

3.4 TERRESTRIAL BIOLOGICAL RESOURCES

This section identifies the regulatory context and policies related to biological resources including federal, TRPA, state, and local regulations; describes the existing conditions in the project area; and evaluates potential biological resources impacts of the proposed Meeks Bay Restoration Project. Biological resources include vegetation and habitat types, special-status plant and animal species, and otherwise sensitive plant communities. Data reviewed in preparation of the analysis include aerial photographs of the project area; records searches of the California Natural Diversity Database (CNDDDB), the California Native Plant Society Inventory of Rare Plants, and the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation database; LTBMU sensitive species lists, the project Invasive Plant Risk Assessment (incorporated by reference), the project Biological Evaluation (hereinafter referred to as the "BE" and incorporated by reference), and the project Biological Assessment (hereinafter referred to as the "BA" and incorporated by reference) (CNDDDB 2021; CNPS 2021; ESA 2022; USFS 2013a; USFS 2013b; USFWS 2021; LTBMU 2021; and LTBMU 2022); California Department of Forestry and Fire Protection Fire and Resources Assessment Program (FRAP) land cover data, and recent biological resources surveys and assessments conducted in the project area, including an aquatic resources delineation prepared for the project (Ascent Environmental 2020).

3.4.1 Regulatory Setting

See Section 3.6, "Hydrology and Water Quality," for a discussion of Section 404 of the Clean Water Act and the Porter-Cologne Water Quality Control Act.

FEDERAL

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act (ESA) (16 U.S.C. Section 1531 et seq.), USFWS regulates 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.

Section 10 of the ESA applies 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. Section 7 of the ESA applies if a federal discretionary action is required (e.g., a federal agency must issue a permit), in which case the involved federal agency consults with USFWS.

Executive Order 11990—Protection of Wetlands

Executive Order 11990 established the protection of wetlands and riparian systems as the official policy of the federal government. The order requires all federal agencies to consider wetland protection as an important part of their policies and take action to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands.

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 will 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 CFR, Section 10.13 (50 CFR 10.13). The list includes nearly all birds native to the United States.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act, enacted in 1940 and amended multiple times since, prohibits the taking of bald and golden eagles without a permit from the Secretary of the Interior. Similar to the ESA, the Bald and Golden Eagle Protection Act defines “take” to include “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb” (16 U.S. Code 668–668c). For the purpose of the act, disturbance that would injure an eagle, decrease productivity, or cause nest abandonment, including habitat alterations that could have these results, are considered take and can result in civil or criminal penalties.

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.

National Forest Management Act

The National Forest Management Act is an amendment of the Forest and Rangeland Renewable Resources Planning Act of 1974. This Act establishes standards for how the USDA Forest Service manages the national forests, requires the development of land management plans for national forests and grasslands, and directs the USDA Forest Service to develop regular reports on the status and trends of the Nation’s renewable resources on all forest and rangelands.

TAHOE REGIONAL PLANNING AGENCY

Thresholds

The TRPA thresholds includes standards that have been developed to focus management efforts and provide a measure of progress for vegetation, wildlife, and fisheries. The adopted TRPA threshold standards for vegetation and wildlife that pertain to the Meeks Bay Restoration Project, and the attainment status for each standard, are summarized in Table 3.4-1 (TRPA 2021a).

Table 3.4-1 Relevant TRPA Vegetation, Wildlife, and Fisheries Resource Threshold Indicators and Their Attainment Status

TRPA Threshold Indicator	2019 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	At or Somewhat Better 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:	
Deep-Water Plants	Considerably Worse than Target

TRPA Threshold Indicator	2019 Attainment Status
Sensitive Plants:	
Tahoe Yellow Cress	Somewhat 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	Somewhat Worse than Target
Osprey	Considerably Better than Target
Nesting Bald Eagle Population	Considerably 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	At or Somewhat Better than Target
Deer Disturbance Free Zones Management Standards	Implemented

Source: TRPA 2021a

Tahoe Regional Plan

The Conservation Element of the Tahoe Regional Plan establishes goals for the preservation, development, utilization, and management of natural resources within the Tahoe Region. 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 Vegetation, Wildlife, and Stream Environment Zone (SEZ) Subelements are discussed in this section, and the goals related to the Meeks Bay Restoration Project from each of these subelements are identified below.

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

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

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

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

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

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.

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

The two goals 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.

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

The goal identified for SEZs is:

GOAL SEZ-1: provide for the long-term preservation and restoration of stream environment zones.

Code of Ordinances

The applicable provisions of the TRPA Code regarding terrestrial vegetation and wildlife are summarized below.

Protection and Management of Vegetation

The Code requires the protection and maintenance of all native vegetation types. Chapter 61, "Vegetation and Forest Health," Section 61.3, "Vegetation Protection and Management," provides for the protection of SEZ vegetation, other common vegetation, uncommon vegetation, and sensitive plants in SEZs (TRPA 2021b). TRPA defines an SEZ as an area that owes its biological and physical characteristics to the presence of surface water or groundwater. SEZ includes perennial, intermittent, or ephemeral streams; meadows and marshes; and other areas with near-surface water influence within the Tahoe Basin. No project or activity may be implemented within the boundaries of an SEZ except as otherwise permitted for habitat improvement, dispersed recreation, vegetation management, or as provided in Code Chapter 30, "Land Coverage." 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.

Tree Removal

TRPA regulates the management of forest resources in the Tahoe Basin to achieve and maintain the threshold standards for species and structural diversity, to promote the long-term health of the resources, and to create and maintain habitats for diverse wildlife species. Tree removal is typically subject to review and approval by TRPA, however tree removal by the Forest Service on National Forest System lands is exempt from TRPA approval.

In addition, trees and vegetation not scheduled to be removed must be protected during construction in accordance with Chapter 33, "Grading and Construction," Section 33.6, "Vegetation Protection during Construction."

Wildlife

TRPA sets standards for preserving and managing wildlife habitats, with special emphasis on protecting or 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 the 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 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 applies also 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.

STATE

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

Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code prohibit take of fully protected birds, mammals, reptiles and amphibians, and fish. Species listed under these statutes may not be taken or possessed at any time and no incidental take permits can be issued for these species except for scientific research purposes, for relocation to protect livestock, or as part of a natural community conservation plan (NCCP).

Native Plant Protection Act

The Native Plant Protection Act (NPPA) (California Fish and Game Code Section 1900 et seq.) allows the California Fish and Game Commission to designate plants as rare or endangered. Sixty-four species, subspecies, and varieties of plants are protected as rare under the NPPA. The act prohibits take of endangered or rare native plants but includes exceptions for agricultural and nursery operations; for emergencies; and, after proper notification of CDFW, for vegetation removal from canals, roads, and other building sites, changes in land use, and other situations.

3.4.2 Environmental Setting

OVERVIEW OF LAND COVER AND HABITAT TYPES

Habitat composition and distribution in the project vicinity is consistent with other conifer forest, meadow, and alpine lake systems of the northern Sierra Nevada. Land cover types in the project area consist of Jeffrey pine, lodgepole pine, montane chaparral, montane riparian, perennial grassland, and Sierran mixed conifer, and lacustrine habitat as documented by FRAP using the California Wildlife Habitat Relationship (CWHR) classification system. Figure 3.4-1 shows the distribution and extent of habitat types within the project area.

Although the project area is composed mostly of natural habitat types typical of the northern Sierra Nevada, it is a popular summer recreation site providing opportunities for camping, boating, picnicking, swimming, and beach use. Approximately 80 percent of the project area on the east side of SR 89 is occupied by developed facilities, including RV and tent camping areas, a boat ramp, resort buildings, parking areas, the existing marina, and roads and paths. Most of these uses are embedded within the matrix of natural cover types in the project area and substantially limit the quality and potential ecological functions of these habitats. For example, most of the Jeffrey pine and Sierran mixed conifer understory is occupied by campsites, parking areas, roads and trails, and other summer-use facilities and these areas are subject to high levels of disturbance.

Sierran Mixed Conifer

Within the project area, Sierran mixed conifer is located within Meeks Bay Campground; it is a relatively open forest dominated by a mix of white fir (*Abies concolor*), Jeffrey pine (*Pinus jeffreyi*), and lodgepole pine (*Pinus contorta*). Canopy cover varies from approximately 30 to 70 percent. In open areas, the understory consists of a variety of shrubs, grasses, and forbs, including Woods' rose (*Rosa woodsii*) and big sagebrush (*Artemisia tridentata*). Some of the understory is unvegetated due to the Meeks Bay Campground and other facilities located within this habitat type.

Jeffrey Pine

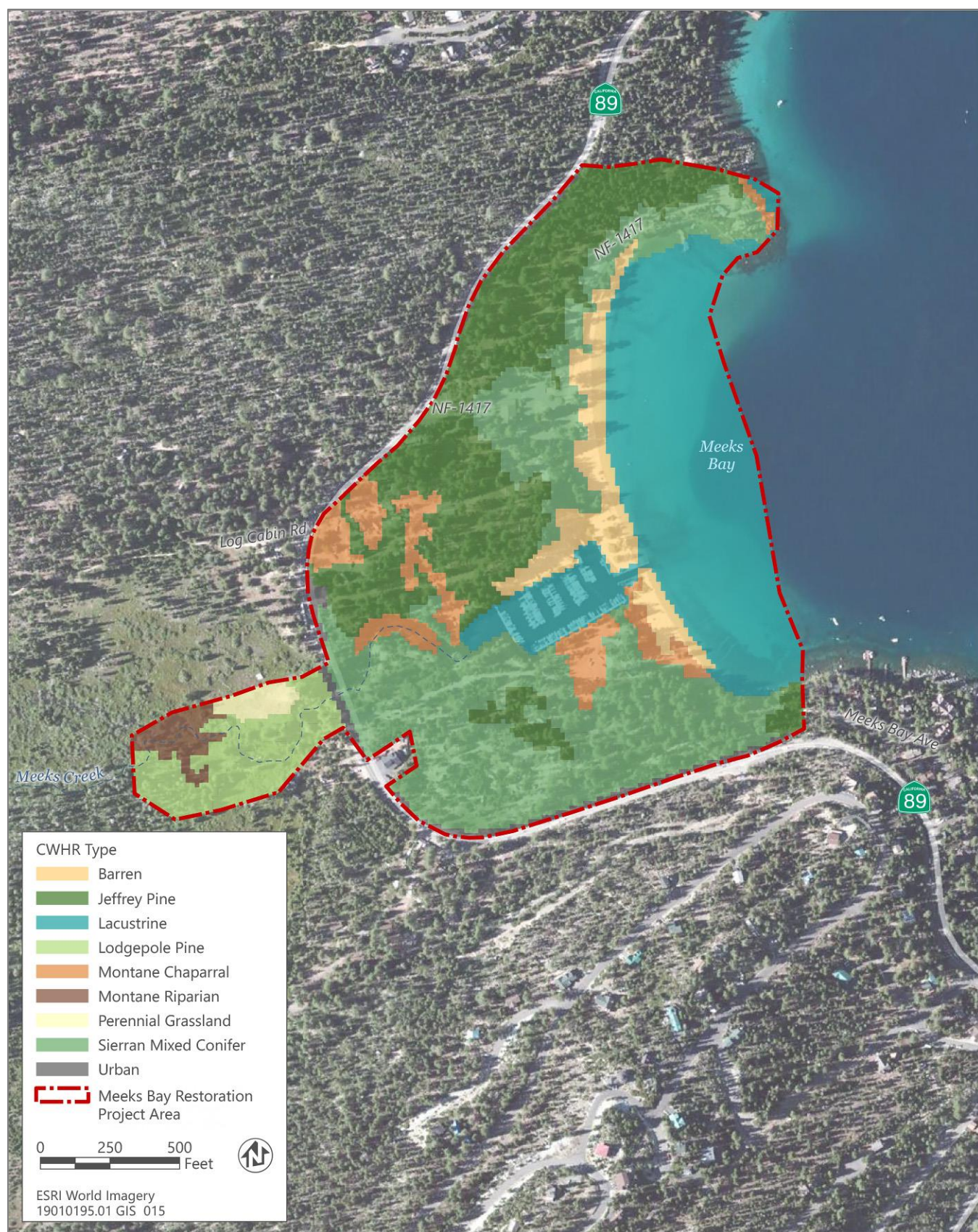
Jeffrey pine covers drier, upland regions of the project area with a single tree layer. The single tree layer ranges from approximately 50 to 150 feet in height. The stand has typically between 40 and 70 percent crown cover in the tree layer. The understory consists of greenleaf manzanita (*Arctostaphylos patula*), rabbitbrush (*Chrysothamnus nauseosa*), big sagebrush (*Artemisia tridentata* ssp. *tridentata*), sulfur buckwheat (*Eriogonum umbellatum*), and antelope bitter brush (*Purshia tridentata*). Much of the understory is unvegetated due to the Meeks Bay Campground and other facilities located within this habitat type.

Montane Chaparral

The growth form of montane chaparral species can vary from treelike to prostrate. When mature, montane chaparral is often impenetrable to large mammals. Understory vegetation in the mature chaparral is largely absent. Conifer trees may occur in sparse stands or as scattered individuals within the chaparral type. On shallow granitic soils in the Sierra Nevada, low dense growths of pinemat manzanita (*Arctostaphylos nevadensis*) and huckleberry oak (*Quercus vacciniifolia*) characterize an edaphic late-seral or climax community (i.e., a steady state influenced by substrate), associated with scattered conifers and exposed granite.

Lodgepole Pine

Lodgepole pine occurs on moist sites that are transitional between upland forest communities and wet montane meadow. This plant community is characterized by open canopies of lodgepole pine (*Pinus contorta*) of similarly sized trees in association with few other species and with a sparse understory. Trees can reach a height of 130 feet but typically average 40 to 65 feet. Many lodgepole pine stands are associated with meadow edges and streams, where the understory typically consists of willows and herbaceous species characteristic of wet montane meadows, such as grasses, forbs, and sedges.



Source: data downloaded from USDA Forest Service (EVEG) in 2018

Figure 3.4-1 Land Cover

Urban

Areas mapped as “urban” in the project area are associated with paved surfaces in the SR 89 corridor.

Barren (Beach)

The beach area along Lake Tahoe is mapped mostly as the “barren” CWHR type in the FRAP layer. The Meeks Bay beach in the project area provides habitat for Tahoe yellow cress (*Rorippa subumbellata*), which only grows along the shores of Lake Tahoe. Beaches along Lake Tahoe consist of course-grained sand with a fluctuating water elevation.

Montane Riparian

Lemmon’s willow (*Salix lemmonii*) is the dominant species with an extensive understory of a wide variety of herbaceous vegetation. In the project area, this community commonly occurs in wetter parts of Meeks Meadow.

Perennial Grassland

Perennial grassland habitat in the project area is dominated by perennial grasses and sedges such as Idaho bentgrass (*Agrostis idahoensis*) and slender wheatgrass (*Elymus trachycaulus*) and is associated with whiskerbrush (*Leptosiphon ciliatus*). This habitat occurs in the drier portions of Meeks Meadow.

Lacustrine

Lacustrine habitat in the project area consists of Lake Tahoe. Lake Tahoe is characterized by open water with a shoreline of sandy beach. The proportion of Lake Tahoe’s open water and sandy beach fluctuates annually and seasonally with changing lake levels. The plants and animals found in the littoral zone vary with water depth, and a gradient of species composition is distributed from deeper water to shore.

JURISDICTIONAL WETLANDS

The project area contains several potentially jurisdictional aquatic resources: five riverine waters (two intermittent drainages and three perennial drainages), one lacustrine water (i.e., Lake Tahoe, described above), four palustrine emergent wetlands, five palustrine scrub-shrub wetlands, and one palustrine forested wetland (Ascent Environmental 2020; Table 3.4-2).

Table 3.4-2 Total Acres of Habitat Types in the Project Area

Vegetation Community Type	Size (acres)
Terrestrial Habitats	
Sierran Mixed Conifer	22.6
Jeffrey Pine	16.4
Montane Chaparral	4.5
Lodgepole Pine	4.1
Urban	1.3
Montane Riparian	1.1
Perennial Grasslands	0.7
Barren	4.2
Aquatic Habitats	
Lacustrine	18.8
Riverine	4.9 ¹
Palustrine Emergent Wetland	2.2 ¹
Scrub-Shrub Wetland	0.9 ¹
Forested Wetland	1.0 ¹

¹ These acreages overlap with identified terrestrial habitats and do not contribute to the total acreage of the project area.

Source: Data compiled by Ascent Environmental in 2021; Ascent Environmental 2020

INVASIVE PLANTS

Four LTBMU invasive species of concern are known to occur in the project area; cheatgrass (*Bromus tectorum*), Canada thistle (*Cirsium arvense*), bull thistle (*Cirsium vulgare*), and oxeye daisy (*Leucanthemum vulgare*). Additional infestations of cheatgrass, bull thistle, oxeye daisy, and common St. John's wort (*Hypericum perforatum*) were documented on adjacent properties (LTBMU 2022). However, comprehensive invasive plant surveys have not occurred in the project area. Table 3.4-3 lists these invasive species, their threat ratings, and the number of infestations within the project area and on adjacent properties (LTBMU 2022).

Table 3.4-3 Invasive Plant Species within the Project Area

Species	Common Name	CDFA Rating ¹	Cal-IPC Rating ²	Number of Infestations within:	
				Project Area	Adjacent Properties
<i>Bromus tectorum</i>	Cheatgrass	NA	High	4	5
<i>Cirsium arvense</i>	Canada thistle	B	Moderate	1	0
<i>Cirsium vulgare</i>	Bull thistle	C	Moderate	8	1
<i>Hypericum perforatum</i>	St. John's wort	C	High	0	1
<i>Leucanthemum vulgare</i>	Oxeye daisy	NA	Moderate	1	1
TOTAL				15	8

Notes: NA = not applicable

¹ CDFA ratings: A-listed weeds: eradication or containment is required at the state or county level; B-listed weeds: eradication or containment is at the discretion of the County Agricultural Commissioner; C-listed weeds: eradication or containment required only when found in a nursery or at the discretion of the County Agricultural Commissioner. (California Department of Food and Agriculture 2021)

² Cal-IPC ratings: High: attributes conducive to moderate to high rates of dispersal and establishment; usually widely distributed among and within ecosystems. Moderate: impacts substantial and apparent, but not severe; attributes conducive to moderate to high rates of dispersal; distribution may range from limited to widespread. Limited : ecological impacts are minor or information is insufficient to justify a higher rating, although they may cause significant problems in specific regions or habitats; attributes result in low to moderate rates of invasion; distribution generally limited, but may be locally persistent and problematic. (California Invasive Plant Council 2021)

Source: LTBMU 2022.

SENSITIVE BIOLOGICAL RESOURCES

In this analysis, sensitive biological resources include those species and biological communities that receive special consideration through the TRPA Goals and Policies and TRPA Code, ESA, CESA, CWA, or local plans, policies, and regulations; or that are otherwise considered sensitive by federal, state, or local resource conservation agencies and organizations. Sensitive biological resources evaluated as part of this analysis include sensitive natural communities and special-status plant and animal species. These resources are addressed in the following sections.

Sensitive Natural Communities and Habitats

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration through the TRPA Goals and Policies and TRPA Code, Section 404 of the CWA, and other applicable regulations. Sensitive natural habitats may be of special concern to these 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). These communities may or may not contain special-status plants or their habitat (CDFW 2018). CDFW designates sensitive natural communities based on their state rarity and threat ranking using NatureServe's Heritage Methodology. Natural communities with rarity ranks of S1 to S3, where S1 is critically imperiled, S2 is imperiled, and S3 is vulnerable, are considered sensitive natural communities to be addressed in the environmental review processes of CEQA and its equivalents (CDFW 2018). Many riparian plant communities qualify as sensitive natural communities based on the plant associations therein. In addition, riparian habitats are protected under Section 1602 of California Fish and Game Code. The project area contains approximately 1.1 acres of montane riparian habitat (Table 3.4-2; Figure 3.4-1).

Sensitive natural communities are generally identified at the alliance level of vegetation classification hierarchy using the Manual of California Vegetation (Sawyer et al. 2009). Known occurrences of sensitive natural communities are included in the CNDDDB; however, no new occurrences have been added to the CNDDDB since the mid-1990s when funding was cut for this portion of the CNDDDB program. One sensitive natural community was identified within the nine USGS 7.5-minute quadrangles surrounding the project area: fen (CNDDDB 2021). Fen habitat was not identified during the delineation of aquatic resources (Ascent Environmental 2020). Given the incomplete nature of this information in the CNDDDB, and the presence of montane riparian habitat in the project area, additional sensitive natural communities may occur in the project area.

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 nondegradation while providing for opportunities to increase the acreage of these habitats. Additionally, most wetland and riparian habitats in the Tahoe Basin are also designated as SEZ, which is one of two TRPA-adopted threshold standards for soil conservation. SEZ is a term used specifically in the Tahoe Basin to describe perennial, intermittent, and ephemeral streams; wet meadows, marshes, and other wetlands; riparian areas; and other areas expressing the presence of surface and ground water through biological and physical characteristics.

As described above under "Jurisdictional Wetlands," the project area contains riverine waters, lacustrine habitat (i.e., Lake Tahoe), palustrine emergent wetlands, palustrine scrub-shrub wetlands, and palustrine forested wetlands (Ascent Environmental 2020; Table 3.4-2). These habitats would be considered SEZs and sensitive habitats. Additional sensitive terrestrial natural communities and habitats in the project area include montane riparian habitat and meadow habitat.

Special-Status Species

Special-status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource agencies. Special-status species are species, subspecies, or varieties in one or more of the following categories, regardless of their legal or protection status:

- ▶ designated as sensitive, special interest, or a threshold species by TRPA;
- ▶ officially listed by California or the federal government as endangered, threatened, or rare;
- ▶ a candidate for state or federal listing as endangered or threatened;
- ▶ taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- ▶ species identified by CDFW as species of special concern;
- ▶ species listed as fully protected under the California Fish and Game Code;
- ▶ species designated as sensitive by USDA Forest Service; and
- ▶ taxa considered by CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes five rarity and endangerment ranks for categorizing plant species of concern, summarized as follows:
 - CRPR 1A - Plants presumed to be extinct in California;
 - CRPR 1B - Plants that are rare, threatened, or endangered in California and elsewhere;
 - CRPR 2 - Plants that are rare, threatened, or endangered in California but more common elsewhere;
 - CRPR 3 - Plants about which more information is needed (a review list); and
 - CRPR 4 - Plants of limited distribution (a watch list).

Typically, CRPR 3 and CRPR 4 species do not qualify as special-status species, as they may be locally abundant or otherwise not sufficiently rare to warrant protection. However, several CRPR 3 and CRPR 4 species are also considered USDA Forest Service sensitive species in the LTBMU; thus, they are included in this analysis.

The term "California species of special concern" is applied by CDFW to animals not listed under ESA or CESA, but that are considered to be declining at a rate that could result in listing, or that historically occurred in low numbers and known threats to their persistence currently exist. CDFW's fully protected status was California's first attempt to identify and protect animals that were rare or facing extinction. Most species listed as fully protected were eventually listed as threatened or endangered under CESA; however, some species remain listed as fully protected but do not have simultaneous listing under CESA. Fully protected species may not be taken or possessed at any time and no take permits can be issued for these species except for scientific research purposes or for relocation to protect livestock.

A preliminary list of special-status plant and animal species known or with potential to occur in the project area was developed based on a review of the sources listed at the beginning of this chapter. The data review identified 47 and 31 special-status terrestrial plant and wildlife species, respectively, known or with potential to occur in the project area or vicinity (see Tables B-1 and B-2 in Appendix B, "Special-Status Species"). A total of 23 special-status plant species and 18 special-status wildlife species are known to occur or may occur in the project area and could be affected by construction activities (e.g., grading, excavation, heavy equipment use, staging) under the alternatives (see Tables B-1 and B-2 in Appendix B). These species are the focus of the impact analysis for special-status species presented in Section 3.4.3, "Environmental Impacts and Mitigation Measures," and are described below. Other special-status terrestrial species could use or occur in portions of the project area but are not expected to be affected considerably by the alternatives.

The following provides additional discussion of special-status species known or with potential to occur in the project area and addressed in the impact analysis under Section 3.4.3.

State-Listed and TRPA Special Interest Plant Species

Tahoe Yellow Cress

Tahoe yellow cress occurs only on the sandy beaches of Lake Tahoe. This species is designated as a sensitive plant and threshold indicator species by TRPA, a USDA Forest Service sensitive plant species and is listed as endangered by the state of California. The distribution and abundance of Tahoe yellow cress are closely linked to lake level, with greater abundance and more occurrences present during low lake levels when more beach habitat is available for colonization (Pavlik and Murphy 2002, Stanton et al. 2015). The species exhibits a metapopulation dynamic, where populations or clusters of plants at some locations may periodically disappear or decline in number in some years (e.g., in high water years), and Tahoe yellow cress may recover or colonize exposed habitats suitable for the species during other periods (Pavlik and Murphy 2002). The timing and probability of these dynamic extirpation and colonization events depend primarily on lake level and disturbances from recreation or development, but also on the biophysical characteristics of the sites themselves. The primary anthropogenic disturbances to this species are recreational use of beaches occupied by Tahoe yellow cress and development of marinas, boat ramps, and piers, which result in trampling and degradation or loss of habitat. In response to low numbers of Tahoe yellow cress occurrences in the late-1990s, a multiagency technical advisory group (TAG) was formed to develop and implement a conservation strategy for the species. The Tahoe Yellow Cress Conservation Strategy (Conservation Strategy) was completed in 2002 (Pavlik and Murphy 2002) and updated in 2015 (Stanton et al. 2015), and a memorandum of understanding and conservation agreement were signed by 13 state and local agencies and stakeholders to implement the strategy. In 2002, the TAG initiated a research program that has included seed collection, greenhouse propagation, experimental outplantings of container-grown Tahoe yellow cress plants, translocation of naturally occurring Tahoe yellow cress among sites, and some limited genetic analysis. In 2005, members of the TAG transitioned to being members of an adaptive management working group (AMWG). A central goal of the Conservation Strategy is to ensure a sufficient level of protection and conservation for the species that will preclude the need for USFWS to list Tahoe yellow cress under the ESA.

The AMWG conducts regular population surveys at known and potential Tahoe yellow cress population sites in the shorezone.

Tahoe yellow cress is known to occur in Meeks Bay within the project area, and this Meeks Bay population is ranked as a high priority for conservation based on the population's size (stem counts), persistence, and stem count variation during long-term, ongoing monitoring of the species carried out by the AMWG (Stanton et al. 2015). The cumulative distribution of Tahoe yellow cress occurrences near the project area (based on numerous years of data) is displayed in Figure 3.4-2.



Source: data received from TRPA in 2018

Figure 3.4-2 Tahoe Yellow Cress Occurrences in the Vicinity of the Project Area

Other Special-Status Plants

USDA Forest Service Sensitive Plant Species

Ten additional special-status plants that are designated as sensitive species by LTBMU may occur in the project area. Short-leaved hulsea is associated with red fir and mixed conifer habitat types and is the only Forest Service Sensitive plant of upland habitats that may occur in the project area. The following Forest Service Sensitive plants with potential to occur are all generally associated with mesic sites, including seeps, meadow, and streambank habitat types, but a few can occur on drier sites as well, including summer-dry meadows, and shrubland habitat types (see Table B-1 in Appendix B):

- ▶ Upswept moonwort
- ▶ Scalloped moonwort
- ▶ Mingan moonwort
- ▶ Western Goblin
- ▶ Bolander's candle moss
- ▶ Blandow's bog moss
- ▶ Plumas ivesia
- ▶ Broad-nerved hump-moss
- ▶ Goward's water fan

California Rare Plant Rank Species

Thirteen special-status plants with California Rare Plant Ranks but no other status may occur in the project area. Mountain bent grass, threetip sagebrush, Davy's sedge, and subalpine aster all occur in upper or lower coniferous forest, with several occurring in open and rocky sites. The following species are all generally associated with mesic sites, including wet meadows, swamps, seeps, and shallow water, but several can also occur in drier montane coniferous forest sites (see Table B-1 in Appendix B):

- ▶ Watershield
- ▶ Woolly-fruited sedge
- ▶ Mud sedge
- ▶ American manna grass
- ▶ Nuttall's ribbon-leaved pondweed
- ▶ Alder buckthorn
- ▶ Marsh skullcap
- ▶ Northern slender pondweed
- ▶ Flat-leaved bladderwort

TRPA Special Interest Wildlife Species

Osprey

Osprey is designated by TRPA as a special interest species. The nearest documented osprey nest is approximately 2.8 miles south of the project area near Rubicon Point (TRPA 2020). Ospreys forage in Lake Tahoe as well as several other fish-bearing lakes, streams, and rivers within the Tahoe Basin. Nesting and foraging habitat potentially suitable for osprey is present in the project area.

TRPA maintains a nondegradation standard for habitat within a 0.25-mile buffer zone ("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 in recent years. Figure 3.4-3 shows the most recent (2020) distribution of osprey disturbance zones in the vicinity of the project area, based on years of annual nest monitoring coordinated by TRPA (TRPA 2020). The project area is outside of any osprey disturbance zone identified by TRPA (TRPA 2020; Figure 3.4-3).

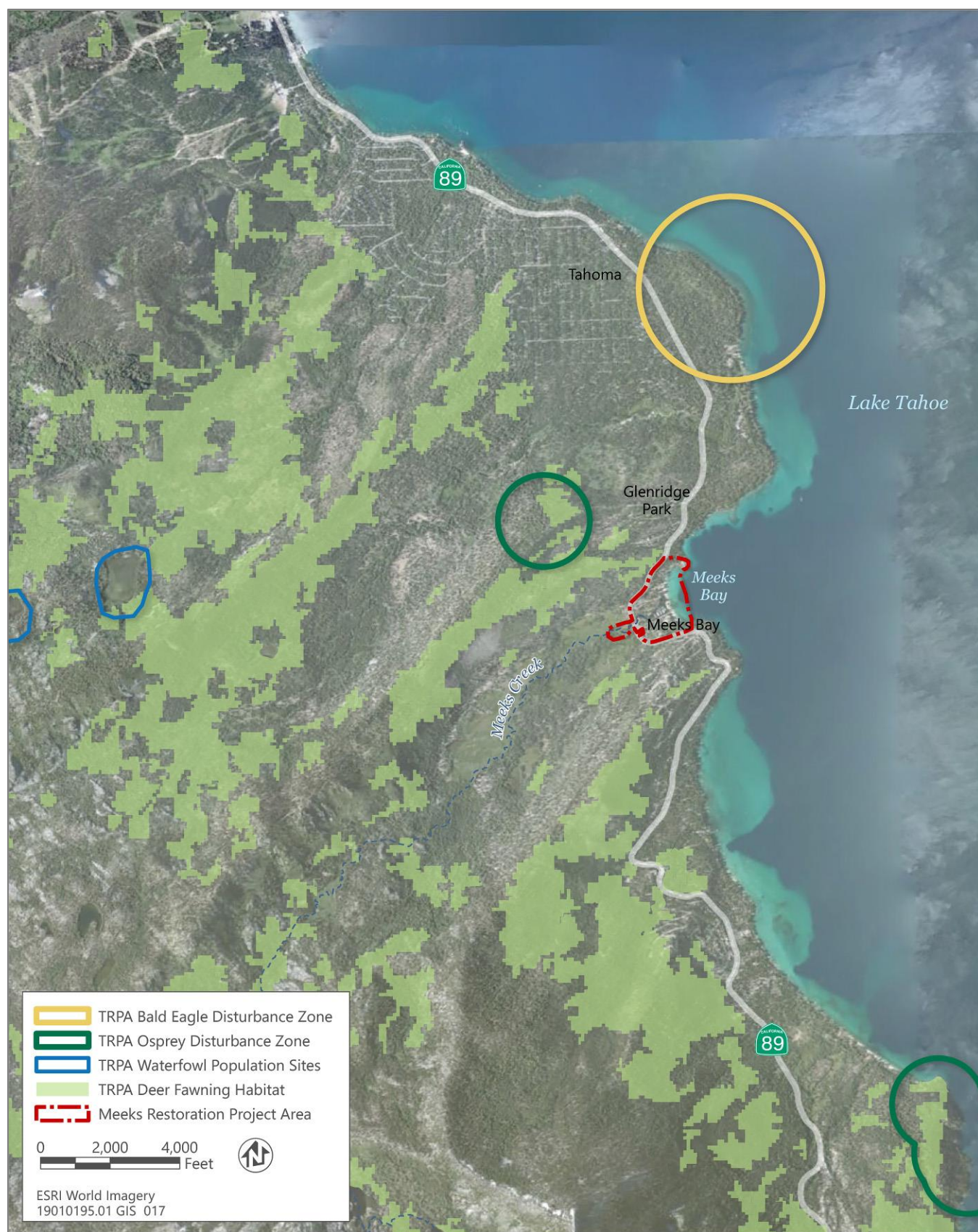


Figure 3.4-3 TRPA Osprey and Bald Eagle Disturbance Zones and Waterfowl Population Sites

Bald Eagle

Bald eagle is designated by TRPA as a special interest species and is also designated as a sensitive species in LTBMU by USDA Forest Service. Bald eagle is also federally protected by USFWS under the Bald and Golden Eagle Protection Act, listed under CESA as endangered, and fully protected under California Fish and Game Code. 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 1 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. Nesting bald eagles have been documented approximately 1.6 miles north and 5 miles southeast of the project area (CNDDDB 2021, TRPA 2020). The project area is outside of any bald eagle disturbance zone identified by TRPA (TRPA 2020; Figure 3.4-3). The project area does not contain nesting habitat suitable for bald eagle; however, foraging and wintering for the species is present.

Waterfowl

"Waterfowl" is designated by TRPA as a special-interest group of species because its nesting habitat in the Tahoe Basin is limited. Several waterfowl species occur in the Tahoe Basin during spring and summer months as described in Table B-2 in Appendix B. Most of these species nest along shallow-water margins of streams or lakes, in areas of emergent vegetation or other vegetation that provides concealment. In the Tahoe Basin wetlands provide nesting, resting, and foraging habitat for waterfowl. Important waterfowl areas have not been identified by TRPA in Meeks Bay (TRPA 2020); however, many waterfowl species likely forage in aquatic habitats in the project area and waterfowl species could nest in Meeks Meadow.

TRPA has established threshold standards and regulates activities within 18 designated waterfowl population sites. The distribution of TRPA waterfowl population sites in the vicinity of the project area is displayed in Figure 3.4-3. Because of increased recreational encroachment into wetland areas over the last several decades, habitat quality at TRPA-designated waterfowl population sites has been degraded; however, the 2019 TRPA threshold attainment status is considered at or somewhat better than target (Table 3.4-1, TRPA 2021a). Existing TRPA regulations prevent new projects from directly degrading wetland and riparian habitats, including mapped waterfowl population sites (TRPA 2021b).

Mule Deer

Mule deer is designated by TRPA as a special interest species. Existing TRPA regulations prevent new projects from threatening, damaging, or destroying fawning habitat for deer or having adverse impacts on deer migration areas. The distribution of TRPA deer fawning habitat in the vicinity of the project area is displayed in Figure 3.4-3. While mule deer may forage or move through the project area, the project area does not contain deer fawning habitat as defined and mapped by TRPA (TRPA 2022; Figure 3.4-3).

Other Special-Status Wildlife Species

Sierra Nevada Yellow-Legged Frog

Sierra Nevada yellow-legged frog is listed as endangered under ESA, threatened under CESA, and is designated as a sensitive species in LTBMU by USDA Forest Service. This species occurred historically in much of the Lake Tahoe area and remaining extant occurrences are present in the highest elevations of the south and southwest portions of the Tahoe Basin (see Table B-2 in Appendix B); however, there are no known historic or extant occurrences in the vicinity of the project area (CNDDDB 2021). Additionally, the presence of predators (e.g., nonnative salmonids, bullfrogs, crayfish) further reduces the likelihood of presence of Sierra Nevada yellow-legged frogs in the project area. While this species is unlikely to occur in the project area due to degraded habitat conditions, absence of known occurrences in the vicinity, and overall rarity, Sierra Nevada yellow-legged frog is addressed in the impact analysis presented in Section 3.4.3, below. Ongoing restoration activities in Meeks Bay may improve habitat for Sierra Nevada yellow-legged frog, which may be present in the project area in the future.

Additionally, the analysis of Sierra Nevada yellow-legged frog is provided to support informal Section 7 ESA consultation with USFWS on the project. Potentially suitable habitat for SNYLF on LTBMU lands (and eight other National Forests in Forest Service Region 5) has been generally defined by USFWS (2014b) in a Programmatic Biological Opinion (BO; December 19, 2014, Ref # FFO8ESMFOO-2014-F-0557) as: elevations above 4,500 feet; permanent water bodies or those hydrologically connected with permanent water including adjacent areas up to 82 feet (25 m) away; and overland areas in between water bodies within 984 feet (300 m) of one another. (The Programmatic BO for Region 5 refers to these physical features generally as "suitable habitat," although they have not necessarily been verified for the presence of habitat primary constituent elements [PCEs] or actual suitability for SNYLF based on site-specific ecological conditions across the Region.) Although not currently expected to support Sierra Nevada yellow-legged frog based on site-specific ecological conditions and past survey results (see Table B-2 in Appendix B), Meeks Creek and its adjacent uplands meet the general definition of potentially suitable habitat established in the Programmatic BO.

Southern Long-Toed Salamander

Southern long-toed salamander is a CDFW species of special concern. Habitat suitable for this species includes alpine meadows and high mountain ponds and lakes. Adults of this species are subterranean during most of the year, using mammal burrows, rock fissures, and occasionally human-made structures. During breeding migration they may be found under surface objects such as rocks or logs near the breeding pond. The project area is within the known range of southern long-toed salamander and adult salamanders and larvae have been observed within the project area in Meeks Creek (CNDDDB 2021). Aquatic habitat suitable for this species is present in Meeks Creek. While southern long-toed salamanders are known to use upland habitats within approximately 330 feet (100 meters) of aquatic habitat, much of the upland areas within 330 feet of Meeks Creek is developed and highly disturbed (i.e., campgrounds). Therefore, upland habitat suitable for southern long-toed salamanders is only present within approximately 100 feet or less from Meeks Creek.

Other Special-Status Birds and Common Native Nesting Birds

Three additional special-status birds may occur in the project area: long-eared owl, olive-sided flycatcher, and yellow warbler (Table B-2 in Appendix B). All of these species are CDFW species of special concern, and could nest within montane riparian and forest (i.e., Jeffrey pine, lodgepole pine, Sierran mixed conifer) habitat in the project area. Nesting habitat suitable for long-eared owl and yellow warbler is limited to riparian and forest habitat within Meeks Meadow or adjacent to Meeks Meadow west of SR 89. While olive-sided flycatcher is more likely to nest in the forest habitat adjacent to Meeks Meadow west of SR 89, the species could still occur in the forest areas east of SR 89. Other raptor species (e.g., Cooper's hawk [*Accipiter cooperi*], red-tailed hawk [*Buteo jamaicensis*], great horned owl [*Bubo virginianus*]) and other common native nesting birds have potential to nest within or adjacent to the project area, and these species and their nests are protected under California Fish and Game Code.

Monarch

Monarch is a candidate for listing under ESA. The project area is within the spring/summer breeding and spring/fall migration ranges. Breeding and foraging habitat suitable for monarchs includes meadows and forest clearings with native milkweeds and other nectar-producing flowering plants. The project area likely contains native milkweeds and sufficient flowering plants to provide habitat suitable for monarchs. Although not documented, monarch butterfly is assumed to potentially breed in the project area.

Western Bumble Bee

Western bumble bee was designated as a candidate for listing as endangered under CESA by the California Fish and Game Commission on June 12, 2019. A November 13, 2020, court decision by the Superior Court of Sacramento ruled that insects are not eligible for listing under CESA and vacated the candidacy of this and three other bumble bee species. Although western bumble bee is not currently a candidate for listing under CESA, the species is imperiled and considered sufficiently rare by the scientific community to be considered a special-status species under CEQA and is also designated as a sensitive species in LTBMU by USDA Forest Service. Western bumble bee has recently undergone a decline in abundance and distribution and is no longer present across much of its historic range. In California, western bumble bee populations are currently largely restricted to high elevation areas in the Sierra Nevada (Xerces

2018). Western bumble bees have been detected historically near Emerald Bay, approximately 8 miles south of the project area (CNDDDB 2021). There is only one known collection record of western bumble bee in the Tahoe Basin (on LTBMU lands) since 2000; a detection in 2007 approximately 12 miles southeast of the project area (CNDDDB 2021).

Although the life history characteristics of western bumble bees are not well understood, bumble bees have three basic habitat requirements: suitable nesting sites for the colonies, availability of nectar and pollen from floral resources throughout the duration of the colony period (spring, summer, and fall), and suitable overwintering sites for queens. Known native floral resources for western bumble bee include ceanothus (*Ceanothus* spp.), thistle (*Centaurea* spp., *Cirsium* spp.), rabbitbrush, lupine (*Lupinus* spp.), coyote mint (*Monardella* spp.), goldenrod (*Solidago* spp.), and clover (*Trifolium* spp.) (Williams et al. 2014). Bumble bees are typically generalist foragers and are known to use other native and nonnative floral resources, such as vetch (*Vicia* spp.) and clover (*Trifolium* spp.) (Williams et al. 2014).

Western bumble bee is generally believed to overwinter near the ground surface in loose soil or under leaf litter or other debris (e.g., thatch and bunch grasses). Western bumble bee nests typically occur in abandoned rodent burrows or other animal nests. Nesting and overwintering habitat potentially suitable for this species may be present with the project area, especially within less developed areas.

American Badger

American badger is a CDFW species of special concern. This species occurs throughout California and is associated with various habitat types, including shrubland, woodland, forest, and grassland habitats, with friable soils. Habitat potentially suitable for American badgers is present within Meeks Meadow and undeveloped open woodlands (i.e., west of SR 89) in the project area.

Ringtail

Ringtail is a fully protected species under California Fish and Game Code. Ringtails are typically associated with riparian, forest, and shrub habitats and is typically found near habitats with a permanent water source (e.g., perennial streams, longer-lasting intermittent streams). Habitat potentially suitable for ringtails is present within undeveloped forest and riparian woodland habitats in the project area (i.e., within Meeks Meadow and west of SR 89). Ringtails use a variety of habitats for denning, including rock crevices, snags, and tree hollows. While optimal denning habitat is likely not present in the project area, there are some large trees and snags that may provide den habitat for ringtail.

Special-Status Bats

Four special-status bats may occur in the project area: fringed myotis, pallid bat, Townsend's big-eared bat, and western red bat. Fringed myotis, pallid bat, and Townsend's big-eared bat are designated as a sensitive species in LTBMU by USDA Forest Service; pallid bat, Townsend's big-eared bat, and western red bat are also CDFW species of special concern. These species use a variety of habitats to roost, including caves, crevices, mines, hollow trees, buildings, and foliage (e.g., clusters of leaves found in willow, or other tree species). Roosting habitat potentially suitable for special-status bats is present in the project area within crevices (e.g., exfoliating bark, cracks and fissures in tree stems or branches, crevices in buildings), foliage (e.g., willows), and cavities (e.g., large tree hollows, unoccupied buildings). The bridge over Meeks Creek does not have features that would support critical roosting for bats.

Sierra Nevada Snowshoe Hare

Sierra Nevada snowshoe hare is a CDFW species of special concern. Habitat potentially suitable for Sierra Nevada snowshoe hare in the project area is present primarily within riparian areas in Meeks Meadow. Snowshoe hares build nests (which are also known as "forms") on the ground within brush or young forest habitat. Snowshoe hare young are precocial, meaning that they are born fully furred and capable of locomotion very soon after birth. Young Sierra Nevada snowshoe hares have been observed from approximately June through July (Brylski et al. 1998).

Western White-tailed Jackrabbit

Western white-tailed jackrabbit is a CDFW species of special concern. The project area contains undeveloped brush and forest habitat (i.e., west of SR 89) potentially suitable for this species. Like Sierra Nevada snowshoe hare, western white-tailed jackrabbits build nests (which are also known as "forms") on the ground within brush or young forest habitat. Western white-tailed jackrabbits breed from February to July.

3.4.3 Environmental Impacts and Mitigation Measures

METHODOLOGY

Evaluation of potential biological impacts is based on a review of existing documents and studies that address biological resources in the vicinity of the project. Information obtained from these sources was reviewed and summarized to describe existing conditions and to identify potential environmental effects, based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that the project would comply with relevant federal, state, and local laws, ordinances, and regulations.

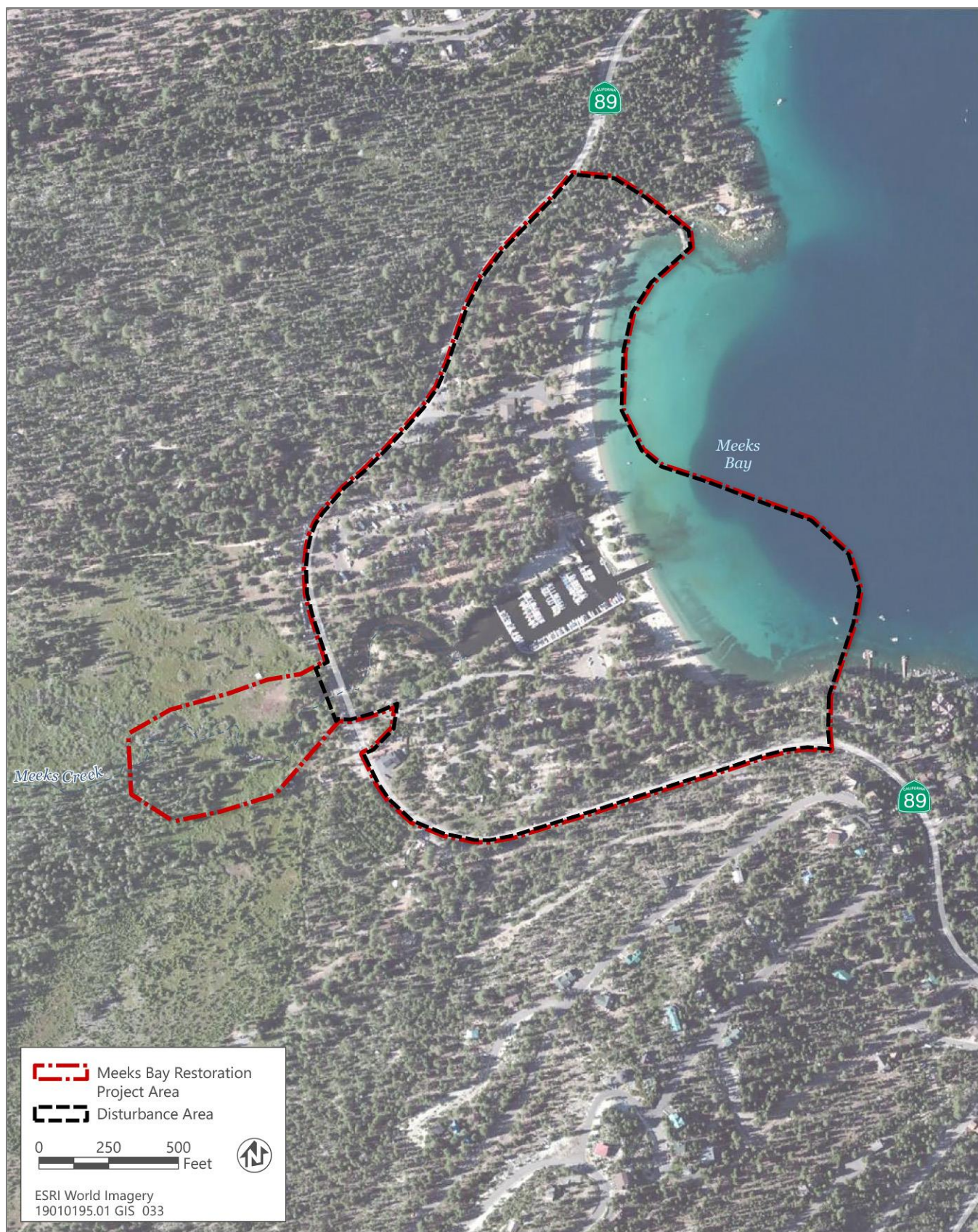
Disturbance Area

The Meeks Bay Restoration Project area includes Meeks Bay, recreation facilities (i.e., Meeks Bay Marina, Meeks Bay Resort, Meeks Campground), and Meeks meadow (see Figure 2-1 in Chapter 2, "Description of the Proposed Action and Alternatives"). For the purposes of the biological resources impact analysis, a portion of the project area including areas east of SR 89 and approximately 50 feet west of SR 89 is considered the "disturbance area." Outside of the disturbance area, ground disturbance, vegetation removal, staging, and other project activities would not occur. Therefore, impacts on biological resources are not expected to occur outside of the disturbance area. Figure 3.4-4 shows the disturbance area in relation to the larger project area.

THRESHOLDS OF SIGNIFICANCE

The thresholds of significance were developed in consideration of the State CEQA Guidelines, TRPA Thresholds, TRPA Initial Environmental Checklist, LTBMU Forest Plan, and other applicable policies and regulations. Under NEPA the significance of an effect must consider the context and intensity of the environmental effect. The factors that are taken into account under NEPA to determine the context and intensity of its effects are encompassed by the thresholds of significance. An alternative would have a significant effect on terrestrial biological resources if it 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, USFWS, or designated as sensitive by the Regional Forester (i.e., "Forest Service sensitive");
- ▶ have a substantial adverse effect on any riparian habitat, wetlands, or other sensitive natural community identified in local or regional plans, policies, or regulations or by CDFW or USFWS;
- ▶ 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;
- ▶ conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- ▶ result in substantial removal of riparian vegetation or other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table;
- ▶ substantially change the diversity or distribution of species, or numbers of any species of plants (including trees, shrubs, grass, crops, micro flora, and aquatic plants);
- ▶ reduce the numbers of any unique, rare, or endangered species of plants or animals;
- ▶ result in deterioration of existing fish or wildlife habitat quantity or quality;
- ▶ substantially reduce the size, continuity, or integrity of wildlife habitat, or result in unnatural changes in the abundance, diversity, or distribution of native wildlife species; and
- ▶ conflict with the Standards and Guidelines from the LTBMU Land and Resource Management Plan (USDA Forest Service 2016).



Source: Adapted by Ascent in 2022

Figure 3.4-4 Disturbance Area

ISSUES NOT DISCUSSED FURTHER

Implementation of the alternatives would not introduce new vegetation that would require excess fertilizer or water. After completion of construction and restoration activities under the alternatives, native wetland and riparian vegetation would be re-established throughout the restoration area. Existing native vegetation and soil removed during implementation of restoration activities are salvaged and replanted on site to the extent feasible. Implementation of the alternatives would not change the natural functioning of any old growth ecosystems because the project area does not contain old growth habitat. These TRPA criteria are not discussed further. The project area is not within the plan area of any adopted Habitat Conservation Plan or NCCP. This issue is not discussed further.

Special-Status Wildlife Species outside of the Disturbance Area

As described above under "Methodology," ground disturbance, vegetation removal, staging, and other project activities would be limited to the disturbance area and would not occur in the western portion of the project area, including Meeks Meadow. Several special-status wildlife species were determined to have potential to occur only within habitats in Meeks Meadow or directly adjacent to Meeks Meadow: long-eared owl, yellow warbler, American badger, ringtail, Sierra Nevada snowshoe hare, and western white-tailed jackrabbit (Table B-2 in Appendix B). Because project activities would not occur outside of the disturbance area, and these species are not expected to occur in the disturbance area, impacts on these species are not expected to occur. These species are not analyzed further.

Impacts on Nesting Birds from Construction Noise

Construction activities would generate noise due to the use of heavy equipment (e.g., pile driver, excavator, backhoe, generator). Excessive construction noise can result in disturbance to nearby bird nests, potentially resulting in abandonment of the nest and loss of eggs or chicks. The disturbance area is located greater than one mile from the nearest bald eagle disturbance zone and greater than 0.5 mile from the nearest osprey disturbance zone as designated by TRPA (Figure 3.4-3). As described in Section 3.11, "Noise," at this distance (i.e., greater than 0.5 mile), construction noise generated from the project area would be less than noise levels experienced in urban environments or near roadways (e.g., existing traffic noise from SR 89). Therefore, it is unlikely that nesting bald eagles or osprey that have been documented in the vicinity of the project area would be adversely affected by construction noise. Further, habitat potentially suitable for other special-status birds (i.e., long-eared owl, yellow warbler) is located within and adjacent to Meeks Meadow, several hundred feet from the disturbance area. As described in Section 3.11, "Noise," modeled noise levels at this distance from the noise source, using standard attenuation rates, would be similar to noise levels experienced in urban environments or near roadways (e.g., existing traffic noise from SR 89). Therefore, impacts on special-status birds resulting from construction noise are not expected to occur. This issue is not discussed further.

Impacts on Foraging or Overwintering Habitat for Special-Status Birds

Nesting habitat suitable for bald eagle is not present within the project area; however, the species may forage or overwinter in the project area. Several additional special-status bird species may also forage or in the project area (i.e., American peregrine falcon, osprey, willow flycatcher, northern goshawk, California spotted owl) despite limited or absent nesting habitat. While project construction activities may result in temporary disruption of foraging or overwintering activities due to the presence of construction crews and associated increased human activity, project activities, including tree removal, are not expected to result in substantial permanent adverse effects on foraging or overwintering habitat for special-status birds. Restoration of Meeks Creek is expected to result in a net benefit for birds generally, because the channel banks and floodplain would be revegetated with native riparian plant species that would provide additional foraging and nesting opportunities and because removal of facilities and infrastructure may result in more available natural habitat for foraging and breeding. Therefore, impacts on foraging and overwintering habitat for special-status birds are not expected to occur. As described in the BE, project implementation may affect but is not likely to lead to a trend toward listing or loss of viability of bald eagle. This issue is not discussed further.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Impact 3.4-1: Result in Disturbance, Loss, or Reduced Abundance of Tahoe Yellow Cress and Other Special-Status Plants

Implementation of Alternatives 1, 2, 3, and 4 would consist of restoration and construction activities that would include ground disturbance, vegetation removal, and the use of vehicles and heavy machinery, which could result in damage or removal of Tahoe yellow cress and other special-status plant species. Implementation of RPMs developed for the project would require identification and protection of Tahoe yellow cress and other special-status plant occurrences, and mitigation for unavoidable, permanent losses that would reduce the number of plants in the occurrence below self-sustaining numbers, or permanently adversely alter occupied habitat of special-status plant species. Further, project actions would ultimately result in a functional lift in ecosystem functions and an increase in habitat for Tahoe yellow cress and other special-status plants associated with mesic habitat from current conditions. Therefore, the impact related to special-status plants associated with Alternatives 1, 2, 3, and 4 would be less than significant. Implementation of the No Action Alternative would not include restoration of Meeks Creek and lagoon and may contribute to the ongoing degradation of Meeks Creek, which could result in adverse effects on Tahoe yellow cress occurrences. This would be a potentially significant impact.

No Action Alternative

Under the No Action Alternative, there would be no restoration and the marina would remain in place as it currently is, with a boat ramp and approximately 120 slips. The marina would be operational during accessible, high and normal lake levels and would not be operational during periods of low lake levels. Upland features would remain in their current configuration, which includes 76 campsites in two campgrounds and two day-use areas. Under existing conditions, Meeks Creek is degraded and lacks the wetland, lagoon, and barrier beach habitat that historically existed in the project area.

These degraded conditions would continue and may worsen under the No Action Alternative, ultimately resulting in reduced hydrologic and geomorphic functions of Meeks Creek and the lagoon, continued incision and decreased floodplain connectivity, continued lowering of groundwater levels and alteration of complex, deltaic sediment transport dynamics, and continued loss of wetland area and impairment of riparian function.

The degraded conditions in Meeks Creek would continue as described above, which could result in loss of habitat for Tahoe yellow cress occurrences, as well as special-status plants associated with mesic habitat. Therefore, this alternative may result in potentially significant impacts on Tahoe yellow cress and other special-status plants associated with mesic habitat in the project area.

Alternative 1: Full Restoration with Boating Pier

Alternative 1 would involve complete restoration of Meeks Creek and lagoon, which would result in a short-term period of high-intensity disturbance during restoration activities and construction of infrastructure features (i.e., parking, paths, utilities). A 300-foot-long boating pier would also be constructed. Restoration and construction activities would include grading, earthmoving, and excavation which would include the use of vehicles and heavy machinery including trucks, loaders, dozers, excavators, backhoes, and generators. Some removal of trees and other vegetation would occur (including trees greater than 30 inches dbh) within the restoration footprint. With Alternative 1, construction and other restoration activities such as the removal of sheet pile at the mouth of Meeks Creek and restoration of the barrier beach could potentially remove or damage occurrences of Tahoe yellow cress present near the creek outlet and other special-status plants associated with mesic habitat in the project area. Construction and other project activities in conifer forest habitats could remove or damage occurrences of special-status plants associated with forest habitats, including short-leaved hulsea (a USDA Forest Service sensitive species), if present.

Several RPMs would be implemented as part of the project, including identification and protection of Tahoe yellow cress populations during restoration activities (see applicable RPMs included in Appendix A). Resource protection barriers and interpretive information would be installed to protect the species where it occurs in Meeks Bay. The BE/BA identified RPMs for impacts on Tahoe yellow cress and other special-status plants, which are described in

Appendix A (LTBMU 2021). Through implementation of the RPMs, surveys would be conducted in potential habitat to identify any occurrences of the special-status plant species on site prior to carrying out any project activities. For Tahoe yellow cress, identified occurrences would be buffered from restoration activities and protected on site, where full avoidance is achievable while implementing necessary restoration actions. For any project-related removal of Tahoe yellow cress that may be required to accomplish the restoration objectives (e.g., if removal of sheet pile at the mouth of Meeks Creek and restoration of the barrier beach requires work in occupied Tahoe yellow cress habitat and full avoidance of all plants is not feasible), the RPMs require implementation of mitigation measures including translocation and outplanting of Tahoe yellow cress plants within suitable habitat in the project area, and long-term monitoring and adaptive management. For all other special-status plant species with potential to occur in the project area, identified occurrences would be buffered from restoration activities and protected on site. If removal of any special-status plants, other than Tahoe yellow cress, is required to achieve restoration objectives and design requirements, the number of plants and area of occupied habitat removed would be limited to the minimum necessary to accomplish project objectives. If project activities would result in removal or mortality of a small number of individuals of a special-status plant population but would not result in loss of an entire special-status plant occurrence, would not reduce the number of plants in the occurrence below self-sustaining numbers, and would not remove or permanently adversely alter occupied habitat, then mitigation, such as plant salvage and relocation efforts, would not be necessary. If an entire special-status plant occurrence would be lost through removal or adverse habitat modification and this loss represents a substantial portion of the species' local (Tahoe Basin) population, the loss would be mitigated through transplantation, sacrifice seed collection, restoration of disturbed habitat and replacement of topsoil; and performance standards would be established and implemented to ensure survival of the salvaged or translocated plants. The decision about whether plant salvage and replanting or relocation will be required will be made in consultation with the responsible agency (e.g., LTBMU, TRPA, or CDFW). As specified in the RPMs for special-status plants (see Appendix A), relocation of special-status plants would only be attempted in cases where relocation has a high probability of success, and it would not be possible to implement the project without harming the entire occurrence of special-status plants.

In addition to direct removal of special-status plants, project activities have potential to result in indirect adverse effects to special-status plants, if present, through adverse modifications to habitat, such as soil compaction, hydrological modification, removal of shade vegetation. Alternative 1 would not substantially change visitation at the site and would therefore not affect risks of recreational trampling. Further, project actions under Alternative 1 would ultimately result in a functional lift in ecosystem functions through removal of the marina, recreating shallow lagoon habitat, and to restoring channel and floodplain topography along Meeks Creek allowing floodplain connectivity and establishment of wetland habitat, increasing habitat for special-status plants associated with mesic habitat from current conditions. Restoration of the barrier beach would increase habitat for Tahoe yellow cress. Therefore, implementing Alternative 1 would result in an indirect beneficial effect on special-status plants, including Tahoe yellow cress due to improved habitat conditions and increased habitat availability in Meeks Bay. Because RPMs would be implemented to minimize, avoid, and/or compensate for any loss of special-status plant occurrences, this impact would be less than significant; and, as described in the BE/BA, project implementation may affect but is not likely to lead to a trend toward listing or loss of viability of Tahoe yellow cress or any other USDA Forest Service sensitive plant species.

Alternative 2: Full Restoration with Pedestrian Pier

Alternative 2 would include the restoration and construction activities described for Alternative 1 but would include an approximately 100-foot-long pedestrian pier instead of the 300-foot-long boating pier included in Alternative 1. The mechanisms for impacts on special-status plants would be the same as described above for Alternative 1. The addition of a pedestrian pier would introduce similar impacts as those described for the boating pier. Further, project actions under Alternative 2 would ultimately result in a functional lift in ecosystem functions and an increase in habitat for Tahoe yellow cress and other special-status plants associated with mesic habitat from current conditions.

For the same reasons described for Alternative 1, impacts on special-status plants, including Tahoe yellow cress, would be less than significant.

Alternative 3: Full Restoration with No Pier

Alternative 3 would include the restoration and construction activities described for Alternative 1 and Alternative 2 but would include a small paddlecraft launch structure instead of the boating pier or pedestrian pier included in Alternative 1 and Alternative 2, respectively. The mechanisms for impacts on special-status plants would be the same as described above for Alternative 1. The addition of a paddlecraft launch structure would introduce similar impacts as those described for the boating pier. Alternative 3 could result in up to a 5 percent increase in visitation during peak periods (i.e., July and August) (see Section 3.1, "Recreation"). However, the project includes TYC protection measures such as signage and/or natural barriers to prevent trampling, which would minimize the risk of recreational trampling. Further, project actions under Alternative 3 would ultimately result in a functional lift in ecosystem functions and an increase in habitat for Tahoe yellow cress and other special-status plants associated with mesic habitat from current conditions.

For the same reasons described for Alternative 1, impacts on special-status plants, including Tahoe yellow cress, would be less than significant.

Alternative 4: Preferred Alternative

Similar to Alternatives 1, 2, and 3, Alternative 4 would involve removal of the marina and full restoration of the creek, lagoon, and barrier beach. Like Alternative 3, this alternative would not include a pier but would include a small paddlecraft launch structure on the south end of the bay. As with Alternative 1, this alternative would relocate the two motel style cabin units in the Meeks Bay Resort farther inland and replace them with three smaller cabin units while maintaining the existing overnight visitor capacity. This alternative would not relocate the parking on the south end of the project area, but it would expand parking capacity by 14 spaces; it would also include upland features common to all the action alternatives.

The mechanisms for impacts on special-status plants would be the same as described above for Alternative 1. The addition of a paddlecraft launch structure would introduce similar impacts as those described for the boating pier. The expanded parking could increase visitation, but to a lesser extent than Alternative 3. As with Alternative 3, this alternative would include signage and/or barriers to reduce the risk of recreational trampling. Further, project actions under Alternative 4 would ultimately result in a functional lift in ecosystem functions and an increase in habitat for Tahoe yellow cress and other special-status plants associated with mesic habitat from current conditions.

For the same reasons described for Alternative 1, impacts on special-status plants, including Tahoe yellow cress, under Alternative 4 would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.4-2: Result in Disturbance, Loss, or Reduced Abundance of Special-Status Wildlife from Construction and Recreational Uses

Implementation of Alternatives 1, 2, 3, and 4 would consist of restoration and construction activities that would include ground disturbance, vegetation removal, and the use of vehicles and heavy machinery, which could result in disturbance, injury, or mortality of several special-status wildlife species if present. Implementation of RPMs developed for the project would require identification of special-status wildlife occurrences through preconstruction surveys and implementation of protective measures to avoid impacts on these occurrences. Therefore, the impact related to special-status plants associated with Alternatives 1, 2, 3, and 4 would be less than significant. Impacts on special-status wildlife that may occur in the disturbance area would be less than significant under the No Action Alternative.

Table B-2 in Appendix B provides a list of the special-status wildlife species that may occur or are known to occur within the project area. As noted above, under "Issues Not Discussed Further," several species that may occur in the project area are not expected to occur in the disturbance area and impacts on foraging and overwintering species are not expected to occur. Ten remaining special-status wildlife species or species groups may occur within the

disturbance area: osprey, waterfowl, Sierra Nevada yellow-legged frog, southern long-toed salamander, monarch, western bumble bee, fringed myotis, pallid bat, Townsend's big-eared bat, and western red bat.

No Action Alternative

Under the No Action Alternative, there would be no restoration and the marina would remain in place as it currently is, with a boat ramp and approximately 120 slips. The marina would be operational during accessible, high lake levels and would not be operational during periods of low lake levels. Upland features would remain in their current configuration, which includes 76 campsites in two campgrounds and two day-use areas. Because no construction activities would occur under the No Action Alternative, direct and indirect impacts on special-status wildlife would not occur. Impacts on special-status wildlife would be less than significant.

Alternative 1: Full Restoration with Boating Pier

Alternative 1 would involve complete restoration of Meeks Creek and lagoon, which would result in a short-term period of high-intensity disturbance during restoration activities and construction of infrastructure features (i.e., parking, paths, utilities). A 300-foot-long boating pier, reconstructed bridge, relocated cabins, and other recreation features would also be constructed. Restoration and construction activities would include grading, earthmoving, and excavation which would include the use of vehicles and heavy machinery including trucks, loaders, dozers, excavators, backhoes, and generators. Some removal of trees and other vegetation would occur throughout the project area (including trees greater than 30 inches dbh within the restoration footprint).

Sierra Nevada Yellow-legged Frog

Restoration activities would likely result in an overall improvement of potential habitat for this species; however, restoration and construction activities (i.e., installation of temporary barriers including a diversion dam, dewatering of a portion of Meeks Creek, placement of fill in the existing lagoon, grading of creek and lagoon, installation of a trail bridge and nonmotorized watercraft launch, and replacement of the SR 89 bridge) could result in the direct loss of Sierra Nevada yellow-legged frog individuals in Meeks Creek, if present, or temporary impacts on aquatic habitat. Existing best management practices (BMPs) for construction included in TRPA Code of Ordinances, Lahontan RWQCB requirements, and National Pollutant Discharge Elimination System permits would be implemented, which would include preparation and implementation of stormwater pollution prevention and hazardous materials handling and management plans, which would minimize the potential for impacts on aquatic habitat.

Further, an RPM for impacts on fish and other important native aquatic species (e.g., Sierra Nevada yellow-legged frog, southern long-toed salamander) has been identified, which is described in Appendix A, "Resource Protection Measures." This RPM would require biological monitoring when flows are diverted from in-channel construction sites and screens covering pump intakes to limit entrainment of these species. With implementation of existing BMPs and this RPM, in addition to the low likelihood of presence of Sierra Nevada yellow-legged frog in the project area, impacts on this species resulting from Alternative 1 would be less than significant. As described in the BA prepared for the project, project implementation may affect but is not likely to adversely affect Sierra Nevada yellow-legged frog.

Southern Long-Toed Salamander

Restoration activities would likely result in an overall improvement of habitat for this species; however, restoration and construction activities that would involve ground disturbance or vegetation removal could result in the direct loss of southern long-toed salamander individuals in Meeks Creek or in underground habitat in upland areas (e.g., rodent burrows). RPMs for impacts on southern long-toed salamanders have been identified, which are described in Appendix A. These RPMs include a preconstruction survey for southern long-toed salamanders within Meeks Creek and associated wet meadow and wetland habitat, as well as upland areas within approximately 100 feet of these features, and include biological monitoring when flows are diverted from in-channel construction sites and screens covering pump intakes to limit entrainment of aquatic species, including southern long-toed salamanders. With implementation of these RPMs, impacts on southern long-toed salamanders resulting from Alternative 1 would be less than significant.

Special-Status Birds (Osprey, Olive-Sided Flycatcher, Waterfowl) and Common Nesting Birds

Tree removal, other vegetation removal, and ground disturbance activities in the disturbance area could result in loss of nests of special-status birds (i.e., osprey, olive-sided flycatcher, waterfowl) and common tree- and ground-nesting

native birds protected by California Fish and Game Code, if present in the disturbance area. An RPM for vegetation removal has been developed, and pursuant to this RPM, all vegetation (i.e., riparian vegetation, conifers) would be removed the year prior to commencement of construction activities and/or outside of the nesting bird season (i.e., February 1 through August 31), unless surveys determine that no nesting birds are present (see Appendix A). With implementation of this RPM, direct loss of the nests of special-status bird and common tree- and ground-nesting native birds would not occur. Further, restoration of Meeks Creek is expected to result in a net benefit for birds, because the channel banks and floodplain would be revegetated with native riparian plant species that would provide additional foraging and nesting opportunities and because removal of facilities and infrastructure may result in more available natural habitat for foraging and breeding. With implementation of this RPM, impacts on special-status birds and common nesting birds resulting from Alternative 1 would be less than significant.

Mule deer

As noted above, while not considered abundant in the vicinity of the project area, mule deer may forage or move through the project area on occasion. The project area does not contain deer fawning habitat and is not positioned in any important movement corridors for the Loyalton-Truckee mule deer herd. Additionally, the SR 89 corridor and disturbance from recreational use of the project area and surroundings limit the project area from functioning as an important deer movement corridor. Implementation of the project would not impose new barriers to movement of mule deer in the region relative to existing conditions. Therefore, project implementation would not threaten, damage, or destroy fawning habitat for deer or result in adverse impacts on deer migration areas and impacts on mule deer resulting from Alternative 1 would be less than significant.

Monarch Butterfly

Restoration and construction activities that would involve ground disturbance or vegetation removal could result in disturbance of monarchs and habitat suitable for the species. Milkweed host plants and breeding monarch butterflies could be disturbed, injured, or lost during construction activities if present in the project area. Construction and restoration activities would not occur in Meeks Meadow, with the exception of limited excavation adjacent to the SR 89 bridge, which would limit the likelihood of impacts on optimal habitat for monarchs. Disturbance resulting from restoration and construction activities would be temporary, and restoration of Meeks Creek is expected to result in a net benefit for monarchs, because the channel banks and floodplains would be revegetated with native riparian plant species that would provide additional nectar resources for the species and because removal of facilities and infrastructure may result in more available natural habitat for foraging and breeding. As described in the BE/BA, project implementation may affect but is not likely to lead to a trend toward listing or loss of viability of monarchs. An RPM for impacts on monarch habitat has been identified, which is described in Appendix A. The RPM includes implementation of pollinator habitat restoration measures, which would further benefit monarchs. With implementation of the RPM, impacts on monarchs resulting from Alternative 1 would be less than significant.

Western Bumble Bee

Restoration and construction activities that would involve ground disturbance or vegetation removal could result in mortality of western bumble bees while foraging and within nesting or overwintering colonies (e.g., in underground rodent holes, loose soil, leaf litter, log/tree cavities, surface vegetation), if present in the project area. While loss of individual western bumble bees or a colony as a result of project activities may not cause the population to drop below self-sustaining levels, threaten to eliminate the species, or substantially reduce the range of the species, the population status of this species is poorly understood, and loss of colonies could have a substantial effect on the population. It is unlikely that the project area would support a high concentration of western bumble bee colonies due to the rarity of the species in the region. Further, construction and restoration activities would not occur in Meeks Meadow, with the exception of limited excavation adjacent to the SR 89 bridge, which would limit the likelihood of impacts on optimal habitat for western bumble bee. Thus, project implementation is not expected to result in loss of a significant number of bumble bees, if present. As described in the BE/BA, project implementation may affect but is not likely to lead to a trend toward listing or loss of viability of western bumble bee. Restoration of Meeks Creek is expected to result in a net benefit for native bees, including potentially western bumble bee, because the channel banks would be revegetated with native riparian plant species that would provide additional nectar and pollen resources for the species and because removal of facilities and infrastructure may result in more available natural

habitat for nesting and overwintering. An RPM for impacts on western bumble bee habitat has been identified, which is described in Appendix A. The RPM includes implementation of pollinator habitat restoration measures, which would further benefit western bumble bee. With implementation of the RPM, impacts on western bumble bees resulting from Alternative 1 would be less than significant.

Special-Status Bats

Tree and building removal activities could result in loss of active roosts of special-status bats if present in the project area. Construction activities could result in disturbance to active roosts due to the visual stimulus and noise from vehicles, heavy equipment, and personnel, potentially resulting in roost abandonment.

An RPM for vegetation removal has been developed, and pursuant to this RPM, all vegetation (i.e., riparian vegetation, conifers) would be removed the year prior to commencement of construction activities and/or outside of the bat maternity and bat hibernation season (i.e., May 1 through September 15 and November 15 through March 15, respectively) (see Appendix A). This RPM requires all building demolition to occur outside of the bat maternity and bat hibernation season, if feasible. An additional RPM, described in Appendix A, includes a survey for potential communal bat roosting if demolition of buildings with confirmed or suspected use by bats during the bat maternity and hibernation seasons would occur. With implementation of these RPMs, impacts on fringed myotis, pallid bat, Townsend's big-eared bat, western red bat, and other common bat species resulting from Alternative 1 would be less than significant and, as described in the BE/BA, project implementation may affect but is not likely to lead to a trend toward listing or loss of viability of fringed myotis, pallid bat, and Townsend's big-eared bat. Furthermore, the project includes the construction of bat boxes near the restored lagoon, which could have long-term beneficial effects on the species.

Alternative 2: Full Restoration with Pedestrian Pier

Alternative 2 would include the restoration and construction activities described for Alternative 1 but would include an approximately 100-foot-long pedestrian pier instead of the 300-foot-long boating pier included in Alternative 1. The mechanisms for impacts on special-status wildlife would be the same as described above for Alternative 1. The addition of a pedestrian pier would introduce similar impacts as those described for the boating pier.

For the same reasons described for Alternative 1, impacts on Sierra Nevada yellow-legged frog, southern long-toed salamander, special-status birds (i.e., osprey, olive-sided flycatcher, waterfowl), common tree- and ground-nesting native birds protected by California Fish and Game Code, mule deer, monarch, western bumble bee, special-status bats (i.e., fringed myotis, pallid bat, Townsend's big-eared bat, western red bat) would be less than significant under Alternative 2.

Alternative 3: Full Restoration with No Pier

Alternative 3 would include similar restoration and construction activities described for Alternatives 1 and 2 but would include a small paddlecraft launch structure instead of the boating pier or pedestrian pier included in Alternative 1 and Alternative 2, respectively. The mechanisms for impacts on special-status wildlife would be the same as described above for Alternative 1. The addition of a paddlecraft launch structure would introduce similar impacts as those described for the boating pier.

For the same reasons described for Alternative 1, impacts on Sierra Nevada yellow-legged frog, southern long-toed salamander, special-status birds (i.e., osprey, olive-sided flycatcher, waterfowl), common tree- and ground-nesting native birds protected by California Fish and Game Code, mule deer, monarch, western bumble bee, special-status bats (i.e., fringed myotis, pallid bat, Townsend's big-eared bat, western red bat) would be less than significant under Alternative 3.

Alternative 4: Preferred Alternative

Similar to Alternatives 1, 2, and 3, Alternative 4 would involve removal of the marina and full restoration of the creek, lagoon, and barrier beach. Like Alternative 3, this alternative would not include a pier but would include a small paddlecraft launch structure on the south end of the bay. As with Alternative 1, this alternative would relocate the two motel style cabin units in the Meeks Bay Resort farther inland and replace them with three smaller cabin units while maintaining the existing overnight visitor capacity. This alternative would not relocate the parking on the south end of

the project area, but it would expand parking capacity by 14 spaces. It would also include upland features common to all the action alternatives.

The mechanisms for impacts on special-status wildlife would be the same as those described above for Alternative 1. The addition of a paddlecraft launch structure would introduce similar impacts as those described for the boating pier. For the same reasons described for Alternative 1, impacts on Sierra Nevada yellow-legged frog, southern long-toed salamander, special-status birds (i.e., osprey, olive-sided flycatcher, waterfowl), common tree- and ground-nesting native birds protected by California Fish and Game Code, mule deer, monarch, western bumble bee, special-status bats (i.e., fringed myotis, pallid bat, Townsend's big-eared bat, western red bat) would be less than significant under Alternative 4.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.4-3: Result in Disturbance or Loss of Common Terrestrial Vegetation Communities and Wildlife Habitats, Trees, Sensitive Natural Communities, and Riparian Habitat

Construction and restoration activities under Alternatives 1, 2, 3, and 4 would not occur in Meeks Meadow, other than limited disturbance directly adjacent to the SR 89 bridge; therefore, impacts on sensitive natural communities in the meadow would not occur. The potential disturbance or removal of terrestrial vegetation resulting from Alternatives 1, 2, 3, and 4 would not substantially reduce the quantity or quality of terrestrial vegetation communities and habitats in the project area or cause a change in species distributions or diversity. Therefore, the impact related to common terrestrial vegetation communities and wildlife habitats, trees, sensitive natural communities, and riparian habitat would be less than significant.

With the No Action Alternative, no vegetation would be removed or disturbed and direct and indirect impacts on habitats present in the project area would not occur. Impacts from ongoing recreation on common terrestrial vegetation communities and wildlife habitats, trees, sensitive natural communities, and riparian habitat would not change and would be less than significant.

No Action Alternative

Under the No Action Alternative, there would be no restoration and the marina would remain in place as it currently is, with a boat ramp and approximately 120 slips. The marina would be operational during accessible, high lake levels and would not be operational during periods of low lake levels. Upland features would remain in their current configuration, which includes 76 campsites in two campgrounds and two day-use areas. Because no construction activities would occur under the No Action Alternative, no vegetation would be removed or disturbed and direct and indirect impacts on habitats present in the project area would not occur. Impacts on common terrestrial vegetation communities and wildlife habitats, trees, sensitive natural communities, and riparian habitat from recreation activities would continue the same as under existing conditions. This would be less than significant.

Alternative 1: Full Restoration with Boating Pier

Alternative 1 would involve complete restoration of Meeks Creek and lagoon, which would result in a short-term period of high-intensity disturbance during restoration activities and construction of infrastructure features (i.e., parking, paths, SR 89 bridge, reconstructed cabins, utilities). A 300-foot-long boating pier would also be constructed. Restoration and construction activities would include grading, earthmoving, and excavation which would include the use of vehicles and heavy machinery including trucks, loaders, dozers, excavators, backhoes, and generators. Some removal of trees and other vegetation would occur (including trees greater than 30 inches dbh) within the restoration footprint.

Common natural terrestrial habitats within the project area consist primarily of conifer forest (i.e., Sierran mixed conifer, Jeffrey pine, lodgepole pine), montane chaparral, grassland, and beach habitat included in the barren FRAP category (Table 3.4-2; Figure 3.4-1). Sensitive natural communities and sensitive habitats in the project area include montane riparian habitat, meadow habitat, and wetlands (discussed in detail under Impact 3.4-4). Project construction and restoration activities under Alternative 1 would not occur in portions of Meeks Meadow, where these

sensitive natural communities and sensitive habitats have been documented. Thus, impacts on these habitats are not expected to occur. Construction and restoration activities would occur within common terrestrial vegetation communities that may provide habitat for wildlife. Additionally, trees (including those greater than 30 inches dbh) may be removed to establish defensible space and maintain healthy forest communities. As described above under in Section 3.4.2, "Environmental Setting," much of the common terrestrial vegetation communities are associated with campsites, parking areas, roads and trails, and other summer-use facilities and are already subject to high levels of disturbance. Disturbance or permanent loss of common vegetation communities would be minor and incidental and any temporarily disturbed areas would be restored following construction and restoration. TRPA's Handbook of Best Management Practices and standard conditions of approval require minimizing the disturbance footprint and amount of native vegetation removed by a project, temporarily fencing retained vegetation, and revegetating any temporarily disturbed areas.

While common vegetation could be permanently or temporarily removed or disturbed during construction and restoration activities under Alternative 1, the potential loss would be relatively minor for reasons discussed previously. Additionally, the terrestrial vegetation communities and habitats that may be affected are common and widely distributed in the Tahoe Basin and elsewhere in the Sierra Nevada, and the amount of habitat disturbance and loss would be very small relative to the total amount available in the area. Additionally, any tree removal that may be required would not substantially affect overall canopy cover or reduce the abundance of this vegetation type on the landscape.

In sum, potential disturbance or removal of terrestrial vegetation that would occur under Alternative 1 would not substantially reduce the quantity or quality of vegetation communities and habitats in the project area and would not result in a change in diversity or distribution of species in the project area. There would be no impacts on sensitive natural communities or sensitive habitats in the project area. Additionally, project implementation would not result in a substantial change in local population numbers of any common plant or tree species or any unique, rare, or endangered species of plants or animals. Any permanent and temporary loss and disturbance that would occur under Alternative 1 would be relatively minor and not substantially reduce the size, continuity, or integrity of any common vegetation community or habitat type or disrupt the natural processes that support common vegetation communities in the project area. This impact would be less than significant.

Alternative 2: Full Restoration with Pedestrian Pier

Alternative 2 would include the restoration and construction activities described for Alternative 1 but would not include removal and reconstruction of cabins and would include an approximately 100-foot-long pedestrian pier instead of the 300-foot-long boating pier included in Alternative 1. The addition of a pedestrian pier would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on common terrestrial vegetation communities and wildlife habitats (including trees), sensitive natural communities, and sensitive habitats would be less than significant under Alternative 2.

Alternative 3: Full Restoration with No Pier

Alternative 3 would include similar restoration and construction activities described for Alternative 2 but would include campground expansion and a small paddlecraft launch structure instead of the pedestrian pier included in Alternative 2. The addition of a paddlecraft launch structure would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on common terrestrial vegetation communities and wildlife habitats (including trees), sensitive natural communities, and sensitive habitats would be less than significant under Alternative 3.

Alternative 4: Preferred Alternative

Similar to Alternatives 1, 2, and 3, Alternative 4 would involve removal of the marina and full restoration of the creek, lagoon, and barrier beach. Like Alternative 3, this alternative would not include a pier but would include a small paddlecraft launch structure on the south end of the bay. As with Alternative 1, this alternative would relocate the two motel style cabin units in the Meeks Bay Resort farther inland and replace them with three smaller cabin units while maintaining the existing overnight visitor capacity. Alternative 4 would not relocate the parking on the south end of

the project area, but it would expand parking capacity by 14 spaces. It would also include upland features common to all the action alternatives.

The mechanisms for impacts on common vegetation communities and wildlife habitats (including trees), sensitive natural communities, and sensitive habitats would be the same as those described above for Alternative 1. The addition of a paddlecraft launch structure would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on common terrestrial vegetation communities and wildlife habitats (including trees), sensitive natural communities, and sensitive habitats would be less than significant under Alternative 4.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.4-4: Result in Disturbance or Loss of State or Federally Protected Wetlands

Implementation of Alternatives 1, 2, 3, and 4 would consist of restoration and construction activities that would include ground disturbance; however, project actions would not result in a net loss of state or federally protected wetlands or other water waters and would ultimately result in a functional lift in ecosystem functions and an increase in wetland habitat from current conditions. Therefore, the project would not have a substantial adverse effect on any riparian habitat, wetlands, or other sensitive natural community, and the impact related to state or federally protected wetlands associated with Alternatives 1, 2, 3, and 4 would be less than significant. Implementation of the No Action Alternative would not include restoration of Meeks Creek and lagoon and may contribute to the ongoing degradation of Meeks Creek and continued loss of wetland area associated with the creek. This would be a potentially significant impact for the No Action Alternative.

No Action Alternative

Under the No Action Alternative, there would be no restoration and the marina would remain in place, with a boat ramp and approximately 120 slips placed in the lagoon. Currently, some marina infrastructure, including the floating platforms and slips, have been removed from the marina to facilitate AIS control and other management actions. With the No Action Alternative, this infrastructure would be reinstalled, and the marina would continue to operate as it had in the past. Under existing conditions, Meeks Creek is degraded and lacks the wetland, lagoon, and barrier beach habitat that historically existed in the project area. Additionally, continued maintenance of the marina would require ongoing dredging to remove accumulated sediment and aquatic invasive plant species and would involve the use of heavy equipment in Meeks Creek. These degraded conditions would continue and may worsen under the No Action Alternative, ultimately resulting in reduced creek function, continued incision and disconnection of the creek from the floodplain, interference with lagoon and barrier beach processes, and continued loss of wetland area associated with the creek. This impact would be potentially significant.

Alternative 1: Full Restoration with Boating Pier

Alternative 1 would involve complete restoration of Meeks Creek and lagoon, which would result in a short-term period of high-intensity disturbance during restoration activities. Restoration activities would include earth moving and grading to recreate a shallow lagoon and to restore channel and floodplain topography along Meeks Creek from SR 89 to Lake Tahoe. This would result in removal of anthropogenic fill from the marina and placement of clean gravel and sand fill to recreate historic channel and floodplain conditions. Restoration would also include removal of existing marina infrastructure, including the concrete boat launch, steel and concrete retaining walls, and boulder riprap. Riparian areas and floodplain surfaces would include microtopographic features (hummocks and depressions), as well as backwater channels, oxbow features, and multiple distributary channel to promote habitat complexity and vegetation diversity. In addition, the lagoon and floodplain would be graded to a range of elevations to support a mix of natural obligate wetland and riparian vegetation. Overall, project actions would not result in a net loss of state or federally protected wetlands or other water waters and would ultimately result in a functional lift in ecosystem functions and an increase in wetland habitat from current conditions.

For these reasons, impacts on state and federally protected wetlands would be less than significant.

Alternative 2: Full Restoration with Pedestrian Pier

Alternative 2 would include the restoration and construction activities described for Alternative 1 but would include an approximately 100-foot-long pedestrian pier instead of the 300-foot-long boating pier included in Alternative 1. The addition of a pedestrian pier would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on state and federally protected wetlands would be less than significant under Alternative 2.

Alternative 3: Full Restoration with No Pier

Alternative 3 would include the restoration and construction activities described for Alternative 1 and Alternative 2 but would include a small paddlecraft launch structure instead of the boating pier or pedestrian pier included in Alternative 1 and Alternative 2, respectively. The addition of a paddlecraft launch structure would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on state and federally protected wetlands would be less than significant under Alternative 3.

Alternative 4: Preferred Alternative

Similar to Alternatives 1, 2, and 3, Alternative 4 would involve removal of the marina and full restoration of the creek, lagoon, and barrier beach. Like Alternative 3, this alternative would not include a pier but would include a small paddlecraft launch structure on the south end of the bay.

The mechanisms for impacts on wetlands would be the same as those described above for Alternative 1. The addition of a paddlecraft launch structure would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on state and federally protected wetlands would be less than significant under Alternative 4.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.4-5: Interfere with Wildlife Movement Corridors or Impede the Use of Wildlife Nurseries

Implementation of the alternatives would not result in substantial interference with wildlife movement corridors because the project area does not currently function as an important wildlife movement corridor and the alternatives would not result in construction of new barriers to wildlife movement. No wildlife nurseries are known to occur in the project area; however, communal bat roosts may occur. Implementation of an RPM developed for the project (see Appendix A) would require identification and protection of communal bat roosts. Therefore, the project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors relative to baseline conditions. Nor would it impede the use of native wildlife nursery sites. This impact would be less than significant.

No Action Alternative

Under the No Action Alternative, there would be no restoration and the marina would remain in place as it currently is, with a boat ramp and approximately 120 slips. The marina would be operational during accessible, high lake levels and would not be operational during periods of low lake levels. Upland features would remain in their current configuration, which includes 76 campsites in two campgrounds and two day-use areas. Because no construction activities would occur under the No Action Alternative, there would be no physical change to the project area relative to existing conditions. Interference with wildlife movement corridors or adverse effects on wildlife nurseries would not occur. Impacts on wildlife movement corridors and wildlife nurseries would be less than significant.

Alternative 1: Full Restoration with Boating Pier

Alternative 1 would involve complete restoration of Meeks Creek and lagoon, reconstruction of the SR 89 bridge, demolition and reconstruction of cabins, and other facility construction that would result in a short-term period of high-intensity disturbance during restoration activities and construction of infrastructure features. A 300-foot-long

boating pier would also be constructed. Restoration and construction activities would include grading, earthmoving, and excavation which would include the use of vehicles and heavy machinery including trucks, loaders, dozers, excavators, backhoes, and generators. Some removal of trees and other vegetation would occur (including trees greater than 30 inches dbh) within the restoration footprint.

The project area contains natural vegetation (i.e., forest, chaparral, grassland, lacustrine); however, the majority of the project area is characterized by heavy recreational use associated with Meeks Bay Marina, Meeks Bay Resort, and Meeks Campground. As described in Section 3.4.2, "Environmental Setting," the project area does not contain any portion of a natural landscape block or ECA as defined by the California Essential Habitat Connectivity Project and is separated by nearby ECAs and natural landscape blocks by SR 89 (Spencer et al. 2010). The existing level of human activity in the project area and the existing anthropogenic barriers to wildlife movement likely limit the project area from functioning as an important wildlife movement corridor. Further, restoration and construction activities would be temporary and project implementation would not impose new barriers to movement of wildlife relative to existing conditions. In fact, a terrestrial wildlife undercrossing would be incorporated into the design of the new SR 89 bridge.

There are no known native wildlife nursery sites in the project area. The project area does not contain deer fawning habitat as defined by TRPA (TRPA 2022; Figure 3.4-3); however, the project area could contain roosting habitat for common bat species. As described in Impact 3.4-2, the BE/BA identified an RPM for impacts on bat roosts, which is described in Appendix A (LTBMU 2021). This RPM includes a survey for potential communal bat roosting if potential roost habitat is planned for removal and retention of habitat features with confirmed or suspected use by bats during the bat maternity and hibernation seasons. With implementation of this RPM, impacts on communal bat roosts in the project area would be avoided. For these reasons, impacts on wildlife movement corridors and wildlife nursery sites from Alternative 1 would be less than significant.

Alternative 2: Full Restoration with Pedestrian Pier

Alternative 2 would include similar restoration and construction activities described for Alternative 1, including a terrestrial wildlife undercrossing incorporated into the design of the new SR 89 bridge, but would include an approximately 100-foot-long pedestrian pier instead of the 300-foot-long boating pier included in Alternative 1. The addition of a pedestrian pier would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on wildlife movement corridors and native wildlife nursery sites would be less than significant under Alternative 2.

Alternative 3: Full Restoration with No Pier

Alternative 3 would include similar restoration and construction activities described for Alternative 1 and Alternative 2, including a terrestrial wildlife undercrossing incorporated into the design of the new SR 89 bridge, but would include a small paddlecraft launch structure instead of the boating pier or pedestrian pier included in Alternative 1 and Alternative 2, respectively. The addition of a paddlecraft launch structure would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on wildlife movement corridors and native wildlife nursery sites would be less than significant under Alternative 3.

Alternative 4: Preferred Alternative

Alternative 4 would involve removal of the marina and full restoration of the creek, lagoon, and barrier beach described for Alternatives 1, 2, and 3. This alternative would also include a terrestrial wildlife undercrossing incorporated into the design of the new SR 89 bridge. Like Alternative 3, this alternative would not include a pier but would include a small paddlecraft launch structure on the south end of the bay.

The mechanisms for impacts on wildlife movement and native wildlife nursery sites would be the same as those described above for Alternative 1. The addition of a paddlecraft launch structure would not introduce a more severe impact than the boating pier described in Alternative 1. For the same reasons described for Alternative 1, impacts on wildlife movement corridors and native wildlife nursery sites would be less than significant under Alternative 4.

Mitigation Measures

No mitigation is required for this impact.

Impact 3.4-6: Conflict with Local Policies and Ordinances

Land uses in the project area are regulated by the TRPA Regional Plan and Code of Ordinances, and the LTBMU Forest Plan. Implementation of RPMs developed for the project and mitigation measures identified under Impact 3.4-2 and included in Appendix A would reduce impacts on resources protected by TRPA goals, policies, and Code of Ordinances and LTBMU standards and guidelines to less than significant for Alternatives 1, 2, 3, and 4. Therefore, the impact related to potential conflict with local policies or ordinances protecting biological resources would be less than significant for all alternatives.

No Action Alternative

Under the No Action Alternative, there would be no restoration and the marina would remain in place as it currently is, with a boat ramp and approximately 120 slips. The marina would be operational during accessible, high lake levels and would not be operational during periods of low lake levels. Upland features would remain in their current configuration, which includes 76 campsites in two campgrounds and two day-use areas. Because no construction activities would occur under the No Action Alternative, there would be no project-related physical change to the project area relative to existing conditions that would conflict with a local policy or ordinance protecting biological resources. Impacts on biological resources protected by TRPA goals, policies, and Code of Ordinances, or the LTBMU Forest Plan would not occur. Therefore, impacts resulting from conflict with local policies and ordinance would be less than significant.

Alternative 1: Full Restoration with Boating Pier

Alternative 1 would involve complete restoration of Meeks Creek and lagoon, which would result in a short-term period of high-intensity disturbance during restoration activities and construction of recreation and infrastructure features (i.e., parking, SR 89 bridge, cabins, paths, utilities). A 300-foot-long boating pier would also be constructed. Restoration and construction activities would include grading, earthmoving, and excavation which would include the use of vehicles and heavy machinery including trucks, loaders, dozers, excavators, backhoes, and generators. Some vegetation removal would occur (including trees greater than 30 inches dbh) within the restoration footprint.

Land uses in the project area are regulated by the LTBMU Forest Plan, and TRPA Regional Plan and Code of Ordinances. The Forest Plan, TRPA Regional Plan, and Code of Ordinances includes policies protecting biological resources, such as sensitive and uncommon plants, wildlife, special-status species habitat, aquatic habitat, wetland and riparian habitat, trees, and native vegetation. As discussed above in Impacts 3.4-1, 3.4-2, 3.4-3, 3.4-4, and 3.4-5, while implementation of the alternatives could result in some tree removal and other adverse effects on these resources, RPMs identified in the BE/BA (also see Appendix A) would be implemented to reduce impacts on biological resources to less than significant. Additionally, compliance with the TRPA Code of Ordinances is a regulatory requirement for project approval and permitting. Therefore, implementation of the approved project would not conflict with local policies protecting these resources; impacts from Alternative 1 would be less than significant.

Alternative 2: Full Restoration with Pedestrian Pier

Alternative 2 would include similar restoration and construction activities described for Alternative 1 but would include an approximately 100-foot-long pedestrian pier instead of the 300-foot-long boating pier included in Alternative 1. The addition of a pedestrian pier would not introduce a more severe impact than the boating pier described in Alternative 1. Therefore, for the same reasons described for Alternative 1, no conflict with the policies protecting these resources would occur and impacts from Alternative 2 would be less than significant.

Alternative 3: Full Restoration with No Pier

Alternative 3 would include similar restoration and construction activities described for Alternative 1 and Alternative 2 but would include a small paddlecraft launch structure instead of the boating pier or pedestrian pier included in Alternative 1 and Alternative 2, respectively. The addition of a paddlecraft launch structure would not introduce a more severe impact than the boating pier described in Alternative 1. Therefore, for the same reasons described for Alternative 1, no conflict with the policies protecting these resources would occur and impacts from Alternative 3 would be less than significant.

Alternative 4: Preferred Alternative

Alternative 4 would involve removal of the marina and full restoration of the creek, lagoon, and barrier beach described for Alternatives 1, 2, and 3. Like Alternative 3, this alternative would not include a pier but would include a small paddlecraft launch structure on the south end of the bay. As with Alternative 1, this alternative would relocate the two motel-style cabin units in the Meeks Bay Resort farther inland and replace them with three smaller cabin units while maintaining the existing overnight visitor capacity. Alternative 4 would not relocate the parking on the south end of the project area, but it would expand parking capacity by 14 spaces. It would also include upland features common to all the action alternatives.

The mechanisms for impacts on biological resources and the applicable local ordinances would be the same as those described above for Alternative 1. The addition of a paddlecraft launch structure would not introduce a more severe impact than the boating pier described in Alternative 1. Additionally, compliance with the TRPA Code of Ordinances is a regulatory requirement for project approval and permitting. For the same reasons described for Alternative 1, implementation of the approved project under Alternative 4 would not conflict with local policies protecting biological resources and this potential impact would be less than significant.

Mitigation Measures

No mitigation is required for this impact.

CUMULATIVE IMPACTS

Cumulative impacts on biological resources are considered in the context of the Meeks Creek watershed, Lake Tahoe Basin, the range of affected special-status species, as well as adjacent migration and movement corridors (e.g., natural habitat areas surrounding the project area, the Pacific flyway for migratory birds) that are connected to the project area. Past, present, and reasonably foreseeable future development, recreation, and fuels management projects, including the projects listed in Table 3-2, have resulted and likely will continue to result in significant cumulative impacts on special-status plants, special-status wildlife, sensitive natural communities, riparian habitat, state or federally protected wetlands, wildlife movement corridors, and native wildlife nurseries. In the distant past, development occurred absent environmental regulation and habitat conversion, degradation, and indirect effects (e.g., noise, air, and light pollution) occurred with little or no mitigation. In recent decades, however, development has continued, but in a regulatory context that required compensatory actions for project-related adverse effects on state and private lands. Also in recent years, restoration projects have restored habitat and natural areas resulting in benefits to regional flora and fauna. The Mayala Wata Restoration at Meeks Creek Project would be implemented concurrently with the project. This project will result in a net benefit to biological resources; however, immediate, temporary impacts resulting from restoration activities would be similar to the Meeks Bay Restoration Project. Recreation projects, such as the Tahoe Trail, while not without their impacts, serve to focus recreational use in specific areas, preventing impacts to more pristine areas. Fuels reduction projects may result in temporary impacts on wildlife habitat and introduce noise, vibration, and other disturbance, but their objectives to reduce the risk of catastrophic wildfire is ultimately beneficial to biological resources, including wildlife, forest, and riparian habitat in the region.

All action alternatives would require active construction adjacent to and in Meeks Creek and Lake Tahoe. RPMs identified in Appendix A would be implemented, which would reduce impacts on special-status plants and special-status wildlife by requiring identification of these resources through focused surveys and avoidance of the resources if detected. Additionally, restoration of Meeks Creek and lagoon would likely constitute an overall benefit for special-status wildlife in the vicinity of the project area by restoring native vegetation and ecosystem function. The net beneficial effects associated with the Mayala Wata Restoration at Meeks Creek Project would likely compound with the net beneficial effects associated with the Meeks Bay Restoration Project. Other projects listed in Table 3-2 would result in similar temporary impacts on biological resources (e.g., restoration projects, fuels management projects) or permanent impacts on these resources (e.g., development projects, recreation projects). However, these projects would also be required to mitigate these impacts to a less-than-significant level through implementation of RPMs or mitigation measures.

Project construction and restoration activities under all action alternatives would not occur in Meeks Meadow, where sensitive natural communities and sensitive habitats (i.e., montane riparian habitat, meadow habitat) have been documented. While common vegetation could be permanently or temporarily removed or disturbed during construction and restoration activities under the action alternatives the potential loss would be relatively minor because these habitats are already subject to high levels of disturbance and any temporarily disturbed areas would be restored following construction and restoration. Additionally, the terrestrial vegetation communities and habitats that may be affected are common and widely distributed in the Tahoe Basin and elsewhere in the Sierra Nevada, and the amount of habitat disturbance and loss would be very small relative to the total amount available in the area. Additionally, any tree removal that may be required would not substantially affect overall canopy cover or reduce the abundance of this vegetation type on the landscape.

Project construction and restoration activities under all action alternatives would result in a short-term period of high-intensity disturbance during restoration activities. Overall, project actions would not result in a net loss of state or federally protected wetlands or other water waters and would ultimately result in a functional lift in ecosystem functions and an increase in wetland habitat from current conditions.

The majority of the project area is characterized by heavy recreational use associated with Meeks Bay Marina, Meeks Bay Resort, and Meeks Campground, and the project area does not contain any portion of a natural landscape block or Essential Connectivity Area. The existing level of human activity in the project area and the existing anthropogenic barriers to wildlife movement likely limit the project area from functioning as an important wildlife movement corridor, restoration and construction activities would be temporary, and project implementation would not impose new barriers to movement of wildlife relative to existing conditions. Further, there are no known native wildlife nursery sites or deer fawning areas in the project area. A design criterion would be implemented to identify and protect communal bat roosts.

Land use in the project area is regulated by the TRPA Regional Plan and Code of Ordinances, which include policies to protect biological resources, such as sensitive and uncommon plants, wildlife, special-status species habitat, aquatic habitat, wetland and riparian habitat, trees, and native vegetation. To address potential impacts on biological resources, resource protection measures would be implemented to reduce impacts on biological resources to less-than-significant levels. Additionally, compliance with the TRPA Code of Ordinances is a regulatory requirement for project approval and permitting. Therefore, implementation of the approved project would not conflict with local policies protecting these resources.

For the reasons described above, the alternatives would have a less than cumulatively considerable impact related to terrestrial biological resources.