incorporate measures to protect riparian function into treatment designs, and provide training for workers to comply with applicable environmental laws and regulations including CFPR measures that pertain to operations in the WLPZ (14 CCR Sections 956.3, 956.4, 956.5, 956.7, 963, 963.6, 963.7, and 963.9). Later treatment activities in degraded riparian areas may include restoration intended to restore, retain, or enhance such areas for their ecological value, resulting in long-term benefits to fish and aquatic habitat.

Short-term physical disturbance or alteration of fish habitat would primarily result from minor delivery of fine sediment to watercourses and, in limited cases, disturbance of stream beds, stream banks, and lakeshores during treatment activities. Heavy equipment would be used in some areas to access treatment sites and for yarding and transport of trees and slash. Disturbance of the bed or banks of fish-bearing streams or lakeshores by yarding or heavy equipment, including driving of equipment through streams at low-water crossings, could increase erosion and sediment delivery that temporarily degrades water quality, temporarily reduces instream shelter habitat, and temporarily reduces prey availability or feeding success by fish. Leaks or spills of petroleum or other toxic substances from equipment or staging/fueling areas would cause similar short-term effects on water quality and fish habitat suitability if they were to occur. Impacts caused by erosion from soil disturbance or toxic substances entering waterbodies would be most likely in Planned CWPP Projects areas, which encompass 11,714 acres (66 percent) of the program area and consist primarily of larger-acreage parcels of public land subject to mechanical and other treatment methods. With incorporation of SPR BIO-4 and HYD-3 to avoid riparian disturbance and maintain riparian function, SPR HYD-1 to maintain water quality, and applicable CFPRs and TRPA Code requirements that limit heavy equipment use in WLPZs and at watercourse crossings, project-related sedimentation, water quality degradation, and aquatic habitat alterations would be minimized and the severity and extent of any effects on fish habitat would be minor.

Fish could be disturbed and temporarily stressed by treatment activities occurring in close proximity to watercourses, but effects are expected to be minor and temporary, occurring only occasionally and for short periods (minutes to hours) during typical treatment activities. While operation of equipment and other treatment activities adjacent to streams and lakeshores could disturb and temporarily displace fish from preferred habitat and interrupt essential behaviors (e.g., migration, spawning, foraging, sheltering), projects implemented under the PTEIR would incorporate SPRs BIO-1 through BIO-4, SPR HYD-3, and applicable CFPRs to identify and avoid sensitive habitats, restrict heavy equipment use, and limit disturbance in and near watercourses, thus minimizing the frequency and extent of fish disturbance (14 CCR Sections 954.1, 956.3, 956.4, 956.5, and 956.7). Temporary disturbance of fish and minor alteration of fish habitat may also occur during water drafting activities, but water drafting is expected to be infrequent and would be subject to protection measures included in SPR BIO-5 and other applicable regulations, thus minimizing the likelihood and severity of any potential impacts.

Treatment activities occurring away from streams and riparian areas may also cause soil disturbance, including ground compaction, erosion from burned areas, and landsliding, but the likelihood of sediment delivery to aquatic habitats would be minimized through incorporation of SPRs GEO-1 through GEO-9 and applicable CFPRs (14 CCR Sections 952.5, 963, 963.6, 963.7, and 963.9) that would restrict wet weather operations, limit soil compaction, stabilize disturbed soil, limit operations on steep and unstable slopes, and limit the intensity of prescribed burns. Some erosion would result from reconstruction or grading of existing forest roads used to access treatment sites, but later projects under the PTEIR would not include construction of new temporary or permanent roads.

Direct Impacts

Direct impacts to fish are possible if fish are unable to avoid heavy equipment at low-flow watercourse crossings and pump intakes at water drafting locations, or if fish are exposed to great enough concentrations or durations of toxic substances that leak or spill into waterbodies. While injury or mortality of fish by crushing at watercourse crossings, impingement at drafting pump intakes, or exposure to toxic substances is possible, free-swimming fish life stages are extremely unlikely to experience these effects because they are adept at moving away from disturbance and unsuitable habitat conditions. Fish eggs and non-motile larvae could be subject to these effects if heavy equipment, water drafting intakes, or toxic substances enter streams when eggs or newly hatched larvae are present in the substrate. Special-status fishes known or with potential to occur in the program area (Lahontan cutthroat trout, mountain sucker, mountain whitefish, and Lahontan tui chub) spawn from spring through summer, primarily in gravel riffles of streams. Non-special-status native fishes occurring in the program area (e.g., Lahontan redband shiner, Lahontan speckled dace, Tahoe sucker, Paiute sculpin) and some non-native game fish (e.g., rainbow trout) also spawn in spring or summer in similar stream habitats. Other non-native game fish (e.g., brown and brook trout, Kokanee salmon) use similar habitat but spawn in fall or early winter.

While direct impacts to some fish species are possible if later treatment activities affect vulnerable life stages during these time periods and where these species occur, incorporation of SPRs BIO-1, HYD-3, and BIO-5 as well as applicable CFRs (14 CCR Sections 956.3, 956.4, 956.5, 956.7, 963, 963.6, 963.7, and 963.9), would identify and avoid fish spawning habitat, minimize watercourse crossings by heavy equipment, and limit the intake velocity at pumps used for water drafting, largely avoiding or minimizing the likelihood of direct impacts. The severity and likelihood of spills or leaks of toxic substances would be minimized by implementation of best management practices included in SPR HYD-1, which requires compliance with applicable water quality regulations. With incorporation of the aforementioned SPRs and other protection measures, direct impacts to fish, including populations of special-status species, other native fish, and non-native game fish, would be unlikely and would not reduce their distribution, abundance, or viability. As discussed in Impact 3.6-6, below, later projects under the PTEIR would not impede upstream or downstream movement of fish during or after project implementation, thus avoiding effects on fish distribution and movement. As a result, later treatment activities would not impede or prevent access to habitat required to support reproduction and maintain population viability. Adverse impacts on special-status or other native fish and non-native game fish that could result from introduction or spread of aquatic invasive species (AIS) are addressed in Impact 3.6-7.

For the reasons discussed above, potential program-related indirect and direct impacts on special-status and common fish species would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.6-6: Potential to Interfere Substantially with Fish and Wildlife Movement Corridors or Impede Use of Nurseries

Later treatment activities implemented under the proposed program could be located in areas used as fish and wildlife movement corridors or nurseries. Treatment-related noise and disturbance could lead to temporary changes in migration or movement patterns. Wildlife nursery sites could be disturbed or essential nursery habitat components could be degraded by later treatment activities. SPRs BIO-1, BIO-3, BIO-4, BIO-8, HYD-1, HYD-3, and HYD-4 require identification of nursery sites prior to treatment activities and actions to prevent degradation of aquatic and riparian corridors. Temporary shifts in wildlife movements to avoid or navigate around active treatment sites and associated disturbances would not substantially interfere with movement requirements or migration patterns; and program implementation would not create long-term barriers to local or landscape-level movements. While implementation of SPRs would minimize impacts, nursery sites could still be removed, degraded, or disturbed during treatment activities. This would be a **potentially significant** impact.

Definitions and summaries of fish and wildlife movement corridors and nursery sites in the program area are provided in Section 3.6.2, "Environmental Setting."

Prescribed fire, mechanical treatment, and manual treatment could occur within areas used by wildlife for movement corridors or nurseries. Examples of wildlife nurseries potentially present in the program area include bat maternity roosts and deer fawning areas. The following discussion considers the potential for short-term disturbance to wildlife movement and nurseries during later treatment activities and for longer-term effects following treatment due to habitat modification and reduced habitat function. Except for mule deer, this analysis primarily considers impacts on native species that do not meet the definition of special-status species (refer to Impact 3.6-2 for further discussion of impacts on special-status wildlife species).

Short-Term Effects during Treatment Activities

Noise or visual disturbance due to the presence of equipment, personnel, or fire could cause resident or migratory wildlife to temporarily avoid or move out of the areas immediately surrounding treatment areas. These disturbances could temporarily disrupt the movement patterns of some wildlife species that may use treatment areas or adjacent lands for regular movements locally or for seasonal migrations. Additionally, access or use of any wildlife nursery sites (e.g., bat maternity roosts, deer fawning areas) present within or adjacent to active treatment areas could be disturbed or impeded temporarily by treatment activities, as explained further below.

Some treatment activities in the WUI would occur in close proximity to human development. The general types and levels of disturbances (e.g., equipment noise, visual disturbance, human activity) from treatment activities near developed areas (e.g., communities, existing structures, and public roads with consistent traffic) would likely be similar to existing disturbance levels in these areas. Wildlife near human development is likely accustomed to human presence and motorized vehicles (e.g., mule deer); therefore, any temporary incremental increases in noise and human disturbances from treatment activities in these areas are unlikely to disrupt current movement patterns substantially above existing levels.

In areas further from human development, the treatment areas would typically be surrounded by natural open space accessible to terrestrial wildlife; and, individuals would likely move out of active treatment areas and into adjacent habitats temporarily to avoid fire, noise, and personnel (Monteith et al. 2018, Shaffer et al. 2018). Treatment sites containing historic migratory corridors or other important movement routes (e.g., for mule deer) would likely not span entire core areas available for movement, thereby allowing migratory or mobile species to move around areas of treatment activities through adjacent open space temporarily. Additionally, treatment activities would not create any temporary barriers to movement that would redirect migration during non-working hours. Therefore, treatment-related disturbances to local or regional wildlife movements would be temporary and relatively minor.

Treatments would not occur within aquatic habitat types, but treatment could occur adjacent to aquatic wildlife movement corridors and nursery sites. Treatments could occur within riparian corridors and other terrestrial movement corridors, such as ridgelines or valleys. SPR HYD-1 requires compliance with water quality regulations and SPR HYD-3 requires WLPZs to be established on each side of watercourses which would: minimize disturbance to wildlife movement and nursery sites within aquatic and riparian habitat by limiting treatment activities within WLPZs; and protect aquatic and riparian habitat by avoiding erosion and associated sedimentation that could degrade aquatic nursery sites or sensitive riparian habitat. SPR HYD-4 and TRPA Code require delineation and protection of SEZs. In addition, SPR BIO-4 and CFPRs (14 CCR Sections 956.3, 956.4, 956.5, and 956.7) would prevent riparian vegetation removal that could reduce stream shading and result in increased temperatures that could be harmful to some nurseries (e.g., developing salmonid eggs). SPR BIO-1 requires data review and a reconnaissance-level survey of the proposed treatment site to determine whether there is potential for wildlife nurseries to occur. If it is determined that wildlife nurseries may occur, then SPR BIO-8 would require surveys for nursery sites. SPR BIO-8 would minimize impacts to nursery sites by ensuring they are identified before treatment activities are implemented so they can be avoided under further measures. If nursery sites identified in surveys conducted pursuant to SPR BIO-8 occur within areas or habitats that are not avoided or protected in implementation of the SPRs, treatment of vegetation containing an active nursery site could potentially cause the removal or abandonment of a wildlife nursery. For example, treatment activities could remove or burn trees containing a bat maternity roost. In addition, treatment-related noise and human disturbance near nursery sites could result in temporary avoidance, changes in behavior, separation of adults and young, or, if the disturbance is severe, abandonment of the nursery site. These disturbances and behavioral responses could decrease the reproductive success of the affected population.

Long-Term Effects of Treatment Types

Treatments would remove vegetation and change habitat structure (e.g., cover, size-class distribution) locally but would not cause substantial permanent habitat loss or degradation that would interfere substantially with movement corridors over the long term. Although the long-term effects of fuel reduction treatments on wildlife species and habitat are not fully understood (Collins et al. 2014), a large experimental study designed to evaluate how fuel treatments influenced a multitude of ecological variables in numerous forests found that wildlife and wildlife habitats were not substantially affected several years post-treatment and included variables such as species abundance, community structure, and diversity (McIver et al. 2013). Furthermore, for some species, habitat quality is likely to improve with certain treatments (e.g., treatments designed specifically to enhance riparian, aspen, and wet areas).

Later treatment activities would not create substantial barriers to the movement of resident or migrating wildlife that utilize native habitats because treated areas would remain permeable to wildlife. Additionally, although treatment could result in some gaps in vegetation, treated areas would generally retain some of the pre-treatment vegetation that provides protection and foraging during movement. During prescribed fire treatments some existing vegetation would be retained in a mosaic pattern in forest or shrub communities. Overall, treated areas would typically be small compared

to migration corridors and likely span only a portion of a corridor or movement area such that wildlife could move through or near treated areas without substantially changing migration patterns. Although individual responses to later treatment activities would vary, some species could benefit from treatment; for example, openings in post-fire forests were found to allow pronghorn (which does not occur in the Lake Tahoe Basin) different routes to foraging areas (Franke 2000, Shaffer et al. 2018). Mule deer in the program area would likely benefit from a mosaic of burned and unburned habitat due to increased foraging opportunities, easier movement, and enhanced ability to detect predators within these environments (CDFW 2015, Holl et al. 2012). SPR BIO-4 and CFPRs (14 CCR Sections 956.3, 956.4, 956.5, and 956.7) would require that treatments are designed to avoid loss or degradation of riparian habitat function, such as preventing the removal of trees and large woody debris that provide stream shading, cover, and bank stability. Implementation of this requirement would avoid long-term increases in stream temperature and minimize loss of riparian vegetation cover, erosion, and sedimentation that could degrade movement corridors or nursery sites within aquatic and riparian habitat.

Treatment activities could modify, degrade, or remove important habitat features of a nursery site. Examples of important habitat requirements for nursery sites that could be affected include hollow trees for bat maternity roosts and meadow and riparian areas that provide hiding cover and forage for mule deer fawning. Some wildlife populations return to the same nursery site every year (e.g., some bats and other species) and degradation or loss of important habitat features at these locations could impede the use of the nursery site for multiple breeding seasons.

Conclusion

SPR HYD-1 would require compliance with water quality regulations, SPR HYD-3 and CFPRs would require WLPZs to be established on each side of watercourses, and SPR HYD-4 and TRPA Code would require delineation and protection of SEZs. In addition, SPR BIO-4 and CFPRs would prevent vegetation removal that could reduce stream shading and require that treatments are designed to avoid loss of riparian habitat function. SPR BIO-1 would require data review and a reconnaissance-level survey of the proposed treatment site to determine whether there is potential for wildlife nurseries to occur. If it is determined that wildlife nurseries may occur, then SPR BIO-8 would require surveys for nursery sites. With the implementation of SPRs, treatment activities would not substantially interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors. However, while compliance with regulations and implementation of SPRs would minimize impacts, treatment activities could still result in adverse effects on wildlife nurseries if these sites occur within areas or habitats that are not avoided or retained in implementation of the SPRs. Important nursery sites could be removed, degraded, or disturbed by treatment activities. Some nursery sites may contain a large number of individuals and disturbance or loss of these nurseries could have a substantial effect on reproductive success and the local or regional population. This would be a **potentially significant** impact.

Mitigation Measures

Mitigation Measure 3.6-6: Retain Nursery Habitat and Implement Buffers to Avoid Nursery Sites

The project proponent will implement the following measures while working in treatment areas that contain nursery sites identified in surveys conducted pursuant to SPR BIO-8:

- ▶ **Retain Known Nursery Sites.** A qualified RPF or biologist will identify the important habitat features of the wildlife nursery and, prior to treatment activities, will mark these features for avoidance and retention during treatment.
- ▶ **Establish Avoidance Buffers.** The project proponent, in consultation with CDFW and/or TRPA (depending on species), will establish a non-disturbance buffer around the nursery site if activities are required while the nursery site is active/occupied. The appropriate size and shape of the buffer will be determined by a qualified RPF or biologist, based on potential effects of project-related habitat disturbance, noise, visual disturbance, and other factors. No treatment activity will commence within the buffer area until a qualified RPF or biologist confirms that the nursery site is no longer active/occupied. Monitoring of the effectiveness of the non-disturbance buffer around the nursery site by a qualified RPF, biologist, or biological technician during and after treatment activities will be required. If treatment activities cause agitated behavior of the individual(s), the buffer distance will be increased, or treatment activities

modified until the agitated behavior stops. The qualified RPF, biologist, or biological technician will have the authority to stop any treatment activities that could result in potential adverse effects to special-status species.

Significance after Mitigation

Implementation of Mitigation Measure 3.6-6 would reduce potentially significant impacts to wildlife nursery sites because it would avoid removal of important habitat features and avoid or minimize disturbance from noise and human presence. This would retain the value and function of the nursery site such that its use by native wildlife would not be substantially impeded, thereby reducing this impact to **less than significant**.

Impact 3.6-7: Cause the Introduction or Spread of New or Invasive Species of Animals

Treatment activities have the potential to introduce or spread aquatic invasive species (AIS) to waterbodies in the program area as well as elsewhere within and outside the Tahoe Basin if contaminated equipment comes into contact with waterbodies in which habitat conditions are suitable for AIS. Treatment activities also have the potential to introduce or spread terrestrial invasive plant species (TIS) by creating soil disturbance that is conducive to TIS recruitment and by introducing or spreading TIS seeds or propagules. Incorporation of SPRs requiring the removal of existing TIS infestations and proper inspection and decontamination of all equipment would minimize the risk of AIS and TIS introduction or spread. With these requirements, this impact would be **less than significant**.

Invasive species are plants and animals that are not native to an area and spread quickly, replacing habitat for native species, once they have been introduced and established. They can come to dominate certain habitats by attacking or outcompeting native species for nutrients, water, space, and breeding sites. They can also indirectly affect native plants and change ecosystems by altering soil stability; promoting erosion; colonizing open areas; affecting the accumulation of litter, salt, or other soil resources; and promoting or suppressing fire (Brooks et al. 2004).

Aquatic Invasive Species

Numerous AIS including aquatic plants, fishes, and invertebrates have also become established in the Lake Tahoe Region (TRPA 2014). Most AIS occur in Lake Tahoe and other lakes in the Tahoe Basin, including some within the program area, but AIS are also present in some streams. AIS including Eurasian watermilfoil (*Myriophyllum spicatum*; an aquatic plant), curlyleaf pondweed (*Potamogeton crispus*; another aquatic plant), and several warmwater fish species are present in the Upper Truckee River and in Taylor Creek, which flows from Fallen Leaf Lake to Lake Tahoe (Wittman and Chandra 2015). Other AIS present in the Tahoe Basin and portions of the program area include the Asian clam (*Corbicula fluminea*), signal crayfish (*Pacifastacus leniusculus*), and American bullfrog (*Rana catesbeiana*) (TRPA 2014). AIS not present in the Tahoe Basin but considered to be potential invaders include zebra and quagga mussels (*Dreissena* spp.) and New Zealand mud snail (*Potamopyrgus antipodarum*).

AIS adversely affect native species and ecosystems, water quality, recreation, and other values and resources. AIS are commonly spread by activities such as boating and fishing but may also be spread by any equipment or other object that comes into contact with infested waters and is capable of transporting AIS to another waterbody. Threats include new introductions of AIS to the Lake Tahoe Region from other waterbodies, as well as the expansion of existing populations within the Region and the spread of AIS to waterbodies outside the Region (TRPA 2014). The risk of AIS introduction or spread by means of treatment activities is likely greatest for aquatic plants (e.g., Eurasian watermilfoil, curlyleaf pondweed) and invertebrates including Asian clam, zebra and quagga mussels, and New Zealand mud snail, as these species are most likely to become attached to equipment used in later treatment activities. The introduction of mussels and mud snail, which are not currently known to have invaded the Tahoe Basin, is of particular concern. Preventing the introduction of AIS to new water bodies is the preferred approach to AIS control, as eradication of AIS is unlikely once populations are established and such efforts are more costly than prevention (TRPA 2014).

The likelihood of equipment used in later treatment activities becoming a vector for AIS introduction or spread is considered low because of the low frequency and duration that such equipment is typically in contact with waterbodies. Nevertheless, it is possible that equipment could be contaminated by AIS through contact with infested waterbodies within or outside the Tahoe Basin. Initial contamination may occur during activities conducted under the Tahoe PTEIR or other unrelated activities. Hoses, screens and tires of trucks used for water drafting are the most likely

vector of AIS introduction and spread, but other equipment used for later treatment activities can also become contaminated following contact with infested waterbodies and introduce AIS when crossing streams and drainage ditches or entering other waterbodies in the program area during treatment activities.

The risk of AIS introduction by equipment used for water drafting as part of later treatment activities under the PTEIR would be minimized by incorporation of SPR BIO-5, which includes a requirement to inspect and properly decontaminate equipment before and after drafting activities. Other equipment that may come into contact with water during later treatment activities such as trucks, skidders, and harvesters would also be inspected for AIS and decontaminated as required by SPR BIO-1, similarly minimizing the risk of AIS introduction or spread.

Terrestrial Invasive Species

Terrestrial invasive plant species (TIS) are non-aquatic plants with invasive characteristics that allow them to quickly become established and spread. They can impact landscapes by displacing native plants, reducing biodiversity, and by altering nutrient and water cycling processes that help maintain functioning ecosystems. They can also reduce the quality of forage and habitat for wildlife. In 2011, the Lake Tahoe Basin Weeds Coordinating Group developed a list of priority TIS, which classified TIS species by their presence in the Lake Tahoe Basin (Basin) and the potential for eradication or control (LTBWCG 2011). Class 1 weeds are those that are present in the Basin but exist in small infestations that can be eradicated with aggressive action. Some Class 1 species include: Canada thistle (*Cirsium arvense*), sulfur cinquefoil (*Potentilla recta*), hoary cress (*Cardaria draba*), yellow starthistle (*Centaurea solstitialis*), teasel (*Dipsacus folliculiflorus*), musk thistle (*Carduus nutans*) and scotch thistle (*Onopordum acanthium*). Class 2 species are weeds that are known to occur in the Basin and are managed to prevent further spread. Common Class 2 species include: bull thistle (*Cirsium vulgare*), perennial pepperweed (*Lepidium latifolium*), Dalmatian toadflax (*Linaria dalmatica*), St. Johnswort (*Hypericum perforatum*), and yellow toadflax (*Linaria vulgaris*).

Common traits of invasive plant species include rapid growth and reproduction, high levels of seed production and dispersal, the ability to alter growth form to suit conditions, and tolerance of a wide range of environmental conditions. The same characteristics that make plants invasive also allow these species to tolerate disturbances and rapidly colonize disturbed areas. Invasive species are especially successful in areas of intensive or repeated disturbance (ERI 2004). Ground disturbance associated with mechanical treatments and other treatment activities make treatment sites vulnerable to invasive species infestation. However, all treatment activities would comply with SPR BIO-7, which reduces the potential for the introduction of new invasive species to a treatment site by requiring the inspection and decontamination of equipment, vehicles, and clothing prior to entering a treatment site and by implementing other Best Management Practices for fire and fuel management. SPR BIO-7 also reduces the potential for the spread of existing invasive species within a treatment site, by requiring the identification and removal of invasive species prior to initiating treatment activities.

Conclusion

Treatment activities have the potential to introduce or spread TIS and AIS. However, with incorporation of the SPRs described above, there would be very little risk of introducing or causing the spread of TIS or AIS as a result of later treatment activities implemented under the PTEIR. This potential impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact 3.6-8: Substantially Reduce Habitat or Abundance of Common Wildlife, Including Nesting Birds

Later treatment activities conducted under the proposed program would occur in habitats that support common native bird, mammal, reptile, amphibian, and invertebrate species. Treatment activities could disturb breeding; remove or damage active nests, dens, and other breeding sites; kill or injure individuals; and temporarily reduce breeding productivity of these species. Because treatments would be implemented within relatively small proportions of the extensive ranges of common species, and suitable habitat would remain available to these species across the broader landscape surrounding treatment areas, the magnitude of these potential losses would not substantially reduce the overall abundance of any common wildlife species. Additionally, implementation of SPRs BIO-1, BIO-2, BIO-3, and BIO-4 would limit the loss or degradation of high-quality breeding habitats for special-status wildlife that would also benefit common species, and implementation of SPR BIO-9 would protect common nesting birds, including raptors. Therefore, treatment activities would not substantially reduce the population size of or availability of suitable breeding habitat for any common wildlife species, including nesting birds. This impact would be **less than significant**.

Suitable foraging, breeding, and sheltering habitat for common native bird, mammal, amphibian, reptile, and other animal species is ubiquitous throughout the program area. These common species do not meet the criteria for special-status species as defined in this PTEIR; however, mandatory findings of significance pursuant to the CEQA Guidelines require consideration of whether a project would “substantially degrade the quality of the environment, reduce habitat of wildlife species, cause wildlife populations to drop below self-sustaining levels, or threaten to eliminate a plant or animal community.” Because of the large geographic scope of the program area and numerous common wildlife species distributed throughout the program area, later treatment activities implemented under the proposed program have the potential to disturb or otherwise affect many common native species.

The impact mechanisms, effects on individual animals, and short- and long-term effects on habitat composition, function, and structure associated with prescribed burning, mechanical treatment, and manual treatment described previously for Impact 3.6-2 (for special-status wildlife) and Impact 3.6-6 (for wildlife movement and nursery sites of common species) would also generally apply to common wildlife species. Temporary disturbances to foraging patterns, local movements, and reproductive activities of common bird, mammal, reptile, and amphibian species resulting from treatment activities would occur in some locations. However, common wildlife species are generally well-distributed, abundant, and adapted to varying levels of natural and anthropogenic disturbances. Temporary disturbances and displacement of animals associated with treatment activities would occur locally over short periods of time in any one area, and are not expected to affect significant portions of an individual’s foraging or breeding range, or the overall distribution of a common species.

If treatments are implemented during the breeding season (which varies by species), active nests, dens, or other breeding sites present in the program area could be removed or damaged during manual and mechanical treatment activities, or burned directly or otherwise damaged by prescribed burning (e.g., heat scorch, smoke). These disturbances could result in reproductive failure and the direct mortality or injury of adults or young, if present. For example, common birds use essentially all terrestrial habitats and a wide variety of substrates for nesting in the program area, including trees, tree and snag cavities, shrubs, burrows, ground substrate, and grasses/herbaceous vegetation. Treatment activities that occur outside the nesting season for common birds and raptors would not remove or disturb active nests. Additionally, some common wildlife species are subject to state or federal regulatory protections. For example, native nesting birds are protected under California Fish and Game Code sections 3503 and 3503.5 and the federal MBTA. As discussed in Section 3.6.1, “Regulatory Setting,” compliance with these statutes is typically achieved by implementing avoidance and minimization measures to prevent project-related loss of active nests (e.g., conducting activities outside of the nesting bird season; identifying and avoiding disturbance by limiting treatment activities near an active nest; or monitoring active nests and delaying treatment activities near the nest until after young have fledged or the nest otherwise becomes inactive). If implementation of prescribed burning or other treatment activities during the nesting season resulted in the removal, damage, and disturbance of nests such that nest abandonment and injury or mortality of adults, young, or eggs occurred, the magnitude of potential treatment-related reproductive failure or mortality of common birds and other wildlife taxa would depend on several factors. These

factors include the types and quality of habitats affected, the timing of vegetation removal relative to the most sensitive or vulnerable periods of a species breeding chronology (e.g., when fidelity to a breeding site is highest due to the presence of developing or immobile young), and the density of common species breeding within a treatment site.

As discussed previously, treatment activities would remove vegetation and alter habitat structure (e.g., amount of cover, size-class distribution) locally, but would not cause permanent habitat degradation or conversion to a different habitat type that would substantially reduce habitat for common wildlife species over the long term. During prescribed burning treatments, some existing vegetation would be retained in a mosaic pattern in forest or shrub communities. In some cases, habitat quality, particularly within areas treated with the proposed aspen, meadow, riparian, and wet-area restoration prescriptions, may improve over the long term with treatment. Although responses to vegetation changes are likely to vary and some changes to species composition could occur locally, overall abundance and diversity of common birds and other wildlife are not expected to substantially change post-treatment, based on several large experimental studies and meta-analyses (Verschuyl et al. 2011, Stephens et al. 2012, McIver et al. 2013, Newman et al. 2018). Furthermore, suitable breeding and foraging habitats for common wildlife species in the treatable landscape are generally abundant, widely distributed, and would remain available to these species across the broader landscape surrounding treatment areas.

Implementation of SPRs would reduce potential treatment-related disturbances or loss of common wildlife and would limit the loss or degradation of some high-quality habitats. SPR BIO-2 would require crew members and contractors to receive training regarding minimizing disturbances to wildlife. Additionally, SPRs designed to identify special-status species habitat (SPR BIO-1) and sensitive natural communities (SPR BIO-3), and retain the habitat function and value of riparian habitat (SPR BIO-4), as well as compliance with protective statutes (e.g., California Fish and Game Code Sections 3503 and 3503.5 and the federal MBTA), would reduce the likelihood of impacts on common species using these important habitats. If a treatment must occur during the nesting season of common native bird species, including raptors, SPR BIO-9 would require nesting bird surveys prior to treatment activities and implementation of feasible impact avoidance strategies (e.g., protective buffers, treatment modifications, raptor nest monitoring).

Conclusion

Common wildlife species in the program area are relatively abundant locally and regionally, and habitat subject to treatment activities is not considered critical or limiting to the presence or viability of common wildlife populations. Treatment activities implemented during the breeding season could cause reproductive failure and the direct mortality or injury of adults or young present within active treatment areas. However, because treatments would be implemented within relatively small proportions of the extensive ranges of common species, and suitable habitat would remain available to these species across the broader landscape surrounding treatment areas, the magnitude of these potential losses is not expected to substantially reduce the overall abundance of any common wildlife species. Therefore, implementation of the proposed program would not substantially reduce the habitat, population abundance, or viability of common wildlife species, including nesting birds. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required for this impact.

This page intentionally left blank.