Tahoe Keys
PROPERTY OWNERS ASSOCIATION
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June 8, 2023

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Subject: EIR/EIS Mitigation Monitoring and Reporting for Control Methods Test Project – 2023 Pre-Project Ecotonal Report

Dear Mr. Zabaglo,

The Tahoe Keys Property Owners Association (TKPOA) herewith submits the subject Spring 2023 Pre-Project Ecotonal Report (Report). This Report satisfies the requirements of the Mitigation Monitoring and Reporting Program (MMRP) No. R6T-2022-0005 for Bio-1 Field Reconnaissance and Monitoring. Under this MMRP mitigation provision and prior to initiating the test program, TKPOA was required to conduct a pre-test field reconnaissance of potentially affected terrestrial, riparian, and aquatic (benthic and littoral zones) habitat and species. The enclosed report documents TKPOA's compliance with that provision of the MMRP.

SEA staff performed a field survey on May 25, 2023 of all sites in the Tahoe Keys. Site photos were taken documenting the typical site conditions. While a few sensitive species were found, treatment activities are unlikely to impact these species. While performing the site visit, SEA staff also surveyed for active nest sites of migratory birds. No active nests, or nests from previous years, were observed.

After evaluating data collected from the site visit and a desktop evaluation, it was determined that the CMT Project will not likely adversely impact any special status species, their habitats, or migratory birds.

Please let us know if you have any questions or comments regarding the attached Report.

Sincerely,

Hallie Kirkingburg
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Attachment:

- Attachment; Pre-Project Ecotonal Report

Cc (electronically with Attachment):

- Tiffany Barulich, M.S., Water Resource Control Engineer, Lahontan Regional Water Quality Control Board
- Kimberly Chevallier, Deputy Director & Chief Partnership Officer, Tahoe Regional Planning Agency
- Emily Frey, Aquatic Invasive Species Projects Coordinator, Tahoe Regional Planning Agency
- Kristine Lebo, Water Quality Manager and AIS Coordinator, Tahoe Keys Property Owners Association
- Pete Wolcott, TKPOA Water Quality Committee Chair, Tahoe Keys Property Owners Association

SPRING 2023 ROUTINE MONITORING ECOTONAL REPORT FOR THE TAHOE KEYS LAGOONS AQUATIC WEED CONTROL METHODS TEST

PREPARED PURSUANT TO
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD LAHONTAN REGION
MITIGATION MONITORING AND REPORTING PROGRAM NO. R6T-2022-0005

JUNE 8, 2023

SPRING 2023 ROUTINE MONITORING ECOTONAL REPORT FOR THE TAHOE KEYS LAGOONS AQUATIC WEED CONTROL METHODS TEST

JUNE 8, 2023

Prepared for
Tahoe Keys Property Owners Association

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1.0 INTRODUCTION

The following sections address the mitigation measures for BIO-1 field reconnaissance and monitoring of the areas adjacent to treatment sites within the Tahoe Keys West Lagoon and Lake Tallac Lagoon, as required within Section 5.0 of the Mitigation Monitoring and Reporting Program (MMRP) published February 25, 2022 for the Tahoe Keys Lagoons Aquatic Weed Control Methods Test (CMT or Project). The MMRP was adopted by both the Lahontan Regional Water Quality Control Board and the Tahoe Regional Planning Agency as part of these agencies' approvals of the Project.

> MM-BIO-1: *Prior to initiating the test program, TKPOA will conduct a pre-test field reconnaissance of potentially affected terrestrial, riparian, and aquatic (benthic and littoral zones), habitat and species. This will include the test sites and buffer zones appropriate to each potentially affected species. The occurrence of any sensitive or listed species and/or habitat will be recorded. If sensitive receptors are observed, an evaluation will be made as to the potential impacts. If direct or indirect impacts are possible, coordination will be initiated with the appropriate federal (USFWS) and state (CDFW) agency to determine further mitigation to avoid impacts. Examples of mitigation measures could include environmental tailboards prior to the start of work, the establishment of exclusionary zones (i.e., around active nests), and/or assigning biological field monitors with stop work authority if impacts to receptors are possible. Should work stop based on discovery of sensitive or listed species, TKPOA will consult with appropriate agencies to determine next steps prior to work restarting.*

This 2023 Pre-Project Ecotonal Report (Report) describes the purpose of the evaluation, the studies conducted during the site visit, and personnel conducting those studies, and maps showing the Project site and surrounding area.

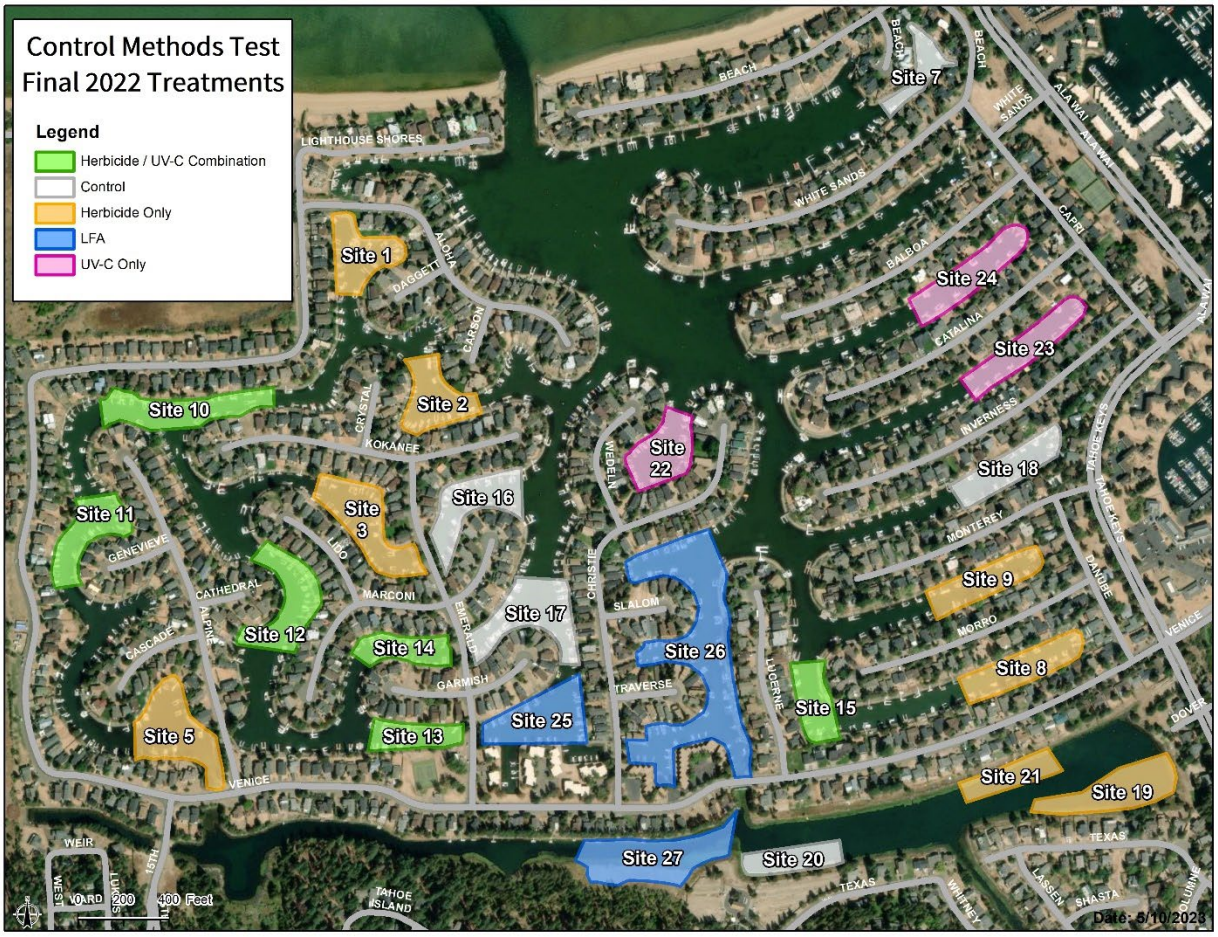
1.1 Project Description

The CMT Project is located in the Tahoe Keys in South Lake Tahoe, California. The Tahoe Keys is approximately 372 acres and includes homes, townhomes, marinas, and a commercial center. The West Lagoon (113.6 acres), East Lagoon (32.1 acres), and Lake Tallac Lagoon (26.1 acres) are three man-made water features in the Tahoe Keys. The lagoons are relatively shallow with an average depth of 10 to 12 feet, and a maximum depth of 20 to 30 feet.

The CMT Project Year 1 tested standalone-treatments using herbicides, ultraviolet (UV-C) light, Laminar Flow Aeration (LFA), and combination treatments of herbicide and UV-C light in the first year of the proposed CMT. The first-year methods are being followed in Years 2 and 3 of the CMT with non-herbicide follow-up methods, including spot treatments using bottom barriers, diver-assisted suction/hand pulling, and UV-C treatments. Implementation of these follow-up methods will be dependent on the target plants present, size of infestation, and

location of infestation. Figure 1 shows the proposed areas for installation of bottom barriers, as well as the areas that will receive treatments of diver assisted suction/hand pulling (DASH), UV-C, and Laminar Flow Aeration (LFA) in Year 2 of the Project.

Figure 1. 2022 Treatment Areas to Receive Non-Herbicide Treatments in 2023



1.2 Purpose of the Report

This report summarizes a desktop evaluation and field survey for sensitive biological resources within and adjacent to the Project sites. Biological resources that were evaluated include federally and state listed threatened and endangered species, as well as species that are candidates for listing, rare species which must be considered under the California Environmental Quality Act (CEQA), and habitats protected by federal or state laws. These taxa are collectively known as special status species. They are tracked by the California Department of Fish and Wildlife (CDFW) through the California Natural Diversity Database (CNDDB) and include:

- Species officially listed as Threatened and/or Endangered by the United States Fish and Wildlife Service (USFS) or the CDFW;
- Species which are candidates for listing in the near future;

- Species that meet the criteria for listing, but not currently included on any list;
- Species considered to be of Special Concern by the State;
- Habitat that is declining in the State at an alarming rate or that is in limited distribution;
- Habitat that is used by listed species; and
- Habitat that is within the jurisdiction of one or more state and/or federal agencies, such as designated Critical Habitat.

For most plant and animal species, the CNDDB tracks sightings, or "Occurrences", which indicate the presence of an individual or a population. This report does not constitute a jurisdictional determination of a wetland delineation.

1.3 Survey Dates and Personnel

Sierra Ecosystem Associates (SEA) staff Environmental Scientist/Natural Resource Analyst Summer Abel (S. Abel), Assistant Environmental Scientist Aria Pauling (A. Pauling), and Environmental Scientist Intern Kylen Kennedy (K. Kennedy) visited the site and completed a field survey of the area on May 25, 2023. The field survey focused on completing a habitat assessment for sensitive species around the Tahoe Keys including the Lake Tallac Lagoon.

Before the site visit, SEA staff completed a desktop evaluation of published resources with information regarding the site and the surrounding area. Photos were taken during the site visit that are included in Appendix A.

2.0 METHODOLOGY

The development of this Report involved: 1) a desktop evaluation and 2) a field survey. The methodology for each is described below.

2.1 Desktop Evaluation

The desktop evaluation of the Project site consisted of the review of the current database maintained by CDFW to identify special-status species which could occur on the Project site (CNDDB 2023). Other sources included the United States Geological Survey (USGS) topographical maps. In addition, S. Abel completed a search of database records in the CNDDB for reported occurrences of special status species. The CNDDB search includes the Project site and a 5-mile buffer around the Project site. Table 1 summarizes the species identified in this focused query (CNDDB 2023). Figure 2 displays the occurrences of these species as they are located near the CMT treatment sites.

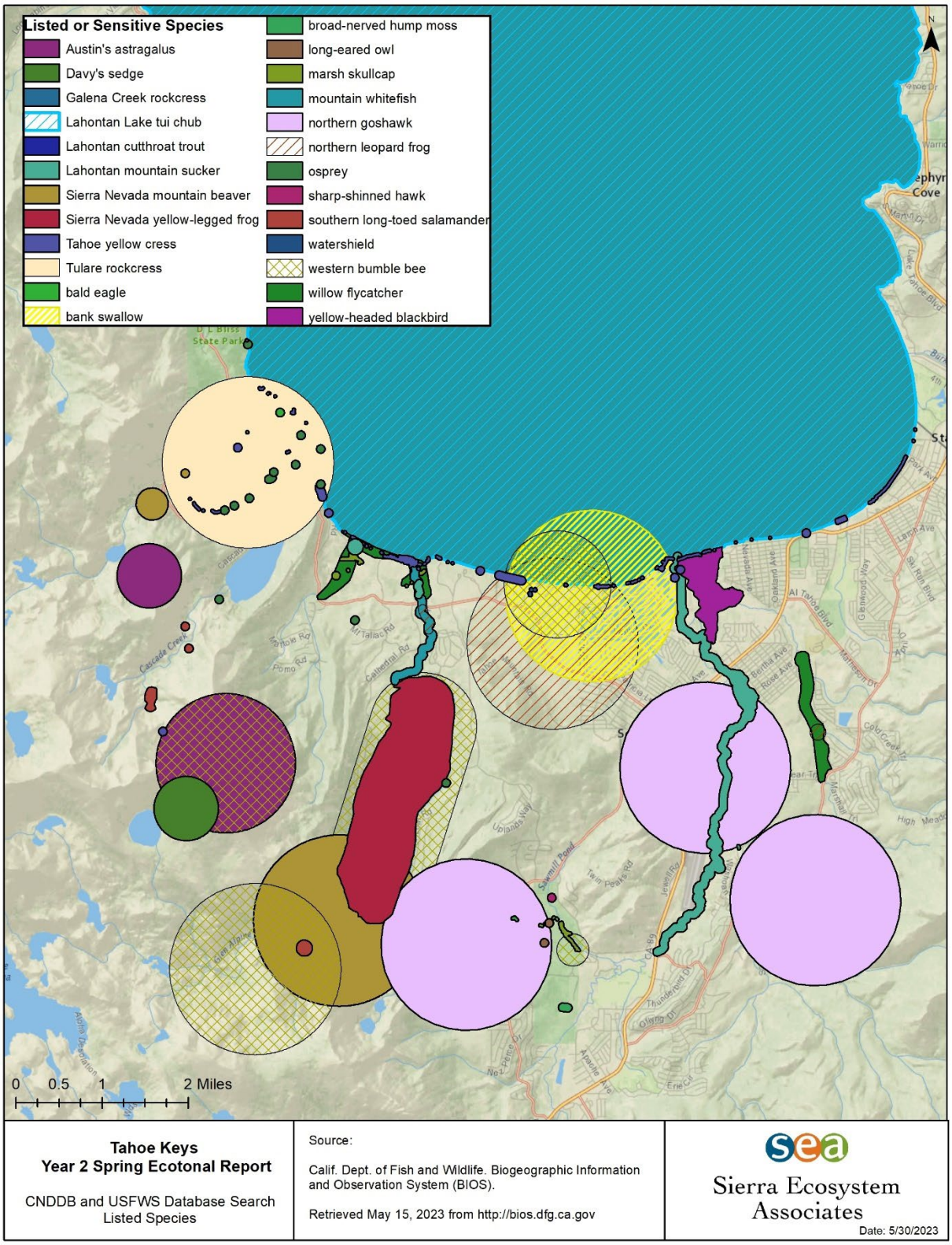
Table 1. CNDDB Species Identified

Common Name	Scientific Name	Federal Listing	California Listing	Rare Plant Rank*	CDFW Status*
bald eagle	*Haliaeetus leucocephalus*	Delisted	Endangered		
bank swallow	*Riparia riparia*	None	Threatened		
Lahontan cutthroat trout	*Oncorhynchus clarkii henshawi*	Threatened	None		
northern goshawk	*Accipiter gentilis*	None	None		Species of special concern
Sierra Nevada yellow-legged frog	*Rana sierrae*	Endangered	Threatened		Watchlist species
southern long-toed salamander	*Ambystoma macrodactylum sigillatum*	None	None		Species of special concern
Tahoe yellow cress	*Rorippa subumbellata*	None	Endangered	1B.1	
Tulare rockcress	*Boechera tularensis*	None	None	1B.3	
Austin's astragalus	*Astragalus austiniae*	None	None	1B.3	
Davy's sedge	*Carex davyi*	None	None	1B.3	
Galena Creek rockcress	*Arabis rigidissima var. demota*	None	None	1B.2	
willow flycatcher	*Empidonax traillii*	None	Endangered		
yellow-headed blackbird	Xanthocephalus xanthocephalus	None	None		Species of special concern
western bumble bee	Bombus occidentalis	None	Candidate Endangered		
Lahontan lake tui chub	Siphateles bicolor pectinifer	None	None		Species of special concern
northern leopard frog	Lithobates pipiens	None	None		Species of special concern
Lahontan mountain sucker	Catostomus lahontan	None	None		Species of special concern
Sierra Nevada mountain beaver	Aplodontia rufa californica	None	None		Species of special concern
sharp-shinned hawk	Accipiter striatus	None	None		Watchlist species
osprey	*Pandion haliaetus*	None	None		Watchlist species
mountain whitefish	*Prosopium williamsoni*	None	None		Species of special concern

*Rare plant rank established by the California Native Plant Society (CNPS, 2023)

*Certain sensitive and watchlist species were added due to expanded parameters such as USFS and BLM status, and were excluded in previous reports due to relevance and lack of habitat potential

Figure 2. Listed and Sensitive Species



2.2 Field Survey

The field assessment included a pre-CMT Project survey and a reconnaissance of potentially affected terrestrial, riparian, and aquatic habitat and species. The field survey of the West Lagoon and Lake Tallac Lagoon was done by boat on May 25, 2023.

3.0 RESULTS BASED ON DESKTOP EVALUATION AND FIELD SURVEY

The following section provides details on the wetland features, specific habitat characteristics at the sites, conditions which influence those habitats, and information gathered during the May 2023 site visit.

The local topography surrounding the project site is urban with residential housing throughout and surrounding the Tahoe Keys. In the West Lagoon, the many artificial coves are completely surrounded by residential structures with little to no wetland vegetation or habitat. Most of the water to land interface is comprised of a seawall, retaining walls, or riprap. The Lake Tallac Lagoon setting includes less dense residential and more wetland habitat, with mostly water to land interface.

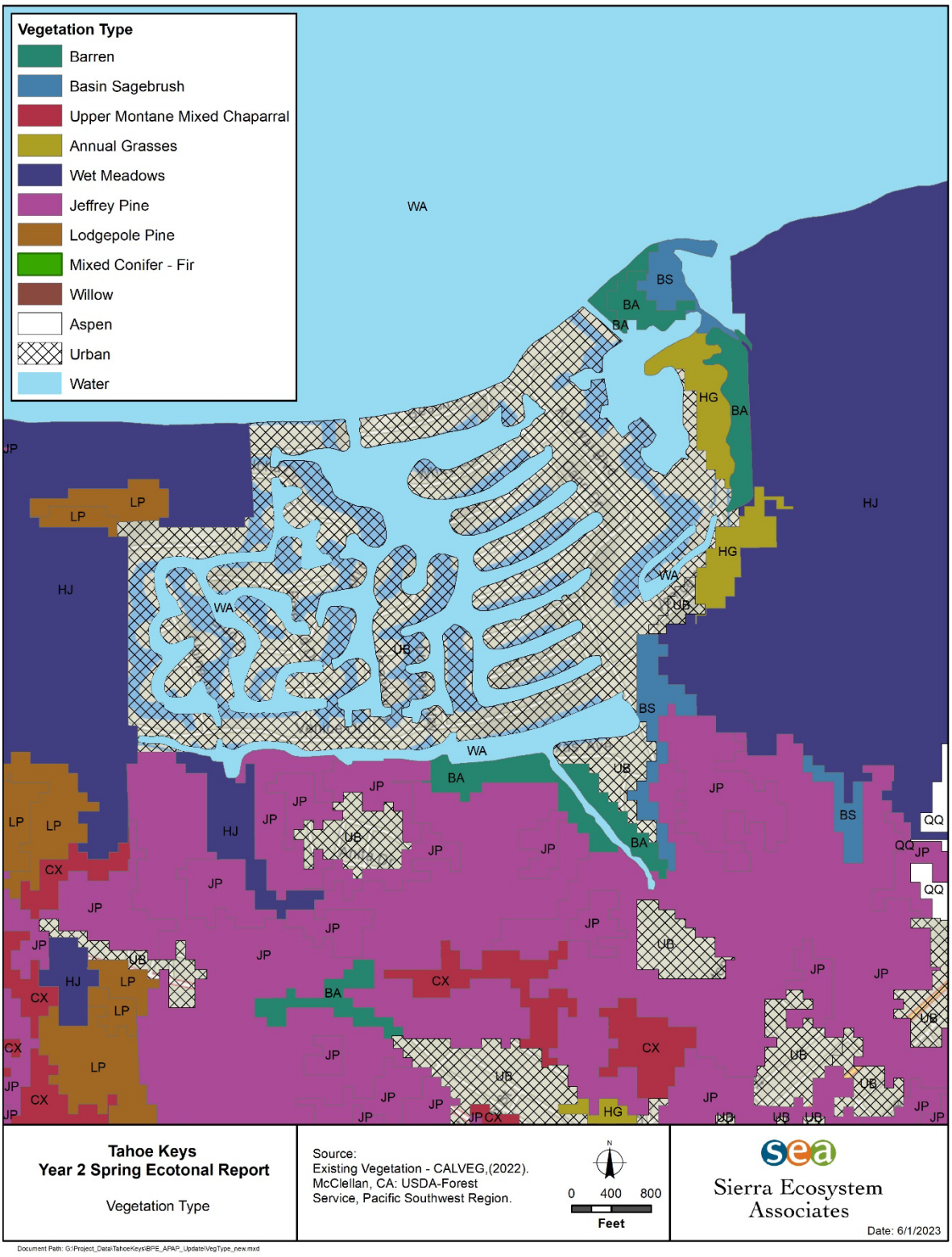
3.1 Wetland Features

Wetland habitat in the West Lagoon is minimal. The deepwater vegetation species are comprised of mostly coontail, Eurasian milfoil, and curlyleaf pondweed (Emergent wetland vegetation is almost nonexistent and shore zone areas are dominated by landscaping, seawalls, and maintained sandy beaches). Lake Tallac Lagoon has a more natural wetland shore zone on the southern shore with the same deepwater aquatic plants, but with assorted wetland facultative and obligate plants such as *Juncus* ssp, *Salix* ssp, and *Carex* ssp. The shallow areas are dominated by watershield on the surface.

3.2 Vegetation Classification

The vegetation within the West Lagoon is mainly planted ornamental species with a mix of native lodgepole and Jeffrey pine. The surrounding area (to the east and west of the Keys development) is a mix of lodgepole pine, wet meadow, and marsh (Upper Truckee River Marsh to the east and Pope Marsh to the west). The vegetation types can be seen in Figure 3.

Figure 3. Vegetation Classification



3.3 Wildlife Sightings

Figure 4 shows the wildlife sightings from the May 25th field survey. All the notable wildlife sightings were in Lake Tallac Lagoon area which included a bald eagle *(Haliaeetus leucocephalus)*, black bear *(Ursus americanus)*, North American beaver *(Castor canadendsis)*, and osprey (*Pandion haliaetus*). In addition, one deceased goldfish was observed at the West side of Lake Tallac. Based on observations from Year 1 field crew forms of the CMT Project, there were multiple sightings of deceased fish, mainly catfish and bass, throughout the Tahoe Keys. There was no trend in terms of the sites/treatment areas and location of the deceased fish.

Sightings of beavers chewing on trees have also been noted mainly in the outflow channel for Lake Tallac, which is an area of the Tahoe Keys that has minimal disturbance. TKPOA's General Manager received an email on December 27th from a homeowner on Venice drive alerting them of beaver chewing activity. The North American beaver tends to migrate to areas in which their preferred food sources exist. Past beaver activity in Lake Tallac was common. Beavers feed on both terrestrial and aquatic vegetation. They usually select deciduous trees such as willow, aspen, and birch over aquatic species, grasses, and agricultural crops, however selection and diet vary seasonally and depend on availability (Pejstrup 2023). Beavers are excellent ecological engineers that can create freshwater habitats by building dams from locally sourced wood (Orazi 2022). A historical beaver lodge in the eastern portion of Lake Tallac Lagoon was noted during the 2015 Tahoe Keys Macrophyte Survey (TKPOA 2015). Beaver activity tailed off in the following years. This cyclical migratory nature of beavers is evident here in Lake Tallac Lagoon.

Figure 4. Wildlife Sightings

4.0 DISCUSSION

The following section provides details on Project impacts and the specific habitat characteristics for potential threatened, endangered, and sensitive (TES) species that are present in the vicinity of the CMT treatment sites. TES species, which are listed in Table 1, are plants and animals that historically occur in the surrounding area and those with potential habitat.

4.1 Plants

Tahoe yellow cress (*Rorippa subumbellata)*

Tahoe yellow cress prefers sandy habitat that exists primarily on the southern shores of Lake Tahoe. Historic and current occurrences exist outside the Tahoe Keys lagoons on the shore of Lake Tahoe. Habitat is very poor within the CMT treatment areas with minimal bare sandy beaches. Treatment activities are not likely to cause impacts to this species.

Galena Creek rockcress (*Arabis rigidissima var. demote)*
Galena creek rockcress occurs in sandy to rocky soils derived from granitic or volcanic materials, primarily on moderate to steep northerly aspects. This plant is often found in drainages and moisture accumulating microsites, meadow edges or in dry openings in conifer forests from 5,900-10,200 feet (USFS 2023). Habitat is very poor within the treatment areas with limited bare sandy beaches. Treatment activities are not likely to cause impacts to this species.

Davy's sedge *(Carex davyi)*
Davy's sedge is known to occur in moist meadows and rocky slopes in subalpine coniferous forest and upper montane coniferous forests (Hauge). Habitat is very poor within the treatment areas with little rocky slopes and no meadows. Treatment activities are not likely to cause impacts to this species.

Austin's astragalus (*Astragalus austiniae)*
Austin's astragalus is native to the Sierra Nevada in the vicinity of Lake Tahoe. It is found in the alpine climate of the high mountains, where it tolerates exposed areas (California Native Plant Society 2023). Habitat is poor within the treatment areas with limited bare exposed areas. Treatment activities are not likely to cause impacts to this species.

Tulare rockcress (*Boechera tularensis)*
Tulare rockcress is a species endemic to California. It grows on rocky slopes in subalpine habitats at elevations ranging from 7,874-10,498 feet (California Native Plant Society). Habitat is very poor within the treatment areas with limited rocky slopes. Treatment activities are not likely to cause impacts to this species.

4.2 Animals

Bald eagle *(Haliaeetus leucocephalus)*
The Bald eagle is listed as endangered in California. Bald eagles forage in large bodies of water. They typically nest in large trees adjacent to a body of water. Foraging habitat in the Tahoe Keys lagoons is good. Nesting occurrences are common nearby with a reoccurring nest near Emerald Bay four miles to the west and one near the Upper Truckee River mouth at the marsh. The adjacent Jeffrey pine and lodgepole forests to the south may offer potential nesting sites, but CMT site-specific treatment activities are unlikely to adversely impact this species with substantial alternative foraging areas throughout the Tahoe Keys.

Bank swallow (*Riparia riparia*)
The bank swallow is a state-listed Threatened species. This colonial species nests along steep vertical banks, cliffs, or bluffs along perennial waters. The bank soil must be soft enough for burrowing (Zeiner, 1990). There are no treatment areas that provide suitable habitat for this species. Much of the Lake Tallac Lagoon shoreline area appears to be flat sandy soil with no

eroded banks, which is not ideal for bank swallows. Adverse impacts to this species are not likely.

Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*)
Optimal stream habitat is characterized by clear, cold water with silt-free substrate and a 1:1 pool-riffle ratio. Streams should have a variety of habitats including areas with slow deep water, abundant instream cover (i.e., large woody debris, boulders, undercut banks), and relatively stable streamflow and temperature regimes. Streambanks should be well vegetated to provide cover, shade, and bank stabilization (Hickman and Raleigh 1982). This type of habitat is not present in the CMT Project area, and treatment activities are not likely to cause impacts to this species.

Northern goshawk *(Accipiter gentilis)*
The Northern goshawk is a CDFW Species of Special Concern. Goshawks typically live in large tracts of coniferous forests and on forest edges. Foraging and potential nesting habitat does not exist within the CMT Project treatment areas. Goshawks prefer areas with little to no human activity. Treatment activities are not likely to cause impacts to this species.

Sierra Nevada yellow-legged frog *(Rana sierrae)*
The Sierra Nevada yellow-legged frog (SNYLF) is federally listed as endangered and listed as threatened in California. This amphibian inhabits lakes, tarns, ponds, meadow streams, isolated pools, and sunny riverbanks in the Sierra Nevada Mountains. Waters that do not freeze to the bottom and that do not dry up are required. It prefers open shorelines that gently slope up to shallows of a few inches (CalHerps 2017). Habitat for this species is very poor in the CMT Project area. Invasive fish such as small mouth bass make this species unlikely to occur within the CMT treatment areas. Treatment activities are not likely to cause impacts to this species.

Willow flycatcher *(Empidonax traillii)*
The Willow flycatcher is listed as Threatened in California. The willow flycatcher prefers dense riparian vegetation such as willows and cottonwoods along meadows and streams. Based on field observations, habitat is poor to non-existent. No areas of dense riparian vegetation exist within the Treatment areas. Treatment activities are not likely to cause impacts to this species.

Osprey (*Pandion haliaetus*)
Osprey is on the CDFW species Watch List. Ospreys prefer a wide range of forest habitat near lakes, rivers, and coastal waters with adequate supplies of fish. They require large snags or other suitable nesting platforms within 15 miles of fishable water. Foraging habitat is good within the CMT Project treatment areas although nesting sites are poor. The adjacent Jeffrey pine and lodgepole forests to the south may offer potential nesting sites, but treatment activities are unlikely to adversely impact this species.

Mountain whitefish (*Prosopium williamsonii)*
Mountain whitefish is a CDFW Species of Special Concern. Mountain Whitefish generally inhabits clear, cool waters of high elevation streams, rivers, and lakes. It is a CDFW Species of Special Concern. Warm turbid waters within the Tahoe Keys lagoons offer poor habitat for mountain whitefish. Treatment activities are not likely to cause impacts to this species.

Yellow headed blackbird (*Xanthocephalus xanthocephalus*)
Yellow headed blackbird is a CDFW Species of Special Concern. Yellow headed blackbirds are generally found gathered in flocks in open fields, often with other blackbirds (Audubon). These birds nest primarily in large wetlands but also in mountain meadows and along the edges of ponds and rivers (The National Wildlife Federation 2023). There are limited wetlands and meadows present near the Tahoe Keys and would offer poor habitat. Treatment activities are not likely to cause impacts to this species.

Western bumblebee (*Bombus occidentalis*)
Western bumblebee can be described as a generalist pollinator that can be found in a wide variety of habitats such as fallow fields, roadsides, gardens, and natural areas and forages on a variety of native and nonnative plants. High-quality summer foraging habitat includes meadows, prairies, or open fields with abundant flowers (Otto 2023). With limited meadows and open fields near the CMT treatment areas, habitat is poor for Western bumblebees. Treatment activities are not likely to cause impacts to this species.

Southern long toed salamander *(Ambystoma macrodactylum sigillatum)*
Southern long toed salamander is a CDFW Species of Special Concern. Southern long toed salamanders occur in diverse habitats including coniferous forests, oak woodland, alpine, sagebrush, or marshland communities. They use springs, ponds, small lakes, slow moving streams, and marshland for breeding and larval development (USFS 2023). This type of habitat is not present in the CMT Project area, and treatment activities are not likely to cause impacts to this species.

Northern leopard frog (*Lithobates pipiens*)
The Northern leopard frog is a CDFW Species of Special Concern. Northern leopard frogs breed in a variety of aquatic habitats that include slow-moving or still water along streams and rivers, wetlands, permanent or temporary pools and beaver ponds. Emergent vegetation such as sedges and rushes are important features for breeding and development. Adult northern leopard frogs also require steam, pond, lake, or river habitats for overwintering and summer feeding (USFW 2023). Suitable habitat for the northern leopard frog is minimal, and CMT treatment activities are not likely to cause impacts to this species.

Lahontan mountain sucker (*Catostomus lahontan*)
Lahontan mountain sucker is a CDFW Species of Special Concern. Lahontan mountain sucker can be found in cool mountain streams with the temperature ranging from 1-28 degrees

Celsius. These streams tend to have a moderate gradient composed of boulders, sand, or rubble. Within a stream, mountain suckers can be found in pools with ample cover from logs, overhanging banks, and aquatic vegetation (University of California 2023). This type of habitat is not present in the CMT Project area, and treatment activities are not likely to cause impacts to this species.

Sierra Nevada mountain beaver (*Aplodontia rufa californica*)
The Sierra Nevada Mountain beaver is a CDFW Species of Special Concern. Sierra Nevada mountain beavers occur in dense riparian-deciduous and open, brushy stages of most forest types. Typical habitat in the Sierra Nevada is montane riparian with frequent open and intermediate-canopy coverage with a dense understory near water. Deep, friable soils are required for burrowing, along with a cool, moist microclimate (Beier, 1989). This type of habitat is not present in the CMT Project area, and treatment activities are not likely to cause impacts to this species.

Sharp-shinned hawk (*Accipiter striatus*)
Sharp-shinned hawk is a CDFW Watchlist Species. Sharp-shinned hawks can be found in mixed or coniferous forests, open deciduous woodlands, thickets, and edges. They usually nest in groves of coniferous or deciduous trees with brush or clearings nearby (Audubon 2023). The adjacent Jeffrey pine and lodgepole forests to the south may offer potential nesting sites, but treatment activities are unlikely to adversely impact this species.

Lahontan lake tui chub (*Siphateles bicolor pectinifer*)
Lahontan Lake tui chub is a CDFW Species of Special Concern. Lahontan Lake tui chubs are found in springs, ponds, lakes, large sluggish streams and in the shelter of small swift water streams. Typically, the tui chub habitat is characterized by slow water and abundant aquatic vegetation (University of California 2023). This type of habitat is not present in the CMT Project area, and treatment activities are not likely to cause impacts to this species.

4.3 Summary

Overall habitat for special status species is very poor due to:

- Lack of native vegetation
- Abundance of non-native fish
- Frequent and widespread human activity
- Increased water temperature and turbidity of the lagoons
- Lack of nesting areas for birds such as large trees, shrubs, and banks

No raptors were observed nesting during the field survey. No nests from previous years were observed. An Osprey and bald eagle were observed hunting in Lake Tallac, as well as some raptors in the West Lagoons. No other occurrences of threatened, endangered, or other special status species were observed during the field survey.

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Appendix A

Project Photos

Photo 1. Beaver Activity - Lake Tallac

Photo 2.Beaver Activity - Lake Tallac

Photo 3. West Lagoon - Site 5

Photo 4. Site 10 - West Lagoon

Photo 5. West Lagoon - Site 16

Photo 6. Lake Tallac - Site 27

Photo 7. West Lagoon - Site 23